



مجلة التربية الرياضية

مجلة علمية فصلية مُحكمة متخصصة

بعلوم الرياضة تصدر عن

كلية التربية البدنية وعلوم الرياضة
جامعة بغداد





جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بغداد
كلية التربية البدنية وعلوم الرياضة

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المجلد السادس والثلاثون

العدد الثالث

السنة 2024

DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024](https://doi.org/10.37359/JOPE.V36(3)2024)

E-ISSN: 2707-5729

P-ISSN: 2073-6452

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تأسست عام (1990)

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رقم الإيداع في دار الكتب والوثائق العراقية (597) لسنة (1990)

(P-ISSN: 2073-6452)

(E-ISSN: 2707-5729)

تصميم الغلاف: د. ياسر وجيه قدوري

تعليمات النشر في مجلة التربية الرياضية

أولاً: تعليمات عامة:

- مجلة علمية رياضية فصلية غير ربحية، متخصصة بنشر البحوث العلمية الخاصة بعلوم الرياضة، لأغراض النشر العلمي، تصدرها كلية التربية البدنية وعلوم الرياضة / جامعة بغداد.
- تعتمد المجلة سياسة التحكيم السري والمزدوج والوصول الحر للبحوث دون قيد أو شرط.
- يتم استخدام الأسماء وعناوين البريد الإلكتروني والهواتف في قاعدة بيانات المجلة للأغراض العلمية فقط الخاصة بالمجلة ولن تكون متاحة للجميع أو تستعمل لغرض آخر.
- تعتد مجلة التربية الرياضية الرخصة (CC BY 4.0)  (a Creative Commons Attribution 4.0 International license) وهي بذلك تحفظ حقوق الملكية الفكرية للباحثين الناشرين فيها، وفي الوقت نفسه تتيح للآخرين بتحميل ومشاركة وإعادة استخدام وتوزيع البحث في نطاق واسع. للمزيد من المعلومات، انقر على الرابط أدناه: <https://creativecommons.org/licenses/by/4.0/>
- تتم إجراءات المراجعة الأولية للبحث المرسل من قبل هيئة التحرير وإجراء الاستلال الإلكتروني، ويتم إعلام الباحث بأي مشكلة خلال الأسبوع الأول من استلام البحث.
- يتم إحالة البحث للتحكيم العلمي من قبل هيئة التحرير لمحكمين اثنين معتمدين من قبل المجلة وبشكل سري.
- تتم عملية التحكيم خلال مدة (3) أسابيع وفق تعليمات المجلة (إرشادات المحكمين).
- بالاعتماد على توصية المحكمين، يتم قبول البحث كما هو أو قبولة بعد إجراء التعديلات أو رفضه، ويتم إعلام الباحث بذلك.
- بعد الانتهاء من التحكيم، يتم طلب دفع رسوم النشر البالغة (120000) ألف دينار عراقي. علماً إن المجلة غير ربحية والنفقات أعلاه لتغطية أجور التحكيم والنشر والترجمة فقط.
- يكون النشر للباحثين من خارج العراق مجاني وبشكل كامل ولحد نهاية سنة (2021).
- كل إجراءات تحكيم البحوث تكون إلكترونياً اعتماداً على نظام المجلات المفتوحة (OJS).

ثانياً: شروط كتابة البحث:

تتبع مجلة التربية الرياضية (JOPE) طريقة (IMRAD) في كتابة البحوث وهي ترمز الى الحروف الأولى لكلمات: المقدمة (Introduction). الطريقة والأدوات (Materials and Methods). النتائج (Results) و (And). المناقشة (Discussion). ورقة واجهة البحث: ويجب أن تتضمن الاتي:

- **عنوان البحث (Research Title):** يعد عنوان البحث الجزء المميز منه الذي يقرأه عدد كبير من الباحثين ويحتوي العنوان ايضا اسم الباحث (الباحثين) وعناوينهم (طرائق التواصل معهم).
- **شروط عنوان البحث:**

- ✓ يحوي على عدد قليل من الكلمات كلما امكن ذلك، و بما لا يزيد عن (12) كلمة.
- ✓ يكون واضح وسهل الفهم ولا يحتوي على المختصرات.
- ✓ يشرح محتويات البحث بدقة وبشكل محدد.
- ✓ ان لا يكون بصيغة استفهامية كما في المقالات الصحفية.
- ✓ يشير الى موضوع البحث وليس النتائج.

- **اسم المؤلف (المؤلفون) (Authors):** مؤلف البحث هو الشخص او الأشخاص الذين أسهموا بشكل فعلي في تخطيط وتنفيذ البحث. ويتم تثبيت أسماء المؤلفين بتسلسل منطقي نسبة الى أهمية مشاركتهم في البحث، اذ يُعد الاسم الأول بالبحث هو كبير معدي البحث وبكلام اخر المؤلف الأول (Senior Author) في حين يتم ترتيب باقي المؤلفين نسبة الى أهمية وقدر مشاركتهم في إتمام البحث. يكون طالب الدراسات العليا المؤلف الاول في اطروحته او رسالته يليه المشرف الرئيس بوصفه المؤلف الثاني وهكذا، علماً أن المجلة تعتمد تسلسل الباحثين حسب ما هو مثبت في البحث المرسل للمجلة. يجب ادراج هامش يشير الى المعلومات الخاصة عن المؤلفين كافة للاتصال بهم بهدف التعاون او الاستيضاح او اي شأن يخص البحث ومجال الاختصاص، ويجب ملاحظة ان يكتب الأسم الثلاثي واللقب للمؤلفين مع ذكر عنوان العمل و وسيلة الاتصال (البريد الالكتروني - رقم الهاتف) وباللغتين العربية والانكليزية.

- **مستخلص البحث (Abstract):** ينقل الملخص معلومات البحث القائم فعلاً مع مراعاة عدم استعمال عبارات الوعود (سوف يقدم، سوف يعرض.... وغيرها)، ويكون ملخص البحث بمعدل (150-250) كلمة ويكتب في فقرة واحدة باللغتين الإنكليزية والعربية. يبدأ الملخص بترتيب متسلسل بعرض الاهداف ثم توضيح الإجراءات المستعملة وأهم النتائج المتضمنة حقائق جديدة

تتعلق بتحقيق الأهداف، وأخيراً الاستنتاجات الرئيسية ومستوى دلالتها (Sig). وتكتب أفعال جمل عرض الأهداف والمقدمة ومناقشة النتائج والاستنتاجات في الزمن المضارع، في حين تكتب الإجراءات والأختبارات والنتائج في الزمن الماضي. يجب أن لا يحتوي ملخص البحث على الآتي:

- ✓ الاختصارات (الأحرف المختصرة) إلا إذا كانت معيارية أو معروفة مسبقاً مثل (Vo2Max).
- ✓ الإشارة إلى الجداول أو الأشكال في متن البحث والاستشهاد بالمصادر.
- ✓ أي معلومات أو استنتاج غير موجود في متن البحث والجمل العامة والجمل المطولة أو المعقدة أو الملتوية (المراوغة).
- ✓ تجنب ذكر البيانات الكمية بشكل مفصل وكذلك المعالجات الإحصائية والمصطلحات الطويلة جداً.
- ✓ ذكر المتوسط الحسابي والانحراف المعياري لأعمار وأوزان وأطوال عينة البحث. مثال: (متوسط الطول) متر ($\pm$ الانحراف المعياري).

- **الكلمات المفتاحية (Key Words):** يجب أن يتضمن البحث كلمات مفتاحية بعدد لا يتجاوز (6) كلمات، ويجب أن تكون محددة بالدراسة وغير الكلمات الموجودة في عنوان البحث، وعلى أن تكتب في نهاية ملخص البحث بفقرة منفصلة وباللغتين الإنكليزية والعربية.
- **المقدمة (Introduction):** تكون مقدمة البحث جيدة قصيرة نسبياً، تشرح أهمية الدراسة وتحديد أهدافها من خلال البحث في الأدبيات ذات العلاقة من مراجع ودراسات، ويكون ذلك عن طريق استعراض مختصر لهذه الدراسات والتي تكون ذات علاقة بمشكلة البحث والتي يجب أن لا تقل عن خمسة دراسات حديثة ومناسبة لتعزيز البحث، كما أن المقدمة تُعرف بالمصطلحات الخاصة أو المختصرات التي سيتضمنها متن البحث لاحقاً، ويفضل أن لا تتجاوز عدد الكلمات في مقدمة البحث عن (500) كلمة وأن لا تتضمن تكرار لعبارات أو مفاهيم ذكرت في أي موقع من الملخص، مع مراعاة تجنب العبارات الانشائية والجمل التي لا تضيف للقارئ معلومة مثل إعادة الحقائق والحالات البديهية.

- **الطريقة والأدوات (Materials and Methods):** أن الغرض من هذا القسم هو لعرض ما تم عمله، وكيف تم، وأين تم، وذلك بطريقة مباشرة وبسيطة فضلاً عن التعريف بكيفية جمع البيانات وعرضها وتحليلها. إذ يجب أن يوفر هذا القسم من البحث كل المعلومات الضرورية اللازمة للسماح للمؤلفين الآخرين للحكم على الدراسة والإفادة منها، ويجب مراعاة ترتيب

- الاجراءات الميدانية زمنياً مع توفير كافة المعلومات الضرورية فقط، وعلى وفق ذلك يتطلب ان يتضمن هذا القسم من البحث على الآتي مع أهمية تسلل الفقرات:
- ✓ منهج البحث وتصميمه المستعمل.
 - ✓ الوصف الدقيق لعينة البحث من حيث (الجنس والعمر والوزن.... وغيرها).
 - ✓ تصميم التجربة مع عدد مرات اجراء الاختبار او القياس وإيجاز الإجراءات المستعملة لاختذ العينات (إجراءات الاختبار).
 - ✓ ذكر الأجهزة والادوات المستعملة مع مواصفاتها الفنية الدقيقة وعددها ومصدرها وطريقة العمل بها (الضرورية منها فقط غير شائعة الاستعمال). ويجب استعمال الأسماء العلمية للأجهزة بدلاً عن اسمائها التجارية مع ذكر أسماء الشركات المصنعة للجهاز واية معلومات تفيد القارئ.
 - ✓ وصف التعديلات اذا ما تم اجراءها على القياسات الروتينية (الاختبارات)، اما إذا ما تم استعمال اجراء جديد (اختبار جديد) فيجب ذكره وشرحه بالتفصيل.
 - ✓ توضيح طريقة اجراءات البحث من تجربة واختبارات ورقية، وعملية، وشفوية او على جهاز الحاسوب.
 - ✓ الطريقة الإحصائية (او/و) الرياضية المستعملة لتحليل وتلخيص البيانات.
 - ✓ يحق للمجلة ان تطلب من المؤلفين تفاصيل او معلومات إضافية عن أي جزء من أجزاء البحث. وبشكل عام يجب ان يضع المؤلفين بعين الاعتبار الأمور الآتية عند كتابته لإجراءات البحث:
 - ✓ لايجوز استعمال المختصرات (بأي لغة كانت) قبل تعريفها في ملخص البحث او مقدمته.
 - ✓ تحديد نظام وحدات القياس الدولية المستخدم في البحث، مثل (المتر، كيلوغرام، الثانية ... الخ)
 - ✓ توضيح جميع المواد المستعملة في الدراسة بحيث يمكن للقارئ استعمالها في بحوث مشابهة أخرى.
 - ✓ وصف اهداف واجراءات القياس لكل اختبار (اختبار قبلي - اختبار بعدي - اختبار احتفاظ ... وهكذا) .
 - ✓ وصف كل التقنيات والاختبارات المستعملة بذكر اسمها فقط اذا كانت معروفة وقياسية او ذكر التفاصيل في حالة كونها جديدة او تم اجراء تعديل عليها.
 - ✓ لا يجوز اضافة معلومات لا تمت بصلة بالنتائج، والتي يمكن ان تربك القارئ.
 - ✓ استخدام الافعال بصيغة الماضي في عرض اجراءات البحث.

• **النتائج (Results):** يُقدم هذا القسم من البحث المعلومات الجديدة التي توصل لها الباحث، لذا يعد على أنه أساس (مركز) البحث. ويلاحظ أن مقدمة البحث والإجراءات صُممت للإجابة عن التساؤلات؛ لماذا وكيف وصل الباحث (الباحثين) لهذه النتائج والتي سيتم تفسيرها في قسم المناقشة، لذا فإن قيمة البحث تكون بما يتضمنه من نتائج، ويجب أن يتم عرضها بطريقة واضحة جداً ومباشرة وباستعمال العدد الضروري من الكلمات دون اسهاب أو اختصار، وعادة ما يكون عرض النتائج أسهل فهماً إذا ما تم ترتيب العرض على وفق تسلسل أهداف البحث التي تم ذكرها في مقدمة البحث.

إرشادات حول عرض نتائج البحث:

- ✓ أعرض نتائج البحث بشكل بسيط وواضح في جداول أو اشكال وذلك لتسهيل فهمها ومقارنتها. ملاحظة أن الجداول تعرض أرقاماً دقيقة في حين أن الاشكال تظهر الاتجاهات ذات الخصائص ولا يجوز عرض ارقام الجداول نفسها في الاشكال.
- ✓ لا يجوز اعادة النتائج كتابةً بعد عرضها في الجداول أو الاشكال التوضيحية، ويمكن فقط الإشارة الى اهم ما مؤشر في الجداول أو الاشكال (أي عدم استعمال العرض الكتابي للجداول).
- ✓ وثق واعرض فقط البيانات الضرورية بدلاً من الاسهاب والتكرار في عرض البيانات ولا تعرض بيانات كثيرة واختصرها بالتحليل الاحصائي ولخصها لعرضها في جداول أو اشكال وذلك لتسهيل فهمها ومقارنتها.
- ✓ ضمن نتائج البحث بالنتائج السلبية (ما لم يتحقق) إن كان ذلك مفيداً لتفسير النتائج.
- ✓ عند كتابة النتائج يتم الإشارة الى الجداول أو الاشكال بارقامها (الجدول 1) (الشكل 1).

المناقشة Discussion: في هذا القسم من البحث يفسر الباحث (الباحثون) مضمون النتائج ودلالاتها والاثار المترتبة عليها. وتُبين المناقشة أهمية قيمة العمل المنجز كما انها تربط كل أجزاء البحث معاً. أن مهارة الباحث (الباحثين) في تفسير النتائج الجديدة، على وفق الحقائق المعروفة باستخدام نتائج البحث هي دليل على التغيرات المبتكرة (الابداعية) للسلوك الملاحظ، ويجب أن تدفع حدود معرفة القارئ (توسع مداركه) وتثير حماسه. وعلى الباحث أن يلتزم بالاتي في مناقشته للنتائج:

- ✓ ناقش على ضوء معنوية النتائج.
- ✓ لا تكرر ما تم ذكره في الدراسات السابقة.

✓ تتضمن مناقشة النتائج تفسير اتفاقها او عدمه مع المعلومة او المعرفة في الدراسات المنشورة سابقاً.

✓ تدعيم النتائج التي توصلت اليها بأساس نظري علمي (ما هي الأسباب العلمية للنتائج المتحققة).

✓ اقترح بحوث مستقبلية مخطط لها اوبحوث بحاجة الى متابعة (دراسة).

✓ لا يجوز اضافة معلومات لم يتناولها البحث، وان يتم التعامل مع النتائج الموثقة في الدراسة الحالية فقط.

✓ تجنب التعميم والتخمين للنتائج والتي لم تؤكدھا الدراسة.

✓ تكتب المناقشة بصيغة المضارع والماضي، اذ تكتب المعارف المتوافرة من الادبيات والأبحاث بصيغة المضارع، في حين تكتب مناقشة نتائج البحث الحالي بصيغة الماضي.

الاستنتاجات (Conclusions): الاستنتاجات ليست إعادة صياغة لنتائج البحث، انما هي مستنبطة منها. فالاستنتاجات تشير الى الخطوط العريضة للدراسات المستقبلية استناداً على نتائج الدراسة الحالية. ويمكن تخصيص فقرة مستقلة للاستنتاجات.

الشكر والتقدير (Acknowledgments): تسمح المجلة بتضمين كلمات الشكر والتقدير في نهاية البحث ويخصص لشكر المؤسسات والافراد الذين قاموا بمساعدة حقيقية للباحث لاجراء بحثه اذ يقدم الشكر للشركة، او المؤسسة التي قدمت الأموال لدعم البحث، او المختبرات التي زودت الباحث بالادوات والأجهزة، او الى الأشخاص الذين قدموا للباحث النصيحة والمساعدة في جميع البيانات، او التحليل او أي أمر اخر مهم. كما ان هذا القسم يعد مكاناً لذكر اصل البحث وبكلام اخر اذ كان البحث مستقلاً من رسالة ماجستير او أطروحة دكتوراه.

المصادر (References): تتضمن قائمة المصادر كل الاستشهادات المعتمدة في متن البحث فقط وبطريقة (APA) الإصدار السادس حصراً وفق نظام (Microsoft Word 2010) صعوداً أو برنامج (Mendeley) أو (EndNote). ان الاستشهادات النصية في متن البحث يجب ان تتطابق تماماً مع قائمة المصادر.

الملاحق (Appendix): يمكن ادراج أي معلومات تخص البحث المهمة منها حصراً ضمن الملاحق، إذ تحتوي الملاحق على تفاصيل المنهاج التدريبي او البيانات او الجداول الكبيرة (الجداول المعيارية) أو ادوات البحث مثل الاستبيانات وبرامج الحاسوب المستعملة او الأجهزة المصنعة والتي يجب عرضها وشرحها لاهميتها والتي لا يمكن ادراجها ضمن متن البحث بسبب كبر حجمها.

جدول توضيحي يلخص طريقة امراد (IMRAD)

ت	القسم	الغرض او الهدف
1	العنوان	عن ماذا البحث.
2	المؤلفون (الباحثون)	أسماء وانتماءات المؤلفين.
3	الكلمات المفتاحية	الكلمات غير الموجودة في العنوان والتي توصف البحث.
4	الملخص	شرح قصير عن ذلك البحث.
5	المقدمة	لماذا هذا البحث؟ والمشكلة وما هو غير المعلوم واهداف البحث؟
6	الأدوات والإجراءات	كيف تم اجراء البحث؟
7	النتائج	ماذا وجدت؟
8	المناقشة	ماذا يعني ذلك؟ وما التالي؟ وتفسير النتائج والتوجه المستقبلي.
9	الاستنتاجات	الاثار المحتمليه (الممكنة)
10	الشكر والتقدير	لمن ساعدوك وكيف؟ وما هو مصدر التمويل؟
11	المصادر	تفاصيل عن استشهادات البحث.
12	الملاحق	المواد التكميلية.

ثالثاً: شروط استلام البحث لغرض النشر في مجلة التربية الرياضية:

- ✓ أن لا تزيد عدد كلمات البحث عن (2500-3000) كلمة.
- ✓ أن يطبع البحث بنظام (Microsoft Word 2010) صعوداً بحجم خط (12) لمتن البحث و (14) غامق للعناوين الرئيسية وبنوع (Simplified Arabic) للغة العربية و (Times New Roman) للغة الإنكليزية بأبعاد الصفحة القياسية (عمودي - 3.17×2.54 سم). وبمسافة منفردة بين الاسطر و (1) بين الفقرات.
- ✓ أن يثبت اسم الباحثين الكامل والصحيح باللغتين العربية والإنكليزي اسفل عنوان البحث، في حين تثبت معلوماتهم (الشهادة، والقابهم العلمية ومكان عملهم ووسيلة الاتصال بهم البريد الالكتروني ورقم الهاتف مع المفتاح الدولي) في هامش الصفحة الاولى.
- ✓ ترقم صفحات البحث إلكترونياً أسفل ووسط الصفحة.
- ✓ تكون أبعاد الصور او الاشكال متناسقة وباسعمال الماسح الضوئي حصراً وبدقة عالية.

- ✓ يكتب رقم الجدول وعنوانه بشكل مختصر ووافي اعلى الجدول في حين يكتب رقم وعنوان الصورة او الشكل في الأسفل وبشكل ومختصر ووافي.
- ✓ ينشر البحث باللغة الإنكليزية بعد ان يتم ترجمته من قبل المجلة يمكن ارسال البحوث او يمكن ارساله باللغة الإنكليزية.
- ✓ تطبع الأرقام بالصيغة العربية حصراً (0 1 2 3 4)، وعند استعمال الاقواس لا يتم ترك مسافة بين الاقواس مثل: (2540)، وعدم ترك مسافة قبل علامات الترقيم مثل الفارزة، او النقطتين، او النقطة. مثال: التدريب الرياضي، التعلم الحركي، علم النفس الرياضي.
- ✓ لا يجوز استعمال برامج الترجمة الفورية او مواقع الانترنت للترجمة للغة الانكليزية مثل (google translate) وغيرها.
- ✓ استعمال المصطلحات العلمية المعروفة والمتداولة، وعلى الباحثين المقدمين لبحثهم باللغة العربية ادراج المصطلحات العلمية باللغة الإنكليزية في متن البحث.
- ✓ الاستشهاد بالمصادر يكون وفق أسلوب (APA) الإصدار السادس حصراً وفق نظام (Microsoft Word 2010) صعوداً أو برنامج (Mendeley) أو (EndNote).
- ✓ يجب ان تتطابق الاستشهادات النصية في متن البحث تماماً مع قائمة المصادر.
- ✓ لا يقبل الاستشهاد من المواقع الالكترونية العامة والضعيفة.
- ✓ يقبل الاستشهاد من المواقع العلمية الرصينة الرصينة بالاعتماد على البحوث المنشورة المجالات المحكمة والكتب العلمية والرسائل والاطاريح الجامعية المحلية او الدولية.
- ✓ يجب أن لا تقل الاستشهادات بالمصادر العلمية عن (25) مصدر رصين وبواقع (50%) من البحوث العلمية كحد أدنى، و (50%) كحد أعلى من الكتب العلمية.
- ✓ يجب ان تكون المصادر حديثة (آخر خمس سنوات)، مع وجود بعض الاستثناءات الضرورية.

ثبت المحتويات

الصفحة	عنوان البحث	اسم المؤلف (المؤلفين)	ت
528-543	A comparative study of biomechanical variables between the stages of performing the skills (Blanik) and (Lu Yu Fu) On the jumping platform for the player qualifying for the final of the World Cup series in Qatar	Mumtaz Amin, Ismaeel Alalawi, Yasir Hussein	1
544-559	Designing and codifying a test to measure the speed and ability to pass and receive the ball in a collective fast attack for Iraqi handball club players	Moushriq Fathi , Zahraa Hadi ; Huda Abd Alhussein; Yasir Hussein	2
560-570	The study examined the effectiveness of intense special exercises, combined with intermittent electrical stimulation, in alleviating lower back pain in professors aged 50-60 years at the College of Science, University of Baghdad	Farah Essam , karam salam	3
571-582	The Effect of Special Exercises According to Specific Areas device On Learning low forehand reverse Of Squash Players Aged 13-15 years old	Agader Hadi, Ali Ramadan	4
583-598	The effect of rapid strength training in a water environment according to the Obstructive force index on some kinematic variables for the start phase and achievement of the 100-meter Sprint	Abu Al-Hassan Mahmoud, Alaa Yasir	5
599-609	Predicting the level and digital achievement in terms of some body measurements of 2000-meter rowing players in qualifying for the 2023 Asian Cup Championship	Ayad Ali	6
610-635	The effect of inquiry-based learning style in learning the skill of front rolling in artistic gymnastics for second-stage students in the Faculty of Physical Education and Sports Sciences according to their double coding	Doaa kaab , Aseel Gatia	7
636-647	The effect of exercises in the third intensity zone of the strength characteristic of the speed of the two legs on the adequacy of the circulatory and respiratory systems and the performance of some basketball skills among young players	Zainab Khalaf	8
648-665	The effect of green area management style in (some Iraqi stadiums) on some soil biological properties Using geospatial applications	Zainab J. Saleh, Haleema Almashhadnai	9
666-688	Psychological narcissism and its contribution to the feeling of psychological loneliness among young basketball players	Mariam Hashem	10
689-706	The effect of educational exercises by stimulating the brain with (Fit Light) technique on improving	Rossol kalaf	11

	functional thinking and some kinematic manifestations and learning to perform running (400) meters		
707-721	The effect of third intensity zone exercises by varying the muscle elongation of the muscles of the dominant arm and the supporting leg on some physiological indicators and the performance of pushing the weight	Nimet al-Azzawi	12
722-733	A historical study of the Asian Men's Volleyball Championships from (1975) to (2021)	Omar Sabbar , Mohammed Ismail , Ali Jawad	13
734-751	The effect of rehabilitation exercises in improving the range of motion and muscle strength of the muscles working on both sides of the spine for women aged (30-40) years	Imad Khlaif	14
752-764	Special exercises using tools and their effect on learning the skill of landing with Salto backward tucked to stand on the horizontal bar	Roaa Akbar, Shaima Yassin , Jamal hamza	15
765-781	The Impact of the Guidance Technique of Stopping Negative Thinking on reducing Psychological Reluctance in Swimming Lessons among Female Students of Physical Education and Sports Science	tiba zaid, Ali Khalif	16
782-797	Design and standardization of a test of spatial awareness and distance for the skills of passing from above and below for volleyball players aged (12-14 years)	Khalil Mohammed	17
798-811	Sports marketing strategy and its relationship to the competitive advantage of institutional clubs in Iraq	Ali Rashid, Thamer Rija	18
812-820	The effect of cardiorespiratory fitness training on developing speed endurance, heart rate adaptation, and men's 1500-meter running performance	Rana F.M. Al – Dulaimi , Fahem Easa	19
821-833	Self-confidence and its relationship to completing the 100-meter freestyle race	Maysaa Matrood	20
834-858	The effect of the listening triangle strategy on cognitive organization and the performance and accuracy of some basic football skills	Fareek Hazaa	21
859-868	Comparison of Certain Specific Physical Abilities Between Discus Throwing and Shot Put for Elite Advanced Athletes	Murtadha Sahib, Ammar Rashid	22
869-879	The Effect of Special Speed Exercises on The Variables of The First Arc of 400-Meter Hurdles Race Under 20 Years of Age	Zahaa Abdulhassan , Intisar Hameed	23

A comparative study of biomechanical variables between the stages of performing the skills (Blank) and (Lu Yu Fu) On the jumping platform for the player qualifying for the final of the World Cup series in Qatar

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2190](https://doi.org/10.37359/JOPE.V36(3)2024.2190)

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Article history: Received 14/ July/2024 Accepted 18/ July/2024 Available online 28/ September/2024

Abstract

The idea of the research came from the performance of one of the players who qualified for the final of the World Cup series in gymnastics held in Doha, the capital of Qatar, for the year 2023-2024 on the vaulting platform. In the individual final of the apparatus, this player performed two skills, the first was the “Blank” skill and the second was the “LuYuFu” skill. The two skills are different only in terms of direction. The first skill is performed while facing the device, that is, in the front direction, while the second skill is performed by the player from the back direction. Here, the research was done to find out what differences will appear in the biomechanical variables between both skills, and on the basis of dividing the movement stages, which is the vault table strike, then the first flight, then the push on the platform, then the second flight, and finally the landing. The performance of the player was photographed from the side with a camera with a speed of 240 images/second, perpendicular to the path line of the motor performance of both skills. And during his role, as being in the fifth place in the championship of the individual apparatus, after which motor analysis procedures were carried out using the MaxTRAQ program and the biomechanical variables common to the two skills were adopted according to the technical division for the performance stages on vault table. A comparison was made between the values of the

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variables according to each stage between the two skills, through which we noticed a difference in the body position at the vault strike through the distance and speed of landing on the vault table, which was reflected in the force of the strike. The results were in favor of the first skill, as is the case with the first flight, and the reason for this is due to the fact that The player will resort to change his direction in the second skill in order to do the Arabian jumb, i.e. half turn, to land on the platform to prepare for the second push and flight. As for the second stage of flight and landing, it was in favor of the second skill because when landing, the body is facing the horse, while in the first skill, the player's back is facing the horse. The process of adjusting the back landing is better than adjusting the front landing, with the exception of the deviation that occurred at the end of the skill due to the body twist over the vault table.

Keywords: biomechanical variables, performance stages, (Lu Yu Fu), (Blank), vault table, qualified player for the final, World Cup series in Qatar.

introduction

Sports performance at the world championship level is considered one of the most prominent manifestations that combine challenge, competitiveness and technical skill. Among the sports that require superior and highly difficult skills is gymnastics in general and the jumping platform in particular. Gymnastics is one of the most exciting and challenging sports in the world, as it requires the implementation of elaborate skills and enormous physical strength to achieve success. Among the players who have the skills and the abilities needed to shine in this sport are those who qualify to participate in international finals, such as the World Cup series.(Al et al., 2022)

This study aims to the following:

- 1- Identify the biomechanical variables of the skills (Blank) and (Lu Yu Fu) on the vault table for the player who qualifies for the final of the World Cup series in Qatar.
- 2- Identify the differences in the biomechanical variables between the skills (Blank) and (Lu Yu Fu) on the vault table for the player who qualifies for the final of the World Cup series in Qatar.
- 3- Exploring and analyzing the biomechanical factors that affect the player's performance in certain stages of executing the "Blank" and "Lu Yu Fu" skills on the vault table for the player who qualifies for the final of the World Cup series in Qatar.

This is achieved by extracting biomechanical variables and analyzing the performance of one of the players participating in the finals of the World Cup series in Qatar for the year 2023-2024. This study is expected to provide a detailed and comprehensive look at the biomechanical differences between these two skills.

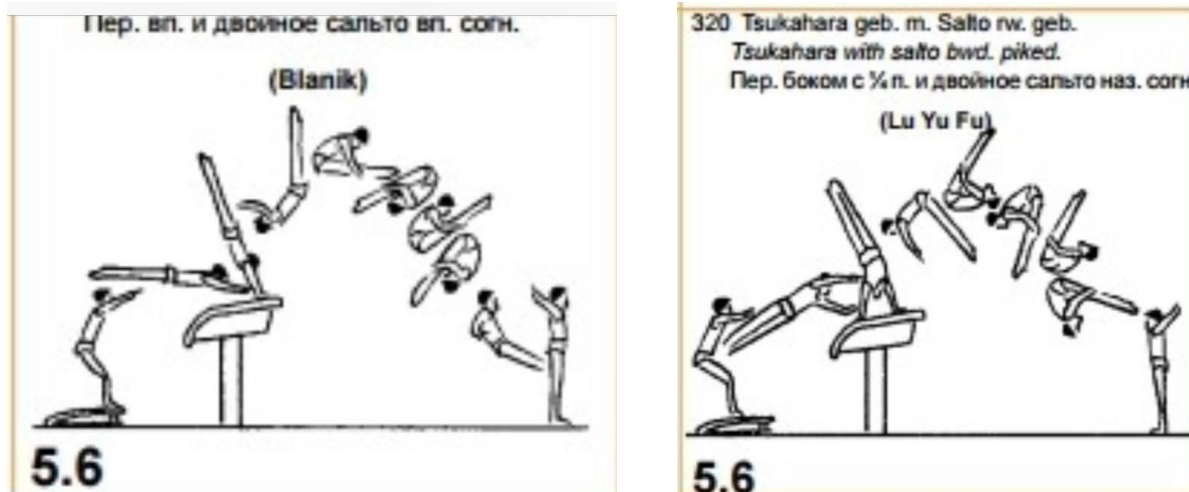


Figure (1) shows the sequence of performance for the skill (Blank) and the skill (Lu Yu Fu) and their value according to international law.

This study is based on an in-depth analysis of the movement and forces used during the stages of executing the two specific skills from the beginning until the end of the movement, using advanced techniques to measure and analyze movement and interpret the results based on the biomechanical data that will be collected from the player while implementing the two specific skills. Skill analysis methods and speed measurements will be used as well as measuring movement angles, times, heights, and distances during each stage of executing the two skills.(Kadhim, 2023)

Through the expected results of this study and a full understanding of the biomechanical factors affecting the players' performance in these skills, it will be crucial for coaches to develop training programs and physical preparation for athletes, as the resulting instructions and recommendations can be used to improve players' performance in certain stages of implementing vault skills and thus better results in international championships.(Easa et al., 2022)

According to the researchers' vision, the results obtained from this study will provide a comprehensive view of the biomechanical factors that determine the players' performance in both the "Blank" and "Lu Yu Fu" skills on the vault table and by better understanding of these factors, the programs of training and physical preparation for athletes can be developed with the aim of improving their performance and increasing their chances of success in international competitions.(Kazar & Kazim, 2020)

In short, this study represents an important contribution to a deeper understanding of the biomechanical factors that determine the performance of players in gymnastics, specifically in vault table, at the global level, and highlights the importance of integrating biomechanical variables in improving the performance of athletes.(Abdulhussein et al., 2024)

Method and tools

The researchers relied on the descriptive approach, which allows studying the reasons to reach better plans for the purpose of improving performance and conditions in the community concerned with the survey (Amer and Al-Samarrai 2009 AD, 193-194). The research community was represented by 8 players nominated for the individual apparatus championship on the vault table in the World Cup Series Championship in Qatar for the year 2023-2024. The research sample was chosen intentionally. He is the only player and his rank was the second in this championship. The reason for his selection was due to his performance of the required two movements in the research.

Thus, the percentage of the research sample to the community is (12.5%), and on 7/15/2023, Doha, Qatar, in the championship hall located in the Aspire Sports City, the site was prepared to photograph the right side of the vault, and on its horizontal level, the camera was installed in their desired location, which ensures the appearance of the player took of the last two steps before the vault table and to his landing point, perpendicular to the line of performance of the skill. Its height was (1.35 metres) and away from the middle of the performance area (15 metres). The zoom technique was used to control the vision area within the photographic frame. Then the main experimental procedures took place in the following way:

- 1- Before starting the filming process, data of the player's physical measurements and weight was recorded.
- 2- When the player is called to the performance location on the vault table apparatus according to the sequence that was given to him in the list of candidates. The camera is turned on and configured for the purpose of recording the two attempts.
- 3- The camera recording is switched on the moment the start signal is given to the player and is switched off after the performance is completed.
- 4- The two skills were recorded according to the player's performance according to the game law, then the films were taken and transferred to the computer to ensure the proper content.
- 5- The two skills were analyzed using (21) variables for each skill and according to the stages of performance using the MaxTRAQ analysis program, in addition to the player's final score set by the jury for the two skills.
- 6- The score for each skill was received according to the jury's evaluation and added to the variables table.

In order to analyze the two skills and extract their variables, each skill was divided according to the stages of its performance. The pictures below show the division of these stages for each skill.



Figure (2) shows the sequence of performance of the “Blank” skill



Figure (3) shows the sequence of performance of the skill (Lu Yu Fu)

Table (1)

The variables that were selected and extracted are:

No	Variables	Definition of variables
1	The horizontal distance to jump to the vault	It is the distance from the end of the last step until the first touch on the vault
2	Landing speed on the vault	It is the speed of the body's movement at the moment of landing and the first touch on the vault
3	Landing angle on the vault	The angle between the horizontal line and the body line passing through the point of contact
4	Vault strike time	It is the time period of a vault strike from the first touch until the last contact
5	The dent distance	The vertical distance the surface of the jumping device descends to the bottom when the glove is struck
6	Maximum knee flexion	The angle between the thighs and the leg at its maximum bend over the vault
7	angle of advancement	The angle between the horizontal line and the body line passing through the point of contact
8	Starting angle	The angle between the body's path during launch and the horizontal line
9	Starting speed	It is the speed of the body's travel the moment it leaves the glove
10	Flight time for the platform	The time period from the moment the glove leaves until the first touch of the platform
11	Angle of landing on the platform	The angle between the horizontal line and the body line passing through the point of contact
12	Contact time with the platform	It is the period of time that the platform is connected from the first touch until the last touch

13	The angle of rise from the platform	The angle between the horizontal line and the body line passing through the point of contact
14	Hip height end push	The vertical distance from the surface of the platform to the player's hip at the end of the push
15	Departure angle from the platform	The angle between the body's path during launch and the horizontal line
16	Starting speed	It is the speed of the body's travel the moment it leaves the platform
17	Highest height above the platform	The vertical distance from the surface of the platform to the highest height reached by the player
18	Flight time to landing	The time period from the moment you leave the platform until the first touch to the ground
19	Landing distance from the platform	The horizontal distance from the end of the platform to the first touch on the ground
20	Landing angle	The angle between the horizontal line and the body line passing through the point of contact
21	Hip height at the moment of landing	The vertical distance from the surface of the ground to the player's hip at the moment of landing
22	Final score for the jump	The total difficulty value and performance score are given by the arbitration committee

These variables were extracted once for the (Blank) skill and once for the (Lu Yu Fu) skill through analysis using the MaxTRAQ program, which is an international program approved in many scientific researches and in various universities in the world, as the capabilities of this program include two-dimensional analysis and three-dimensional analysis according to the method of filming, the required variables, and the form of skill performance.

In our research, we used the two-dimensional analysis feature, according to the photography angle available to us, taking into consideration that the filming took place within the real atmosphere of the championship, in which no one outside the champion organizers could move freely. The best location for photographing the skills on the vault table was from the side stands of the apparatus, which we used and it was at the same level as the location of the vault table. The issue was also related to the variables that the researchers adopted to study in this research, in which we tried to clarify the most important points of similarity and difference between these two skills from a biomechanical perspective and on the same player.(Ati et al., 2024)

Results and discussion

Table (2)

It shows the values of the biomechanical variables for the performance of the two skills by the research sample

NO	variables	measuring unit	Blank	Lu Yu Fu
1	The horizontal distance to jump to the glove	M	2.81	1.97
2	Landing speed on the gauntlet	m/s	11.8	8.75
3	Landing angle on the glove	degree	57	57
4	Glove strike time	second	0.112	0.121
5	Glove dent distance	M	0.17	0.13
6	Maximum knee flexion	Degree	144	156
7	Rising angle	Degree	83	83
8	Starting angle	Degree	25	35
9	Starting speed	m/s	8.7	8.5
10	Flight time for the platform	second	0.158	0.175
11	Angle of landing on the platform	degree	23	31
12	Contact time with the platform	Second	0.117	0.121
13	The angle of rise from the platform	Degree	113	107
14	Hip height end push	Degree	1.2	1.13
15	Departure angle from the platform	Degree	65	32
16	Starting speed	m/s	7.8	5.42
17	Highest height above the platform	Cm	2.43	2.02
18	Flight time to landing	Second	1.104	1.054
19	Landing distance from the end of the platform	M	2.48	3.29
20	Landing angle	Degree	61	79

21	Hip height at the moment of landing	Cm	0.87	1.1
22	Final score for the jump	Degree	14.800	14.533

Discussion of results

Through the table of the biomechanical variables values for the performance of the two skills by the research sample, who is the player participating in the individual apparatus finals and ranked fifth among the performance of the eight players in the individual apparatus championship, we see a very clear discrepancy in the values of the variables between the two skills (Blank) and (Lu Yu Fu). We will sequentially explain these variables and compare them on the basis of the performance of each skill. (Yasser Najah Hussein. 2017)

The first variable, which is the horizontal distance for jumping only, was greater in the first skill (Blank) than it was in the second skill (Lu Yu Fu), with a difference of (84 cm). The same is true for the variable of the speed of landing on the vault, with a difference of (3.05 m/s) in favor of the first skill, and this gives an indication that the skill performance requirements on the vault table apparatus when the body is facing the device requires greater speed and therefore a greater distance for the purpose of landing with the greatest horizontal speed on the vault.(Kazim et al., 2019)

In light of what we observed in the variable of landing speed on the vault table, and despite the equality of the landing angle and the rising angle on the vault, the difference was in line with each of the three variables, namely the time of the vault strike, the distance of the jumping dent, and the maximum knee flexion, in which the difference was also in favor of the first skill,(Mhaidi & Dakhil, 2022) as the difference was recorded (0.009 seconds).) In the time of the vault strike, the difference is (4 cm) in the dent distance, and the difference is (12 degrees) in the maximum flexion. The greater speed caused a greater dent in the vault, and thus the impact time became less due to the springiness of the vault, and this is the case with the angular difference in the flexion of the knee on the vault.(Yasir et al., 2020)

Because of the change of the body position and its rotation when exiting the vault in the second skill and due to the specificity of this skill, the differences serve in favor of the first skill in both the starting angle variable with a difference of (10 degrees) and the starting speed variable with a difference of (0.2 m/s), so the first skill, the player tries to stay on the path as the body approaches the horizontal position while the second skill increased the angle by a difference of 10 degrees to operate the vertical factor needed for the skill performance requirements so that the body is in a suitable position in touch with the vault table, while he is in a half turn. For this reason, the flight time is less for the first skill than in the second skill by a difference of 0.17 seconds.(Ali et al., 2020)

This was reflected in the angle of landing variable on the platform, and certainly in the second skill the value of the angle was greater than the first skill by a difference of (8 degrees), while the rising angle from the platform was greater in the first skill by a difference of (6 degrees)

than the second skill. The reason for this is that the first skill, because it is performed from beginning to end where the body is facing the vault and requires it to obtain a highest height in order to perform two bent flips. Therefore, it tries to gain the greatest horizontal speed and convert it to vertical speed when leaving the vault, and therefore the difference in the time of pushing on the vault was very small, which is (0.004 seconds). (Hussein, Y.N. 2015).

Because of the difference in the body position at the moment of letting go between the two skills, the differences were clear, especially in the starting angle. The difference between them reached (33 degrees), and the hip height was higher in the first skill by (7 cm) than in the second skill, and in the final achievement the difference was in the value of the starting speed which is in favor of the first skill by a difference of (2.38 m/s). The reason for this is due to the percentage of loss of strength and speed resulting from the change in the angles of the body's joints, as well as shifting the paths of the body parts in the linear and circular direction in the second skill more than what occurred in the first skill.(Kadhim, 2023)

Despite the difference in the increase in the launch angle in the vertical direction for the second skill, the variable of the highest height above the vault was in favor of the second skill by a difference of (41 cm). The reason is due to the difference in the launch speed in the first skill, which caused an increase in flight time with a difference of (0.05 seconds) over the second skill, in which the landing distance was greater by a difference (81 cm) than in the first skill. The reason is certainly due to the speed and angle of starting, which were greater in the first skill, and this is one of the basics of motives. (Mohammed, I. I., Jawad, U. A. M., & Hussein, Y. N. (2015).

In the end, the landing angle, which was recorded as a difference of (18 degrees), and the height of the hip at the moment of landing with a difference of (23 cm), comes with an increase in the second skill for both of them compared to the first skill. The reason is due to the position of the hip position and its location at the moment of landing, as the body is in its landing and at the moment of contact with the ground with the flexion for the purpose of absorbing the hit will be the hip behind the landing point and down due to the position of the body that places the apparatus behind it, while the situation is the opposite when landing in the second skill. The body, after rotating 180 degrees at the moment of touch, will be facing the device, and thus the hip will be almost above the landing point and upwards.(Jawad Kadhim, M., & Salman Ahmed, 2016)

Last but not least, we come to the final score set by the judges from Committee D and Committee E. Although the difficulty score values are equal for the two skills, which is (5.6), the performance score was better for the first skill, with a difference of (0.267) of the score, and this gave a picture of the amount of errors that occurred between the two skills, which was clearly reflected in the comparison between their biomechanical variables.(Salman et al., 2022)

Conclusions

- 1- The requirements for skill performance on the vault table apparatus when the body is facing the device requires greater speed and therefore a greater distance for the purpose of landing with the greatest horizontal speed on the vault. It is different from what it is when performing while the body is not facing, meaning there is a rotational movement around the longitudinal axis to perform a half turn on the vault.
- 2- The greater speed of the player causes a greater dent in the vault and thus will make the strike time shorter due to the springiness of the vault. This is also the case with the angular difference in the flexion of the knee on the vault and this will be reflected in the first flight and the variables of push on the vault and according to the requirements of each skill.
- 3- Due to the change in body's position and rotation when leaving the vault in the second skill, and due to the specificity of this skill, we find that the differences are better in favor of the first skill in both the variable start angle and the variable start speed. In the first skill, the player tries to maintain the body's path closer to the horizontal position while the second skill increases the angle for the purpose of increasing the vertical factor of the skill performance requirements so that the body is in a suitable position in contact with the vault at the end of the half turn. Therefore, the flight time is less for the first skill than for the second skill.
- 4- The variable angle of landing on the vault in the second skill has a greater angle value than the first skill, and the same is true for the angle of rising from the vault. The reason for this is that in the first skill, and because it is performed from beginning to end, the body is facing the vault and requires it to obtain a highest height to perform two bent flips. He tries to gain the greatest horizontal speed and convert it to vertical speed when leaving the vault table.
- 5- Due to the difference in the body position at the moment of letting go between the two skills, there were clear differences in the increase, especially in the starting angle, starting speed, and hip height, in favor of the first skill. The reason for this is due to the percentage of loss of strength and speed resulting from the change in the angles of the body's joints, as well as shifting the paths of the body parts in a linear direction and the circle in the second skill is more than what occurred in the first skill.
- 6- The body is landing, and at the moment of contact with the ground with flexion for the purpose of absorbing the hit, the hip will be behind the point of landing and down due to the position of the body, which places the vault behind it, while the situation is the opposite when landing in the second skill. The body, after rotating 180 degrees, will be facing the vault table at the moment of touch. Thus, the hip is almost above the landing point and to the top.
- 7- Although the difficulty score values are equal for the two skills, which is (5.6), the performance score was better for the first skill, with a difference of (0.267) of the score, and this gave a picture of the errors that occurred between the two skills, which was clearly reflected in the comparison between their biomechanical variables.

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Designing and codifying a test to measure the speed and ability to pass and receive the ball in a collective fast attack for Iraqi handball club players

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2196](https://doi.org/10.37359/JOPE.V36(3)2024.2196)

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Article history: Received 9/ August/2024 Accepted 20/ August /2024 Available online 28/ September/2024

Abstract

Design and codify a test to measure the speed and ability to pass and receive the ball in a collective fast attack for Iraqi handball club players. The recent amendments to the rules of the law of the game have contributed effectively to raise the pace of competition by increasing the speed of the game's rhythm to revolutionize this field. Therefore, most international and local teams have begun to change training methods to reflect this on the style of playing and the concentration of those teams has shifted to the fast attack that is characterized by ease and scoring goals quickly to achieve victory so that the dominant character of the game becomes fast rhythm playing. All handball players should have the capabilities that qualify them to meet the requirements of the game which helps to determine the level of ball passing skills among handball players in a collective fast attack to perform shots on goal skillfully with high accuracy. Hence, it requires the availability of means or tests to measure the capabilities of the players, and here lies the importance of this study, but if these tests are found, they are rare or not sufficient for the purpose, and here lies the problem of the study. Therefore, the researchers agree to delve into this matter to develop appropriate solutions by designing a modern measurement method or

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a special test so that researchers, coaches and handball players alike can benefit from the test as a humble service from the researchers of this paper towards the game. The study is conducted on some club players participating in the Iraqi Handball League. The main goal of this study is to design and codify a special test to measure the ability of the players to perform a fast collective attack. Additionally, as for the areas of study, the researchers rely on some club players participating in the Iraqi Handball League. The study is performed on 10th Mar, 2021 until 20th Jul, 2022. The procedures of the test are conducted in the stadiums of the clubs participating in the Iraqi Handball League. The study employs a general qualitative approach. The researchers also employ quantitative methods to highlight the percentages, the arithmetic mean, the standard deviation, the simple correlation coefficient, the T test, the standard score, and the modified standard score. The researchers conclude from the results they achieved that this test, which is designed and codified, is characterized by high accuracy and adequacy, and can be used to measure the speed and ability to pass and receive the ball in the collective fast attack of handball players which is the reason for designing such test. The researchers support employing such tests to measure the speed and effectiveness of handball players' performance of the fast attack process in order to properly evaluate their performance before and during the championships. The researchers also urge to devise other tests on different samples.

Keywords: Hand, handling, fast attack, standard scores, test innovation, standard levels.

Introduction

Tests in the field of sport have regularly contributed effectively to determine the level of players and highlight their strengths and weaknesses. Every sport event has a goal that the athlete constantly strives to achieve. Hence it is necessary to know the player's exact level before and during competitions since this step gives the coach a comprehensive overview of the level of his players and on a regular basis. Tests will also show the coach results that can be used and analyzed so that he can evaluate and correct if there is a deviation from the set goal, ensuring the continuous development of the level of capabilities of the players. All objective tests must be supported by solid scientific evidence to give Tangible and accurate results that can be relied upon to determine the level of the player. Therefore, tests in sport games have become of great importance. "Thus we notice that conducting tests and measurements in sport games, whether applied individually or collectively, has become of great importance in the work of coaches in terms of the integrity of the curriculum" (Rashid, 2008, p. 332)

Handball is one of those team games which are widely played all over the world. Like other sports, players must master all defending and attacking skills according to their style of play. "Handball is a game that has its own basic skills, and all of these defending and attacking skills are developed to serve the players in order to reach the opposing team's goal" (Moushriq Khaleel Fathi, 2022, p. 216). The moment the attacking team loses the ball, it moves from attack to defense, and the players must return to their defensive areas to organize themselves into one of the known defensive formations, then the opposing team begins to attack in an organized manner according to a specific plan, through passes between the attacking team to go towards the

opposing team's court. "Ball handling is one of the important skills in the game of handball, through which it is possible to reach the opposing team's goal and good handling are no less important than the shooting process." (Mohsen Al-Mousawi, 2019, p. 504).

The team can launch a fast attack until the team loses the ball or they score a goal against the opposing team. Handball players must also have speed in its various forms, as these players seek to score goals to win matches by approaching the opposing team's field and reaching the goal successfully.(Salih et al., 2024) The handball attack takes place in waves, including a fast attack individually, which requires the player to launch the ball into the opposing team's court at maximum speed to score a goal, or in the form of a fast, collective attack in which more than one player participates by passing the ball between them accurately through short or long passes taking into consideration different playing situations during the matches,(HalalAtiyah et al., 2024) to bypass some defenders who return quickly, randomly, and irregularly to their defense areas. "The issue here goes back to the attacking formation system that relies on "On speed" (Radi Al-Sudani, 2010, p. 53). This rapid movement is permitted according to the rules of the game and is not subject to restrictions as long as there is no legal violation that prevents them from progressing. (Abdulhussein et al., 2024)

The recent amendments to the rules of the law of the game have contributed effectively to raise the pace of competition by increasing the speed of the game's rhythm to revolutionize this field. Therefore, most international and local teams have begun to change training methods to reflect this on the style of playing and the concentration of those teams has shifted to the fast attack that is characterized by ease and scoring goals quickly to achieve victory so that the dominant character of the game becomes fast rhythm playing.(Kadhim, 2024b) All handball players should have the capabilities that qualify them to meet the requirements of the game which helps to determine the level of ball passing skills among handball players in a collective fast attack to perform shots on goal skillfully with high accuracy. To solve the research problem, the researchers conclude that the tool designed for use in the study is valid for measuring what it is designed for and performed the task well.(Kadhim, 2024a) The researchers also conclude that the designed test has become standardized and can be used easily and conveniently. The test can be considered an objective criterion as it is more realistic and compatible with the nature of the player's performance during the match, in addition to reaching the standard levels for this test that allow coaches and researchers to determine the true level of the players. The researchers highlight the necessity of using this test and this tool for coaches and researchers in the future, because this test is considered an authentic standard that reflects the level of the player's shooting accuracy. (Moushriq Khaleel Fathi, 2022, page 294)

The coach needs a test to determine the level of the players. However, tests in this area are rare and even if they exist, these tests are outdated. A modern test is invented that measures the accuracy of shooting by jumping forward from the goal area line for handball players to solve this problem. **The study aims** to design and codify a test to measure the accuracy of shooting by jumping forward from the goal area line as a result of a fast attack by handball players and determines the standard levels for the players.(Kadhim et al., 2021) The descriptive approach is applied in this study in the form of a survey of the club teams participating in the Iraqi Handball

League Championship, moreover, an innovative tool is employed to measure shooting accuracy which leads to reach a solution to the research problem. **The researcher conclude** that the tool Designed to be used in the study is valid for measuring what it is designed for as that tool performs the duty accurately. It is also concluded that the designed test has become standardized and can be used easily and conveniently.(Kazar & Kazim, 2020) This test can be considered an objective criterion as it is more realistic and compatible with the nature of the player's performance during the match as well as reaching standard levels planned in the goals of the study that allows coaches and researchers to determine the real level of players.(Easa et al., 2022) Therefore **the researcher recommends** the necessity of using this test and this tool for coaches and researchers in the future because this test is considered a real standard that reflects the level of shooting accuracy of the player.

Study prepared by Hana Jalal Fathallah (Hanna Jalal Fathallah, 2013, page 228)

(Fast attack and its relationship with long passing skills and arrangement of participated teams of championship in Kurdistan region universities for hand ball)

The aim of the research is to gain knowledge about fast individualistic attack, long passes with variant distances, arrangement of participated teams of championship in universities of hand ball in Kurdistan region; the researcher chooses the sample intentionally, which are college chosen players of Kurdistan region /Iraq, for hand ball (for men); in 2010-2011.They are (60) players and representatives. Then the researcher prepares the form for fast attack test & long pass variant level skill & throwing the ball from near and far in order to take the opinion of adapts. Then the researcher uses quantitative method which is percentages to reach the results of the research. Finally, the researcher arrives at these important points; there is a relationship between fast individual attack & long pass skill for Sulaimanya chosen players and the relationship between fast singular attack with throwing the ball from near skill for Duhok chosen players. The highest percentage ratio for fast individual attack with long pass skill & throwing the ball from near places for the benefit of college of Sulaimanya & Duhok chosen players.

Study by Ahmed Khamis Rady: (Radi, 2016, p. 250) Building specific speed and its relationship to the time of performing the third wave of the blitz (fast center), and its success in handball.

The study aims to build a test to measure the speed of the handball player in Iraq, and to set standard levels for this test. The research also aims to identify the relationship between the speed of the game of handball and the time of performing the third wave (the fast center), and how applicable the test can be. The researcher uses the descriptive approach and the research community is represented by the players of the six teams participating in the final Super League. The research sample on which the test s applied for the purpose of construction and standardization amounts to (70) players. Al-Karkh Club is chosen to show the relationships between the specific speed and performance time of the third wave in the fast attack and the way the test is applicable in handball after obtaining the scientific foundations and the discriminating

ability. The researcher concludes that the test proves significant effectiveness and validity in measuring the speed of the handball player in Iraq and that the specific speed has a relationship with the performance time of the third wave of the fast attack of the handball players. These results are proved through the successful attempts of fast attacks during the matches. The researcher underlines the importance of using the test to measure the speed of the handball player in Iraq. All previous studies dealt with the fast attack and they are similar to the current study as all studies used the descriptive approach, however there are differences in the objectives, problem, and sample between one study and another and between the current study. Mashreq Khalil Fanhi's study dealt with the individual fast attack, but our current study deals with the collective fast attack.

The sample of the second study consists of college students which forms the difference with the current study. The study of Ahmed Khamis is similar in terms of the first goal, but the second goal was to find correlations between the speed of the game of handball and the time of performing the third wave (fast center) and its success. All of these studies reach solutions to the problem and achieve the aimed objectives. The goal of our research is to work on designing and codifying a special test to measure the speed and ability to pass and receive the ball in a collective fast attack. As for the areas of study, the researchers rely on some of the club players participating in the Iraqi Handball League. The test is applied on 10th Mar, 2021 until 20th Jul, 2022. The test is conducted in the stadiums of the clubs participating in the Iraqi Handball League.

The mechanism and tools:

The researchers use the descriptive approach using the survey method to achieve the goals and solve the problem. The research community is selected and it consists of (15) clubs participating in the Iraqi Handball League, (Al-Jaish, Al-Shurta, Al-Karkh, Karbala, Al-Futwa, Al-Taawoun, Al-Kut, Diyala, Basra Municipality, Al-Musayyab, Al-Khaleej Al-Arabi, Kufa, Nasiriyah, Naft Maysan, Al-Hashd). The research sample is selected from some of the players of those clubs, the total number of which are (172) players out of (217) players, with a percentage of (79.26%), after excluding a number of players, table (1). The construction sample is 72 players and the rationing sample is 172 players. The researchers use some tools, including a regular handball court, (4) signs, colored adhesive tape, a stopwatch, a whistle, and a computer. To achieve the first part of the research, the researchers conduct two experiments. Two surveys, to ascertain the ease and difficulty of the test and to confirm the scientific foundations of the test represented by obtaining the coefficient of validity, consistency and objectivity, as well as the discriminatory ability, then determining the levels and standards.

Table (1) the no. of clubs and the no. of players participating

N o	The clubs participating	The overall players	The tested players	
1	Al-Jaish	18	15	
2	Al-Shurta	19	19	
3	Al-Karkh	18	16	
4	Karbala	18	17	
5	Al-Futwa	13	11	
6	Al-Taawoun	12	10	
7	Al-Kut	16	10	
8	Diyala	14	11	
9	Basra Municipality	11	9	
10	Al-Musayyab	12	11	
11	Al-Khaleej Al- Arabi	13	6	
12	Kufa	12	8	
13	Nasiriyah	14	11	
14	Naft Maysan	14	10	
15	Al-Hashd	13	8	
	Total	217	172	the percentage = %79.26

The scientific foundations of the test are validity, reliability, objectivity, and discriminating ability. The researchers obtain the validity and stability of the test (discriminant validity) through retesting, using the Pearson correlation coefficient. Objectivity is achieved by matching the test scores of two arbitrators with the Pearson correlation coefficient, check table (2).

The scientific foundations	correlation coefficient	Truthful spirit	The type of correlation
Stability	0.99**	0.000	Moral
Objectivity	0.98**	0.000	Moral

Table (2) To calculate the discriminatory power, the raw scores of the test are arranged in ascending order using (27%) of the lower scores and (27%) of the higher scores to differentiate between the two groups, using the T-test in Table (3). The test became in its final form as follows:

The variables	The lower group		The higher group		The calculated value of T	Truthful morality	The difference type
	$\bar{Y}$	S	$\bar{Y}$	S			
Test	18.4263	.09912	20.2421	.73130	-10.725	.000	Moral

Table (3) the percentages and standards of higher and lower groups

- **Test name:** A test to measure the speed and ability to pass and receive the ball using a collective fast attack for handball players.
- **The aim of the test:** to measure the speed and ability to pass and receive the ball using a collective fast attack for handball players.
- **Tools:** a regular handball court, a whistle, 4 handballs, 3 markers, sticky tape, and a stopwatch.
- **Method of performance:** The player stands at the corner of the court on a point drawn on the ground above the free throw line. After hearing the whistle signal, the timing begins with the stopwatch. The player initiates passing the ball in a long, whippy hand from head level to the teammate standing on the opposite side of the court at a point far from the midfielder line and the sideline which is a distance of (1) meter inside his court. The player sets out to begin a fast attack into the opposing team's court towards the mark fixed at the center of the midfield line. The player turns to his side to change his direction after he receives the ball from the same fellow player and advances with it. After that the player passes it to the other teammate player who is standing on the opposite side of the previous player, at a point that is also (1) meter away from the free throw line and the sideline, on the opposing team's court. The player runs towards the other person stationed at the seven-meter throw line and turns around behind him to change his direction and comes back and receives the ball from his teammate, advances with it, and then passes it to the same player. The first teammate goes at full speed to return and receive the ball from him and advance it until he reaches the free throw line. He raises the ball to take the approximate steps to shoot by jumping forward high from the goal area line towards the goal. The time is stopped the moment the ball leaves his hand, Figure (1).
- **Performance conditions:**
 1. The tester begins to perform after the whistle signal from the arbitrator.
 2. The tester must turn behind the screen before passing to the teammate.
 3. The attempt is repeated after taking a rest for a minute if the tester loses the ball or makes a legal error, such as walking with the ball.
- **Register:**

1. The unit of measurement for the test is time (seconds).
2. The time taken for the tester is calculated from the moment the whistle starts until it finishes the test, taking into account the accuracy of the colleague's handling of the ball and receiving it. If the ball falls from him and he is able to regain control of the ball and completes the test. Five seconds will be added to the test time. If the ball falls and the player does not control it or even if the player drops the ball a second time, he is retested after a short rest period.

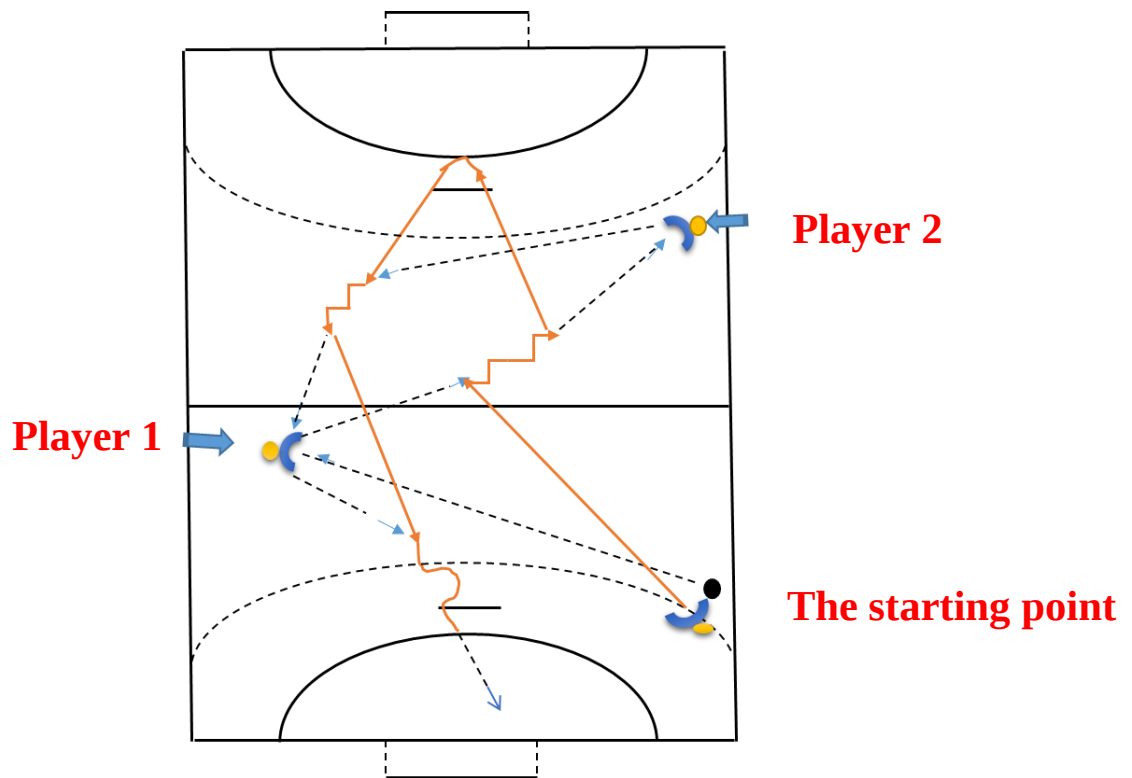


Figure (1) shows the performance of players in speed of passing and receiving test with collective fast attack

The researchers use statistical (quantitative) methods using SPSS, represented by percentage, arithmetic mean, standard deviation, simple correlation coefficient (Pearson), T test, standard score, and modified standard score.

Presentation of results: The arithmetic mean, standard deviation, and spraining coefficient are obtained as shown in Table (4).

Table (4) shows the arithmetic mean, standard deviation, and spraining coefficient of the test sample.

A test to measure the speed and ability to pass and receive the ball in a collective fast attack for Iraqi handball club player.	arithmetic mean	standard deviation	spraining coefficient
	18.1605	1.04258	.8870

Table (4)

Table (5) shows the raw grades and standard scores which are moified for the sample.

No	Raw grade	Standar d score	Modifi ed standa rd	No	Raw grade	Standar d score	Modifi ed standar d	No	Raw grad e	Standard score	Modifi ed standa rd
1	21.60	3.2990 7	82.99	59	18.50	.32567	53.26	11 7	17.6 0	-.53758	44.62
2	21.60	3.2990 7	82.99	60	18.50	.32567	53.26	11 8	17.6 0	-.53758	44.62
3	21.10	2.8194 9	78.19	61	18.50	.32567	53.26	11 9	17.6 0	-.53758	44.62
4	21.10	2.8194 9	78.19	62	18.50	.32567	53.26	12 0	17.6 0	-.53758	44.62
5	21.10	2.8194 9	78.19	63	18.40	.22975	52.30	12 1	17.6 0	-.53758	44.62
6	20.50	2.2439 9	72.44	64	18.40	.22975	52.30	12 2	17.6 0	-.53758	44.62
7	20.50	2.2439 9	72.44	65	18.40	.22975	52.30	12 3	17.6 0	-.53758	44.62
8	20.10	1.8603 3	68.60	66	18.30	.13384	51.34	12 4	17.6 0	-.53758	44.62
9	20.10	1.8603 3	68.60	67	18.30	.13384	51.34	12 5	17.5 0	-.63349	43.67
10	20.10	1.8603 3	68.60	68	18.30	.13384	51.34	12 6	17.5 0	-.63349	43.67
11	19.90	1.6685 0	66.68	69	18.30	.13384	51.34	12 7	17.5 0	-.63349	43.67
12	19.90	1.6685 0	66.68	70	18.20	.03792	50.38	12 8	17.5 0	-.63349	43.67

13	19.80	1.5725 8	65.73	71	18.20	.03792	50.38	12 9	17.5 0	-.63349	43.67
14	19.80	1.5725 8	65.73	72	18.20	.03792	50.38	13 0	17.5 0	-.63349	43.67
15	19.50	1.2848 3	62.85	73	18.20	.03792	50.38	13 1	17.5 0	-.63349	43.67
16	19.50	1.2848 3	62.85	74	18.20	.03792	50.38	13 2	17.5 0	-.63349	43.67
17	19.50	1.2848 3	62.85	75	18.10	-.05800	49.42	13 3	17.5 0	-.63349	43.67
18	19.50	1.2848 3	62.85	76	18.10	-.05800	49.42	13 4	17.5 0	-.63349	43.67
19	19.40	1.1889 1	61.89	77	18.10	-.05800	49.42	13 5	17.5 0	-.63349	43.67
20	19.40	1.1889 1	61.89	78	18.10	-.05800	49.42	13 6	17.4 0	-.72941	42.71
21	19.40	1.1889 1	61.89	79	18.10	-.05800	49.42	13 7	17.4 0	-.72941	42.71
22	19.30	1.0930 0	60.93	80	18.10	-.05800	49.42	13 8	17.4 0	-.72941	42.71
23	19.30	1.0930 0	60.93	81	18.10	-.05800	49.42	13 9	17.4 0	-.72941	42.71
24	19.30	1.0930 0	60.93	82	17.90	-.24983	47.50	14 0	17.4 0	-.72941	42.71
25	19.30	1.0930 0	60.93	83	17.90	-.24983	47.50	14 1	17.4 0	-.72941	42.71
26	19.30	1.0930 0	60.93	84	17.90	-.24983	47.50	14 2	17.3 0	-.82533	41.75
27	19.30	1.0930 0	60.93	85	17.90	-.24983	47.50	14 3	17.3 0	-.82533	41.75
28	19.20	.99708	59.97	86	17.90	-.24983	47.50	14 4	17.3 0	-.82533	41.75
29	19.10	.90117	59.01	87	17.90	-.24983	47.50	14 5	17.3 0	-.82533	41.75
30	19.10	.90117	59.01	88	17.90	-.24983	47.50	14 6	17.3 0	-.82533	41.75
31	19.10	.90117	59.01	89	17.90	-.24983	47.50	14 7	17.3 0	-.82533	41.75
32	19.10	.90117	59.01	90	17.80	-.34574	46.54	14 8	17.3 0	-.82533	41.75
33	18.90	.70933	57.09	91	17.80	-.34574	46.54	14 9	17.2 0	-.92124	40.79
34	18.90	.70933	57.09	92	17.80	-.34574	46.54	15 0	17.2 0	-.92124	40.79
35	18.90	.70933	57.09	93	17.80	-.34574	46.54	15 1	17.2 0	-.92124	40.79

36	18.90	.70933	57.09	94	17.80	-.34574	46.54	15 2	17.2 0	-.92124	40.79
37	18.90	.70933	57.09	95	17.80	-.34574	46.54	15 3	17.1 0	-1.01716	39.83
38	18.80	.61342	56.13	96	17.80	-.34574	46.54	15 4	16.9 0	-1.20899	37.91
39	18.80	.61342	56.13	97	17.80	-.34574	46.54	15 5	16.9 0	-1.20899	37.91
40	18.80	.61342	56.13	98	17.80	-.34574	46.54	15 6	16.9 0	-1.20899	37.91
41	18.80	.61342	56.13	99	17.80	-.34574	46.54	15 7	16.9 0	-1.20899	37.91
42	18.80	.61342	56.13	10 0	17.80	-.34574	46.54	15 8	16.9 0	-1.20899	37.91
43	18.70	.51750	55.18	10 1	17.80	-.34574	46.54	15 9	16.9 0	-1.20899	37.91
44	18.70	.51750	55.18	10 2	17.80	-.34574	46.54	16 0	16.9 0	-1.20899	37.91
45	18.70	.51750	55.18	10 3	17.80	-.34574	46.54	16 1	16.8 0	-1.30491	36.95
46	18.70	.51750	55.18	10 4	17.70	-.44166	45.58	16 2	16.8 0	-1.30491	36.95
47	18.60	.42159	54.22	10 5	17.70	-.44166	45.58	16 3	16.7 0	-1.40082	35.99
48	18.60	.42159	54.22	10 6	17.70	-.44166	45.58	16 4	16.7 0	-1.40082	35.99
49	18.50	.32567	53.26	10 7	17.70	-.44166	45.58	16 5	16.7 0	-1.40082	35.99
50	18.50	.32567	53.26	10 8	17.70	-.44166	45.58	16 6	16.5 0	-1.59266	34.07
51	18.50	.32567	53.26	10 9	17.70	-.44166	45.58	16 7	16.5 0	-1.59266	34.07
52	18.50	.32567	53.26	11 0	17.70	-.44166	45.58	16 8	16.4 0	-1.68857	33.11
53	18.50	.32567	53.26	11 1	17.60	-.53758	44.62	16 9	16.4 0	-1.68857	33.11
54	18.50	.32567	53.26	11 2	17.60	-.53758	44.62	17 0	16.3 0	-1.78449	32.16
55	18.50	.32567	53.26	11 3	17.60	-.53758	44.62	17 1	16.3 0	-1.78449	32.16
56	18.50	.32567	53.26	11 4	17.60	-.53758	44.62	17 2	16.2 0	-1.88040	31.20
57	18.50	.32567	53.26	11 5	17.60	-.53758	44.62				
58	18.50	.32567	53.26	11 6	17.60	-.53758	44.62				

The normal curve is then divided into seven levels for this test, Figure (2)

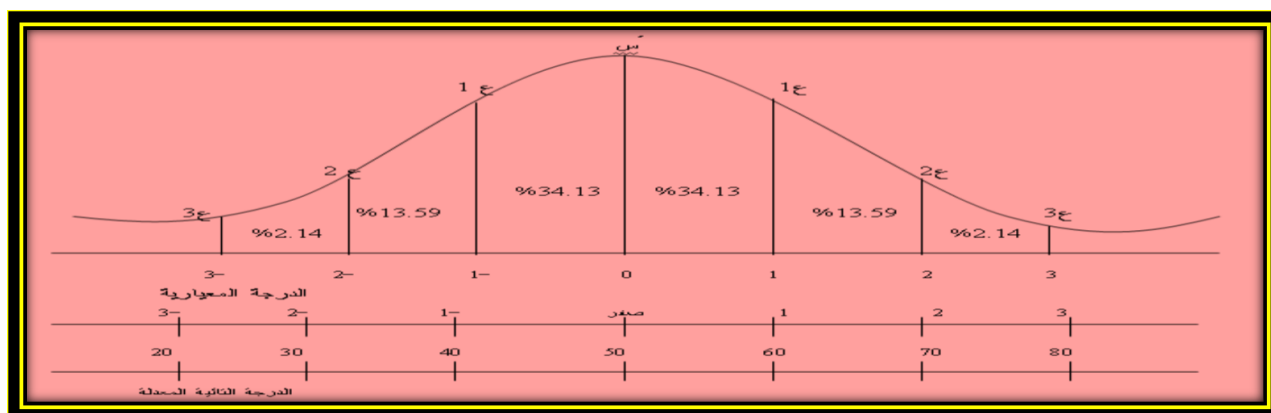


Figure (2) it shows the percentages of the standard levels the sample achieved in the test

From what is shown in Table (5), one understands that the modified standard scores for the test measuring the speed and ability to pass and receive the ball in the collective fast attack of handball players are limited to the lowest modified standard score, which is (31.20), which corresponds to a raw score (16.20), and the highest modified standard score (82.99) which corresponds to a raw score of (21.60) noting that the test is calculated in time. The test proves that the shorter the performance time, the better the tester's performance.

The standard levels	The rate of the modified standard grade	The rate of the standard levels
Excellent	39- 30	39.83 – 31.20
Very good	49- 40	49.42 – 40.79
Good	59 – 50	59.97 – 50.38
Average	69- 60	68.60 – 60.93
Accepted	79 – 70	78.19 – 72.44
Weak	89 – 80	82.99
Very weak	—	—

Table (7) shows the percentages of standard levels achieved by the sample in the test.

The test		Less than 40 Excellent	From 40-49 Very good	From 50-59 good	From 60-69 Average	From 70-79 acceptable	From 80-89 weak	More than 90 Very weak
A test to measure the speed and ability to pass and receive the ball using a collective fast attack for handball players.	repetition	20	78	47	20	5	2	—
	rate	11.627	45.34	27.32	11.627	3	1.2	—

Table (7) shows that the highest frequency is in the very good range, and the lowest frequency is in the very weak range, as the sample do not achieve any spread in it and the percentages of the standard levels that the sample achieve in this test are at a level less than (40) which demonstrate an excellent level and it achieved spread. Twenty sample members are included in this group. The level that reaches more than (90) is considered very weak. None of the sample members has spread in it so the level is considered excellent, which is the first level. The sample achieves a percentage greater than what is essentially determined for it by the natural curve. However, (Farhan et al., 2016) most of the sample's performance is concentrated in the second level (Very good) and the percentage is much higher than what is determined for it according to the natural curve. As for the third level (good) it comes in a secondary place in terms of its spread as its percentage is more than what is determined initially according to the natural curve. As for the fourth level, (average), the sample also spread at a greater rate than that determined for it by the natural curve. On the fifth level (acceptable), the researchers notice that the sample's spread is also less than that determined for it by the natural curve. On the sixth level (weak) the sample's spread is also less than the determined rate. From the above, one can say that the test ranges from excellent to very good, which achieves the goal of this research.

It indicates that the test in general is not very easy and is not very difficult. The researchers agree that handball players have the ability to perform this test with distinction because most of the teams' training depends on fast attacks so that these teams can go along with each other on the field to win the matches. (Mousa & Kadhim, 2023) The reason why the sample is not spread equally at all levels is the performance of the two players for the test. This test depends on the speed of performance as well as the player's ability to pass with high accuracy

and receive the ball while advancing by running at high speed, despite the obstacles included in the test. The players are being able to change direction and advance again to shoot at the goal which requires players to master handball skills. "Handball is a game that has its own basic skills and all of these defending and attacking skills are found to serve the players in order to reach the goal" The opposing team" (Abbas, Mahmud; Khaleel, Moushriq Fathi;, 2019, p. 216). The speed of advancing the ball to the opposing team's court is considered a very important factor in building a fast handball attack. "The kinetic speed in handball is the tool that determines the extent of successfully initiating and ending attacks." (Al-Ugaili, Kazem, and Shuhaib, 2015, p. 58)."

Conclusion:

The researchers conclude from their findings that this test, which is designed, built and codified, is characterized by high accuracy and adequacy and can be used to measure the speed and ability to pass and receive the ball in a collective fast attack by handball players despite the obstacles that the player encounters during performance represented by changing direction, turning around other players, passing and receiving the ball. The researchers find that the test is compatible with the nature of performance during the course of play. Therefore, the test is considered an objective test, and standard levels have been designed for it through which coaches can identify the level of performance of their players before and during the championships. Hence the test is established and the goal of this research is achieved. The researchers urge to use such tests to measure the speed and effectiveness of the performance of handball players during a fast attack in order to properly evaluate their performance before and during championships. The researchers also highlight the importance of inventing other tests in this field or designing tests for different samples in terms of age groups for male and female players.

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The study examined the effectiveness of intense special exercises, combined with intermittent electrical stimulation, in alleviating lower back pain in professors aged 50-60 years at the College of Science, University of Baghdad

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2030](https://doi.org/10.37359/JOPE.V36(3)2024.2030)

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Article history: Received 20/ February/2024 Accepted 20/September/2024 Available online 28/ September/2024

ABSTRACT

Lower back pain is one of the problems facing all groups of society, especially the elderly, as the causes of pain revolve around many different factors. The research aims to use intense special exercises accompanied by intermittent electrical stimulation to get rid of lower back pain among professors of the College of Science at the University of Baghdad for ages 50–60 and identify its effect. The research assumes that there are statistically significant differences in the degree of pain before and after the therapeutic approaches. The research sample consisted of professors who suffer from constant pain, numbering (6). The researchers used the experimental method to design one experimental group with a pre- and post-test to suit the research problem. They also used the SPSS program to process the research data statistically. The collected results concluded that the intense special exercises and intermittent electrical stimulation at the beginning of the rehabilitation unit contributed to pain relief by reducing the degree of pain within a short period. The researchers recommended using special exercises and stimulation to relieve pain in other similar cases.

Keywords: Intense special exercises, intermittent electrical stimulation, the pain, lower back.

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Introduction

Unexpected lower back discomfort brought on by a spinal or trunk injury might restrict trunk movement. One side may experience the discomfort, which may only last briefly before disappearing as the injury heals. But if you don't address it, the lower back's surrounding muscles might spasm and cause limited movement, making it a chronic condition (Batota, 2006, p. 2)

Individuals of all age groups, from infancy to old age, experience lower back pain, a contemporary condition that causes discomfort due to pain, restricted movement, and the inability to perform everyday tasks without difficulty. Seven cervical vertebrae, twelve thoracic vertebrae that connect with the ribs, five lumbar vertebrae that form the lower back, five fused sacral vertebrae, and finally four fused coccygeal vertebrae, also known as the coccyx, make up the spine (Kanaz, 2009, p. 49). Lower back discomfort is caused by disc problems, muscular weakness in the lower back, and vertebral fractures or abnormalities (Abdulzahra, 2000, p. 23). The objective of this study is to employ rigorous specialized workouts combined with intermittent electrical stimulation to reduce lower back pain in professors aged 50-60 years at the College of Science, University of Baghdad, and to determine the impact of this approach. The study postulates that there exist statistically significant disparities in pain levels prior to and following the treatment interventions. Hussein (2016), who sought to determine the effects of nutritional supplements in conjunction with therapeutic activities for the treatment of lower back pain, conducted the study that examined relevant prior research. It concluded that therapeutic activities paired with dietary supplements contributed to the development of various trunk flexion angles, and that these exercises, along with dietary supplements, lowered pain levels and enhanced back muscle strength. We also discussed the study by Al-Khazraji, Al-Ani, and Abbas (2017). The study aimed to design therapeutic exercises to increase trunk flexibility for individuals with physical disabilities (unilateral below-knee amputation) and investigate the impact of these therapeutic exercises on reducing lower back pain in the research sample. It concluded that the therapeutic exercises applied to the research sample had a positive effect on improving trunk and spinal flexibility, and that enhancing trunk and spinal flexibility significantly contributed to reducing pain levels in the research sample of individuals with physical disabilities (unilateral below-knee amputation), as noted in the study by Abu Al-Eyoun and Majli, 2016. The objective was to develop a recovery program for individuals with lumbar disc herniation, incorporating therapeutic exercises, therapeutic massage, thermal treatment techniques, and traction therapy. The study also aimed to determine how the proposed program would affect various study variables such as the degree of disc herniation, the strength of the back and leg muscles, back flexibility, pain levels, limb numbness, movement satisfaction, and the disability index due to lower back pain. I have determined that the suggested treatment program involves the use of therapeutic massage, thermal modalities, traction therapy, and controlled therapeutic exercises to partially rearrange the slipped disc to its original position, enhance the strength of the back and leg muscles, improve back flexibility, decrease pain sensation, alleviate numbness in the limbs, and restore the patient's functional capacity to meet daily life demands. Abdul Amir and Ibrahim (2023) conducted a study with the goal of determining the values of spinal flexibility levels and assessing the importance of the disparities between pre-test and post-test outcomes among squash players who are younger than 20 years old. I observed significant differences between the pre-tests and post-tests, favoring the post-tests for the research group because of the preventive exercises that were

provided for this purpose. The objective of Abdul Razak's (2016) study was to provide therapeutic activities combined with medical equipment for individuals suffering from lumbar disc herniation.(Kadhim, 2024a) It determined that rehabilitation exercises and equipment have an effective role in the therapy process, avoiding muscular atrophy in the affected areas. Additionally, the progressive increase in difficulty and regular diversity of workouts gave a psychological boost for the patient. The medical equipment significantly mitigated back discomfort and facilitated weight loss, thereby enhancing the patient's psychological comfort during the weight loss process and enabling them to perceive the resulting changes. Recognizing that the psychological and mood conditions can be rather difficult during the initial stages of treatment, it is crucial to adopt a combination of psychological and therapeutic approaches. The value of the current study is in constructing an intensive rehabilitation program with intermittent electrical stimulation to help teachers lessen back pain sensations.(Kazim et al., 2019)

The method and tools

The research topic requires the employment of the experimental method with a one-group design incorporating pre-test and post-test, as it is suitable for this issue. As for the sample, it consists of academics from the College of Science at the University of Baghdad who have been suffering from chronic pain from October 1, 2023, to December 31, 2023, and their number is... (The researchers used the pain assessment test (Al-Najjar, 2001, page 48)

The investigators administered a pre-test to the sample at various intervals, and thereafter conducted a post-test three weeks later. During the interim between the tests, intensive specific exercises accompanied by intermittent electrical stimulation were employed at the beginning of the rehabilitation unit to assist alleviate lower back pain over the course of three units per week, with 10 minutes of intermittent electrical stimulation. The module comprised a series of 4 to 7 exercises, with the major segment lasting on average between 20 and 30 minutes.

The researchers employed the Statistical Package for the Social Sciences (SPSS) to do statistical analysis on the available data

- 1-The arithmetic mean
- 2-The concept of standard deviation
- 3-T-test for independent samples

Results

(Table 1)

This visual representation displays the average values and measures of variability for the pain assessment test outcomes in both the pre-test and post-test.

Post-test		The pre-test		Unit of measurement	The variables
Standard deviation	The arithmetic mean	Standard deviation	The arithmetic mean.		
0.816	1.33	0.753	6.17	Degree	Measuring the level of pain.

(Table 2)

It indicates the difference in means, standard deviation, computed t-value, error level, and significance of differences for the pain measurement test.

The indication	The level of error sig.	The calculated value of (t)	Standard deviation	The arithmetic mean.	Unit of measurement	The variables
Spirituality	0.000	12.042	0.983	4.833	Degree	Measuring the level of pain.

*Degrees of freedom (6-1=5).
Significance at the 0.05 level is shown when the error level is equal to or less than 0.05.

Discussion

Complete physical rehabilitation has a favorable impact on strengthening afflicted muscles, boosting blood circulation, reducing discomfort, and improving muscle tone (Bakri and Al-Ghamri, 2011, p. 50). The contribution of rehabilitation with assistive methods leads to the activation of blood circulation in the injured muscles and works on repairing the damaged muscle fibers, preventing muscle atrophy due to injury (Ismail and Jawad, 2023, p. 560). An analysis of Tables (1, 2) clearly reveals notable disparities, indicating a decline in the average scores between the pre-test and post-test for assessing lower back pain levels. The researchers ascribe this to intensive targeted workouts and their contribution to reducing lower back pain, in addition to the use of intermittent electrical stimulation. The responsibility for applying suitable physical exercises for different types of injuries and their impact on treatment lies with the therapist. They must possess knowledge of training principles related to volume, rest, (Kadhim, 2024b) and intensity and utilize them proficiently (Brody, 2012, p. 220). The sports physician, physical therapist, strength and conditioning coaches, sports psychologist, nutritionist, and the athlete themselves are expected to adopt a consistent bio psychosocial approach to managing sports injuries (Himmat, Sidak, & Mandeep, 2017, p. It seems like your message is incomplete. Could you please provide more background or clarify what you would like to translate? The exercises employed contribute to expanding the range of motion through joint flexibility and muscular elasticity, as demonstrated by Mahmoud and Ismail (2023, p. 1067). Rehabilitation exercises can promote fluid joint mobility, since strengthening the flexibility of the trunk and spine has considerably contributed to reducing pain levels (Al-Khazraji, Al-Ani, and Abbas, 2017, p. 416). Furthermore, this perspective is shared by both Abu Al-Eyoun and Majli (2016, p. 271) as well as Owaid and Hussein (2023, p. 712). The administration and use of regulated therapeutic exercises greatly contribute, notably to the decrease of pain levels. Moreover, the optimal application of innovative

supplementary approaches can assist individuals in improving their health state and managing the demands of their everyday lives. For this reason, a significant number of people regularly visit fitness centers (Khalaf & Abdul-Kadhim, 2022, p. 133). Additionally, exercises play a role in reducing the recurrence of these aches. Abdul-Amir and Ibrahim (2023, p. 534) highlight that range of motion exercises, both without and with resistance, help in preventing spinal injuries. Both Mahdi, Hussein, and Zanaad (2021, p. 123) highlight the educational institution's provision of medical services, counseling, and therapeutic activities.

The conclusions

The obtained results concluded that intensive targeted workouts accompanied by intermittent electrical stimulation at the beginning of the rehabilitation unit contributed to pain alleviation by reducing the level of discomfort within a short duration. The researchers advocated adopting specific workouts and stimulation to reduce pain in other comparable patients.

The appendices
((The appendix))
A sample of the qualifying units
The week: the second
The rehabilitation unit: the third
The duration of the main component of the unit: 22:50 minutes (10 minutes of intermittent electrical stimulation and 12:50 minutes of intensive specific exercises)

Rest between exercises	The total time for each exercise	Total rest time	Total working time	Rest between groups	Groups	Rest between repetitions	The time of a single repetition	Repetition	The exercises
1D	2:10D	30 Th	1:40D	30Th	2		5Th	10	Bridge exercise with knees bent at a 90-degree angle from a lying position.
1D	1:10D	30 Th	40Th	-	1	10Th	10Th	4	Exercise of pulling the leg in front of the body while bending

									the knee from a seated position.
1D	2:10D	30 Th	1:40D	30Th	2		5Th	10	Body rotation exercise to the right and left with the knees bent at a 90-degree angle from a laying posture.
1D	1:10D	30 Th	40Th	-	1	10Th	10Th	4	A thigh muscle push-up exercise performed with the hands and knee flexed at a 90-degree angle while lying-down.
1D	1:10D	30 Th	40Th	-	1	10Th	10Th	4	Hand resistance workout by placing them on the bent knees at a 90-degree angle from the lying posture.

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The Effect of Special Exercises According to Specific Areas device On Learning low forehand reverse Of Squash Players Aged 13-15 years old

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2150](https://doi.org/10.37359/JOPE.V36(3)2024.2150)

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Article history: Received 18/ may/2024 Accepted 21/ may/2024 Available online 28/ September/2024

Abstract

The research aims to prepare special exercises according to specific areas in the accuracy of performing the reverse low blow for squash players, and to identify the effect of special exercises according to specific areas in the accuracy of performing the reverse low blow for squash players. To achieve the goal, the researchers used the experimental method by designing the experimental and control groups with pre- and post-tests to suit it with the research problem. The research population was chosen intentionally, and they are junior squash players aged (13-15) years, who number (12 junior players), as the research sample constituted (100%).) From the research community, they were chosen intentionally because there were no other players in the game of squash. After the tests and variables to be studied were determined, the researchers conducted the exploratory experiment as well as the pre-test, and then the exercises were applied during the training units. After completing the training units, the researchers conducted the post-test on the sample, and the researchers used the statistical package (Spss), and the researchers concluded that the exercises The special exercises contributed significantly to increasing the learning rate of the forward reverse low blow. These exercises also contributed to adding an atmosphere of suspense, excitement, and enthusiasm to the research sample, which contributed to breaking the deadlock in diversifying the exercises. The researchers recommend using the exercises prepared by the researcher, and creating exercises that suit the needs and level of The selected sample, and the necessity of conducting similar research on samples from other categories.

Keywords: special exercises, specific areas, front low swing, squash

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Introduction

Motor learning refers to a range of factors that influence an individual's behavior as they gain experience. It involves the acquisition, stabilization, development, and retention of skills, as well as the acquisition of knowledge related to movement and the improvement of physical abilities. Through practice and experience, learners can develop new motor skills or modify their existing abilities. (Abd al-Hussein and Akhron, 2020, p. 42).

Exercise is universally recognized as a comprehensive practice that encompasses both physical and cognitive abilities. It is essential for all aspects of sports, serving both specific and general purposes. Engaging in exercise is crucial and indispensable for individuals to maintain a healthy and well-rounded lifestyle. Furthermore, exercise is regarded as a source of recreation, (Easa et al., 2022) psychological well-being, and happiness. Exercises are the active components of the programmer that are designed to accomplish specific and immediate goals. (Mahmoud G., 2011, page 3)

The current process of acquiring skills forms the foundation upon which the level of performance in a sport is built. Effective skill acquisition involves utilizing the most effective tools and methods, which saves time and effort for both the learner and the teacher. This approach emphasizes the acquisition of relevant skills while minimizing unnecessary movements, ultimately leading to the desired learning outcomes and objectives. (Mahmoud & Kadhim, 2023)

Squash is a highly competitive individual game that stands out from other sports due to its exciting and thrilling nature. On a field, a player uses a bat and a ball to compete against an opponent. Squash is considered one of the most significant games due to its unique requirements and rules. (Mousa & Kadhim, 2023) Unlike sports with direct physical contact between players, squash does not have a barrier (such as a net) separating them. As a result, players must possess both physical and skilled capabilities to excel in the game. ESCWA players must have exceptional physical and skill talents, (Kadhim et al., 2021) as well as precise execution of both fundamental and advanced techniques, in order to participate in the game without risking infection or injury from direct and constant touch with their opponents on the field. Proficiency is paramount in any game. The significance of the game differs across different games, notably in the case of the ESCWA game. This game requires mastery of several fundamental abilities that are necessary to compete in ESCWA. The most crucial aspect of this game is the ability to apply intense pressure on the opponent and secure victory. (Kazim et al., 2019)

Considering the researcher's background as a former judge and her observations of Mr. Musharraf's experiences, she developed the notion of identifying suitable remedies to address the issues seen in the players' performances. After proposing the idea to Mr. Musharraf, the researcher concluded that it was necessary to develop targeted exercises tailored to specific regions in order to enhance the players' skills and visual accuracy. The use of aids and advancements in motor education is critical in all sports because they significantly improve individuals' performance within the training program (Muhammad and Ali, 2020, p. 26).

The purpose of research is to identify precise locations where the ball makes contact with the wall, ensuring a strong and impactful interaction. This study aims to evaluate the player's proficiency in this skill and strategically assign players to these specific areas. We can achieve the objectives of the research and studies by tailoring exercises to these areas.(Kadhim, 2023b)

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Considering the researcher's background as a former judge and her observations of Mr. Musharraf's experiences, she developed the notion of identifying suitable remedies to address the issues seen in the players' performances. After proposing the idea to Mr. Musharraf, the researcher concluded that it was necessary to develop targeted exercises tailored to specific regions in order to enhance the players' skills and visual accuracy. The use of aids and advancements in motor education is critical in all sports because they significantly improve individuals' performance within the training program (Muhammad and Ali, 2020, p. 26).

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Approach and instruments

Research methodology: The researchers employed a two-group experimental technique, consisting of an officer group and a trial group, to align with the nature of the research.

Research involving the collection of samples: This study specifically targeted 12 developing players from the ESCWA population, using a purposeful technique. The research sample consisted of the whole research community, as it was the only available group to study due to the absence of other participants in the squash game.

Research utilizes several tests. Test for frontal reverse low blow (Salman M., 2013, p. 59)

The purpose of the test is to evaluate the precision of the front-end low-voltage performance.

Test procedure: We evaluate the squash stadium using squash bats, squash balls, and a registration form. This involves drawing five straight lines that are parallel to the left-side wall. Draw Line 1 at the front end of the field, ensuring its length matches the width of a single field (20 cm).

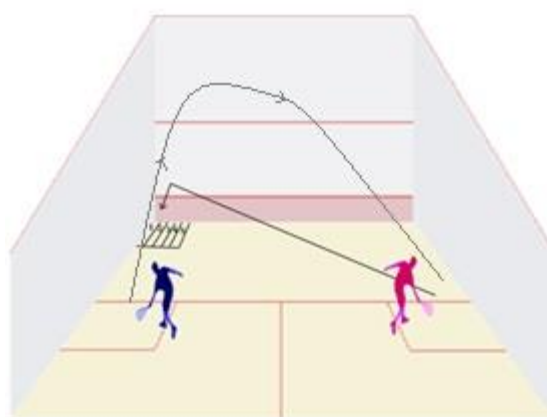


Figure (3-3)

Shows a low-blowing front-side test.

Figure 3.3 illustrates the parking area of the players and how to test for the lower frontal strike.

Performance specifications:

The test requires the player to stand in the region behind the transmission line, facing the right side wall, and assume the correct stance for a forward attack. The player receives five experimental attempts after the warm-up to observe and comprehend the test's execution. Each accurate hit earns a point.

If the ball touches the designated field number, it will result in a penalty of 5 points. 1. The ball earns 4 points when it makes contact with the designated field number. 2. The ball earns 3 points when it comes into contact with the designated field number. 3. If the ball makes contact with the field number, it will score two points. The number 4. If the ball touches the designated field number, it earns one point. The number 5. The value will be zero if it is outside the specified range.

Please keep in mind that if the ball lands on one of the boundary lines, you should count the number of dots on the field as closely as possible.

The initial exploratory experiment took place on Monday, December 25, 2023, at 4 p.m. Its primary goal was to identify the challenges faced by the researcher in the main experiment, as well as assess the performance of the auxiliary task force in terms of player

quantity, efficiency, responsiveness, and relevance to the educational units. Furthermore, the experiment aimed to assess the sample's suitability through a variety of exercises.

The event took place at the stadium of Baghdad University's Faculty of Physical Education and Sports Sciences.

The tribal tests for both the commanding and experimental groups took place on Wednesday, 3-1-2024, at 4 p.m. The College of Physical Education and Sports Sciences at the University of Baghdad conducted the tests under identical conditions to assess the search abilities of the pilot group and the command group.

The primary study for adolescents took place from Saturday, 6.1.2024, to Saturday, 6.4.2024, concluding at 4 p.m. It consisted of 24 instructional sessions, with a frequency of 3 sessions per week (on Saturdays, Mondays, and Wednesdays), spanning a duration of two months.

The group sample applied the training module. The researcher developed an approach that included 40 exercises for the pilot group sample.

We conducted remote tests on the research sample after completing the exercise with the tool, establishing conditions similar to tribal tests to assess the tool's impact. The experimental group and the officer conducted the search tests under the same conditions on Monday, 8-4-2024, at 4 p.m. The College of Physical Education and Sports Sciences/Baghdad University's stadiums served as the venue.

Results:

Presentation and analysis of sample results (officer) in tribal and post-tests

Presentation, analysis and discussion of the results of the tribal and remote testing of the pilot group

Table (1-4)

Shows the results of the descriptive and indicative census between the tribal and remote tests of the experimental group of variables under study

The test	Unit of measurement	group	Arithmetic mean	Standard deviation	f	F h	Calculated T value	Significance level value	the result
low forehand reverse	Number of points	befor	16.000	1.264	4.500	0.223	20.125	0.000	Moral
		After	20.500	1.224					

Table (2-4)

The results of the descriptive and indicative census show between the tribal and remote tests of the control group of the variables under study.

The test	Unit of measurement	group	Arithmetic mean	Standard deviation	f	F h	Calculated T value	Significance level value	the result
low forehand reverse	Number of points	Befor	15.666	1.032	1.666	0.210	7.906	0.001	Moral
		After	17.333	1.032					

The purpose of this report is to present, analyze, and discuss the findings of the tests conducted on the pilot-officer group, which focused on dimensional aspects.

Table (3-4)

The findings of the descriptive and indicative census indicate that there are limitations in the variables between the dimensional tests of the pilot group and the officers in the study.

The test	Unit of measurement	group	Arithmetic mean	Standard deviation	Calculated T value	Significance level value	the result
low forehand reverse	Number of points	control	17.333	1.032	4.842	0.001	Moral
		Experimental	20.500	1.224			

Discussion

The researcher's systematic and continuous commitment to implementing exercises is responsible for the improvement. This dedication has led to enhanced skill performance and ongoing correction. Additionally, the repetition and diversification of the exercises have played a significant role in improving skill performance. Keyun (2002, p. 20) suggests that diversifying the exercises creates a versatile program that can adapt to changing skill performance conditions. Nada Abdel zed (2011, p. 58) further supports this notion, emphasizing the importance of diversifying exercises based on scientific and educational principles to achieve optimal learner performance. Mosstan and Athwart (2002, p. 15) also endorse this approach. 91) "A critical and significant principle in acquiring motor skills is to demonstrate apparent improvement by nurturing and expanding the range of practice activities.

The researcher attributes the improvement in the results, specifically the reduction in initial difficulties, to the teacher's instructional approach. Research has shown that the teacher's use of exercises within the learning units, including a diverse range of exercises and frequent special exercises, enhances the variables under investigation. Mayell's research (1987, pp. 94–93) supports this finding.

The researcher also attributes the reason for the improvement to the continuous repetition of the performance of the units by the players under conditions similar to those of play, which leads to improvement, and also to the regular application of the exercises developed on a continuous basis by the players. The repetition of exercises leads to improvement in the palate.

The implementation of specialized training exercises, the emphasis on proper execution techniques, and the correction of faults to optimize the kinetic output, resulting in enhanced effectiveness and accuracy, have all contributed to the improvement in the precision of executing front and back low blows. The high morale of these skills in dimensional tests is due to their repetitive and intensive focus on a specific type of skill. This

skill demands exceptional precision in ball play, and it results in either a direct point if executed correctly or a loss of the point if the ball falls outside the designated boundary,

The implementation of specialized training exercises, the emphasis on proper execution techniques, and the correction of faults to optimize kinetic output have all contributed to the improvement in the precision of executing front and back low strikes, resulting in enhanced effectiveness and accuracy. We can attribute the high morale of these skills in the dimensional tests to repeated and focused practice on this specific skill type. This skill demands exceptional precision in ball control, and a successful execution results in a direct point, while a failure leads to a loss of the point by allowing the ball to fall outside the designated area.

Conduct individual training sessions in the central portion of the stadium, simulating game circumstances and focusing on specific regions of the field. The movement from the stadium center, as well as the subsequent ball play within those regions, serve as a defensive tactic to maintain control over the designated area (T). Conversely, this strategy also serves as an offensive approach by employing short passes towards the corners of the front court (Kaddory and Shaq, 2015, p. 77).

Conclusions and recommendations

5.1 Conclusions

From the findings of the researcher, he obtained the following conclusions:

1. Positive impact on learning in some squash skills
2. The effectiveness of exercises according to specific regions in learning some squash skills

Recommendations

1. The requirement for comparable studies using samples from different categories.
2. The importance of taking age groups into consideration, since they form the core of all accomplishments.

Education Unit

Category: Emerging

Objective: To learn skill.

Time: 45 minutes

Number of learners: 6 young people

Main Section	70M	Theoretical + practical						
Theoretical.	6M	Explain how the exercise works.						
Application	64M	exercis e	Workin g of time	Rest between repetition s	Repetition	Groups	Rest between n totals	Type of skill
		T1	30 second	45second	6	2	1M	low forehand reverse
		T2	30 second	45 second	6	2	1M	low forehand reverse
		T3	30 second	45 second	6	2	1 M	low forehand reverse
		T4	30 second	45 second	6	2	1M	low forehand reverse

Physical activities

- The anterior extremity of the left field supplies the player with projectiles. The player is armed with a ball cannon, positioned in front of the left field. The player is directing a low-thrust forward attack towards the designated spot.
- sends the ball to the front wall via a teammate, and the player executes a low blow forward.
- The player moves from the top to the T position to execute a low inverse blow from the front wall.

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The effect of rapid strength training in a water environment according to the Obstructive force index on some kinematic variables for the start phase and achievement of the 100-meter Sprint

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2038](https://doi.org/10.37359/JOPE.V36(3)2024.2038)

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Article history: Received 27/ February/2024 Accepted 19/ March/2024 Available online 28/ September/2024

Abstract

The study aimed to prepare rapid strength training in a water environment according to the obstructive force index for 100-meter Sprint. To identify the values of some kinematic variables for the start and achievement stage for the research sample. To identify the effect of rapid strength training in a water environment in developing some kinematic variables for the start and completion stage of running (100 m Sprint between the test (pre-post) for the research sample. The researchers used the experimental method by designing two equal groups with a pre- and post-test to suit the nature of the research problem. The research sample was identified with track and field runners for the 100-meter event in Maysan Governorate over the age of 20 years. The number of athletes 2023-2024 is (8). They will be taken completely by the comprehensive inventory method. They constituted 100% of the research community. The researchers concluded that performing rapid strength training exercises according to the aquatic medium whose intensity is regulated according to the law of obstructive force had a positive impact on Kinematic variables for the start and completion stage. The most important recommendations which the researchers recommended are: the necessity of using rapid strength training in the aquatic medium because of this medium's effective impact on developing muscular strength and then achievement. The of adopting the law of obstructive force to codify the training intensities for fluids (the aqueous medium) in training. Fast running and all games necessity.

Keywords: rapid force, obstructive force index, kinematic variables, starting phase, achievement, 100 metres Sprint.

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Introduction

Specialists and researchers in the field of sports put great attention to solving the problems facing this field and trying to promote it on the other side, by searching for the most appropriate ways to obtain high achievement through the mechanism of scientifically controlling the components of the load (intensity, size, comfort) ,(Sikhe & Yasir, 2020) And used of scientific theories and the concepts of training science as well as various other sciences, the training process must be fruitful and enhance its results through the use of modern science and modern technologies,(Idrees, Yasir, & Hammood, 2022) and keep pace with development, as it calls for the search for new solutions and innovative means that help push progress forward by finding alternative means more useful than the traditional means used in training in order to develop physical abilities, which are carried out through organized physical preparation and linked to the dynamics of other sciences, so it is considered Athletics activities are events that are affected by physical abilities, especially short distance running events (100-200-400) meters, Achievement is determined by the physical characteristics of the player as well as the kinematic specifications and their association with physical variables (Zahid, 2009).

Many studies have been conducted dealing with training in the aquatic medium, including a study (Kamalakkannan et al., 2010), where the study aimed to identify the impact of water training on the variables of physical fitness selected among volleyball players, and the study was conducted on a sample of (30) players divided into two groups each group (15) players,(Idrees, Yasir, & Rashied, 2022) and the study included the approach (experimental) where the curriculum included (12) weeks, By (3) units per week, for 45 minutes, and the results proved that there are differences between the two groups, and the hydropyometric training group showed a significant improvement in speed, explosive ability and endurance compared to the traditional group.

As for the study (Kumarasamy, 2013), the study aimed to identify the effect of water plyometric exercises on the selected fitness components, and the sample consisted of (30) handball players from different colleges of Tamil Nadu, India, and included the study of the (experimental) methodology, where the program lasted (8) weeks by three units per week, where each unit took (45) minutes, The results proved that there are significant differences between the two groups and in favor of water training, and the hydroponic plyometric training group showed a significant improvement in speed and muscle strength compared to the control group.(Yasir et al., 2020)

As for the study (Taresh, 2020) (water training with resistances and its impact on the development of some special abilities, functional variables and achievement for elite 200-meter runners under 20 years old), the study aimed to prepare exercises in a water medium according to the resistances and to know their impact on some special abilities and functional variables for elite 200-meter runners under (20 years), and the study sample consisted of (8) players from the elite runners of the Baghdad governorate team for the effectiveness of 200 meters under (20 years).(Mondher et al., 2023) It included the curriculum (experimental), where the curriculum included (24) training units distributed over (8) weeks at a rate of (3) and training limit per week, and the most important results of the study showed that training in the water medium with resistors

had a significant impact on the adaptations in the development of physical and functional variables and the research sample.(Nashwan & Alzoubi, 2022)

As for the study (Bajbouj & Tawashi, 2018), where the study aimed to identify the effect of using plyometric exercises in water on improving the level of achievement, the research sample consisted of (12) players from the Hama University team, and the (experimental) approach was used, as the program included (12) training units distributed over (6) weeks at a rate of two units per week, and the most important conclusions were reached that water plyometric exercises had a positive impact on improving the level of achievement.(Nashwan, 2024)

As for the study (Tareh, 2020) (water training with resistances and its impact on the The study (Al-Fadhli and Hussein, 2012) aimed to prepare exercises for special physical abilities in the aquatic environment (Plyometric), and to identify the effects of these exercises on the development of some types of special strength, speed, starting speed and achievement of the youth high jumpers, and the study sample consisted of Baghdad clubs players (12) players participating in the tournaments held by the Iraqi Athletics Federation for the year (2011), and the study included the curriculum (experimental) where the training program was applied for 8 weeks, Including (16) training units by (2) training units per week, and the results proved that water exercises affected the development of speed, and that the prepared program, which included water exercises as an aid practiced by the experimental group, has contributed to the development of achievement jump.(Alhasan & Rasheed, 2022)

Through the presentation of previous studies, we note that the hindering force index is not used in the regulation of training stress and the lack of use of rapid strength training in the middle and in accordance with the mechanical work done in the least unit of time necessary for these events, which works to develop muscular ability during motor performance through the performance itself or work similar to performance in the race or competition, (EBBEN, 2007).(Ahmed Muhammad AbdulkhaliqAlhasan, 2024)

The problem of the research lies in the absence of some of the foundations on which the development of strength and speed in its training in terms of traditional training methods and methods and the use of traditional and unstudied auxiliary tools and deficiencies in the use of biomechanical analysis in detecting the weaknesses and strengths of runners from the biomechanical side and the lack of deep understanding of the strength of the working muscles and assistance led to a decline and stability of achievement among the members of the study sample, The study aimed to prepare rapid strength training in a aquatic environment according to the index of the obstructive force for runners (100) m free and to identify the values of some kinematic variables, for the starting and completion phase of the research sample and to identify the effect of rapid strength training in a aquatic environment in the development of some kinematic variables for the starting stage and the completion of running (100) m free between the test (pre-post) for the research sample.

Method and tools:

The researchers used the experimental approach by designing the two equivalent groups with a pre- and post-test to suit the nature of the research problem, "The experimental approach represents the most honest approach to solving many scientific problems in a practical and theoretical manner" (Allawi and Rateb, 1999), and here the researchers identified the research community with the arena and field runners for the 100-meter event in Maysan Governorate over the age of 20 years for the 2023-2024 sports season, which numbered (8), They will be taken fully in a comprehensive inventory manner, as the researchers divided them into two groups by (4) runners for the group that trains rapid strength training in a aquatic environment according to the hindering force index and (4) runners for the group that trains rapid strength training by weighting in the ground center and the process of distributing them in a random way, by lottery method and they represented 100% of the research community.

The researchers used cameras number (4) with their supports at a speed (120 images / second) type (Sony) Japanese, a special regular running field with an effectiveness of 100 m, kinetic analysis software (Kinovea), in order to extract the kinematic variables of the starting stage, where the following variables were extracted:

A - Starting stage: - It was analyzed from the moment of take off until the first step and included the following: -

1- The knee angle of the front leg at the moment of take off

It is the angle between the anterior leg thigh line above the starting cube (from the hip point to the knee joint) and the leg line (from the knee joint point to the ankle joint point) and is measured from the inside because it is a closed angle.

2- The knee angle of the back leg at the moment of :

It is the angle between the thigh line of the posterior leg above the starting cube (from the hip point to the knee joint point) and the leg line (from the point of the knee joint to the ankle joint point) and is measured from the inside because it is a closed angle

3- Angle of the Torso joint:

It is the angle between the Torso line (from the point of the shoulder joint to the point of the hip joint) and the thigh line (from the hip joint to the point of the knee joint). It was measured at the moment of extending the front leg and leaving the kickstand.

4- The angle of the elbow joint of the front arm:

It is the angle between the elbow line (from the wrist joint point to the elbow joint point) and the humerus line (from the elbow joint point to the shoulder joint point) of the anterior arm and is measured from the inside because it is a closed angle.

5- The angle of the elbow joint of the rear arm:

It is the angle between the elbow line (from the wrist joint point to the elbow joint) and the humerus line (from the elbow joint point to the shoulder joint point) of the posterior arm and is measured from the inside only because it is a closed angle.

6- Push angle:

It is the angle between the line connecting from the point of contact of the foot with the ground to the point of center of mass of the body with the horizontal line and is measured from the front, as it was measured the moment the front leg left the starting cube.

7- Response time: It is the sum of the reaction time and the time of movement and is measured from the moment of the appearance of the stimulus to the end of the motor duty of the starting stage.

Physical tests used:

100m Sitting Test (IAAF '2019)

1- Objective of the test/

Measurement of running achievement (100) meters.

2- Tools used /

A- A running field with a distance of 100 meters in accordance with legal requirements.

B- Three stopwatch hours (for the two clocks) or the (photo finish) device

C- Starting pistol (sound of shooting).

3- Performance method /

The test begins immediately after the completion of the warm-up process by instructing the laboratory, on the starting line, where the laboratory takes the seated start position after which the shooter gives the starting signal, and at this moment the timers turn on the stopwatches, and when the laboratory reaches the finish line, the stopwatches are stopped.

4- Measurement method / recorded to the nearest 01.0 of the second through (3) three hours of timing, the medium or the possibility of using the photo finch device is taken and the timing is electric.

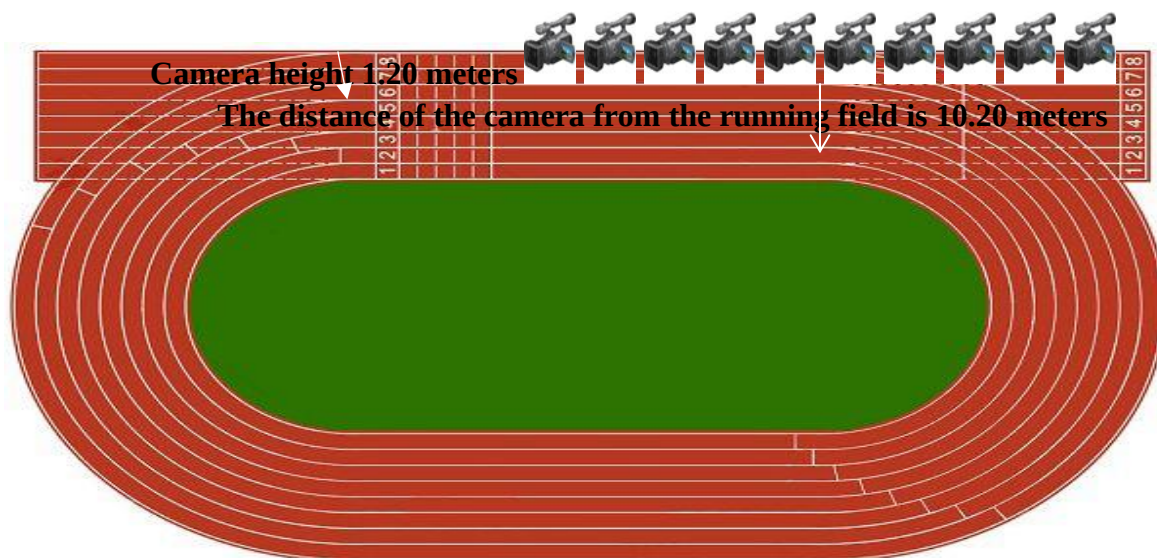


Figure (3-1)

Demonstrates how to place cameras perpendicular to the field of running in video photography and achievement test running 100 meters

The researchers conducted the first exploratory experiment on Sunday, 28/5/2023 at three o'clock in the evening on a sample consisting of (2) from within the members of the research sample, at Maysan Olympic Stadium, and the goal of the first exploratory experiment will be to achieve the following: identifying the number of cameras that will be used in photography, determining the appropriate distance for each camera, checking memory cards (RAM) for each camera with speed control at a rate of 120 frames per second, Ensure the validity of the stadium, the tools and devices used, and the research supplies, know the readiness of the research sample to perform the test, organize the assistant work team, identify the time it takes to test, and the researchers conducted the second exploratory experiment for the members of the experimental research sample on Monday (29/5/2023) and on the large Amara swimming pool and Maysan Olympic Stadium.

The aim of the second exploratory experiment was to achieve the following: knowing the time required to implement the training units, determining the training stresses according to the law of obstructive force for the group that trains in the aquatic environment, fixing all observations related to the exercises prepared and the extent of their benefit, identifying the necessary number of auxiliary cadres, which the researcher needs when carrying out the tests and the main experiment, identifying the possibility of the sample on the application of the exercises, And how to deal with the means.

After conducting the exploratory experiments, the researchers conducted the pre-tests on the research sample on Wednesday (31/5/2023) at Maysan Olympic Stadium, by installing the locations of the cameras, marking them with function points and determining the locations of the signs to facilitate the process of installing the cameras, then the tribal tests were conducted (achievement for the effectiveness of running 100 meters, and video photography) in the afternoon, after the pre-tests, parity was made for the extracted variables as shown in Table (3-2)

(2-3)table
Shows the equivalence of the sample members in the variables of the starting and completion stage

Differences	Sig	Calculated value (T)	Aquatic medium group		Unit of measurement	Variables	Sequencing
			Standard deviation	Arithmetic mean			
Immoral	0.585	0.576	1.660	94.825	degree	Front leg knee angle	1
Immoral	0.801	0.264	0.574	157.660	degree	Leg back knee angle	
Immoral	0.344	1.026	0.420	42.650	degree	Torso angle	
Immoral	0.886	0.149	0.816	92.000	degree	Elbow angle of the front arm	
Immoral	0.453	0.801	1.539	162.175	degree	Elbow angle of the rear arm	
Immoral	0.387	0.933	0.012	1.225	degree	Push angle	
Immoral	0.549	0.635	0.017	10.887	Second	Achievement	

After conducting the pre-tests, the researchers prepared exercises commensurate with the stages of the technical performance of the event and to suit the capabilities of the members of the research sample to reach the best results, as the following was applied: -

Preparation of rapid strength training according to the aquatic environment, the number of weeks is 12 weeks, the number of training units is 2 units per week, the total training units are 24 units, the exercises were applied in the main section of the training unit, the training stresses used in the

training ranged from 90% - 100%, the application of the exercises was in the period of special preparation, taking into account the exchange of work between muscle groups, planning exercises during the training units 1:2.

- The intensity of the exercises used according to the obstructive force index for the group using the aqueous medium was regulated by the following equations:

Obstructive force: It is the force that occurs by the dynamic effect of the inhibitor that affects the direction of the streaming current of the fluid flow, generally it is a resistance force that slows down the force of movement of the body through the fluid. (Hal, 1995)

$$F_d = c_d \frac{1}{2} \rho v^2 A$$

(Obstructive force = density of the medium × the obstacle constant × the square of the velocity × the body plane ÷ 2)

For speed = $\sqrt{\frac{\text{the force of the disability} \div \text{the flat body} \times \text{the thickness of the medium} \times \text{the constant of the disability}}{2}}$

Time = $m_2 \times \sqrt{\frac{\text{flat body} \times \text{thick medium} \times \text{disability constant} \div 2 \times \text{disability strength}}{\text{disability force}}}$

The training method (recursive) was used, and breaks were used between repetitions ranging from (1-3) d, and groups ranging between (2-6) d, and this was confirmed by (Mcfarlane, 2009) as it was mentioned that the rest period is (1-3) minutes between repetitions, and (2-6) minutes between groups to train strength and speed in short runs, the exercises were started on Sunday (4/6/2023).

The post-tests were conducted on (Saturday) (26/8/2023) at Maysan Olympic Stadium, and the same conditions in which the pre-tests were conducted will be taken into account, and the researchers used the statistical bag (spss) to process the data.

Results

Table (1) shows the values of the arithmetic mean, standard deviation, calculated value (T) and level of significance for the variables of the starting stage of the group of water mean and achievement

Differences	Sig	Calculated value (T)	Post-Test		Pre-test		Unit of measurement	Variables
			Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean		
Moral	0.002	9.589	1.611	95.067	1.660	94.825	Degree	Front leg knee angle

Moral	0.030	3.892	0.513	157.915	0.574	157.660	Degree	Leg back knee angle
Moral	0.002	10.830	0.436	42.752	0.420	42.650	Degree	Torso angle
Moral	0.026	4.124	0.847	92.176	0.816	92.000	Degree	Elbow angle of the front arm
Moral	0.008	6.332	1.541	162.070	1.539	162.175	Degree	Elbow angle of the rear arm
Moral	0.031	3.852	0.140	42.195	0.228	42.375	Degree	Push angle
Moral	0.001	11.439	0.012	10.852	0.017	10.887	Second	Achievement
Significant at a significance level less than (0.05)								

Discussion:

The results in Table (1) showed that there are significant differences between the pre- and post-measurements in the variable (knee angle of the front leg, knee angle of the back leg, torso angle, front arm angle, back arm angle, (Kazim et al., 2019) push and achievement angle), and the researchers attribute the significant difference in the results between the pre- and post-tests to the effect of the exercises used, in the aquatic environment according to the hindering force index as a result of the exercises of the aquatic environment, The training program, which includes a set of weight training for the legs, arms and torso, in addition to practicing water training as a suspense factor with the implementation of weight training with intensity appropriate to the research sample, shows positive results (Idrees, Yasir, & Hammood, 2022), And that the legalization of stress according to the index of obstructive force has a dollar important in the development of variables researched because through the equation of the obstructive force was to know the degree of disability for each player in the water medium and then was legalized stress according to this obstructive force, as the resistance of water leads to an increase in muscle strength where the researchers believe that the development of muscular strength and speed any development of physical capabilities is reflected in the biomechanical variables, Khudair (2017, p. 80) states that action against water resistance develops strength further through aqueous environment exercises, especially special strength training, which are reflected in the bio kinematic aspects.

The researchers believe that continuing to give information about the ideal technique for performance has a role in improving technical performance, when hearing the start signal must be done and direct the performance of the movement quickly and speed depends here on the

individual physical, physical and psychological qualities of the runner and play a strong leg a major role in the strong push as a result of the man staying fixed for a longer period, which thus greatly affects the payment at the beginning of the acceleration stage, and that the low position helps to increase the momentum as the horizontal force It is greater than the vertical force compared to the high position, and mentions (Omar and Abdel Rahman, 2018, page 239) "The runner exerts more energy and achieves greater speed, meaning that the energy exerted is large and the player achieves speed and acceleration of this energy."

Therefore, we see the runner's rush quickly forward at an angle of (42° - 45°) and the back foot of the back rest is left before the leg in the front rest and the front thigh is in a state of fixed muscular work and a very slight change occurs in the angle of the knee joint, and the actual change begins in the angle of the knee when the knee of the back leg exceeds the knee of the front leg, and the movement of the rush continues until reaching the full extension of the front leg, At this moment the body is in a form almost perpendicular to the ground, and at the end of the starting phase the thigh and trunk are in line with the ground. (Omar and Abdulrahman, 2018, p. 241)

The runner also performs a series of high harmonic movements between the arms and legs together,(Abdulhussein et al., 2024) as he performs a high reaction movement of pushing and pressing with maximum force with the legs against the starting cube and for both feet using the maximum force of contraction of the muscles of the legs in order to leave the back leg foot of the back cube first and then followed by the front leg with full extension of the leg during this push movement while the torso tilts forward and extends the hip joint and coincides with the movement of push A strong weighted movement opposite and effective in both arms from the shoulder joints In order to increase the momentum of the required starting movement and synchronized the movement of pushing the two legs to perform the launch with the best technique and with the maximum force and in the shortest possible time,(Mahmood & Kadhim, 2023) as this works to achieve the correct mechanical manifestations of the angles of performance at the moment of preparation that works to create good conditions to retain the momentum of the body, which contributes to the lowest moment of resistance to gravity (weight torque) as these indicators are associated with achieving good ranges of the angles of the joints of the body. (Idrees, Yasir, & Rashied, 2022), It is necessary to note here that the movement of the arms is from the shoulder joint with flexion in the elbow joint,(Mousa & Kadhim, 2023) as this movement is of great importance in sprint races by contributing to the stability of the body position and helping to develop the technical stages of the race and maintaining the longest possible period of time for maximum speed, as it mentions (Frag, 2018, page 418) quoting ((Latif Thomas) "The arms play an important and moral role in short-distance running and speed development, Without the mechanism of full arm movements, their specificity and regularity, the maximum speed efforts will not be real."

The results also showed significant differences in the achievement variable, as the researchers attribute this improvement to the logical result of the implementation of the exercises prepared according to the hindering force index,(Salih et al., 2024) as the work focused on the implementation according to the scientific foundations in sports training, in terms of determining the training stresses and the nature of performance, repetitions and rest periods, which aimed to

develop important kinematic variables in the starting stage,(Kadhim, 2024b) which have an effective role in the technique of running and the production of rapid successive movements that lead in the result of obtaining a better achievement. During the running distance, which affected the length of the step and the frequency of the step relatively contributed to the best achievement in running the 100-meter freestyle, as it was mentioned (Al-Sukkari, 1996) that "the use of the appropriate training method is more effective in achieving the training objective used." The researchers believe that these differences are a natural outcome of all that has been mentioned in the results and discussions prior to the starting stage,(Kadhim, 2024a) as the achievement in the competitions of running short distances in general and the effectiveness of 100 meters in particular depend on the kinematic variables of the runner for this any improvement in these variables under study will lead to an improvement in the level of achievement and this is what has been reached and proven by the results in the post-tests, As the application of rapid strength exercises in the aquatic medium according to the indicator of obstructive force,(Kadhim et al., 2021) contributed significantly and effectively to achieving this improvement of the kinematic variables, which in turn reflected on the achievement of runners,(Kazar & Kazim, 2020) and that the good link between the start and start stage contributed to the development of achievement , (Ali, 2005) mentions that the development that accompanied the variables gave an indication of increasing the efficiency and coordination of work between the joints of the body and the working muscles and thus an increase in the achievement achieved, in addition to that the legalization of stress in the water medium was according to the indicator of the obstructive force,(Easa et al., 2022) as the use of this indicator depends on the mass of the player and his surface area and the density of water in addition to the disability and distance traveled and the time achieved in determining the intensity and thus gives more effective and accurate results in the training process, especially when training Speed, through which individual differences between runners are taken into account, and it is mentioned (Al-Fadhli, Lafta, and Hassoun, 2020) that one of the methods of training speed is accuracy in determining intensity.(Farhan et al., 2016)



module

Date (4/6/2023)-(7/6/2023)

First week •

Location : Maysan Swimming Pool
Number of players : 4

First - Second Training Module

Today	Exercises	Intensity	Performance time	Number		Comfort		Working time	Rest time
				Iteration	Totals	Between repetitions	Between totals		
Saturday	Run a distance of (10) meters (water) at neck level Run a distance of (10) meters (water) at chest level	%90	7.49 sec 5.48 sec	3 4	2 2	2- 1.5	3-5 min	44.94 sec 43.48 sec	14.28 min 13.42 min
Tuesday	Partridge with the left leg for a distance of (10) meters (water) at chest level Partridge for a distance of (15) meters with both legs (water) at chest level	%90	7.60 sec 9.38 sec	3 3	2 2	2-1.5	3-5 min	45.60 sec 28.14 sec	14.28 min 10.28 min

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Predicting the level and digital achievement in terms of some body measurements of 2000-meter rowing players in qualifying for the 2023 Asian Cup Championship

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.1997](https://doi.org/10.37359/JOPE.V36(3)2024.1997)

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Article history: Received 11/ January/2024 Accepted 18/ February/2024 Available online 28/ September/2024

Abstract

The study aimed to identify the relationship of body measurements to the level and digital achievement of 2000-meter rowing players in the 2023 Asian Cup Championship, and to identify the contribution of body measurements to the digital level of 2000-meter rowing players, and to identify the extent of the efficiency of body measurement variables in predicting the level and digital achievement of rowing players, while the research sample was represented by the players of the national rowing team participating in the Asian Cup Championship held in Iran 2023, numbering (15) players who were selected intentionally, as well as the arithmetic mean and deviation Standard, simple correlation coefficient, multiple regression coefficient by regression method, and regression coefficient by stepwise regression method, by using the statistical bag spss to reach the results, and the most important conclusions that appeared were that the body measurements have a high significant correlation with the level and digital achievement of rowers, while it appeared that the body measurements also have high contribution rates to the level and digital achievement of rowers.

Keywords: Prediction, digital achievement, digital level, body measurements, rowing.

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Introduction

The study of body measurements has great importance at the training level for all time and standard sports in terms of body shape and size with motor performance, in addition to being an important means of evaluating the individual. Thus, it can be said that the coach, through his technical expertise, must prepare sports champions based on their careful selection and according to the correct body specifications, so body measurements are important for each sporting event, as each game has a specific specificity in the type of body measurements required that must be available, so it can be practiced to achieve the best results.(Nashwan & Allawi, 2021)

"This confirms the fact of choosing the appropriate physical measurements before starting the training process, and that a wise coach will not waste his time and effort with a pattern that does not bode well for success. If the athlete participates in a competition and the anthropometric specifications are not at the required level, there will be fluctuations in the level and stability in some cases, and sometimes there will be a clear deficiency compared to his fellow players. Hence, the process of linking these measurements and identifying the relationship between them and physical performance is one of the important matters in order to reach the required level, which is what this study tried to reveal. In other words, (Kadhim et al., 2021) this study gains its importance in that it tries to determine the extent of the contribution of these physical measurements and their prediction in the digital achievement in order to reach accurate scientific results that serve the 2000-meter rowing game at the national team level to constitute a new addition for coaches in discovering the most qualified players to participate in continental championships. Some studies have addressed the importance of physical measurements, including the study (Saudi, 2009), which emphasized the "importance of physical measurements and their contribution to the level of digital achievement For rowing players. And the study (Abbas, 2008) confirmed that there is a statistically significant correlation between body measurements and skill performance and their contribution to skill performance in tennis, and the study (Hussein, 2010) "confirmed the existence of a significant correlation between some body measurements and physical abilities in performing the smash skill and their contribution to performing the smash skill in volleyball".

This study came to shed light on the specificity of this relationship and to contribute to establishing some scientific foundations that work to raise the level of the game as well as increase the theoretical knowledge of coaches and researchers in order to shorten the time and choose the appropriate player with the highest percentage of guarantee to obtain achievement in the game.(Farhan et al., 2016)

The research aims to identify the body measurements, level and digital, as well as to identify the relationship between body measurements and digital level, and to identify the contribution of body measurements to the digital level and achievement, and to identify the extent of the efficiency of body measurement variables in predicting the digital level and achievement, as well as to identify the role of body measurements in the digital achievement of 2000-meter rowers.(Nashwan, 2024)

The research hypotheses were that there is a statistically significant relationship between some body measurement variables and the digital level and achievement of 2000-meter rowers, and some body measurement variables contribute in varying proportions to the digital level and achievement of 2000-meter rowers

and the possibility of predicting the digital level and achievement in terms of some body measurements of 2000-meter rowers.

The Method and tools:

The researcher used the descriptive approach using the correlational method to suit the nature of the research problem, as the community was represented by the players of the national team participating in the 2023 Asian Cup in Iran, numbering (15) players at a rate of (100%), as they were 23 years old and above and their training age ranged between (8 to 12) years.

Identifying variables:

By reviewing some scientific sources and references, previous studies and personal interviews with some experts in the field of measurement, evaluation and rowing, some physical variables and digital achievement of 2000-meter rowing players were proposed, and after they were presented to a number of experts) as shown in Appendix 1), a number of variables were identified that will represent the research as follows:

Table (1) shows the experts' agreement rates for the research variables.

Variable	Agreement Percentage	Variable	Agreement Percentage
Upper Arm Length	%75	Total Height	%80
Leg Length	%80	Weight	%75
Forearm Length	%75	Trunk Length	%78
Leg Length	%75	Chest Circumference	%75
Thigh Length	%80	Abdominal Circumference	%80
Digital Level	%95	Arm Length	%90

Where all variables were accepted that obtained an agreement rate of (75%) or more from the experts' opinions (Latif, 2017)), as (Benjamin, 1983) indicates that "the researcher must obtain an agreement rate of 75% or more from the experts' opinions".

Measurements and tests for the research variables:

In order to determine the measurements and tests, they were presented to the experts to show the validity of the measurements and tests to measure what they were designed for and also to show the extent of their suitability for the research sample (Saba, 2018).

Measurements for physical variables:

Body length, arm length, upper arm length, forearm length, palm length, lower limb length, leg length, foot length, chest circumference, thigh circumference, calf circumference.

Test for digital achievement variables:

It is a 2000-meter rowing test to qualify for the Asia Cup Championship

The Main experiment

The researcher took all measurements for physical variables on Thursday 4/15/2023 after fixing all the numbers for the players participating in the championship and the achievement they obtained according to the activities in which they participated.

Statistical methods:

The statistical package (SPSS) was used, including the laws of the arithmetic mean, standard deviation, simple correlation coefficient, contribution ratio, and multiple regression.

Results:

Showing the results of the variables of body measurements, level and digital achievement of the 2000 m rowers.

Table (2) Between the arithmetic means and standard deviations of some body measurements and the digital level of the 2000 m rowing event.

Variables	Unit of Measurement	Mean	Standard Deviation
Total Height	Cm	183.2000	3.56526
Weight	Kg	77.5000	2.87711
Trunk Length	Cm	58.2000	1.93218
Chest Circumference	Cm	95.7000	3.09300
Abdominal Circumference	Cm	78.6000	4.55095
Arm Length	Cm	79.4000	1.34990
Upper Arm Length	Cm	31.7000	2.26323
Forearm Length	Cm	28.9000	2.33095
Leg Length	Cm	98.0000	5.65685
Legging Length	Cm	48.0000	2.16025
Thigh Length	m/s	50.6000	2.22111
Digital Level	Cm	7.40	1.46909

Table (3) shows the values of the correlation coefficient between the body measurements and the digital level of the 2000 m rowing efficiency.

Thigh Length	Leg Length	Leg Length	Forearm Length Leg	Upper Arm Length	Arm Length	Abdominal Circumference	Chest Circumference	Torso Length	Weight	Height	Variables
0,420 -	0,322 -	**0,9 -23	**0,849 -	**0,952 -	**0,978 -	0,325 -	**0,843 -	**0,923 -	0,444 -	**0,8 -29	Number level

By observing Table (3), it is clear that there is a negative significant correlation (inverse relationship) between each of (length, arm length, forearm length, upper arm length, chest circumference, and torso length) and the digital level. (Abdulhussein & Al-juboori, 2024) If this indicates anything, it indicates that the more these lengths and chest circumference increase, the less time the boat takes to cover a distance of (2000 m) and thus its speed increases. (Yasir et al., 2020) The researcher attributes this to the fact that increasing the length of the player's arm helps to take the maximum range of movement of the arm in the reciprocal rowing movement between the arms in front of the body to reach the farthest possible point at the moment the paddle is planted in the water, as both of the player's arms are holding the paddle forward and are used to pull the paddle in order to produce the maximum energy. (Abdulkareem et al., 2024) We notice through our analysis of the movement of this arm during rowing that its work begins from the moment the paddle meets the water in front at the farthest possible point, at which point the player begins to pull the paddle (paddle) from the back to the front in a direction parallel to the boat to produce the maximum possible energy. When the palm reaches the level of The knee then begins to reduce the radii of the parts of his arm to overcome the moments of inertia that act on the arm and its parts alike by forming angles at the elbow and shoulder joint. (Hammood et al., 2024) "It is noted that controlling the radii of the body (by reducing the lengths of the body parts) is inversely proportional to the linear speed and maintaining it as long as the body maintains a constant length (Al-Bayati, 2012)). These moments here are an obstacle to the rower's movement. To overcome them, (Salman et al., 2022) the rower works to bend the elbow and shoulder joints because he cannot reduce the mass of his arm. It is known that the humerus is relatively shorter than the forearm, so it is better to bend the elbow joint more than the shoulder to overcome the moments of inertia during the backward pull and increase the angular speed. "The increase and decrease in the radius play a role in achieving the angular speed and the peripheral speed of the body parts while

performing skills related to rotational movement" (Al-Bayati, 2012), and thus increasing the speed that in turn is transmitted to the rower, and then as a result of the action and reaction of hitting the water and pulling the rower, (Al-Bakri & YasirWajeehQaddoori, 2024) the boat moves forward. As for the trunk, as is known, it represents the largest muscle mass in the body that can produce force, especially in the process of pulling back to overcome the moment of inertia. "The moment of inertia is directly proportional to the body mass and the square of its length" (Al-Bayati, 2012). The force is transferred from the lower part of the body to the upper part of it, (Mahmood & Kadhim, 2023) with this force increasing in the trunk, so that this increasing force is in turn transferred to the arms and then directed to the paddle to increase the speed as a result. The same is the case with regard to the chest circumference, as the chest circumference is directly proportional to the size of the working pectoral muscles, (Kadhim, 2023) as the size of the pectoral muscles also produces energy that helps the player exert less force to overcome resistance to a large extent. "This means that exerting force is always linked to the body mass of the player who performs the movement and the speed he obtains due to exerting that force" (Al-Fadhli, 2010). Within this concept, the size of the muscles of a body part produces greater force, so that we can thus save effort and gain strength and thus gain speed.

Table (4) shows the correlation values, the contribution ratio, the independent variable, the significance levels values (T) and (F), and the parameter value for the dependent variable, the level of digital achievement.

Significance	Degree of freedom2	Degree of freedom1	F value	Partial ratio	Standard error	Adjusted ratio	Contribution ratio	Correlation	Model
.000	8	1	177.990	.957	.32317	.952	.957	.978(a)	1
			Significance Level	T Value	Beta	Standard Error	Parameter Value		
			.000	21.054		6.098	128.378	Constant	
			.000	-13.341	-.978	.080	-1.065	Arm Length	
			.000	11.544	-.847	.066	-1.042	Leg Length	

Table (4) shows that arm length and leg length are the body measurements that contribute significantly to the digital level test. The value of the contribution ratio of this body measurement reached (0.957). Thus, (AbdulsalamWaheeb et al., 2024) the equation of the predictive regression line for the dependent variable of the digital level is:

$$Y = Th + M S$$

Since Y = the variable to be predicted (the dependent variable) and represents the digital level. And Th = the fixed amount

And $M S$ = the coefficient of the contributing variable $\times$ the degrees of the independent variable Thus, the equation of the regression line is:

$$Y = 128.378 + (-1.065 \times \text{arm length}).$$

Through this predictive equation, it becomes clear that arm length and leg length are the factors that contribute to the achievement. The player whose arm length is longer and whose leg length is longer can contribute or help him excel in the races.

As for the goal of predicting the digital achievement in terms of body measurements, it can be explained as follows, as shown in Table (4) previously presented, (ZidaneHmood et al., 2024) as the table showed that there is a clear difference in comparison with the body measurements of each player individually, (NaseemJoudah, 2024) knowing that some physical variables of strength and speed were fixed, which are likely to affect the level of achievement. It appeared that the players whose body measurements were at the level of total height, arm length, leg length, (Hammood et al., 2024) and chest circumference were the closest to the digital achievement at the personal and continental levels, and this is what was shown in the championship. As for the players who were of average height and had some advantages in body measurements, including trunk length, forearm length, (Abdalah & SalehRadhiAmesh, 2024) and chest circumference, their positions were average, ranging between second and fourth place. This is what most scientists and experts concerned with rowing activity confirm on the necessity of exploiting the physical ranges of total body length, total arm length, (Mohsen et al., 2024) and total leg length, because the more the aforementioned lengths increase, the player's ability to row longer increases in terms of the rear range of motion and the length of the forward pull. As for the shorter players at all levels, their development will be limited according to Experts' opinion, no matter how much they develop in terms of physical abilities. (Aziz et al., 2023)

And through the prediction, it becomes clear that the players' physical measurements were a contributing factor in the player's performance for the digital achievement that must be available when selecting new players. (Easa et al., 2022)

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The effect of inquiry-based learning style in learning the skill of front rolling in artistic gymnastics for second-stage students in the Faculty of Physical Education and Sports Sciences according to their double coding

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2074](https://doi.org/10.37359/JOPE.V36(3)2024.2074)

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Article history: Received 13/ March /2024 Accepted 31/ March /2024 Available online 28/ September/2024

Abstract

The research aims to identify the effect of employing the method of learning based on inquiries in educational exercises to learn the anterior skill in opening the technical gymnasium, and to know the effect of the method of learning based on inquiries in learning the anterior skill of opening in the artistic gymnasium for students of the second stage in the Faculty of Physical Education and Sports Sciences on According to their double coding, the experimental curriculum was adopted by the experimental design with the two experimental groups and the operational control (2 x 3) on a sample of (79) students who were traditionally chosen by (88.764%) of their community of originally (89) students represented by the students of the second stage in the College of Physical Education and Science Sports at the University of (Kirkuk) is continuing with the official urban development in the morning study for the academic year (2023/2024) for the first semester, Then they divided into implicit groups (6) within these two groups according to their double coding, and after identifying the skill test and preparing educational exercises for this experimenting method by applying tribal tests on Tuesday corresponding to the date (11/14/2023), and ended on Wednesday, the date of date (11/30/2023), the application (4) included educational units for this skill over two consecutive weeks, and then the grades were collected and statistically addressed with the SPSS system, and the conclusions were that it is possible to apply the vocabulary of the learning method based on inquiries in the lessons of physical education The volleyball operation for the second stage in the College of Physical Education and Sports Science, And that the application of the method of learning based on inquiries helps in learning the skill of the anterior argument in opening with the technical gymnastics among students of the second stage in the College of

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Physical Education and Sports Sciences more suitable for people with dual coding, followed by those with graphic coding, followed by verbal coding, and excels to learn it with students who study without them, It is necessary to focus on the practical applications of the methods of stimulating students learning to inquire more than the explanations and guidance in the educational units of the technical gymnastics to increase students 'empowerment to practice and apply based on the discovery of knowledge with performance.

Keywords: inquiries -based learning, anterior rolling in artistic gymnasium, double coding.

Introduction:

Consideration of individual differences among students in the cognitive characteristics supporting skill performance in artistic gymnastics is a paramount concern for researchers, thus making it one of the primary priorities in motor learning. This is because cognitive processes are primarily responsible for constructing the knowledge-based motor program relevant to the desired skill. This motor program inherently relies on the information received by the learner and its alignment with the required skill model. (Ahmed Muhammad AbdulkhaliqAlhasan, 2024) Additionally, the process of storing information in motor memory is subject to individual differences among learners and varies based on their individual characteristics. Some students prefer to encode information about performance visually, (Abdulhussein et al., 2024) while others lean towards symbolic encoding, and there are also those who use both methods in a dual fashion, aiming to facilitate retrieval in educational settings when applying those artistic gymnastics skill performance. It's worth noting that the requirements for performing artistic gymnastics skills are no less significant than the requirements for other games or activities. Students in physical education and sports science faculties need to achieve a commendable level of learning in each, (Kadhim, 2024b) which is simultaneously influenced by the cognitive and knowledge-related phenomena or factors when applying this performance. Considering that the learning process is individualistic, (Kadhim, 2024a) it must be organized according to each learner's characteristics, thereby becoming a constant and accepted notion that they should be prepared to meet those requirements. Consequently, this places a responsibility on academic researchers to support college students with the findings of studies that deal with numerical language, devoid of speculations or unexplored conclusions, (Kadhim et al., 2021) in accordance with the scientific research methodology. Furthermore, teachers employ various strategies in education to develop critical thinking skills, such as focusing on memory activation strategies, deep cognitive processing of information, and increasing cognitive capacity and speed during learning (Al-Taib, 2006, p. 41). In the inquiry-based learning approach, teachers are required to pose questions with multiple answers to students or answers close

to each other (Al-Otoun et al., 2011, p. 242). In addition, in inquiry-based learning, students work in pairs or small groups to answer a question or a series of questions using shared perception, experience, and prior learning.(Easa et al., 2022) All students can be given the same questions or different questions on the same topic, and it is essential to link the questions to the main points of the skill and the objectives of the instructional unit, avoiding intimidation or belittlement and ensuring fairness in assessment and encouraging self-reflection (Inquiry-based learning). There is an old proverb that says, "I hear, and I forget; I see, and I remember; I do,(Farhan et al., 2016) and I understand." The latter part of this phrase is the essence of inquiry-based learning, which involves participation leading to understanding (Badawi, 2010, p. 309). Questions should be consecutive to facilitate learners' identification of skill components sequentially. They should be based on assumptions, providing reasons and evaluations for answers to foster creative thinking. Teachers must possess the skills to pose these questions in a way that is neither dull nor overly complex,(Mahmood & Kadhim, 2023) misleading, vague, or unproductive. They should be balanced in terms of branching or aggregation, considering their age and being able to control the lesson time, with the teacher allowing the largest number of learners to participate, whether voluntarily or not, and this is considered one of the direct learning methods (Khamis et al., 2009, p. 414) Accessing the knowledge domains of any technical skill performance requires meticulous attention to its details and specifics.(Mousa & Kadhim, 2023) Moreover, understanding learners' knowledge of these details and specifics necessitates inquiry to organize them according to their sequence in performance or their importance to facilitate encoding in the brain in a manner controlled by the individual differences among learners, thus facilitating retrieval during application.(Kazim et al., 2019) One of the most important needs for teachers of artistic gymnastics when assessing skill performance on the gymnastics floor for students is measurement with a suitable tool tailored to the specificity of the sample for this cognitive self-regulation, considering it as one of the important characteristics to support this performance.(Kadhim, 2023) Through repeated visits by the two researchers to artistic gymnastics lessons at their college at the University of Kirkuk and discussions with the teachers conducting the lessons, they noticed that many phenomena require accurate description to address the low level of performance for some skills on the gymnastics floor among students.(Salman et al., 2022) This was an initial observation by the researchers to diagnose this weakness in them. However, (Yaroub et al., 2024) it came from these discussions without measuring cognitive self-regulation or measuring the skills that showed variation in the level of students' weakness in their performance. This is considered one of the problems that require finding solutions, especially in these sports educational environment that produces outputs serving various sports formations.(Sikhe & Yasir, 2020) Upon reviewing several relevant specialized studies, the researchers observed a need to first consider individual differences in learners' cognitive characteristics in encoding knowledge about performance. Seeking to diagnose and experiment with one of the learning methods, which

is inquiry-based learning, on these students to contribute to helping them overcome the obstacles to their skill learning in artistic gymnastics. The following two studies addressed the researched variables: Husseinawi's study (2013) titled: "The Effect of Inquiry-based and Directed Discovery Learning Styles on Learning Some Basic Skills in Volleyball." The aim of the study was to identify the effect of using the inquiry-based and directed discovery learning styles in an educational curriculum and to determine their impact on learning some basic skills in volleyball. (Kanger Hamdan & Sukny, 2017) The study adopted the experimental method with the design of two experimental groups and one control group with pre- and post-tests. The study sample consisted of 33 female students from the second stage in the Department of Physical Education at the College of Basic Education, Al-Mustansiriya University, (Abed et al., 2022) divided into three groups (two experimental and one control), each experimental group subjected to an experimental variable. (Nashwan & Alzoubi, 2022) The most important conclusions were a clear improvement in learning among all three research groups (the two experimental groups and the control group) in some basic volleyball skills (serving, receiving, spiking), with the first experimental group (inquiry-based learning style) outperforming the second experimental group (directed discovery learning style) and the control group in learning these skills. The second study, conducted by Abdullah and Al-Shikhli (2020), titled: "Dual Coding and its Contribution to Learning the Skill of Setting in Volleyball among Fifth Grade Preparatory School Female Students." The aim of the study was to identify the level of learning the skill of setting in volleyball, determine the level and type of dual coding (visual-verbal) among fifth-grade preparatory school female students, and identify the type of dual coding and its contribution to learning the skill of setting in volleyball for them. (Nashwan, 2024) The study methodology adopted the descriptive research method with a correlational relationship approach of the regression type on a sample of 30 female students selected deliberately at a rate of 45.545% from their total population of 55 students, representing fifth-grade preparatory students at Al-Mustaqbal Girls' Preparatory School. The most important conclusions were that skill learning in volleyball is more effective when visual information is provided more than verbal information. Dual coding relies on the model and explanation presented in physical education classes, and skill learning in volleyball is affected by what is encoded in the learners' minds, which is evident in their actual performance. It is possible to predict learning the skill of setting through the numerical values of the type of coding they possess. (Mondher et al., 2023)

Thus, the importance of the research is evident in the necessity to follow practical procedures for inquiries about skill performance that are not exaggerated, considering the determinants of active learning that align with the nature and requirements of the front somersault skill in artistic gymnastics. Therefore, the significance of the research lies in two theoretical and practical directions. The theoretical significance is that it may benefit teachers of artistic gymnastics in improving the required learning outcomes for students by considering the individual characteristics of each learner according to their dual coding.

The practical significance is that it may benefit second-year students in the College of Physical Education and Sports Sciences in improving the front somersault skill in artistic gymnastics, aiming to identify the impact of employing the inquiry-based learning style in instructional exercises for learning the front somersault skill in artistic gymnastics and understanding the effect of the inquiry-based learning style on learning the front somersault skill in artistic gymnastics for second-year students in the College of Physical Education and Sports Sciences according to their dual coding. Thus, the researchers assume that there are statistically significant differences between the results of learning the front somersault skill in artistic gymnastics for the pre-test and post-test of the experimental and control groups according to their dual coding. Moreover, there are statistically significant differences between the results of the front somersault skill tests in artistic gymnastics for the post-test of the experimental and control groups according to their dual coding.

Method and Tools:

The experimental research method was adopted according to the current research problem's requirements. Additionally, the classification of the main application sample according to their dual coding for the classification variable (visual, verbal, dual) and the independent research variable represented by the inquiry-based learning style were taken into account to solve the current research problem. The experimental factorial design with two experimental and control groups (2×3) was chosen, where students in the experimental research groups are subjected to the inquiry-based learning style according to their coding type. Conversely, the control groups, corresponding to the experimental groups, follow the conventional teaching method in their artistic gymnastics lesson. This is illustrated in Table (1).

Table (1) illustrates the experimental research design:

Two Groups According to Dual Coding		The Six Groups	Pre-Test Measurement	Variable	Post-Test Measurement
Experimental	Dual	Exp (1) Dual	Tests for the Skill of Forward Roll in Artistic Gymnastics	Tests for the Skill of Forward Roll in Artistic Gymnastics	Inquiry-Based Learning Style (Experimental)
	Visual	Exp (2) Visual			
	Verbal	Exp (3) Verbal			
Control	Dual	Ctrl (1) Dual		The Method Followed in the Lesson (Non-Experimental)	
	Visual	Ctrl (2) Visual			
	Verbal	Ctrl (3) Verbal			

The experimental design serves as a roadmap for researchers to complete research procedures under controlled conditions, ensuring internal and external validity through methodological and statistical procedures. This design allows for the verification of research hypotheses and the implementation of independent variables (experimental) and the application of tests and measurements without grade inflation. Additionally, it provides a clear framework for the researcher to adhere to.

The population of this research is defined as second-year students in the College of Physical Education and Sports Sciences at the University of Kirkuk who attend regular morning classes for the academic year (2023/2024) during the first semester, totaling 89 students. These students are distributed across two classes (A) and (B), with 79 students randomly selected, representing 88.764% of the total population, to constitute the primary research sample for the application. Following the specifications of the experimental design mentioned previously, one of the classes (B) was randomly chosen to be the experimental group (39 students), while class (A) served

as the control group (40 students). Additionally, a survey sample of 10 students, representing 11.236% of the original population, was selected from each class. The numerical distribution within each group of the main experimental and control groups is outlined in Table (2).

These specifications adhere to the current research's requirements for classifying the primary research sample based on their dual coding classification (double, pictorial, verbal) to account for individual differences among students in both the experimental and control groups. The Dual Discrimination Scale was applied to them, developed by Al-Aboudi (2019, p.114), to assess the specificity of kinesthetic learning in physical education and sports science. This scale comprises 36 items distributed across two domains: visual domain (18 items) and verbal domain (18 items). Students were classified based on their scores on this scale, with the highest score in either domain determining their coding type. In cases of equal scores across domains, students were classified as having dual coding. This application resulted in their numerical distribution within each group of the main experimental and control groups, as illustrated in Table (2).

Table (2) illustrates the numerical distribution of the research population and its samples:

Classification of Students According to Dual Coding	Section (B) with Inquiry-Based Learning Style		Section (A) with the Method Followed in the Lesson		Total Students in the Main Application Sample	Exploratory Sample	
	Experimental Group	Number	Control Group	Number		Class	Number
Dual	Experimental (1) Dual	10	Control (1) Dual	13	23	Class (A)	5
Visual	Experimental (2) Visual	15	Control (2) Visual	12	27		
Verbal	Experimental (3) Verbal	14	Control (3) Verbal	15	29		5
Total	3	39	3	40	79	10	
Percentage					88.764%	11.236%	

The experimental design necessitates maintaining internal validity by controlling for extraneous variables, the non-uniformity of which in statistically homogenous values might lead to negative biases in the results of research experimentation. Thus, the researcher ensured the homogeneity of the total primary research sample in some anthropometric variables.

Table (3) demonstrates the homogeneity of the primary research sample students in some extraneous variables:

Internal Variables on the Experimental Design and Their Unit of Measurement		Number	Mean	Standard Deviation	Torsion coefficient	Coefficient of Variation
Anthropometric	Age (months)	79	242.85	2.455	0.377	% 1.011
	Total Body Height (cm)	79	170.15	1.888	-0.541	% 1.11
	Weight - Body Mass (kg)	79	72	1.702	0.56	% 2.363

The normal distribution is accepted with a skewness coefficient of up to (+1), and the acceptance criterion for the variation coefficient is less than (%39). Skill assessment tests were adopted from: (Journal of the Iraqi Central Gymnastics Union, 2023, pp. 7-8).

- ✓ Performance Assessment: The technical performance grade of the students is evaluated by (4) judges, with the highest and lowest scores from the judges being discarded, and the remaining two scores are aggregated, then divided by (2), to obtain the final score in technical performance, measured in points.
- ✓
- ✓ The evaluation of technical performance in gymnastics is rated on a scale of (10) points. This evaluation is conducted by recording the students' performance using a video camera, storing the footage on a compact disc, and presenting it to (4) judges, as detailed below along with the pretests.
- ✓

- ✓ Prior to preparing the instructional exercises in the inquiry-based learning style, the researchers undertook the following preparatory steps:
- ✓
- ✓ -Direct observation of the type of instructional exercises and methods followed by the teacher in teaching the students in the relevant lessons at the college.
- ✓ -Review of various specialized academic and scientific sources on motor learning methods in artistic gymnastics.
- ✓ -Consultation with a group of experts on models of some instructional exercises in the proposed inquiry-based learning style to be applied in practical lessons. These instructional exercises were developed by the researchers with minor modifications.
- ✓
- ✓ Vocabulary related to the inquiry-based learning style was applied to the students of the experimental group in the first semester of the academic year (2023-2024), in the artistic gymnastics lesson for this skill on the gymnastics mat apparatus. The instructional unit in the inquiry-based learning style was included in the practical lesson plan at the college, as follows:
- ✓
- ✓ -Total time for the instructional unit: (90) minutes divided into the preparatory section (10) minutes, main section (70) minutes with an educational aspect (10) minutes, application aspect (60) minutes by reducing the educational aspect time to align with the inquiry-based learning style, and concluding section (10) minutes.
- ✓ -The educational aspect, which lasts (10) minutes, will involve a brief explanation and demonstration of the specific skill in the instructional unit according to the predetermined criteria.
- ✓ -The application aspect, lasting (60) minutes, will include the application of the instructional unit exercises using the inquiry-based learning style and its steps in the practical lesson. The teacher will:
- ⚙ -The teacher prepares a variety of questions related to the technical movements of the specific skill in artistic gymnastics and places them in the notes column of each instructional unit plan.

These questions will intersperse the students' application of each section of the skill and its components.

- ⚙ -The content of the instructional exercises includes sequential performance movements according to the skill sections, incorporating activities that allow for discussion, inquiry, discovery, and experimental application, followed by inquiry-feedback-comparison-analysis-processing-retrial several times for the same instructional exercise before moving on to the next exercise.
- ⚙ -The teacher asks students to answer these questions with a logical explanation based on analysis and synthesis after directing the questions to them collectively or individually for each student. Their answers must be given within a specified time of less than (6) seconds per question. If a student fails to answer correctly, the teacher provides the correct answer to avoid disrupting the time allocated for the practical aspect of the instructional unit.
- ⚙ -The teacher evaluates each student's answer positively for correct responses and corrects any incorrect answers using an approach that avoids coercive learning, encourages understanding, and provides immediate feedback and correction after performance, considering the specificity of fast gymnastics skills in their execution.
- ⚙ -Examples of questions about artistic gymnastics skills (in the preparatory or initial position for the skill: What is the foot position? Why this position? What is the trunk position? And why this position? Where should the focus be in each of the preparatory, main, and concluding sections of the skill? And why? What is the elbow joint position? And why? How do we control the speed of performance? How do we achieve optimal performance? Why is the overall performance of the skill in this way... and other logically sequenced questions that are not overly difficult for the learner).
 - ⚙ -The researchers will not intervene in the details of the preparatory and concluding sections, leaving them to the teacher. - In one academic week, two instructional units are implemented on Sundays and Tuesdays in the practical physical education lessons in artistic gymnastics, according to the weekly schedule allocated for the second stage in the college to learn the specific skill performance. The skill session consists of 4 instructional units.
 - ⚙ -The allocated time for learning the skill is 2 weeks.

- ⚙ -The researchers prepared a total of 12 instructional exercises for learning the skill, distributed in each unit from 3 to 4 exercises, taking into account the number of students, the main section time of the lesson, and the type of skill. Some exercises are repeated in different instructional units.
- ⚙ -The physical education teachers themselves adopted the application of instructional exercises using the inquiry-based learning method. The role of the researchers was to supervise and monitor the lessons for the students in the experimental group, while the control group students followed the conventional teaching methods in the lesson.
- ⚙ -The experiment began with the application of pre-tests on Tuesday, November 14, 2023, and ended on Wednesday, November 30, 2023.
- ⚙ -The results were processed using the Statistical Package for the Social Sciences (SPSS) version (V26) to automatically process the data by finding the following values: percentage, mean, standard deviation, difference coefficient, Pearson correlation coefficient, correlated samples t-test, one-way analysis of variance (ANOVA) F-test, and least significant difference (LSD) test.

Results:

Table (4) shows the results of the pre-tests between the experimental and control research groups.

Test	(Levene)	(Sig)	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	(F)	(Sig)	Significance of Difference
Open Forward Roll	1.608	0.169	Between Groups	4.389	5	0.878	0.44	0.819	Not Significant
			Within Groups	145.56	73	1.994			

Unit of Measurement	Group and Numbers	Comparison	Mean	Standard Deviation	Mean Differences	Variance deviation	(t)	(Sig)	Significance of Differences
(Degree)	Experimental First Dual (10)	Pre-test	2.1	1.449	6.8	1.476	14.571	0.000	Significant
		Post-test	8.9	0.568					
	Experimental Second Visual (15)	Pre-test	1.93	1.033	6.067	1.58	14.874	0.000	Significant
		Post-test	8	0.845					
	Experimental Third Verbal (14)	Pre-test	2	1.177	5.143	1.61	11.949	0.000	Significant
		Post-test	7.14	1.027					
	Control First Dual (13)	Pre-test	2.38	1.758	3.308	2.287	5.215	0.000	Significant
		Post-test	5.69	0.855					
	Control Second Visual (12)	Pre-test	1.58	1.311	3.75	1.485	8.749	0.000	Significant
		Post-test	5.33	1.155					
	Control Third Verbal (15)	Pre-test	1.87	1.642	3.067	2.12	5.602	0.000	Significant
		Post-test	4.93	1.163					

Statistical difference is considered not significant when the (Sig) value is greater than (0.05) at a significance level of (0.05), given a total sample size of (79).

Table (5) shows the results of the pre- and post-differences for the six experimental and control research groups

The statistical difference is significant for each group at the significance level (0.05) and the degree of freedom (n)-(1) when (Sig) > (0.05).

Skill	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	(F)	(Sig)	Significance of Difference
Open Forward Roll	Between Groups	158.054	5	31.611	33.451	0.000	Significant
	Within Groups	68.984	73	0.945			

Table (6) shows the results of the differences in the posttests of the forward rolling skill

* The statistical difference is significant when (Sig) > (0.05) at a significance level of (0.05).

Table (7) shows the results of the LSD test for post-hoc comparisons between the six experimental and control groups

Comparison	Mean Differences	(Sig)	Statistical Significance	Interpretation
Experimental Dual - Experimental Visual	0.9*	0.026	Statistically Significant	Significant in favor of Experimental Dual Group
Experimental Dual - Experimental Verbal	1.757*	0.000	Statistically Significant	Significant in favor of Experimental Dual Group
Experimental Dual - Control Dual	3.208*	0.000	Statistically Significant	Significant in favor of Experimental Dual Group
Experimental Dual - Control Visual	3.567*	0.000	Statistically Significant	Significant in favor of Experimental Dual Group
Experimental Dual - Control Verbal	3.967*	0.000	Statistically Significant	Significant in favor of Experimental Dual Group
Experimental Visual - Experimental Verbal	0.857*	0.020	Statistically Significant	Significant in favor of Experimental Visual Group
Experimental Visual - Control Dual	2.308*	0.000	Statistically Significant	Significant in favor of Experimental Visual Group
Experimental Visual - Control Visual	2.667*	0.000	Statistically Significant	Significant in favor of Experimental Visual Group
Experimental Visual - Control Verbal	3.067*	0.000	Statistically Significant	Significant in favor of Experimental Visual Group

Experimental Verbal - Control Dual	1.451*	0.000	Statistically Significant	Significant in favor of Experimental Verbal Group
Experimental Verbal - Control Visual	1.81*	0.000	Statistically Significant	Significant in favor of Experimental Verbal Group
Experimental Verbal - Control Verbal	2.21*	0.000	Statistically Significant	Significant in favor of Experimental Verbal Group
Control Dual - Control Visual	0.359	0.359	Not Significant	Not statistically significant
Control Dual - Control Verbal	0.759*	0.043	Statistically Significant	Significant in favor of Control Dual Group
Control Visual - Control Verbal	0.4	0.292	Not Significant	Not statistically significant

* The statistical difference is significant when (Sig) > (0.05) at a significance level of (0.05).

The discussion

Revealed that the results presented in Table (5) indicate an improvement in the learning of the forward roll skill in artistic gymnastics among students in both the experimental and control groups in the post-tests compared to their performance in the pre-tests. Additionally, the statistical differences in this improvement were demonstrated in Table (6), which showed less significant differences in Table (7) based on the type of classification for each group between these two groups. The students in the experimental group, particularly those who received instruction through inquiry-based learning, exhibited superior performance. Notably, the first experimental group (dual coding) outperformed the other groups, followed by the second experimental group (pictorial coding) and then the third experimental group (verbal coding).

The researchers attributed these results to the positive impact of this instructional method and its suitability with the characteristics of students, especially those with dual coding, who benefited from forming connections between questions and answers by recalling previous experiences in observing and explaining the model. This assistance facilitated the superiority of the first experimental group (dual coding) by enabling them to perform practical applications through educational exercises, which helped increase their ability to touch the gymnastics mat with their entire bodies and provide logical explanations for their movements according to the skill sections .

The researchers also emphasized the importance of repetitive practice in the educational units, which positively influenced skill learning and enabled learners to comprehend the significance of specific movements, such as the positioning of the feet. This method particularly benefited students with pictorial and verbal coding, as the vocabulary used in the instructional material contained logical sequences in explanation and presentation. Furthermore, the nature of the educational exercise applications progressed from simple to complex and from easy to difficult, enhancing students' understanding and utilization of knowledge in activating their roles in these educational units. This was evident through their repeated attempts to reach the presented model and their efforts to comprehend and internalize the detailed technical knowledge associated with this specific performance.

The characteristics of active learning environments enable learners to become proactive, interact with peers, and express themselves with a considerable degree of freedom, thereby shifting the focus of the educational process from the teacher to the learner. Active learning environments are characterized by being rich in diverse sources of information, providing opportunities for questioning and clarification, fostering a spirit of cooperation and positive participation in work. Understanding performance requirements leads to learners easily grasping the elements of motor skills. Teachers can capitalize on learners' curiosity and motivations, guiding them towards planned educational situations that they willingly engage in, driven by activity. Sustaining this activity until learning is achieved within a plan that precisely defines the objectives, stimulates learners' curiosity and motivations towards achieving specific goals, maintains interaction between learners and teachers, ensures learning occurs, and rigorously evaluates the objectives.

According to information processing theory, learning is not merely a connection between stimulus and response but rather a product of a series of cognitive processes that mediate between receiving the stimulus and providing an appropriate response. Scholars and proponents of information processing theory focus not on external conditions but on the mind, which they view as an information processing system responsible for linking new knowledge to existing knowledge, organizing it, and making it meaningful.

Moreover, increased repetitive attempts to perform a skill consistently lead to enhanced control, mastery, and the attainment of automaticity in performance more rapidly. If the model is effective for the learner, they strive to achieve this motor behavior by recalling the model and comparing it with their own performance after each attempt. With increased repetition, this mental image transitions into a motor program, enabling the player to progress from the crude to the refined and then to the fixed stage.

The researchers attribute the emergence of these results among the experimental group students to their application of instructional exercises using inquiry-based learning, which had a positive impact on increasing students' awareness of body positions, especially in the continuous arm swing forward to reposition them behind the legs. Consequently, learners were able to assess what is required in terms of the ability to push the ground with their hands to reach the starting position for the skill of forward rolling in artistic gymnastics. The teachers' questions played a significant role in stimulating their learning motivation and enhancing their understanding of the necessary knowledge for each skill section and the anticipated abilities before performance. This ensured the success of movements and prevented wasted attempts in each repetition of instructional exercises. The functionality of this teaching method aims to support cognitive structures to meet performance requirements, in addition to its mentioned benefits. However, the role of practice and application remains the most effective in reducing common errors hindering proper performance and achieving the desired improvement in learning this skill.

Furthermore, drawing motor skill programs corresponds to drawing a program in the brain's cortex to control nerve impulses for motor capability output, matching the requirements of the specific skill performance program. This depends on the student's ability to translate information into a picture of motor skills and efficiency, which is linked to their

self-efficacy and psychological and physical state. Active learning principles and foundations for teaching motor skills in sports encourage learners to answer questions, pose inquiries, engage all their senses, ensure an atmosphere of mutual respect and fun during learning, and involve learners in evaluating activities.

Moreover, an individual's skill level depends on three factors: the expectation of effort, the expectation of outcome performance, and the actual outcomes. A decrease in any of these factors will negatively impact one's expectations about skill performance.

Technical performance in gymnastics is related to qualitative assessment according to the regulations governing each gymnastics skill, highlighting the importance of developing and improving skills according to the motor task required for each skill.

The researchers also attribute the emergence of these results, showing improvement in learning the skill of forward rolling in artistic gymnastics among the control group students with dual coding, to their continued attendance of instructional exercises for this skill in their lessons and their comprehension of the vocabulary used in the lesson by their teacher. This has resulted in improvements in the researched mental factor that supports motor performance. It is evident that students with dual coding excel due to their characteristics that align with the presentation and explanation in learning. Similarly, students with visual coding excel due to their ability to easily encode images. Consequently, students with dual coding outperform those with verbal coding. These results underscore the necessity and importance of applying inquiry-based learning to consider these individual differences among students and its positive impact on improving learning this skill.

Individuals are influenced in learning and educational situations by their beliefs about knowledge and learning. Cognitive beliefs affect their judgments, self-learning, the goals they strive to achieve, the cognitive strategies they employ, the types of thinking they engage in, the meaning they derive from new information, and the decisions they make.

Conclusions and Recommendations

1 .It is possible to apply the vocabulary of inquiry-based learning in practical physical education lessons for volleyball in the second stage at the College of Physical Education and Sports Sciences.

- 2 .The application of inquiry-based learning aids in learning the skill of forward rolling in gymnastics among second-stage students at the College of Physical Education and Sports Sciences, with those who have dual coding being the most suitable, followed by those with visual coding, outperforming those who do not follow this method.
- 3 .There is a necessity to focus on practical applications of inquiry-based learning methods more than explanatory and directive processes in gymnastics lessons to increase students' engagement and motivation for practice and application based on knowledge acquisition through performance.
- 4 .Enhancing the capabilities of gymnastics instructors and increasing their knowledge of inquiry-based learning methods should be prioritized according to the principles of motor skill learning.

Appendix (1) shows the double-coding scale as reported from its source

Item	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	When listening to the teacher's explanation, I usually do not form a mental image of the skill being explained.					
2	I enjoy being able to rephrase my ideas in many different ways when writing about a skill.					
3	I enjoy visuals and videos that illustrate performance more than reading.					
4	I do not have the ability to explain a skill in front of students.					
5	I enjoy tasks that require the use of explanations.					
6	I feel that mental visualization of movement is like a real experience.					
7	I use mental imagery to solve problems encountered during performance.					
8	I find it difficult to express a skill I've learned through writing.					
9	I prefer dealing with explanatory images rather than describing skills in words.					

Item	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10	I can form a mental image for any skill I learn.					
11	My visual impressions of skills presented are often unclear.					
12	I can easily recall the words mentioned by the teacher when explaining a skill.					
13	I am able to clearly express my thoughts about a skill.					
14	My ability to imagine a skill is above average.					
15	I find it easy to visualize skills I have learned before.					
16	I consider myself fast in reading the assigned duty.					
17	I feel that illustrative images of skills are more informative than thousands of words.					
18	When the teacher explains a skill, I can imagine it correctly.					
19	I need a lot of time to read the description of a skill until I understand it.					
20	I have the ability to explain a skill after the teacher from the first time.					
21	When I look at a picture of a skill, it's difficult for me to remember exactly how it's done.					
22	I can write in the exam without worrying about the selection of words.					
23	I am better than average in explaining a skill in front of the teacher.					
24	It's difficult for me to form a mental image of a skill when reading about it.					
25	I find it difficult to explain a skill to a colleague.					
26	The mental images I have about a skill are somewhat unclear.					
27	I prefer to read about a skill before performing it.					

Item	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
28	I use mental images that I draw to help me remember the skill.					
29	I feel exhausted when expressing a skill verbally or in writing.					
30	Just before sleep I start imagining the skills explained by the teacher.					
31	I prefer reading instructions on how to perform a skill rather than having the teacher present it to me.					
32	I prefer to view pictures before performing any skill.					
33	I try to link between the image I see and what is stored in the memory.					
34	When trying to remember an image of a skill that was presented, I usually lose part of it.					
35	I enjoy finding new words that match my ideas.					
36	When I see any picture of a skill, I immediately remember that it is stored in memory.					

Appendix (2) shows a model of educational units using the inquiry-based learning method

The first week: Educational goal: Developing the spirit of cooperation among students.

Educational Unit/First the front roll skill. Educational Objective/For students to learn

Time/90 minutes Tools/Floor movement mat, educational flex

Sections of the educational unit	Time	Activities and Skills	Notes
Preparatory Department the introduction	10 min	Left to the teacher	The researcher does not interfere with the details
General warm-up	2 min		
Special warm-up	4 min		
	4 min		
Main Section 70 minute	Educational aspect	10 min	The students sit in a straight line in front of the teacher to explain the skill to them, then he presents its parts to them using Flex, explaining the details of proper performance. The head is forward with the chin pressed to the head, and the chest is pressed to the body, and this is done by bending the hip joint with the knees facing towards. The front must be pushed with both feet together, and then perform a demonstration of this skill model several times, with support with a large number of ideas, and accepting all ideas, going to the greatest extent in thinking with energy and seriousness in searching for ideas, and avoiding idle thinking before performing the skill, and he also directed to take time Take a short break for the mind to generate original ideas for implementing the skill, by carefully integrating the ideas until they are integrated by linking the ideas related to the details of the performance. ✧ The explanation of the skill should not be lengthy and complete with its details, taking into account the appropriate distance when presenting the educational model. ✧ Explanation of the skill is an inquiry and conclusion based on answers from the school itself, in detailing the relationships between the sections of the skill. ✧ The teacher invests this aspect in activating students' thinking to support each student's organization of knowledge in his or her own way when applying the skill later.
	The applied aspect	60 min	-The students stand in a straight line, one after the other, facing the floor movements mat. They are (3) away from each other, rolling forward and backward in the chest towards the knees. Each student is given (30) seconds to inquire before the first application to answer the inquiries, and their application of the movement is repeated (10) times. The ✧ Inquiry consists of questions (How is the position of the feet in the initial or preparatory position for the skill? And why? What is the position of the torso? And why? Where is the consideration

Sections of the educational unit	Time	Activities and Skills	Notes
		duration of the exercise for all students with total rest is 12.5 minutes. -The students stand in a straight line, one after the other, facing the floor movements mat, 3 meters away. They roll over from the shoulder using a jumping ladder to reach a standing position. Each student is given (30) seconds to inquire before the first application, and their application of the movement is repeated (10) times. The duration of the exercise for all students with total rest is 12.5 minutes. -The students stand in a straight line, one after the other, facing the floor movements mat. They are (3) away from taking the basic rolling position for the full performance using the jumping ladder. Each student is given (30) seconds to inquire before the first application, and their application of the movement is repeated (10) times. The duration of the exercise for all students with total rest is 12.5 minutes - The students stand in a straight line, one after the other, facing the floor movements mat, and perform the skill completely. Each student is given (20) seconds to inquire before the first application, and their application of the skill is repeated (5) times. The duration of the exercise for all students, with a total rest, is (12.5) minutes.	in the preparatory, main and final section of the skill? And why? What is the position of the elbow joint? And why? How is the speed of performance controlled? How do we get the best performance? And why is the overall performance of the skill this way... and others). ✱ Providing an atmosphere of freedom so that each student can answer within a period of (6) seconds. ✱ The teacher encourages the flow of ideas with successive questions about the skill and the search for good answers to these questions. ✱ Allowing students to ask questions.
Concluding section	10 min - Left to the teacher		The researcher does not interfere with details.

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The effect of exercises in the third intensity zone of the strength characteristic of the speed of the two legs on the adequacy of the circulatory and respiratory systems and the performance of some basketball skills among young players

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2041](https://doi.org/10.37359/JOPE.V36(3)2024.2041)

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Article history: Received 6/ March /2024 Accepted 8/ April /2024 Available online 28/ September/2024

Abstract

The research aimed to prepare exercises area intensity third strength distinctive speed of the two men for young players basketball, and to identify its impact on the adequacy of the circulatory and respiratory systems and in the performance of some of their basketball skills, and the researcher assumed that there are statistically significant differences between the results of the pre- and post-tests of the experimental and control research groups for each of the adequacy of the circulatory and respiratory systems and the performance of some basketball skills, and there are statistically significant differences between the results of the tests of the experimental research groups and the dimensional control for each of the adequacy of The circulatory and respiratory systems and the performance of some basketball skills, and the experimental approach was adopted by designing the experimental and equal control groups, on a sample of (12) players who were deliberately selected by (75%) of the young basketball players at the Industry Sports Club for the season (2022-2023), and after determining the tests and preparing the exercises, they were applied over a period of (10) consecutive weeks at a rate of two units per week, and after the completion of the experiment, the results were processed with the (SPSS) system to be the conclusions that the application of the exercises of the third intensity zone of the strength characteristic of the speed of the two men helps in developing the adequacy of the circulatory and respiratory systems, and in improving the performance of some skills among young basketball players, and the researcher recommended that, it is necessary to adopt the application of intensity area exercises The third is for the strength characterized by the speed of the two men for the young players in basketball and the good rationing of the high-intensity training load without exaggerations, It is necessary to pay attention to developing the capabilities of basketball coaches when working on the application of exercises in the third

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intensity zone of strength characteristic of speed for the two men for young basketball players that aim to develop their physiological skill factor.

Keywords: Third intensity zone exercises, circulatory and respiratory adequacy, basketball skills.

Introduction:

Strength exercises characterized by speed are necessary and important for young basketball players because they are linked to different skill abilities, especially in playing quickly with the jump and exchanging receiving between them. Every intensity and training load has repercussions represented by internal physiological reactions to meet the requirements of that load, and this is what requires study in the field in order to achieve the required improvements in According to the steps of scientific research and avoiding speculation to express the facts, and that “I use training methods to develop and improve the player’s physical fitness to achieve advanced sporting achievements. We do not believe that a coach can dispense with the use of these methods, which have become the basis for construction and development, and the important thing in this The methods are used for all different types of sports, and the coach only has to be an artist in choosing the appropriate method for the event in which a method can be used more than the rest of the other methods.” (Kamal, 2004, p. 215)

“No matter how diverse the methods and methods for developing muscle strength are, the required improvements fall within the determinants of good planning for the application of these methods and methods, which often focus on plyometric and ballistic exercises in cycles of lengthening and shortening the muscle for rapid, high-production contraction in the effect of the force resulting from it.” (Goldberger, 2013, p: 258)

Also, “the components of the training load are the intensity of the training stimulus, the size of the training stimulus, the duration of rest, and the player’s level, which is determined by the player’s biological age, training age, level of special physical abilities and skill level, social status, and psychological state of the player, whether he is married or single, and the circumstances.” “Psychological.” (Marwan and Muhammad, 2010, p. 106)

Thus, “third intensity zone exercises are a concept often used in physical exercise programs, and they mean exercises that target strength characterized by speed. These exercises include many fast and powerful movements that aim to develop rapid muscle strength and the ability to perform sufficiently sudden and powerful movements.” (Negra & Other, 2020, p: 132)

Also, “the third intensity zone works to develop a variety of physical abilities, including rapid muscular strength, and exercises that focus on the third intensity help in developing rapid muscular strength, which is the ability to produce great force in a short time. This is useful in various sporting activities.” ". (Ramirez-Campillo & Others, 2020, p: 169)

Also, “the gradual increase in training load is the basis for any player training planning and must be followed by all players who care about their level of achievement.” (Jamal, 2018, p. 66)

“The third intensity zone exercises enhance the ability to jump and run very quickly, and are especially important in sports that require rapid acceleration, such as athletics and team sports.” (Chaabene & Other, 2021, p:301)

Also, “third intensity zone exercises help in some functional improvements by strengthening muscles and developing the ability to make fast and powerful movements. This type of exercise can improve daily performance and the ability to move efficiently.” (Haff & Triplett, 2016, p:11)

“Exercises in the third intensity zone help contribute to increasing the basal metabolic rate, which contributes to burning calories and improving general fitness.” (Chaabene & Other, 2021, p: 304)

Among the distinctive exercises in the third intensity zone include: (Bompa & Haff, 2018, p: 114)

- ☐ High jumps and horizontal jumps.
- ☐ Exercises that require explosive ability, such as push-ups from the ground and biometric jumps.
- ☐ Lift weights quickly and frequently.
- ☐ Exercises that combine strength and speed, such as throwing and tossing.

It is also “very important that these exercises are performed correctly and under the supervision of a specialized trainer to avoid injuries and ensure that you get the most benefit from them. These exercises must also be included as part of a balanced training program that targets all aspects.” (Baker, 2017, p: 3)

Also, “exercises that target the third intensity zone contribute to improving the performance of athletes in a variety of sports, such as strength sports, speed and explosive sports, and even team sports such as football and basketball.” (Lloyd & Others, 2016, p:1241)

Also, “training leads to physiological changes that include the body’s systems, and the level of athletic performance advances whenever these changes are positive, in order to achieve physiological adaptation of the body’s systems and then to the physical load and skill performance.” (Adnan, 2010, p. 182)

“Exercises that target the third intensity zone help enhance balance and coordination by strengthening muscles and developing rapid muscle strength. They help improve balance and coordination in general, which can be useful in various daily and sporting activities.” (Chaouachi & Other, 2014, p: 404)

Also, "exercises that target the third intensity zone contribute to developing muscle strength and enhancing the ability to move quickly and efficiently, which leads to improving general health and increasing body flexibility." (Lloyd & Others, 2012, p: 4)

“Exercises that target the third intensity zone, which focuses on strength characterized by speed, contribute to strengthening muscles, tendons, and ligaments, thus reducing the risk of injuries during sports activities and daily life.” (Chaouachi & Other, 2014, p: 405)

Also, “the efficiency of the circulatory and respiratory systems is an important factor in the performance of basketball players, especially for young people.” (Manou & Other, 2013, p: 284)

First: The circulatory system (muscular and skeletal): The circulatory system includes muscles, bones, and joints, and it is very important in basketball because it directly affects strength, physical fitness, and the player’s ability to withstand physical challenges and compete in matches. Some important points include: (Impellizzeri & Others, 2008 , P:870)

- Muscular strength: Strong muscles contribute to executing movements such as jumping, throwing, and dribbling more effectively.
- Basal strength: allows the lower extremities to support the body and bear the load of repeated jumping and landing.
- Flexibility: Flexible muscles reduce the possibility of injuries and allow various movements to be performed.
- Balance: contributes to the implementation of launching movements and rapid changes in different directions.

Second: The respiratory system: The respiratory system plays a vital role in supplying the body with the oxygen necessary for physical performance and removing excess carbon dioxide. In basketball, players are exposed to great physical stress as a result of running, jumping, and rapid movements, and some important points include: (Nikseresht & Other, 2014 , P: 308)

- Pulmonary capacity: The ability to absorb a large amount of air contributes to withstanding physical effort.
- Deep breathing: Correct breathing provides the body with a sufficient amount of oxygen and helps in eliminating metabolic waste.
- Pulmonary endurance: the ability to perform physical effort for long periods without exposure to excessive stress on the respiratory system.

“To achieve high efficiency in the circulatory and respiratory systems, basketball players are advised to pay attention to comprehensive fitness training, which may include vigorous exercises, improving flexibility, developing basal strength, and improving respiratory capacity through aerobic exercises. Training must be done regularly and balanced, taking into account Rest periods and healthy nutrition to support this lifestyle.” (Özkan & Kurt, 2016, P:104)

After this digression, which clarifies the interrelationship between the research variables investigated, (Kazim et al., 2019) it is no secret that basketball players always seek to raise the adequacy of the circulatory and respiratory systems to meet the requirements of various physical, motor, and skill abilities, according to the specificity of this fast-paced game, and by virtue of the researcher’s academic and training work, she noticed a lack of interest in eating Strength training characterized by speed as an independent variable to influence the raising of

the necessary physiological indicators by producing training mixtures that deal with the time of exercises for the distinctive strength of the legs, which is one of the factors controlling transitional speed and the success of various basketball skills, in which a decrease in the level of players is usually observed, forming this noticeable weakness. The problem of the current research is explained as an attempt by the researcher to find solutions to it by targeting physiological and skill factors in the training units that they receive during the period of special preparation, which is an attempt to experiment according to the caveats of avoiding sports injuries when receiving these high-intensity exercises for the third intensity zone exercises for strength characterized by speed. For the legs, considering that these exercises are applied with high-intensity training loads, (Kadhim, 2023) and hence they must not negatively affect the techniques of skill performance and do not confuse the player in various critical situations, especially when the speed is high in the strength characteristic of speed for the legs, (Salih et al., 2024) so the research aims to prepare area exercises The third intensity zone of leg strength for young basketball players, and identifying the effect of the third intensity zone exercises for leg speed power on the adequacy of the circulatory and respiratory systems among young basketball players, and identifying the effect of the third intensity zone exercises for leg speed power on the performance of some basketball skills. (Abdulhussein et al., 2024) Among young players, the researcher assumed that there are statistically significant differences between the results of the pre- and post-tests of the experimental and control research groups for both the adequacy of the circulatory and respiratory systems and the performance of some basketball skills, and there are statistically significant differences between the results of the tests of the experimental and control groups for both the adequacy of the two systems. Periodic, respiratory, and performing some basketball skills. (Kadhim, 2024b)

Method and tools: In light of what the researcher mentioned in the problem of her current research, the experimental research approach was adopted, which is defined as “controlling a specific variable within the conditions of an experiment that enjoys safety conditions to determine its effect on another variable or variables by fixing the rest of the influencing factors.” (Fawqia, 2022, p. 218). The boundaries of the research community were represented by the young basketball players in the Al-Sinaa Club, who numbered (16) players continuing their training for the sports season (2021-2022). (Kadhim, 2024a) They were chosen intentionally in a comprehensive enumeration style to represent the research sample with a percentage of (100). %, and then (12) players (75%) were selected from them to represent the main research sample, who were divided according to the requirements of the experimental design into two experimental and control groups with an equal number of (6) players for each of them. They were randomly distributed to them, and homogeneity was conducted for them in some extraneous variables. Which affects the internal integrity of the experimental design. The values of the torsion coefficients ranged between (+1), and (4) of them (25%) players were chosen for the exploratory sample.

Results:

Table (1) shows the results of the pre-tests for the dependent variables between the two research groups

Discussion:

The results presented in Table (2) indicate that the physiological response was achieved in the post-tests by increasing the adequacy of the circulatory and respiratory systems and the performance of the skills (stomping, shooting by jumping from running, and shooting peacefully) among the players of the experimental group compared to what their results were in the pre-tests. The researcher attributes the emergence of these The result is that they applied the third intensity zone exercises for strength and speed for the legs,(Kadhim et al., 2021) and that their application required vision ventilation to meet the requirements of supplying the body with oxygen to cover the energy related to the burden of resistance and during the distances specified in this application, (Kazar & Kazim, 2020)which constitutes a reflection on the internal reactions of the body to appear in the form of a physiological response in an increase Dimensional values increase the adequacy of the circulatory and respiratory systems, as the exercises in the third intensity zone for strength and speed for the legs have proven their suitability for targeting this physiological development in the physiological and skill factors, and the suitability of good regulation of the training load to apply the exercises regularly for the two units in one training week within the determinants of the anaerobic energy system and the duration of the training for a period of (10) Consecutive training weeks. The researcher also attributes the emergence of this result to the habit of young basketball players to inhaling increased amounts of external breathing air in a way that suits the nature of applying these high-intensity exercises in this period of time, and by their nature, they require strengthening the breathing muscles according to the nature of muscle contractions and their direction in movement. (Easa et al., 2022)The arms to fill the lungs with air, which helped expand the lung tissue to respond to the requirements of these exercises, and for a specific period of time for each exercise, in addition to the period of rest after performing each exercise that young basketball players invest in for recovery, which is also in which quantities of air are inhaled to oxidize metabolic waste and restore Rest for cellular regulators and their basal balance, which requires an increase in the depth of breathing,(Farhan et al., 2016) which reflects positively on the emergence of these results, as these factors combined from external influences and internal body reactions as a physiological response helped in the emergence of results of not harming the skill performance of each skill performance (stomping, aiming, jumping from running, and peaceful shooting among young basketball players in this research.(Mahmood & Kadhim, 2023)

“Third intensity zone exercises can have a positive effect on developing muscular strength and explosive power, which enhances players’ ability to jump and move with greater speed and strength.” (Granacher, 2014, p: 430)

Also, "the third intensity zone exercises that target strength and speed can contribute to developing muscular endurance and physical endurance, which helps players perform well during prolonged basketball matches." (Granacher & Other, 2011, p: 2241)

"Third intensity zone exercises can have a positive effect on muscle strength and movement control.(Mousa & Kadhim, 2023) It can enhance balance and coordination, which contributes to improving the performance of basketball skills such as dribbling and passing, and movement control can reduce the risk of injuries while exercising." (Muehlbauer & Others, 2012, p: 506) Also, "athletes who undergo organized training programs with specific times, goals, methods, and training contents achieve better results than those who train in random ways during the time periods allocated for training times." (Abdel-Zaher, 2014, p. 47)

"The third intensity zone exercises that target strength characterized by speed can help develop rapid muscle strength and can increase the efficiency of the circulatory system. This means increasing the ability of the muscles to repeat fast and powerful movements with greater efficiency, and this contributes to improving the performance of basketball skills that require... Fast explosions, such as jumping, running, and dribbling, are better and stronger, and enhance the efficiency of the respiratory system, as the respiratory system needs to supply the muscles with oxygen and remove carbon dioxide effectively during high-intensity exercises." (Ozmen & Other, 2017, p:39)

Third intensity zone exercises can have a positive effect in developing strength and movement control, which contributes to enhancing balance and coordination, and this positively affects skills such as dribbling and passing. Developing rapid muscle strength can increase players' endurance during intense matches and training." (Seitz & Other 2017, P: 2578) (Young 2006, P: 76)

"The fast and changing situations that the player faces in applying third intensity exercises can achieve progress in performing exercises that depend on the third intensity, and can contribute to building self-confidence and belief in the body's abilities, and then the required improvements in the skill factor in basketball, and contribute to Improving high jumps and positioning in the air, which enhances players' ability to shoot and defend better." (Lloyd & Other, 2015, P: 4) (Sheppard & Other, 2016, P: 231)

"It is worth noting that the diversity of exercises and the inclusion of different components of fitness in a training program can have a greater positive impact on results. These exercises may include strength, flexibility, aerobic capacity and endurance, along with the third intensity zone of strength characterized by speed." (Faigenbaum & Myer, 2016, p: 15)

Conclusions and recommendations:

- 1- Applying exercises in the third intensity zone for strength and speed in the legs helps in developing the adequacy of the circulatory and respiratory systems in young basketball players.
- 2- Applying the exercises in the third intensity zone for strength and speed in the legs helps improve the performance of the skills (stomping, shooting by jumping from running, and shooting peacefully) among young basketball players.
- 3- It is necessary to adopt the third intensity zone exercises for the strength and speed of the legs for young basketball players and to properly regulate the high-intensity training load without exaggerations.
- 4- It is necessary to pay attention to developing the capabilities of basketball coaches when working on applying the third intensity zone exercises for the strength and speed of the legs for young basketball players that aim to develop their physiological and skill factor.

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The effect of surface management method on the pedological properties of soil using geospatial applications for some football fields in Iraq

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2031](https://doi.org/10.37359/JOPE.V36(3)2024.2031)

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Article history: Received 4/ February /2024 Accepted 13/ March /2024 Available online 28/ September/2024

Abstract

A field study was carried out to study the variations in some of the biological characteristics of the green areas within two football fields (Al-Karkh stadiums in Baghdad Governorate and Najaf Stadium in Najaf Governorate). Due to the heterogeneity of the management methods used, so dirt samples were obtained from the depth of 0-30 cm after determining geographical locations 5 drill hole site examined at each stadium, and base maps were produced for the study areas using Google earth, with the aim of studying the impact of football stadium management style on some soil pedological characteristics. The results of the volumetric distribution of the soil separations of the surface samples of the playgrounds showed that the coarse texture is predominant in the two playgrounds, as the predominance in them is for the sand separated. The results also indicate a decrease in the bulk density values of all surface samples of the two playgrounds despite the predominance of the coarse separation in all surface samples, if Which was reflected in the values of porosity, as the results showed a disparity in the values of porosity in the stadiums. The results indicate a low salinity These results are consistent with the nature of the management method followed, and it was found that there is a variation in the values of organic carbon content, as the concentration of organic carbon in the soil is affected by soil management, and From the calculation of the readiness index of elements, it was found that the nitrogen readiness index was moderate in Karkh stadium, while Najaf stadium had a low nitrogen readiness index, while the phosphorus readiness index was high in Karkh and Najaf stadiums, while the potassium readiness index was low in Najaf stadium and medium in Karkh stadium.

Keywords: Green landscapes, Football fields, Characteristics of stadium soil, Management style, NPK readiness guide.

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Introduction:

The process of development that countries are undergoing is likely to enhance their status and propel them towards progress and advancement. Development encompasses many aspects that play a global, international, and local role. Perhaps the most important factor in attracting tourists is working on developing the attractions, including managing green spaces in optimal ways to gain approval and achieve the desired purpose. Green spaces are the cornerstone of urban planning due to their significant impact, and their presence serves to consider the planning, urban, and climatic requirements. They are an important element that must be present in every city and region due to their numerous benefits, including environmental, health, social, sports, and aesthetic benefits. The most important of these benefits is reducing soil erosion and increasing air humidity, which leads to moderating the temperature, especially in the summer. Creating a front view of trees, shrubs, and flowers also works to increase oxygen levels and reduce the percentage of gases emitted by industries and traffic, especially carbon dioxide, through a process called photosynthesis, where plants take in carbon dioxide and release oxygen, thereby purifying the air, softening the atmosphere, and reducing noise pollution through afforestation. They also act as cushions to reduce and alleviate injuries in sports fields, children's playgrounds, and race tracks, and are planted to stabilize slopes and incline (Kraemer & Kabisch, 2021; Anteneh *et al.*, 2023).

The playgrounds are large flat areas of land covered with greenery, which are known as green rugs or lawns, and they need strenuous effort to work to bring them out in the most pompous way because they are considered a wonderful artistic cushion between the feet of the players and the playing ground, and the importance of their presence appears especially in football, polo, croquette, tennis, hockey, golf, equestrian fields... etc., whose floor must be flat and symmetrical because it affects the level of performance of the players and the control of the playing tool (ball-spear-pole-... etc.) And reduce the incidence of sports injuries Since hard and uneven floors cause muscle strain and exposure of the lower limb joints to sudden aches and injuries, in addition to obstructing playing tools and thus the results of the players are affected, so the process of creating green courts needs the necessary technical expertise so that the continuity of the green playing field can be maintained in good condition, whether during matches or training and after it throughout the year, because making any mistake during the construction process causes severe damage that may They are difficult to treat in the future, and even if we can fix them, the costs of this can be high (ÖZKAN, 2022).

Football fields are classified into two groups according to the characteristics of the land: natural grass fields and artificial turf fields. In recent years, the use of hybrid stadiums has also become widespread, with regard to football players and the game, natural grass fields are preferred to artificial turf pitches (Emmons and Rossi, 2015). The grass creates a visual aesthetic appearance and absorbs sunlight, reducing the effects of sunlight on the eyes. On the other hand, football pitches create a soft ground and area that can be moved more safely for players (Orchard, 2002; Chivers, 2008). The dimensions of the pitch can range from a minimum of 90 meters in length to a maximum of 120 meters and a minimum width of 45 meters and a maximum of 90 meters, while the standard dimensions of the turf court are x105 68 m (FIFA, 2011: UEFA, 2018). These dimensions are mandatory for final matches, for example the FIFA World Cup, Confederations Championships and European Champions.

Football pitches are one of the most difficult areas to maintain among climate stadiums, excessive wear and pressure of grass due to playing many matches on the surface of natural grass (Puhalla *et al.*, 2020). These difficulties are represented by conditions on the same land and high maintenance costs (Pessarakli, 2007).

Therefore, uneven or unstable ground can hinder the performance of players. These issues are minimized in football stadiums that are well constructed and managed with a proper infrastructure system and the correct grass types and varieties in line with standards (Emmons and Rossi, 2015). Sports fields with natural grass can be highly variable depending on use and management and the characteristics of the grass significantly affect the mechanical performance (Straw *et al.*, 2020).

Methodology:

Study area

The study was conducted for the two stadiums, Al-Karkh Stadium in Baghdad Governorate, which has an area of (7140) m², where it is located on a longitude of (33°19'80") and latitudes (44°21'54") in the center of Baghdad on the Karkh side, surrounded on the northern side by the Arm neighborhood, on the east by Al-Zawraa Park, on the south by the Baghdad International Fair and on the western side by the Alhelal Hospital. The study also included the province of Najaf, which included Najaf International Stadium, which has an area of (10625) m², where it is located on a longitude (32°03'58") and latitude circles (44°19'01"), surrounded on the northern side by Al-Kafeel University Street, on the east by Karbala-Najaf Road and Al-Mukarramah neighborhood, on the south by Al-Nidaa neighborhood, and on the western side by Al-Askari neighborhood (Figure 1).

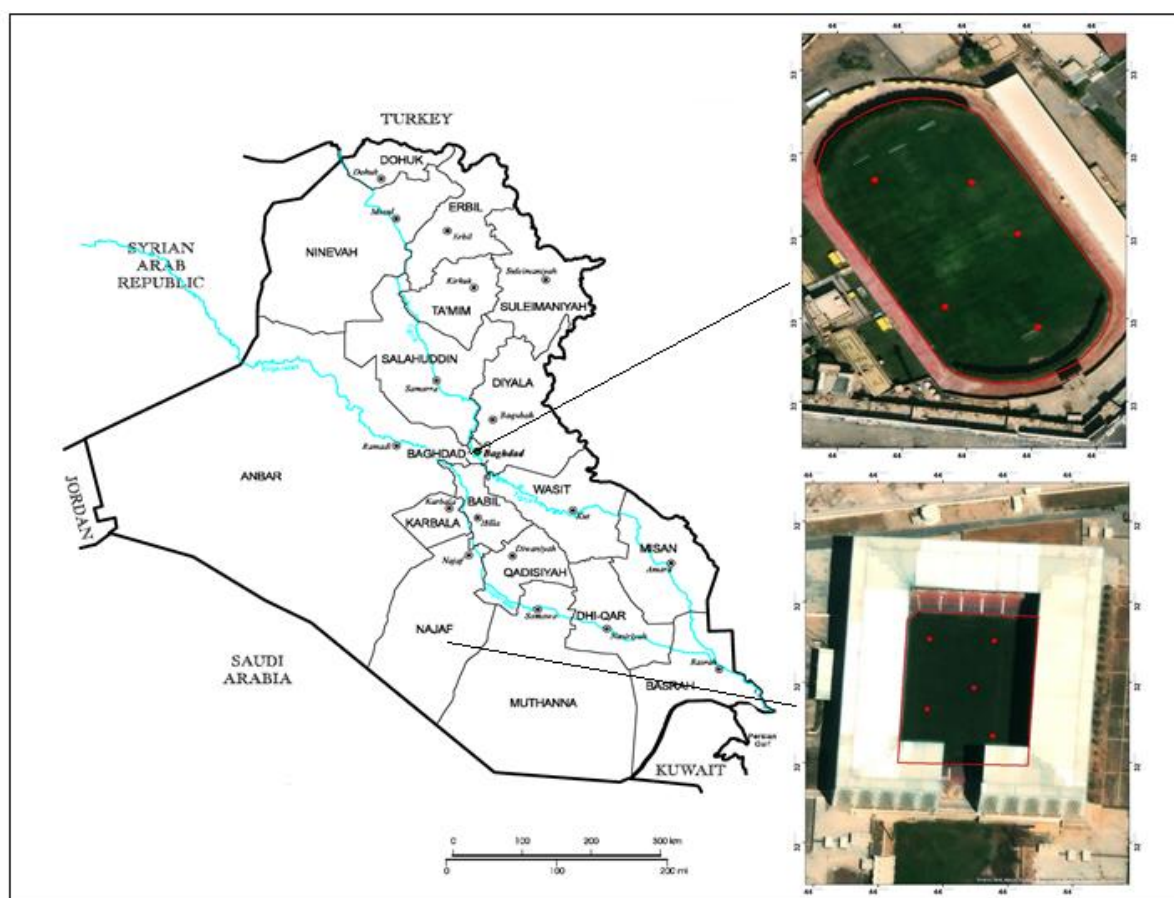


Figure 1. Aerial photos of Alkarkh and Najaf stadiums.

Field procedures:

Several visits were made to the specified areas mentioned earlier, and samples were collected during the period from 8th November, 2022, to 27th January, 2023. During this time, 6 drill hole sites were identified for each field, considering each site as representing the ground perspective of the green spaces. At each site, soil samples were obtained from depths of 0-30 cm (the root zone and the habitat for green plants), packed in polyethylene bags, numbered, and transported to the laboratory for various physical, chemical, and fertility analyses.

Preparation of soil samples for laboratory analysis and measurements: The obtained soil from each diagnostic horizon was air-dried, ground, and then sieved through a 2mm sieve diameter, then stored in plastic containers until laboratory analysis and measurements were carried out. Some aggregates were isolated and kept without separation for the purpose of measuring apparent density. Run the mechanical analysis of soil samples using the Hydrometer method according to Day (1965) and described in Black (1965). Estimate the apparent density of the soil by wax-coating the container, and according to the method provided by Black *et al.* (1965a). Estimate the electrical conductivity of the 1:1 extract according to the method provided in Black (1965b). The soil's calcium carbonate equivalent content was estimated by titration with 1N sodium hydroxide after

the addition of 1N hydrochloric acid, using phenolphthalein as described in Jackson (1958). Gypsum was determined by the acetone deposition method and then measuring the electrical conductivity of the formed precipitate according to Richards (1954). The wet oxidation method, as described in Jackson (1958), was used to estimate the soil's organic matter content, by oxidizing it with potassium dichromate and adding concentrated sulfuric acid as a heat source, followed by titration with ferrous ammonium sulfate using the ferrion indicator.

The ready nitrogen ($\text{NO}_3 + \text{NH}_4$) in the soil was estimated using the KCL extraction and distillation method with Semi-Micro-Kjeldahl, according to Bremner and Mulvaney (1982). The ready phosphorus (P) extracted from the soil using 0.5 M NaHCO_3 at pH 8.5, and determined using the ammonium molybdate indicator and ascorbic acid, then phosphorus was estimated using a spectrophotometer at a wavelength of 882 nanometers according to Cole *et al.*, (1954). For neutral and alkaline soils (pH > 6.5), the available potassium (K) in the soil was extracted using 0.5 M $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$, and then potassium was measured using a flame photometer according to Martin and Sparks (1983).

A. Nutrient availability index:

Soil fertility indicators were classified according to (Sharma *et al.*, 2004), and the nutrient availability index was calculated based on a chart of soil fertility ranges and using an index that was proposed by (Parker *et al.*, 1951) and modified by (Amara *et al.*, 2017). To compare soil fertility levels at each field.

$$\text{Nutrient index} = \{(1 \times A) + (2 \times B) + (3 \times C)\} / \text{NS} \quad (1)$$

Where: -

- A = Number of samples in the low category.
- B = Number of samples in the medium category.
- C = Number of samples in high category.
- NS = Total number of samples.

The nutrient index value (NIV) of 1.67 to 2.33 is a medium. The NIV less than 1.67 is considered as low, and greater than 2.33 is as High.

Table 1 A chart of the ranges of soil fertility characteristics and their nutrient indicators

The testing Soil parameters	Rating			
	Very low	Low	Medium	High
Available N(mg/kg)	deficient	I	II	III
	<10	11- 20	21- 40	>41
Available phosphorus(mg/kg)	Low		Medium	Adequate
	deficient		I	II
	<12.5		12.5-22.5	22.5-45.0
Available potassium(mg/kg)	Low		Medium	High
	deficient		I	II
	<135		135-335	>335

3- Office work:

- i. Creating basemaps for study areas using Google earth, as shape files for study areas were projected, which were prepared in advance by using GIS Arc Map version 10.8. The study points and shape files of the study sites in each playground were dropped on a Google earth program that was exported as a Kml file to be imported into the GIS environment Arc GIS 10.8 and then converted to a shape file to then be able to draw the spatial distribution of soil characteristics.(Mahal et al.,2022).
- ii. GIS Environment Shapefiles were imported from Shape File into GIS Environment for spatial distribution mapping of soil characteristics following the Distance Weight Inverse (IDW) method used as an imperative method in spatial distribution mapping, if The potential for using GIS in urban research is significant also regarding green space analysis .if With the latest technologies, researchers can analyse anthropogenic areas and the benefits of UGS .reliably represent the current state of urban green space use. Their proximity is the traditional metric of greenness exposure, which today is measured precisely and comprehensively with GIS solutions (Al-Arazah *et al.*,2021; Abdullatiff & Wheib, 2019).
- iii. Statistical analysis: Description of the surface sample data was performed using EXCEL, the integrated package for office programs from Microsoft Excel, Office. The coefficient of covariance was measured to detect the nature of the heterogeneity of the traits as well as the analysis of geological statistics in the mapping of the spatial distribution, and the same program (EXCEL) was used in drawing the vertical distribution of soil characteristics.

Results

1-Climate of the study area

The climate of Baghdad province is generally arid, hot dry in summer and cold with little rain in winter, and in light of this, the growth of grass in Karkh Stadium will be determined by hot weather conditions in the relatively long summer and cold in the relatively short winter. The lowest winter temperatures in Baghdad were 4.2°C recorded in January, and the highest summer temperatures in Baghdad were about 43.4°C recorded in July (Table 1), while the total rainfall reached 88.4 mm annually, as rainfall begins in late October and ends in May.

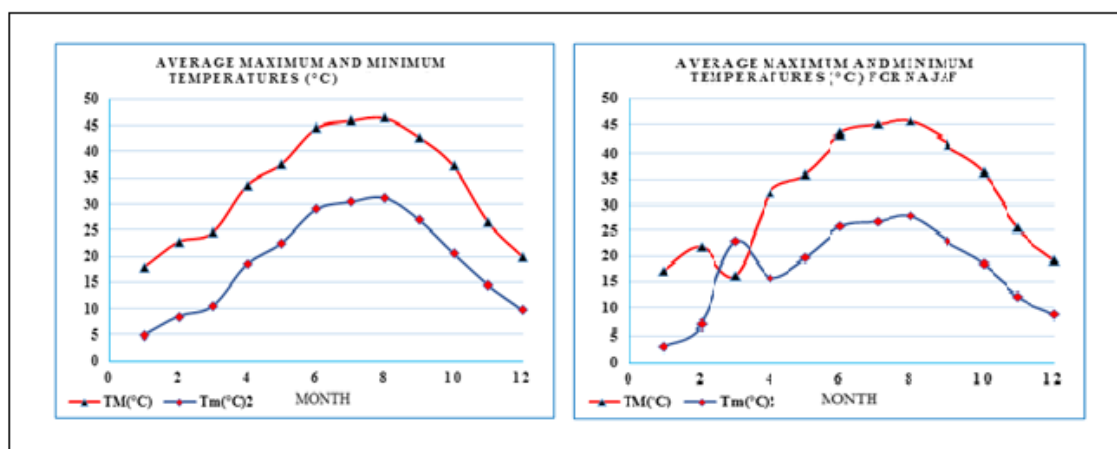


Figure 2. Average maximum and minimum temperatures for 2022.

The dry seasons last from May and end at the end of October, as these seasons are accompanied by a rise in evaporation rates with a clear decrease in relative humidity. The average wind speed is 3.4 m/s, with the highest wind speed recorded at 4.5 m/s in June and the lowest wind speed of 2.5 m/s in November. Based on the principles of the US Soil Survey Staff (1996) and according to the climate data given in (Table 2), the soil temperature regime was of the Hyper thermic type.

Table 2 Average climate data for the weather station in Baghdad for 2003-2022

rate Relative humidity %	Average wind speed m/s	Falling rate Mm	Average minimum temperature ° C	Average maximum temperature ° C	Average monthly temperature °C	Months of the year
71	2.6	14.5	4.2	15.9	9.9	January
61	3.4	14.8	5.7	18.5	12.2	February
53	3.6	18.5	9.2	22.2	15.8	March
43	3.5	10.5	14.6	29.0	22.2	April
30	3.6	3.1	19.6	35.8	28.4	Mays
21	4.2	-	23.3	40.9	32.0	June
22	4.5	-	25.3	43.4	34.8	July
22	4.0	-	24.7	43.5	34.5	dad
26	3.4	-	23	39.6	30.7	September
34	2.9	-	16.2	33.6	24.7	October
54	2.5	11.5	10.6	24.5	17.2	November
71	2.6	15.5	5.2	17.7	11.2	December
38	3.4		15.0	30.4	22.9	annual rate
		88.4				Annual total

As for the climate that dominates the Najaf stadium area, the climate of the Najaf region in Iraq is characterized as a desert climate, hot and dry during the summer months, mild during the spring and autumn, and relatively cold and humid during the winter. Summer temperatures range from 40-50 ° C, with a decrease at night, while winter temperatures range between 5-20 ° C, with high humidity and rainfall in general in the region during autumn and winter, and the amount of rainfall ranges from 50-100 mm per year.

1. Physical qualities

a)Volumetric distribution of soil separations

Table (3) shows the results of the volumetric distribution of soil separations, where the sand separated ranged between 890-290 g kg⁻¹, followed by silt, which ranged between 16.8-591 g kg⁻¹, while the clay content ranged between 60-430 g kg⁻¹, and It is concluded from the results of the surface samples of the volumetric distribution of the soil separations of the surface samples of the two playgrounds that the coarse tissue is predominant, which keeps pace with the modern trend in the use of salt-free sandy soils for green spaces after Improving it by adding organic materials (Kowalewski *et al.*, 2015; Hameed 2023), Where the results of the values of the

coefficient of difference of the surface samples of the soil of the stadiums showed that the separated sand gave the lowest values, as the coefficient of variation for the sand separation in Najaf stadium was 1.97%, and it is more homogeneous in Najaf stadium compared to the sand content of Karkh stadium, where the coefficient of difference was 23.53%.

Table 3. Physical properties of surface samples of playgrounds

Clay	Silt	Sand	Texture	Porosity %	P _p (Mg m ⁻³)	Simple
gm kg ⁻¹						
Alkarkh Sport Club						
336	248	416	clay loam	46.12	1.32	1
399	591	542	sandy clay	45.06	1.28	2
252	143	605	sandy clay loam	45.56	1.35	3
430	280	290	Clay	46.93	1.21	4
231	227	542	sandy clay loam	47.41	1.32	5
%26.57	%57.61	%26.30	-----	%2.08	%4.18	C.V
Al-Naiaf International Stadium						
100	90	810	loamy sand	45.98	1.41	1
121	52	827	loamy sand	49.06	1.35	2
143	72	785	sandy loam	48.02	1.31	3
119	92	795	sandy loam	48.19	1.29	4
133	93	804	sandy loam	47.84	1.33	5
%13.14	%22.25	%1.97	-----	%2.36	%3.44	C.V

b) Bulk density:

The results of Table (3) indicate a decrease in the bulk density values of for surface samples of the two stadiums, which ranged between 1.21-1.41 mcg M⁻³, despite the predominance of the coarse separation due to the service operations followed in those lands, which include the addition of organic matter (humus) because all playgrounds cover the surface layer of them with organic matter from various mixtures with a depth of 15-20 cm, which reflected positively on the values of the bulk density of the surface samples and led to a decrease in their values. This is what he pointed out (chaudhari *et al.*,2013; stolf *et al.*,2011).

c) Porosity%:

It is clear from Table (3) that there is a discrepancy in the porosity values for surface samples of the two stadiums, which ranged between 45.06-49.06%, and that the reason for this disparity is due to the variation in the levels of organic matter, which is associated with a direct relationship with porosity, and that porosity is associated with an inverse relationship with bulk density, as the increase in coarse separation leads to a decrease in porosity, and conversely, when the content of the fine separator rises, it leads to a rise in porosity values (Mola-Abasi *et al.*, 2018;Kenigsberg *et al.*, 2020).

2. Chemical qualities

a) Soil Reaction (pH)

Table (4) indicates a convergence in the results of the values of the degree of interaction for surface samples of the two stadiums, which ranged from 7.21-7.68, and therefore there is a convergence in the values of the coefficient of difference, where Najaf Stadium recorded the lowest values, as it amounted to 1.62%, followed by Al-Karkh Stadium with a coefficient of difference of 1.82%, as it is located within the moderate to light base soils according to Soil Survey Staff (2014). As the degree of soil interaction is affected by the content of sand, which may contribute to reducing the degree of interaction, in addition to containing the surface layer of playground soils on mixtures of organic materials (humus), as well as repeated fertilization operations with NPK fertilizer for playground soils as they are subject to an administrative program, which led to a relative reduction in their values. (Zhang *et al.*, 2016).

Table 4. Chemical qualities of surface samples of playgrounds

pH	EC (dS m ⁻¹)	O.C	Simple	Statistical Standards
		(Cmolc kg ⁻¹ Soil)		
Alkarkh Sport Club				
7.39	1.26	1.08	1	
7.56	1.41	1.06	2	
7.61	4.51	1.2	3	
7.37	3.76	1.06	4	
7.29	2.11	0.86	5	
%1.82	%55.67	%11.61	Coefficient of Variation	
Al-Naiaf International Stadium				
7.29	3.43	1.32	1	
7.48	3.47	1.27	2	
7.33	3.34	1.61	3	
7.44	3.03	1.31	4	
7.59	3.01	1.7	5	
%1.62	%6.78	%13.72	Coefficient of Variation	

b) Soil Salinity (EC)

Table (4) shows the low salinity of the two study sites, which ranged between 0.42-4.78 dS M⁻¹, and that these results are consistent with the nature of the management method followed, as a result of repeated irrigation as an administrative procedure to preserve the greenery of these areas, in addition to the presence of trocars and this is consistent with what he mentioned (Miyamoto *et al.*,2008: Schaan. *et al.*,2003) because repeated irrigation works to wash the sodium and chlorine ions during irrigation operations away from the root area and thus reduce soil salinity. It is under the influence of an intensive management method, and it gave the lowest value of the coefficient of variation for surface samples at Najaf Stadium, which amounted to 6.78%, while the coefficient of variation was 55.67% for Alkarkh Stadium.

c) Organic carbon

Table and Figure (3) shows the values of organic carbon content for surface samples, which ranged between 0.86-1.7 g kg⁻¹ for the two stadiums, it is clear from the map of the spatial distribution of organic carbon content that the most prevalent area of organic carbon content in Karkh stadium is in a range of 1-1.2, while the low content is distributed in the northeastern part of Karkh stadium, while the prevailing content in Najaf stadium is distributed in a range of 1.5-1.7, which is distributed in the northern part and the southeastern part of the stadium, as the concentration of organic carbon is affected in Soil management as irrigation and fertilizer applications enhance mineral weathering, which leads to an increase in clay content, and increase the production of biomass under irrigated and fertilized soil leads to an increase in organic carbon content., and the organic carbon content changes faster in sandy soils compared to soft weaving soils, and the high carbon content is noted in the soils of surface samples, as this is due to the addition of mixtures of organic materials with a depth of 15 cm of the layer The surface of the playground lands, as well as the fact that the surface samples of the playgrounds are subject to an administrative method of applying fertilization and irrigation, Organic carbon increases cation exchange capacity and reduces bulk density (Yost and HartemnK, 2019, Jasim & Alfatlawi, 2023).

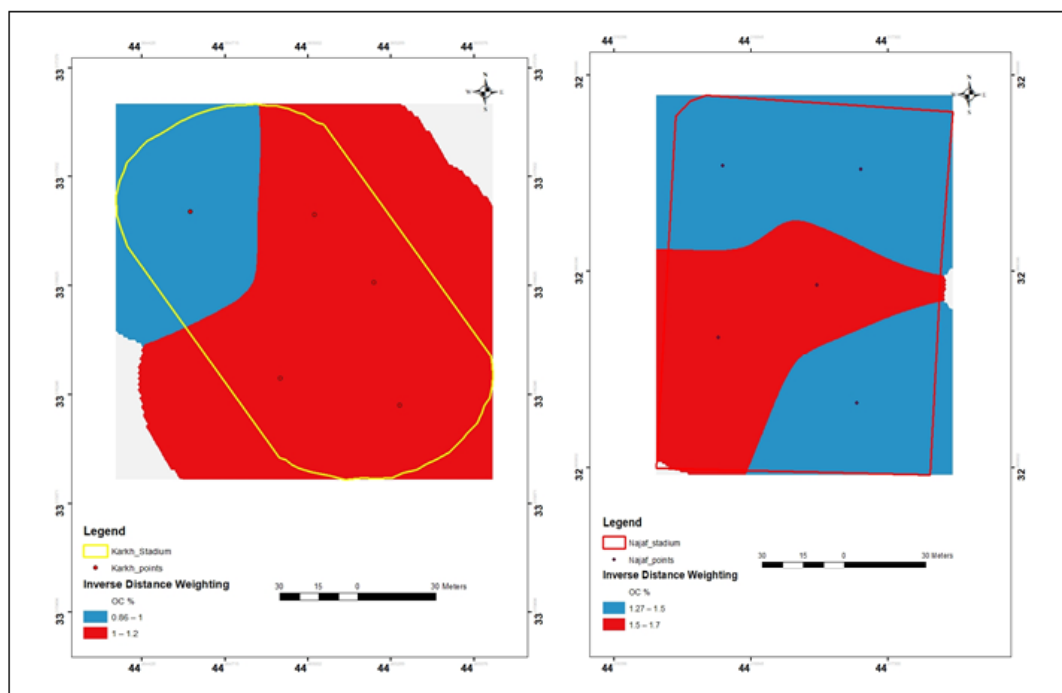


Figure 3. Spatial distribution of organic carbon content.

Available elements for surface samples of stadiums:

The results in Table (5) indicate that the soil content of available nitrogen in Al-Karkh stadium ranged between 21-31.50 mg kg⁻¹ with a coefficient of difference of 20.33%, as shown in Figure (4) maps of the spatial distribution of available nitrogen content in the surface samples of the stadiums, which indicates the predominance of the moderate content of available nitrogen was in a range of 21-22.5 mg kg⁻¹ for Karkh stadium, while the soil content of available nitrogen in Najaf stadium ranged between 16-22 mg kg⁻¹ with a coefficient of variation of 12.43%, When using the special formula to determine the nutrient availability index proposed by (Amara *et al.*, 2017) shown in Table (5), which shows that the nitrogen readiness index was moderate in Al-Karkh Stadium, while in Najaf Stadium, the nitrogen readiness index was weak, so Najaf Stadium needs an integrated nitrogen fertilization program, as nitrogen significantly affects grass growth, color and density, and is one of the basic components of chlorophyll, amino acids and enzymes, and therefore the color and quality of grass is related to the level of nitrogenous nutrition and accordingly nitrogen is usually applied in larger quantities of other nutrients (Beard, 1973; Hummel, 1992) as well as the irrigation process followed in the stadium, as the inappropriate irrigation method leads to an increase in the loss of nitrogen (Sieczko *et al.*, 2023).

Table 5. Available elements for surface samples of stadiums

	K	P	N	Statistical Standards	
	gm kg ⁻¹ soil				
Alkarkh Sport Club	231.50	37.30	21.00	1	
	263.10	33.10	31.50	2	
	218.40	27.20	21.00	3	
	365.70	28.40	21.00	4	
	326.30	38.00	21.00	5	
	%22.45	%15.10	%20.33	Coefficient of Variation	
Al-Naiaf International Stadium	122.50	40.50	16.00	1	
	151.00	47.70	19.00	2	
	130.00	43.10	21.00	3	
	187.20	45.10	22.00	4	
	178.00	41.10	18.00	5	
	%18.56	%6.81	%12.43	Coefficient of Variation	

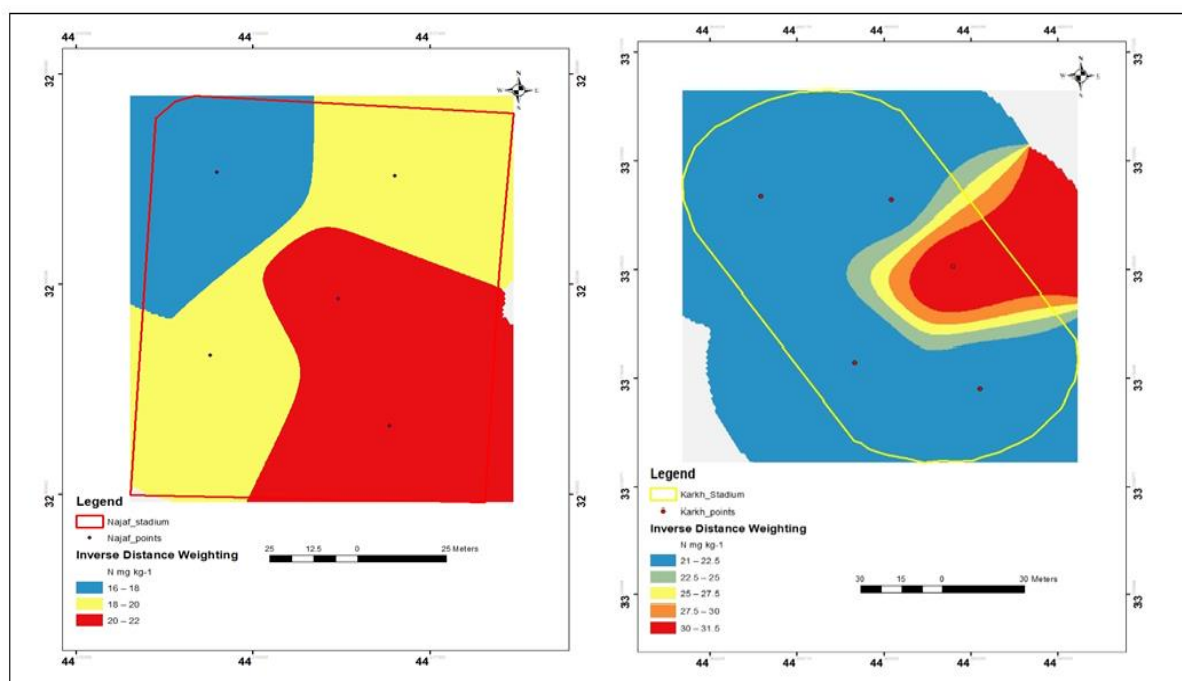


Figure 4. Spatial distribution of nitrogen content.

Table 6. NPK nutrient guide in stadiums according to the equation proposed by Amara et al, (2017)

Available index potassium (mg kg ⁻¹)	Available index phosphorus (mg kg ⁻¹)	Available index Nitrogen (mg kg ⁻¹)	Stadiums
2.2	3	2	Alkarkh Sport Club
1.6	3	0.02	Al-Naiaf International Stadium

Table (5) indicates the soil content of available phosphorus in Karkh stadium, which ranged between 27.20-38.00 mg kg⁻¹ with a coefficient of variation of 15.10%, and it is clear from the spatial distribution map that the high content of phosphorus was more dominant in Karkh stadium and distributed in the northern half of the stadium, while moderate phosphorus content was distributed in the southern half of it with a range of 27.2-30 mg kg⁻¹, while the soil content of available phosphorus in Najaf stadium ranged from 40.50-47.70 mg kg⁻¹ with a coefficient of difference of 6.81%. Figure (5) shows that there is a variation in the distribution of available phosphorus content in Najaf stadium, as the dominance of the range was 40.5-42 mg kg⁻¹ in the western half of the stadium, the increase in the phosphorus readiness index in the stadiums is attributed to the fertilization plan followed in those stadiums, as it has an important impact in the establishment phase of a strong root system, which improves the grass's tolerance to heat, cold and drought, improves water use efficiency, as well as suppresses some grass diseases (Carrowet *et al.*, 2001; Hashim & Hassan, 2023).

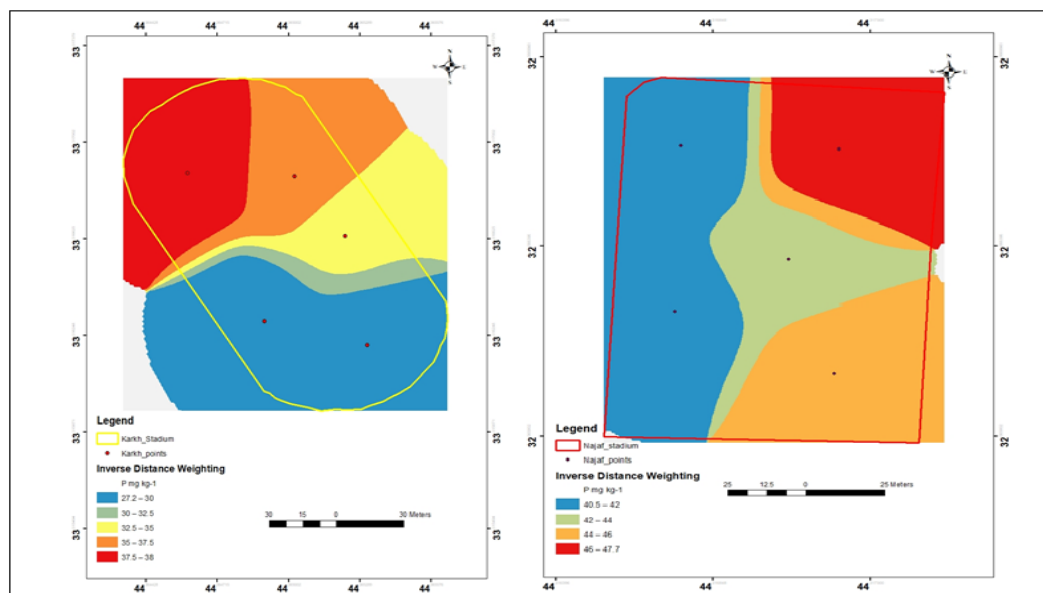


Figure 5. Spatial distribution of available phosphorus content.

Table (5) shows that the soil content of available potassium was different throughout the Karkh stadium, as the high values of available potassium content were prevalent in the western half of the field with a range of 290-365.7 mg kg⁻¹, while the low ranges were distributed in the eastern half of the field with a range of 218.4-290 mg kg⁻¹. The values of the content of available potassium in the whole of the Karkh stadium ranged between 218.40-365.70 mg kg⁻¹ and a coefficient of difference of 22.45%, while for the Najaf stadium, the soil content of available potassium ranged between 122.50-187.20 mg kg⁻¹ with a difference factor of 18.56% and the spatial distribution map shows that the moderate potassium content was prevalent in the southern half of the stadium and a range of 160-187.2 mg kg⁻¹, (Mahmood & Kadhim, 2023)

while the low content of available potassium was distributed in the northern half of the stadium and the range of 122.5-160 mg kg⁻¹. It is also clear from Table (6) that the potassium readiness index decreased in Najaf stadium, while the potassium readiness index was average in Al-Karkh stadium, and that the variation in the potassium readiness index is due to the fertilization plan followed and the organic matter in each stadium, (Mousa & Kadhim, 2023)

as well as the moisture content, which plays a major role in the plant's response to potash fertilization because potassium moves to the roots in a way of propagation and mass flow. Potassium is the backbone of any fertilization program and a key nutrient in plant cells. This element activates many enzymes and is important in many metabolic processes. The lack of K leads to a significant decrease in the growth and productivity of weeds used in the cultivation of Bermuda in green spaces (Ihtisham et al.,2020; Mc Carty Miller,2002).

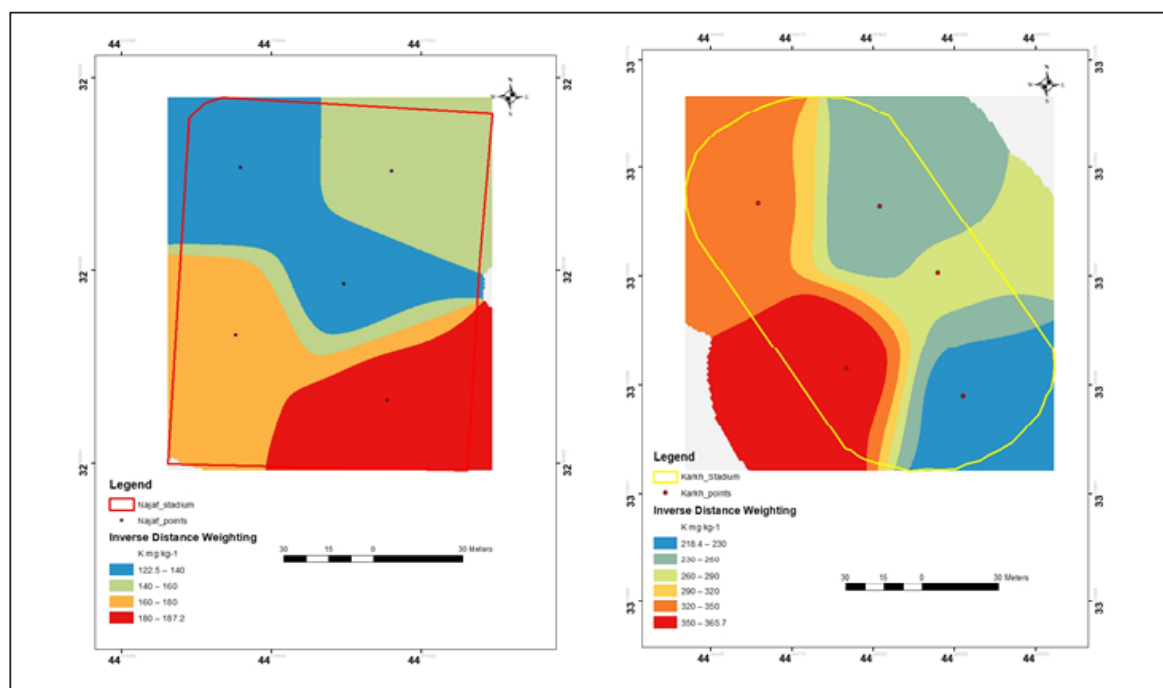


Figure 6. shows the spatial distribution of potassium content in surface samples

Conclusion

Najaf International Stadium recorded the lowest values of spatial heterogeneity for most of the studied soil characteristics in terms of the coefficient of variation compared to the rest of the study areas, and that the standard textures of the stadium soils are coarse (sandy, sandy mixed, and sandy mixed), while some soft and moderately soft tissues appeared in Al-Karkh Stadium, it was also found that the stadium soil lacks nitrogen due to its easy loss. The quality of the grass and its suitability for play depend on proper management.

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Psychological narcissism and its contribution to the feeling of psychological loneliness among young basketball players

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2184](https://doi.org/10.37359/JOPE.V36(3)2024.2184)

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Article history: Received 30/ June/2024 Accepted 11/ July/2024 Available online 28/ September/2024

Abstract

This study aimed to determine the degree of psychological narcissism and the experience of psychological loneliness among young basketball players. It also sought to establish the relationship, contribution, and impact of psychological narcissism on the experience of psychological loneliness among young basketball players. The researcher hypothesizes that psychological narcissism and psychological loneliness among players have a moral correlation. The study focused on youth basketball and utilized a descriptive approach modeled on co-relational relationships. The community consisted of basketball players from Baghdad youth clubs who were training to participate in the local sports season (2023/234). The Sulaikh Club, Housing, and Industries naturally distributed the remaining 72 players among themselves. We intentionally selected Electricity, Air Force, and Civil Defense players using a thorough enumeration approach, ensuring 100% participation. They were considered a single sample, with 35 players selected for the construction sample, accounting for 48.611%, and 5 players selected for other purposes. Intentional gamers from this group made up 6.944% of the exploratory sample and 44.4444% of the remaining 32 individuals in the main research sample. We constructed specialized scales, such as paper and pen scales, to measure two phenomena within the target sample. We developed these scales by following field methodological steps and applying statistical treatments to the building sample. We obtained the results by conducting a survey and scanning the main sample. We then analyzed the results using the SPSS system. The findings indicate that young players exhibit a significant degree of psychological narcissism in the training and competitive setting, as well as a reduced sense of psychological unity in their basketball performances. The manifestation of these psychological phenomena in a partnership has a detrimental impact on the character of their group game. The suggestions were to focus on preventing and reducing psychological narcissism among basketball players. They should strive to enhance their self-confidence and assume responsibility for confronting the various situations in which they encounter psychological stress. This will help to establish a sense of psychological unity, which in turn positively impacts the outcomes of their competitions in this collaborative game that demands cooperation among the players.

Keywords: psychological narcissism, feeling of psychological loneliness, young players in basketball.

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Introduction

"The young man experiences emotional contradiction, indicating that this type of contradiction can lead to conflict and may worsen as his dreams and aspirations for the future grow. To deal with his conflicts and manage his struggles, he must control his emotions. Al-Mu'mini, 2010, pp. 296. "Conflicts within the self, desires, and unconscious impulses are equally concerned with the reality of the person surrounding them, especially the social, cultural, and historical aspects." Al-Jabr (2022, p. 477) "While external events may not directly harm an individual, their impact and response to them can give the impression of harm." Al-Khateeb, 2014, page 393. "It is essential to avoid several frustrating factors, including fear of failure, lack of support from the coach or management, or losing the joy of playing, as these can weaken the player's determination to continue training with the same intensity and enthusiasm." Yassin (2009, p. 105). Emotions and sentiments undoubtedly play a vital role in shaping human cognition and conduct, as well as determining an individual's relationship with the outside world. The psychological history, both ancient and modern, is rich in issues that demonstrate a reciprocal relationship between an individual's emotions and psychological makeup (or personality). (Wardeell and Royce) presented a series of experiments that confirmed the extent to which an individual's emotional system influences their personality. Morocco, 2008, p. 4. Young players' emotions are characterized by intensity, fluctuation, contradiction, and an inability to manage and express them. These feelings are very similar to those of a youngster; however, the difference is in the sort of stimulus. A young teenager may feel upset as a result of criticism, denial of particular privileges, or intervention in their personal affairs.(Easa et al., 2022) Although some signs of maladjustment may emerge, teenagers' emotional conduct improves year after year. As individuals approach adulthood, we notice that their emotional development tends to stabilize." Al-Dasouqi, 2003, pages 165–167. Furthermore, the player's ideas about their ability to exercise self-control influence their level of emotional control and endurance. The more individuals attempt to effectively manage these circumstances and difficulties, the more the physiological and emotional environment influences them. The player's assessment of their own efficacy in controlling their emotions and the resulting behaviors determines their ability to self-regulate. (Masri 2012, p. 20) "On the other hand, a setting that does not provide emotional stability to players causes anxiety, rage, frustration, and stress. This sensation may lead to a loss of self-confidence in social contacts with peers. As a result, individuals may vent these emotional charges by acting aggressively toward others; many psychological pressures stem from threats and punishment, mockery and neglect, and the hostile behaviors they encounter in their training contexts." Hyman and Zelikoff (2009), p. 52. Environmental influences and psychological characteristics acquired by young players, as well as the emotions they meet when integrating into the training and competition environment, shape a wide range of negative and positive behaviors. Psychological reactions to the sports environment, including resilience and its impact on mental health, influence players' behavior. The definition of narcissistic personality is "a personality trait characterized by an excessive sense of self-importance, a constant need for admiration, and a lack of empathy for others." American Psychological Association, 2023. □ "Individuals who suffer from narcissism are typically known for exaggerating their achievements and skills, believing that they deserve special treatment, and may exhibit exploitative behavior in their personal and professional relationships." Adair and Moore, 2019, p. 208

Narcissistic Personality Disorder (NPD) is a psychological illness marked by a pervasive pattern of grandiosity (in fantasy or action), a desire for praise, and a lack of empathy. Individuals with Narcissistic Personality Disorder (NPD) have a strong sense of entitlement, high sensitivity to criticism, and an insatiable desire for attention and praise. According to the American Psychological Association's Dictionary of Psychology, narcissism is the propensity to exaggerate oneself and believe that one is exceptional and unique, deserving of special treatment, which is frequently accompanied with manipulating others to attain personal objectives. Sigmund Freud's Psychoanalytic Theory argued that narcissism is a normal stage of child development in which the youngster becomes self-centered. According to Freud, (Farhan et al., 2016) pathological narcissism emerges when a person stays overly self-centered even after going through this developmental stage. (Mikhail, 2022, page 179) The following primary representations of psychological narcissism exist: (American Psychological Association, 2023) Feeling of grandeur: Narcissistic people have an overblown sense of their own worth. They believe they are superior to others and should receive preferential treatment. They might boast about their accomplishments and abilities, regardless of their exaggeration or impracticality. The unwavering craving for admiration: Narcissists are constantly seeking the approval and admiration of others, and this desire for adulation can be a powerful motivator behind their daily actions. They are uncomfortable if they do not get attention and recognition. Lack of empathy: Narcissists are known to lack empathy for the feelings and needs of others, and they may struggle to understand or appreciate other people's emotional experiences. (Mahmood & Kadhim, 2023) Exploitative behavior in relationships: Narcissists utilize psychological strategies to dominate or manipulate people in order to achieve their own personal goals. Narcissists are very sensitive to criticism, despite their outward appearances of confidence. Their reactions to criticism can be harsh and exaggerated, and they frequently struggle to take unfavorable comments. Narcissistic Personality and Healthy Narcissism: It is critical to distinguish between natural (or healthy) narcissism and pathological narcissism. Healthy narcissism is characterized by adequate levels of self-esteem and ambition, both of which are required for the development of a strong identity and self-confidence. (Mousa & Kadhim, 2023) Pathological narcissism, on the other hand, can jeopardize personal and professional relationships and cause psychological and societal issues. According to research, narcissism has a genetic component, and the family environment—raising children in a culture of excessive praise or neglect—can contribute to the development of narcissistic tendencies. Furthermore, personal successes and failures might impact the development of narcissism. Narcissism has several varieties, including grandiose narcissism and vulnerable narcissism. (Kahala, 2017, page 55) The definition of psychological loneliness is "a person's sense of isolation and disconnection from others, even in their physical presence." A lack of strong social connections or dissatisfaction with current relationships could trigger this emotion. (Taha, 2020, page 14). Psychological isolation is defined as "a state of feeling disconnected and separated from society, or the inability to engage in deep and effective communication with others." "This feeling can be temporary or chronic, and its impact varies from person to person." Rigby and Cunningham (2002, p. 6). The following factors contribute to psychological loneliness: According to Hawkley and Cacioppo (2010), personal issues can include shyness, social anxiety, poor communication skills, and unrealistic relationship expectations. Moving to a new location, losing a contract with the team, and retiring from training are all examples of environmental considerations. Social considerations include living in a community that has experienced

familial or societal disintegration. Psychological factors include sadness and anxiety disorders.

Through the academic activity of the researcher in sports psychology related to basketball, scientific realities mandate that researchers cannot forecast psychological phenomena unless they experience objective measurement that reflects the amount of the assessed phenomenon numerically. The study's difficulty highlights the issue of isolation and narcissism among teenage basketball players. After speaking with certain athletes in direct individual interviews, she realized that their exceptional training and enormous physical build push them toward narcissism. In contrast, others' reactions in the training and competitive environment place psychological demands on them, resulting in isolation, since they believe solitude and distancing assist them in avoiding difficulties with their surroundings. Because psychological narcissism and psychological loneliness are such important phenomena, (Kadhim, 2023) the researcher's attempt to address the following issues is significant. How much psychological narcissism and psychological loneliness do young basketball players experience? Is adolescent basketball players' psychological narcissism linked to a sense of psychological loneliness? The study's goal is to determine the level of psychological narcissism and the feeling of psychological loneliness among young basketball players, as well as to understand the relationship, contribution, and impact of psychological narcissism on psychological loneliness among young basketball players. The researcher hypothesizes that there is a substantial link between psychological narcissism and the reduction, (Salih et al., 2024) contribution, and impact of psychological loneliness among young basketball players.

Method and procedures

The unique nature of the research problem led to the adoption of a correlational approach from the descriptive method. We categorize correlational studies as "the type of research through which it is possible to discover whether there is a relationship between two or more variables and then to determine the strength and direction of this relationship." (Abu Awad 2015, p. 112) Basketball players from Baghdad's young clubs represented the community's boundaries as they resumed their training for the local sports season (2023/234). There are 72 players in all, spread among the clubs (Sulaikh, Al-Iskan, Al-Sanayeat Al-Kahrabaa, Al-Quwa Al-Jawiya, and Al-Difa Al-Madini). These players constitute the research community. We purposefully selected all of them using a rigorous sampling procedure, ensuring a 100% rate. They were considered as a single total sample, with 35 players selected for the construction sample (48.611%) and 5 players for the exploratory sample (6.944%). We purposefully selected the remaining 32 players for the primary research sample, representing 44.4444% of the community. Because there weren't any specific tools available to measure both of the things being studied among young basketball players, the researcher made two paper-and-pencil scales based on sports psychology criteria for measuring and evaluating things. They used field procedures with sequential methodological steps and separate statistical treatments. The

researcher developed 22 items for the psychological narcissism scale and 20 items for the psychological loneliness scale, adhering to the guidelines for formulating item statements and the theoretical reference framework for each psychological phenomenon's specificity in sports psychology. These items featured three options: "always applies to me", "sometimes applies to me", and "never applies to me", with a score system ranging from 3 to 1. The test progresses as the player's level increases in each of the two categories. Measures, it suggests a greater degree of the unfavorable occurrence prevalent in them. A survey questionnaire containing both measures was produced and distributed to 11 specialists in sports psychology, testing, measurement, and basketball. They unanimously (100%) agreed to keep all of the items as is. Thus, the researcher confirmed both the face and logical validity using Bloom's threshold for accepting validity at an 80% or higher rate. She tested both metrics with a pilot sample of 5 players. To identify the expected obstacles later on, and to ensure the clarity of the phrases in the paragraphs and their alternatives, as well as the instructions for the scales for the sample, the average response time for each scale was calculated, which was (6) minutes for the psychological narcissism scale and (5) minutes for the psychological loneliness scale. Then, the two versions of the scales were applied to a sample of 35 players to verify the discriminatory ability of each of their items through smooth field procedures, along with statistical treatments for each scale completely separate from one another, by adopting the method of the two extreme groups, determining a percentage of (27%) for each group, which amounted to (9.45) for each group, rounded to (10) to adopt this number in both of these groups,, as shown in the results of tables (1) and (2)

Table (1) shows the results of the discriminative ability of the items of the psychological narcissism scale for basketball players

The paragraph	The group	number	The arithmetic mean	Standard deviation	(t)	(Sig)	The statistical difference	Discrimination
	The Supreme	10	2.3	0.483	2.777	0.012	D	Distinctive
	The globe	10	1.7	0.483				
	The Supreme	10	2.2	0.422	6.6	0.000	D	Distinctive
	The globe.	10	1.1	0.316				
	The Supreme	10	2.4	0.516	5.692	0.000	D	Distinctive

	The globe.	10	1.2	0.422				
	The Supreme	10	2.6	0.516	5.196	0.000	D	Distinctive
	The globe.	10	1.4	0.516				
	The Supreme	10	2.5	0.527	5.308	0.000	D	Distinctive
	The globe	10	1.3	0.483				
	The Supreme	10	2.7	0.483	8.764	0.000	D	Distinctive
	The globe.	10	1.1	0.316				
	The Supreme	10	2.1	0.316	5.4	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.3	0.483	2.466	0.024	D	Distinctive
	The globe.	10	1.8	0.422				
	The Supreme	10	2.5	0.527	5.308	0.000	D	Distinctive
	The globe.	10	1.3	0.483				
	The Supreme	10	2.8	0.422	6.641	0.000	D	Distinctive
	The globe	10	1.4	0.516				
	The Supreme	10	2.4	0.516	3.857	0.001	D	Distinctive
	The globe.	10	1.5	0.527				
	The Supreme	10	2.9	0.316	6.789	0.000	D	Distinctive

	The globe	10	1.6	0.516				
	The Supreme	10	2.6	0.516	6.641	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.7	0.483	6.481	0.000	D	Distinctive
	The globe	10	1.3	0.483				
	The Supreme	10	2.8	0.422	6.091	0.000	D	Distinctive
	The globe.	10	1.5	0.527				
	The Supreme	10	2.3	0.483	4.025	0.001	D	Distinctive
	The globe.	10	1.4	0.516				
	The Supreme	10	2.9	0.316	7.203	0.000	D	Distinctive
	The globe.	10	1.5	0.527				
	The Supreme	10	2.5	0.527	7.203	0.000	D	Distinctive
	The globe.	10	1.1	0.316				

Paragraph	group	NUMBER	The arithmetic mean	Standard deviation	(t)	(Sig)	The statistical difference	Discrimination
	The Supreme	10	2.1	0.316	5.4	0.000	D	Distinctive
	The globe	10	1.2	0.422				

	The Supreme	10	2.6	0.516	5.814	0.000	D	Distinctive
	The globe.	10	1.3	0.483				
	The Supreme	10	2.7	0.483	4.919	0.000	D	Distinctive
	The globe.	10	1.6	0.516				
	The Supreme	10	2.4	0.516	4.33	0.000	D	Distinctive
	The globe.	10	1.4	0.516				

The paragraph is significant if the degree of (Sig) is greater than (0.05) at the significance level and degree of freedom. (18)

Table (2) shows the results of the discriminative ability of the items in the psychological loneliness scale for basketball players.

Paragraph	Group	number	The arithmetic mean	Standard deviation	(t)	(Sig)	The statistical distinction	Discrimination
	The Supreme	10	2.4	0.516	3.464	0.003	D	Distinctive
	The globe.	10	1.6	0.516				
	The Supreme	10	2.3	0.483	8.51	0.000	D	Distinctive
	The globe.	10	1	0.000				
	The Supreme	10	2.5	0.527	7.203	0.000	D	Distinctive
	The globe.	10	1.1	0.316				
	The Supreme	10	2.7	0.483	6.481	0.000	D	Distinctive
	The globe.	10	1.3	0.483				

	The Supreme	10	2.6	0.516	6.641	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.8	0.422	13.5	0.000	D	Distinctive
	The globe.	10	10	0.000				
	The Supreme	10	2.2	0.422	6.6	0.000	D	Distinctive
	The globe.	10	1.1	0.316				
	The Supreme	10	2.4	0.516	3.464	0.000	D	Distinctive
	The globe.	10	1.6	0.516				
	The Supreme	10	2.6	0.516	6.641	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.9	0.316	8.764	0.000	D	Distinctive
	The globe.	10	1.3	0.483				
	The Supreme	10	2.5	0.527	4.714	0.000	D	Distinctive
	The globe.	10	1.4	0.516				
	The Supreme	10	2.7	0.483	5.308	0.000	D	Distinctive
	The globe.	10	1.5	0.527				
	The Supreme	10	2.7	0.483	8.764	0.000	D	Distinctive
	The globe.	10	1.1	0.316				

	العليا	10	2.8	0.422	8.485	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.9	0.316	7.833	0.000	D	Distinctive
	The globe.	10	1.4	0.516				
	The Supreme	10	2.4	0.516	4.919	0.000	D	Distinctive
	The globe.	10	1.3	0.483				
	The Supreme	10	2.3	0.483	4.025	0.000	D	Distinctive
	The globe.	10	1.4	0.516				
	The Supreme	10	2.7	0.483	7.398	0.000	D	Distinctive
	The globe.	10	1.2	0.422				
	The Supreme	10	2.8	0.422	6.091	0.000	D	Distinctive
	The globe.	10	1.5	0.527				
	The Supreme	10	2.5	0.527	4.714	0.000	D	Distinctive
	The globe.	10	1.4	0.516				

The paragraph is significant if the degree of (Sig) > (0.05) at the significance level (0.05) and the degree of freedom. (18)

Tables 3 and 4 show the Pearson correlation coefficients (r) between the score of each item and the overall score of the scale to which it belongs. These values were found by using statistical methods on the scores of the same 35 basketball players.

Table 3 presents the internal consistency of the link between the items and the overall score of the psychological narcissism scale, specifically for basketball players.

Evaluate the correlation between the paragraph and the overall score of the scale	(Sig)	Evaluate the correlation between the paragraph and the overall score of the scale	(Sig)
0.879*	0.000	0.789*	.000
0.797*	0.000	0.681*	.000
0.771*	0.000	0.875*	.000
0.575*	0.000	0.818*	.000
0.719*	0.000	0.822*	.000
0.953*	0.000	0.916*	.000
0.856*	0.000	0.907*	.000
0.841*	0.000	0.881*	.000
0.738*	0.000	0.817*	.000
0.824*	0.000	0.692*	.000
0.958*	0.000	0.833*	.000

If the degree of (Sig) is greater than 0.05 at the degree of freedom (33) and the level of significance, then the paragraph remains consistent. (0.05)

If the degree of (Sig) is greater than 0.05 at the degree of freedom (33) and the level of significance, then the paragraph remains consistent. (0.05)

Assess the correlation between the paragraph and the scale's overall score	(Sig)	Assess the correlation between the paragraph and the scale's overall score	(Sig)
0.932*	0.000	0.753*	.000
0.691*	0.000	0.809*	.000
0.799*	0.000	0.883*	.000
0.599*	0.000	0.875*	.000
0.884*	0.000	0.801*	.000
0.742*	0.000	0.752*	.000
0.911*	0.000	0.823*	.000
0.782*	0.000	0.792*	.000
0.914*	0.000	0.904*	.000
0.794*	0.000	0.936*	.000

Assess the correlation between the paragraph and the scale's overall score

For statistical verification of dependability, I used the scores of both measures on a sample of 35 players. I calculated the Cornbrash's alpha coefficient, which yielded a value of 0.889 for the psychological narcissism scale specifically designed for basketball players. The psychological unity scale for basketball players yielded a coefficient of 0.898, with 35 degrees of freedom and a significance level of 0.05. Furthermore, statistical verification confirmed that both measures were appropriate for these players, who showed a normal distribution, as shown in Table 5

Table (5) displays the final statistical landmarks and normal distribution values for the two measures

The name of the scale	Number of paragraphs	The total score	The arithmetic mean	Standard deviation	The twist
The psychological narcissism of basketball players	22	66	45.71	5.003	-0.636
The feeling of psychological loneliness among basketball players	20	40	48.29	4.17	-0.955

Table (5) displays the final statistical landmarks and normal distribution values for the two measures.

Following this procedure, the researcher completed the construction of the two scales to their final forms (Appendices 1 and 2). The total score for the psychological narcissism scale for basketball players ranges from 22 to 66, with a hypothetical mean of 44, and the total score for the psychological loneliness scale for basketball players ranges from 20 to 60, with a hypothetical mean of 40. After developing both paper and pencil measures in sports psychology, the researcher conducted a survey with a sample of 32 players from various Baghdad clubs. This entailed conducting the major poll on them through direct measurement, both collectively and individually, when they were present during training sessions at these clubs' headquarters. The administrative body and coaches worked together to aid the researcher in achieving her mission. The headquarters of the five clubs under scrutiny hosted this survey. We collected the paper forms for the measures from each responding player after they had finished their responses. We processed the data in the following steps:

The first stage involved calculating the weight score of each paragraph for the specified option using the triple correction key for both the psychological narcissism scale and the psychological loneliness scale for basketball players.

Step 2: We collected the weighted item scores to determine the player's overall score for each metric. In preparation for statistical analysis.

Step three is to tabulate the data for each metric separately on customized paper form.

"We can rely on measurement to make judgments about individuals' current situations and groups' future potential in various areas of human behavior." Al-Shujairi and Al-Zuhairi, 2022, p. 30. After completing the field survey procedures, we processed the results using the Statistical Package for the Social Sciences (SPSS) to automate data analysis. We calculated percentage values, mean, standard deviation, independent samples t-test, simple Pearson correlation coefficient, Cronbach's alpha, Pearson skewers coefficient, one-sample t-test, and simple linear regression coefficient.

The results:

Table (6) shows the results of comparing the mean with the hypothetical mean for each measure

The scale.	Number of paragraphs.	The total score.	The hypothetical medium	The arithmetic mean	Standard deviation	Average The difference between the two mediums	(t)	(Sig)	The indication
Psychological narcissism	22	66	44	46.22	4.278	2.219	2.934	0.006	D
The feeling of psychological loneliness	20	60	40	48.5	3.583	3.5	13.419	0.000	D

The difference is significant if (Sig) > (0.05) at a degree of freedom (n-1) = (31) and a significance level of (0.05), with the unit of measurement being (degree(

Table (7) displays the correlation coefficients for the two measurements, simple linear regression, contribution ratio, and standard error.

The influencer	The affected on	Simple correlation. ((R	Linear regression coefficient (2(R Coefficient) of determination (	Contrib ution rate	Standard error of estimation
Psychologic al narcissism	The feeling of psychological loneliness.	0.87	0.77	0.76	1.7

32 = N

Table (8) shows the results of the F-test for examining the quality of the linear regression model fitting for the scores of the two measures.

The influencer	The affected on	The contrast	Sum of squares	Degr ees of freed .om	Mean squares	(F)	(Sig)	The indication
Psycholog ical narcissism	The feeling of psychologi cal .loneliness	The decline	307.164	1	307.164	101.446	0.000	D
		Mistake s	90.836	30	3.028			

The value of (F) is a function if the significance level (Sig) is greater than (0.05) at the level of significance. (0.05)

Table (9) shows the results of the estimated values for the intercept and slope (effect) of the scores of the two measures.

The affected on	Variables	Beta β	Standard error	(t)	(Sig)	The moral
The feeling of psychol ogical lone line ss	The fixed limit	14.496	3.39	4.276	0.000	Spirit ual
	Psychologic al narcissism	0.736	0.073	10.072	0.000	Spirit ual

The value of (t) is considered significant if the degree of (Sig) > (0.05) at the level of (significance. (0.05)

Discussion

"We can rely on measurement to make judgments about individuals' current situations and groups' future potential in various areas of human behavior." Al-Shujairi and Al-Zuhairi, 2022, p. 30. After completing the field survey procedures, we processed the results using the Statistical Package for the Social Sciences (SPSS) to automate data analysis. We calculated the percentage values, mean, standard deviation, (Abdulhussein et al., 2024) independent samples t-test, simple Pearson correlation coefficient, Cronbach's alpha, Pearson skewers coefficient, one-sample t-test, and simple linear regression coefficient 'psychological narcissism promotes a sense of psychological loneliness. The researcher explains this finding by pointing out that basketball players' extreme confidence, sense of superiority, and sentiments of grandeur contribute to this level of psychological narcissism. (Kadhim, 2024b) This, in turn, adversely affects their feeling of psychological isolation, as not only does the player's environment shape them, but the player also shapes the environment, leading to responses directed towards the player. When narcissism manifests itself, people tend to insult or reject the player, (Kadhim, 2024a) either overtly or covertly, making the player feel socially unacceptable 'these two events could jeopardize his athletic career, or they could worsen other psychological reactions, resulting in further psychological disorders that would be difficult to manage with psychological guidance programs based on sports psychology concepts. As a result, this finding is consistent with scientific evidence that the influence and impact of behaviors must occur in a healthy psychological environment that promotes the players' personal characteristics. Although self-confidence can be beneficial, it's crucial to control its excessive levels to prevent psychological narcissism, which can negatively impact the player's personality and lead to feelings of social rejection and isolation.(Salman et al., 2022)

Psychological loneliness is a frequent problem that many people face, but it can be addressed by raising awareness, increasing social skills, and obtaining appropriate treatment. Understanding its roots and effects allows us to build effective techniques for dealing with it and living a healthier, more balanced social and psychological existence. Psychological narcissism is regarded as one of the most prominent causes of psychological loneliness, owing to the disruptions it generates in social relationships. (Fichter & Kaplan, 2011, p. 22). "Players who experience a sense of psychological loneliness tend to be less emotional and less responsive to the needs and feelings of others." Lakshmi (2017, p. 227)

Coping and adapting to stress entail the individual's behavioral and cognitive efforts when dealing with the stressful event. Certain mental, emotional, biological, and demographic qualities influence how people interact with stressors. Mous and Chefer, 2013, page 172. "Social environment plays a prominent role in satisfying individuals' needs and motivates them to learn behaviors that provide reinforcement or help them avoid punishment within the social context in which they interact. "Abu Riyash, 2007, page 31. "Psychological isolation can lead to a range of negative effects on mental and physical health, increasing the risks of depression and anxiety,

deteriorating overall health, increasing the likelihood of chronic illnesses, reducing sleep quality, and heightening feelings of stress".(Nashwan, 2024)

Coping and adapting to stress entails the individual's behavioral and cognitive efforts made while dealing with a stressful event. Certain mental, emotional, biological, and demographic characteristics influence how people react to stressors. Mous and Chefer (2013, p. 172).

"Social environment plays a prominent role in satisfying individuals' needs and motivates them to learn behaviors that provide reinforcement or help them avoid punishment within the social context in which they interact. "Abu Riyash. 2007, p. 31.

"Psychological isolation can lead to a range of negative impacts on mental and physical health, increasing the risks of depression and anxiety, weakening general health, boosting the likelihood of chronic illnesses, decreasing sleep quality, and heightening feelings of stress.

Furthermore, "the ability to effectively assess emotions during events requires staying on top of reactions to various circumstances, problems, and others. On the other side, strong self-awareness necessitates a readiness to tolerate the reflection of negative feelings." (Al-Khalidi, 2014, page 34) It is worth emphasizing that "if a player lacks information demonstrating their progress in task performance and self-efficacy assessment, the effort expended to reach the goal will be insufficient. Players, on the other hand, (Nashwan & Allawi, 2021) are willing to work hard to achieve a goal if they receive suitable rewards and have a high sense of their own ability to execute a task." (Brofen, 2010, page 213) "The player's favorable mental state makes him more capable of turning negative ideas into positive ones.

"It is also said that 'one of the finest and simplest methods to create confidence is for the athlete to focus on the perfection of their performance, because ideas, feelings, and behaviors all impact one another. The more confident the performance, the more confidence-filled feelings and thoughts grow. This process becomes even more important when the athlete begins to lose confidence and their competition notices it, necessitating confidence reinforcement through performance. Spring 2009, p. 625.

Further, "taking on unusual and unimportant tasks that involve a degree of difficulty and responsibility in social situations, among others, which carry a certain level of risk, is something only those with self-confidence would dare to do." (Quality, 2007, page 21)

Conclusions and Recommendations

1. Young basketball players exhibit significant levels of narcissism during training and competition.
2. Young basketball players have higher psychological isolation during training and contests.
3. Rising degrees of psychological narcissism lead to increased loneliness among young basketball players, severely impacting team play.
4. Addressing and mitigating psychological narcissism among basketball players, as well as enhancing their self-confidence and sense of responsibility, is crucial. Psychological pressures can lead to feelings of isolation, negatively impacting their performance in a team sport that requires cooperation.

Appendix (1) illustrates a picture of the psychological narcissism scale for basketball players.

T	.The phrase	It always applies .to me	It sometimes applies to .me	It never applies .to me
1	I love to be the center of attention in the team.			
2	I believe that I deserve to be the team leader more than any other player.			
3	I prefer working alone to working in a team			
4	I believe that I am one of the best players on my team			
5	I enjoy it when people acknowledge my achievements off the field			
6	I believe I deserve more appreciation from the coach and the audience			
7	I believe that I deserve special treatment compared to my colleagues.			
8	I believe the team would be in a better position if everyone followed my guidance.			
9	I enjoy talking about my achievements with others.			
10	I place my personal needs above the needs of the team.			
11	I blame others for the mistakes in the match.			
12	I feel jealous when my colleagues achieve great accomplishments.			
13	I find it difficult to accept criticism from the coach or my teammates.			
14	I believe that the criticisms directed at me are unjustified or exaggerated.			
15	I find it difficult to celebrate the success of others if I am not a part of it.			
16	I feel relieved when I see my name in the news or media.			
17	I believe that mistakes can significantly affect my personal image.			
18	I believe that my personal success is the most important thing in the end.			
19	I feel that my experiences are greater than those of the coach.			
20	I see that others need a long time to reach my achievements.			
21	I find that my status is higher than that of the other players.			
22	I love continuous appearances in the media.			

Appendix (2) illustrates the image of the psychological loneliness scale for basketball players

T	The phrase	It always applies to me	It sometimes applies to me	It never applies to me
1	I feel like I'm isolated from my teammates			
2	I feel like I don't belong to the group			
3	I feel like I don't have anyone to support me in the team			
4	I feel that my opinions and thoughts are not being heard in the team			
5	I believe that others ignore me in group decisions			
6	I find it difficult to make friends within the team			
7	I feel like I can't build strong relationships with my colleagues			
8	I feel like I can't build strong relationships with my colleagues			
9	I believe that my feelings and thoughts are often misunderstood			
10	I often find myself alone during practices or matches			
11	I feel like I'm excluded from the important conversations and discussions in the team			
12	I feel like I don't have an important role in the team			
13	I believe that my presence in the team does not have a significant impact			
14	I feel anxious when interacting with my colleagues			
15	I feel uncomfortable in social situations with the team			
16	I feel frustrated when I try to communicate with my colleagues and receive no response			
17	I feel that my relationship with my colleagues is superficial and does not go beyond the boundaries of the training environment			
18	I find it difficult to understand other people's problems			
19	I feel at ease when I am away from large gatherings			
20	I feel like I'm not being invited to participate in the matches			

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The effect of educational exercises by stimulating the brain with (Fit Light) technique on improving functional thinking and some kinematic manifestations and learning to perform running (400) meters

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2160](https://doi.org/10.37359/JOPE.V36(3)2024.2160)

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Article history: Received 28/ may/2024 Accepted 5/ June/2024 Available online 28/ September/2024

Abstract

The research aimed to prepare educational exercises to perform a 400-meter run by stimulating the brain with the Fit Light technology for students, and to identify the effect of these educational exercises by stimulating the brain with the Fit Light technique in improving functional thinking and some kinematic aspects of learning to perform a 400-meter run for students. The experimental research method was adopted by designing the experimental and control groups with tight control for the pre- and post-tests. The boundaries of the research community were represented by third-year students in the Department of Physical Education and Sports Sciences at Al-Mustafa University continuing the official working hours for the academic year (2023-2024), a total number of (85) students who were chosen. Among them for the main research sample were (40) students, representing (47.059%) from this community. Then, the experimental research group was randomly selected: students from Class (B), and students from Class (A) as a control group. After determining the measurement tools, an experiment was conducted by distributing (3) devices of (Fit Light) technology that operate with (LED) daylight or nightlight, distributed in arcs at distances of (100), (200), and (200) meters from the running track for an event of (400) meters, as the students applied it in the practical side of the main section for a period of (60) minutes of this lesson, at a rate of (2) lessons per week, for a period of (3) consecutive weeks. As for the students in the control group, they applied the same educational exercises, but without stimulating the brain with technology. (Fit Light), and the experiment began by applying pre-tests on Sunday, corresponding to (11/5/2023), and then the application began for the period extending from Monday, corresponding to (11/6/2023) until Wednesday, corresponding to (11/22). /2023), and the experiment ended with the application of post-tests on Thursday, corresponding to (11/23/2023), and the results were processed with the Social Statistical System (SPSS) so that the conclusions were recommendations that educational exercises by stimulating the brain with (Fit Light) technology help in improving functional thinking, In improving some of the kinematic aspects of both motor transfer between parts of the body and motor flow in terms of change in momentum, and in

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improving learning to run (400) meters among third-year students in the Department of Physical Education and Sports Sciences, it is necessary to increase the capabilities of athletics teachers to enable them to apply educational exercises. By stimulating the brain with Fit Light technology because of its important role in motor learning for both the mental and skill factor.

Keywords: Fit Light technology, functional thinking, kinematic aspects, learning to run (400) meters

introduction:

Improvements in kinesiology depend on the practical practice of educational exercise applications that are comprehensive in terms of stimulating thinking and stimulating the senses, in a way that supports renewed motor learning, taking into account the availability of the suspense factor to ensure that learners continue in these exercises to perform distance running, especially running a distance of (400) meters, which by its nature requires... Among the learners are the motor coordination between the parts of the body in the repetitive movements of running, with minimal performance errors, which increases the nervous fatigue factor among the learners and thus confuses their thinking, which harms their performance in running this event.(Sakran & Shehab, 2023)

“In order to develop students 'levels of thinking, we must help them acquire thinking skills, as possessing these skills is an educational goal and a necessary educational requirement) ”.Ahmed and Hakam, 2013, p. 565)

Also“ ,in order to know how to deliver a message to the future in an understandable way, we must learn how to choose appropriate thinking methods, which is the key to our success in this. In addition, our knowledge of thinking methods is part of the skills we need) ”.Saeed and Marwan, 2003, p. 30)

It is no secret that“ every individual has his own way of thinking, and it is extremely difficult to predict the ways of thinking of others) ”.Adnan, 2004, p. 79)

Also“ ,in the functional thinking style, students tend to enjoy formulating and planning solutions, and this function includes innovation, formulation, planning ideas, and strategies. They also prefer to realize their own ways of doing things and decide for themselves what they will do and how they will do it, and they enjoy doing things in their own way) ”.Saleh and Muhammad, 2007 ,p. 54)

In functional thinking, students prefer the executive method for specific tasks, and they adhere to the rules and laws. They are merely recipients of orders and carry out what is asked of them according to what is specified. They excel at solving problems, as the word “executive ”refers to these mental functions involved in investigation and not in planning. And the executive function is more implementation than planning) ”.Samia, 2005 ,p. 148)

Although the requirements for running (400) are physical to complete this distance, improving the motor performance of repetitive movements is one of the most important of these requirements as well, considering that the accompanying movements or common mistakes can lead to local fatigue and then mental fatigue that confuses. Thinking about performance, which then leads to harming the skill factor of this activity.(HalahaAtiyah et al., 2024)

“Superior skill performance cannot be performed in a distinctive manner unless it is subjected to research and analysis from multiple aspects in light of the laws and rules of biomechanics in preparation for achieving the best results) ”.Muhammad, 2022, p. 12)

Also“ ,in most movements, the limbs are relied upon as a source of driving force or as an auxiliary force, and motor transfer from the limbs to the torso appears clearly in most sports movements, and it can also be classified into motor transfer from the arms to the torso, motor transfer from the legs to the torso, and motor transfer ”.From head to torso. (Barquq, 2014, p. 11)

In addition“ ,the level of control moves from the spinal cord to the cerebral motor cortex, so the degree of movement complexity increases from simple control of simple reactions to complex movements) ”.Hamid, 2014, p. 328)

To delve into the principle of comprehensiveness for the skill performance of running a distance of (400) metres, the kinematic aspects provide support as a diagnosis of the safety of performing movements, as“ we can confirm that the main field of biomechanics is research into the rules, conditions, (Khedir, 2018) and technical origins of various motor skills in an objective manner, and there is no doubt that the study The objectivity of motor skill contributes to creating the foundations for the best and most appropriate possible skill performance, by expanding the base of theoretical information about the various types of sports activities in order to be able to innovate and achieve the best possible motor achievement) ”.Muhammad, 2003, p. 15)

Also“ ,motor performance in sports activities requires a high degree of motor coordination, meaning the ability to show appropriate motor actions in certain circumstances based on previous motor experiences or mastered skills, and in other words the athlete’s ability to act motorically in the face of different circumstances during performance) ”.Abu Al-Ala, 2012, p. 233)

“It is clear from Piaget’s opinions and ideas that learning is an active and continuous process that leads to the learner creating new cognitive structures (cognitive systems) that achieve successful interaction with tangible environmental stimuli and benefit from the experiences the learner has acquired in new situations ”.(Kawthar, 2007) , p. 114)

Also“ ,the task of the nervous system is to stimulate the various vital systems in the body to continue doing its work, and in the case of continuous stimulation, the speed of the organism’s motor activity increases) ”.Ali and Ikhlas, 2005, pp. 79-80)

Representing the stimulus leads to arousing attention, and therefore innovation must be done to avoid boredom. The stimulus must be attention-grabbing, in terms of its nature and spatial location, and it must be changed to draw attention, in addition to the intensity and novelty of this stimulus, so that it has applied importance in many scientific fields. (Sami, 2017, pp. 200-201)

Also“ ,attention directs awareness)awareness (Toward the stimuli in question so that they become accessible to the senses...which is the mutual relationship between the player and the environment, and attention is closely linked to thinking and observation) ”.Osama, 2000, p. 271)

“Therefore, the learner’s activity in the educational situation is considered a mental activity based on the interaction of the learner’s mental powers with educational stimuli and experiences, and then understanding and perceiving the stimuli and phenomena and the relationships between them, and thus learning has been completed) ”.Hindi, 2010, p. 42)

After this digression on the connection between the comprehensiveness of educational exercises with both the mental factor and the tactical performance factor to continue performing repetitive movements for the (400) meter event, and by virtue of the researcher's work in the academic and training field for some athletics events, she noticed a decrease in the levels of technical skill performance for learning to run the (400) meter event. Especially in the stage of crossing the third arc and entering the fourth distance of this event, which necessitated the need to delve into activating the brain through sensory stimulation of sight through technical mediation. (Ahmed Muhammad AbdulkhaliqAlhasan, 2024)) Fit Light (As an attempt by the researcher to provide support and support for the desired results of this research for both students and teachers to reduce this apparent weakness by learning the skillful performance of this event, this research aims to prepare educational exercises for performing a 400-meter run by stimulating the brain using technology) .Fit Light (For students, and learn about the effect of these educational exercises by stimulating the brain using technology) Fit Light (In improving functional thinking and some kinematic aspects for learning to run (400) meters among students, and the researcher assumes that there are statistically significant differences between the results of the pre- and post-tests for the experimental and control research groups in improving functional thinking and some kinematic aspects for learning to run (400) meters, (Kadhim, 2023) and there are Statistically significant differences between the arithmetic averages of the results of the experimental and control research groups in improving functional thinking and some kinematic aspects for learning to run (400) metres.

Method and procedures:

The experimental research approach was adopted, which is defined as“ controlling a specific variable within the conditions of an experiment that enjoys safety conditions to determine its effect on another variable or variables by fixing the rest of the influencing factors ”.(Fawqia, 2022, p. 218) The experimental design was also adopted for the experimental and control groups with tight control in the pre- and post-tests, and the boundaries of the research community were represented by the third-year students in the Department of Physical Education and Sports Sciences at Al-Mustafa University who are continuing the official working hours for the academic year (2023-2024), the total number of which is (85) students, who are naturally divided into two study divisions: the division)A (The number of students is (40), and the division) B (The number of students is (45) students. From both divisions, (20) students were randomly selected for the main research sample, bringing the number of this sample to (40) students, representing (47.059%) from this population. Then, students from the division were randomly selected for the experimental research group) .B(And the students of the division) A (As a control for it, (10) students from both classes were chosen for the exploratory sample and to verify the scientific foundations and parameters of the functional thinking scale, bringing the number to (20) students, representing (23.529%) from their community of origin. To measure functional thinking, the global scale (Harmson) was adopted, which contains (18).) A paragraph with (5) alternatives, each with a weight score according to the graded (5-1) Likert scale correction, with a total score (18-90), and a hypothetical mean (54), to suit the privacy of third-year students in the Department of Physical Education and Sports Sciences, By adopting the steps of statistical treatments, the experts agreed by a percentage (%80) It was more applied as it is to verify the apparent validity, and it was also tested in a survey to

complete its academic acceptance, by applying it to a statistical analysis sample of 20 students, to verify reliability with the (Cronbach's Alpha) equation 0.849 (At the level of significance) 0.05 (and degree of freedom 18 (To measure learning the skill performance of the (400) meter event, the students were photographed during the stage of crossing the third arc and entering the fourth distance of this event, by videotaping it with a high-speed camera type) Casio- Exilim Pro) Japanese origin at different speeds (300•600•1200 (image. Again, for the specificity of the current research, I rely on videography) 300) p. 2 number (3 (with (3) A camera holder equipped with a water cap, and presented to three evaluators so that the results of each test were recorded in a unit of measurement of a score out of (10), distributed as follows: the preparatory section: its score is (3), the main section: its score is (5), and the final section: its score is (2), From this same imaging, measurements of momentum transfer between body parts and kinetic flow were taken using the kinetic analysis program) Dart fish-Team Pro 5_full version, (in conjunction with the learner crossing the third arc distance of running (400) metres, and for testing on the students of the experimental group in the division) B (The researcher intended to distribute (3) Devices of technology) Fit Light (Which operates with lighting) LED (Day or night lighting is distributed in arcs at distances of (100), (200), and (300) meters from the running track for an event of (400) metres. Each of them is illuminated by the teacher, who stands in the middle of the track, at equal distances (10) before the student arrives. meters for each specific distance of the three arcs, by means of a (manual remote) that operates on a dry battery and is designated for these steps, the role of which is stimulating to the brain, as the student needs to pay attention, focus, and functional thinking to the technical performance of the repetitive movements of event running, and it was invested in the educational environment to accompany their exercises followed in their educational units in Each of the lessons followed in the section without the researcher's intervention in their content or educational methods and techniques when applying them in the practical part of the main section in the lesson, which has a total time of (90), as the students applied them in the applied part of the main section for a period of (60) minutes of this The lesson at a rate of (2) two lessons per week on Mondays and Wednesdays for a period of (3) consecutive weeks. As for the students of the control group in the section) A (They apply the same educational exercises, but without technical brain stimulation) Fit Light (The experiment began by applying the pre-tests on Sunday, corresponding to (11/5/2023), and then the application began for the period extending from Monday, corresponding to (11/6/2023) until Wednesday, corresponding to (11/22/2023). The experiment ended with the application of the post-tests on Thursday, corresponding to (11/23/2023), and the results of the pre- and post-tests were processed by the social statistical portfolio system) SPSS-V, (26 to calculate percentage values, the Cronbach's alpha reliability coefficient, Levene's test for homogeneity of variance, the arithmetic mean, the standard deviation, and the) t-test (for correlated samples, and test) t-test (for uncorrelated samples.

Results:

Table (1) shows the results of the pre-tests between the two groups

Variables	Group And their num		Q	+	)Live	)S	)t	)Sa	the differen
Functional thinking	empiricism	2	49.5	5.1	1.03	0.5	2.5	0.0	Not a sig
	Female officer	2	45.5	4.3					
Motor transport between body parts	empiricism	2	195.5	13.0	0.03	0.5	0.2	0.8	Not a sig
	Female officer	2	196.5	13.5					
Kinetic flow as a function of change in momentum	empiricism	2	176.5	0.9	0.00	0.5	0.0	0.9	Not a sig
	Female officer	2	176.5	0.9					
Learn to run 400 metres	empiricism	2	2.8	1.4	0.77	0.5	0.5	0.7	Not a sig
	Female officer	2	2.9	1.1					

The statistical difference is not significant for the expression of parity and line of initiation when the Sig is greater than (0.05) with a degree of freedom(38)

Table (2) shows the results of the pre- and post-tests for each group

Variables	The group and number	Comparison	Q	+A	F	F-H	t(	) Say	the difference
Function thinking	empiricis (20)	previous	49.75	5.159	17.35	5.153	15.05	0.000	Dal
		the next	67.1	1.553					
	Female officer (20)	previous	45.85	4.308	11.9	5.647	9.425	0.000	Dal
		the next	57.75	3.905					
Motor transport between body part	empiricis (20)	previous	195.15	13.660	44.8	16.71	11.98	0.000	Dal
		the next	239.95	8.513					
	Female officer (20)	previous	196.2	13.878	15.45	12.31	5.609	0.000	Dal
		the next	211.65	9.631					
Kinetic force as a function of change momentum	empiricis (20)	previous	176.52	0.932	35.69	3.053	52.28	0.000	Dal
		the next	212.22	3.205					
	The female officer (20)	previous	176.51	0.941	20.97	8.518	11.00	0.000	Dal
		the next	197.48	8.68					
Learn run metres	empiricis (20)	previous	2.81	1.436	5.5	1.701	14.45	0.000	Dal
		the next	8.3	0.733					
	Female officer (20)	previous	2.95	1.191	2.3	1.525	6.744	0.000	Dal
		the next	5.25	0.851					

The statistical difference is significant to express the pre-post comparison between the group when it is a score)) Say Less than (0.05) degree of freedom(19)

Table (3) shows the results of the posttests between the two groups

Variables And the unit measurement)degree(	Group And th number		Q	+A	)t(	)Say(	the differen
Career planning	empiricism	20	67.1	1.553	9.95	0.000	Dal
	Female offic	20	57.75	3.905			
Motor transp between body pa)kg.m/s(	empiricism	20	239.95	8.513	9.846	0.000	Dal
	Female offic	20	211.65	9.631			
Kinetic flow as function of chang momentum) kg.m	empiricism	20	212.224	3.205	7.126	0.000	Dal
	Female offic	20	197.481	8.68			
Learn to run 4 metres)degree(	empiricism	20	8.3	0.733	12.149	0.000	Dal
	Female offic	20	5.25	0.851			

The statistical difference is significant to express the comparison between the two groups when the Sig score is less than (0.05) with a degree of freedom(38)

Discussion:

From reviewing the results of Table (2), it is clear that the students of both research groups improved their dimensional values for each of the dependent variables, and from reviewing the results of Table (3), it is clear that the students of the experimental group who received their education with brain stimulation technology had a clear superiority) .Fit Light (over their peers in the control group in all of these variables. The researcher attributes the emergence of these results to the positive role of enriching the educational environment using technology) .Fit Light (To stimulate the brain, (Nashwan & Alzoubi, 2022) activate the senses, especially sight, and activate functional thinking in performance, especially in the fourth distance in the event running (400) metres, as the use of technology helped) Fit Light (In mental stimulation and reducing the phenomenon of fatigue imposed by the special endurance for running the distance of this event, which allows the student to increase the opportunity for quick functional thinking and attention to the positions of his body, which appeared clearly in increasing his ability to control parts of the body, which was proven by the results of improvements in the kinematic aspects of each of the motor transfer between Parts of the body to support the technical performance of running this event, as well as the flow of movement in terms of change in momentum. (Nashwan & Allawi, 2021) The researcher also attributes this improvement to the role of practice and application for a period of (6) consecutive weeks, which helped the repetition factor increase neuromuscular

control, which is one of the most important requirements for technical direction of skill performance. To achieve this effectiveness, the researcher invested in the use of technology)Fit Light (In educational exercises, without putting pressure on the student to increase the load on their mass for each of the kinematic aspects investigated, the improvement in the level of functional thinking had a positive role in supporting improvements in each of the kinematic aspects and learning motor performance for running (400) metres.(Al et al., 2022)

“The learner can continue to perform well in the event that he is exposed to mental fatigue by using the process of cognitive activation, compensatory effort, and changing the rules of performance by investing information repeatedly and repeatedly at the same time, in addition to using cognitive rules that require less mental effort) ”.Ghada, 2006, 55-56)

Also“ ,in the succession of exercises, the relationship between the brain and muscles is strengthened, and repetition helps to neglect external stimuli in performing the movement, and this succession serves to subject the body to a change in improving strength and athletic skill in the end) ”.lee & Brenda, 2007, P: 157)

“Exercises should be closely linked to the movements in the skill, and the training program should focus on the muscles working in the performance itself) ”.Frizzell & Dunn, 2015, P: 404-405)

Also“ ,the learner needs to be able to control his attention process to control it and focus attention on the stimuli that are important to him, and then to be able to make appropriate decisions that are not influenced by stimuli far away from him) ”.Saif, 2018, p. 5)

For career thinking) Functional thinking (plays a positive role when using analytical and experimental methods and thoughtful planning, and this type of thinking must be learned with mastery, which is the thinking related to formal logic, constructive research, and efficiency, and the classification of thinking into functional thinking/subjective thinking is rather a classification of truth/value) .Fact/ Value) (Youssef, 2005)

Also“ ,the change in momentum can be measured by the stability of the athlete’s mass and the change in his speed or not, to indicate the smoothness of the movement, whether it was done well or poorly. This is a real quantitative measure that expresses an aspect of the movement that, until the present time, was measured descriptively by looking (qualitatively), so It can be said that Smoothness of motion = change in momentum Considering that good force propulsion means good flow according to Newton’s second law) ”.Sarih Wahbi, 2010, p. 28) (Yaroub et al., 2024)

“The nervous signals in the muscle are strengthened by the effect of physical exercise on the efficiency of the motor system, and it stimulates the movement centers in the cerebral cortex and inhibits the emotional centers) ”.Siddiq et al., 2012, p. 165)

“When the player varies exercises between muscle contraction and static, a variety of muscles in the arms are stimulated, including the biceps and triceps. This helps balance muscle development and avoid overlooking the strengthening of certain muscles at the expense of others) .”.Baker & Other, 2023, P: 95)

“The ability to generate force and movement at high speed occurs by exchanging muscle work when the muscle works to stretch before it contracts. When the muscle expands, kinetic energy is stored and then released in the subsequent muscle contraction to generate fast and strong force and movement) ”.COTE, 2020)‘

Conclusion:

Conclusions Recommendations:

- 1- Educational exercises help stimulate the brain technically) Fit Light (In improving functional thinking among third-year students in the Department of Physical Education and Sports Sciences.
- 2- Educational exercises help stimulate the brain technically) Fit Light (In improving some kinematic aspects of both motor transfer between parts of the body and motor flow in terms of change in momentum among third-year students in the Department of Physical Education and Sports Sciences.
- 3- Educational exercises help stimulate the brain technically) Fit Light (In improving learning to run (400) meters among third-year students in the Department of Physical Education and Sports Sciences.
- 4- It is necessary to increase the capabilities of athletics teachers to enable them to apply educational exercises by technologically stimulating the brain) Fit Light (Because of its important role in motor learning for both the mental and skill factor.

Appendix (1) Functional Thought Scale

Choose the statements in terms of their applicability to you, by writing in the box to the left of the five statements the actual preference that applies to you (1, 2, 3, 4, 5), given that (5) represents the behavior that applies most to you and (1) represents the behavior that applies least to you. upon you.

Firstly, when there is a conflict (argument) between people over an idea, I tend to prefer the side that:		
A	It expresses the values and ideals included in the topic in the best way.	
fo	He knows and tries to end the conflict.	
C	It reflects my personal opinions and experiences in the best way.	
of	Expresses the idea effectively and concisely	
th		
e	The situation is more logical.	
Secondly: When I start working on a group project, what matters most to me is:		
A	Understand how rewarding (profitable) the project is for me and others.	
fo	Determine what we should do about the project.	
C	Organizing and arranging the project and not stopping it.	
of	Understand the project goals and value.	
th		
e	Discover the goals and values of individuals in the group.	
Third, in general, I can absorb new ideas in a better way by:		
A	How it differs from other ideas	
fo	Apply it to difficult situations.	
C	Understand how similar they are to familiar ideas	
of	Focus and careful analysis of it.	
th		
e	Link and return them to current or future activities.	
Fourth: Graphs and illustrations in a book or article, for me, are usually:		
A	It is useful if it is combined and explained in a narrative style (speech).	
fo	It is no more or less useful than the other method.	

C	More useful than narrative style (speech) if it is accurate	
of	It is useful if it raises questions about the narrative style.	
th		
e	It is useful if it explains important facts .	
Fifth: If I am asked to do a project (research), I will likely start with:		
A	Deciding whether to do it alone or need help.	
fo	Determine whether the project will be implemented or not.	
C	Anticipate the results likely to appear.	
of	Try to put the project into a detailed perspective diagram.	
th		
e	Try to put the project in as comprehensive a format as possible.	
Sixth: If I were asked to collect information from people about something of interest to society, I would prefer to:		
A	Meet them in small groups and ask general questions.	
fo	Hold an open meeting and ask them to give their views.	
C	I interview each individual and ask specific questions.	
of	I ask them to provide me with information that they have that is closely related to the topic.	
th		
e	I meet important people informally to get their thoughts.	
Seventh: I believe that something is true if:		
A	It seems logical and scientific.	
fo	It is consistent with other things that I think are true.	
C	It proves to be good in practice.	
of	It was contrary to the opposing opinion.	
th		
e	It can be verified personally with observable facts.	
Eighth: When I read a magazine article during my free time, it will likely be about		
A	How does a person solve a personal or social problem?	
fo	A controversial political or social issue.	

C	A true account of someone's interesting experience.	
of	An interesting comic character or event characterized by fun.	
th		
e	A summary of historical or scientific research.	
Ninth: When reading a report at work, I will pay more attention to:		
A	Whether the recommendations are achievable on the ground.	
fo	The relationship of the results to my personal experiences.	
C	Validity of the results of the stored data.	
of	Inferences and conclusions made from data.	
th		
e	The report writer's understanding of the goals and objectives.	
Tenth: When I have work to do, the first thing I want to know is:		
A	Why the work is worth doing.	
fo	What are the immediate benefits of completing the work?	
C	The best way to get it done.	
of	What effect does it have on other work that needs to be completed?	
th		
e	Who is the person who wants to get the work done? And when?	
Eleventh: Usually, I learn more about how to do something new by:		
A	Analyze how to do it in the best way.	
fo	I wish there was someone to show me how to do it.	
C	Start doing this thing as soon as possible.	
of	Listening to different points of view on how to accomplish it.	
th		
e	Understand how it relates to other things I know.	
Twelfth: If I were to take one of the tests, I would prefer:		
A	An oral presentation covering what I know.	
fo	A roundup of how I applied what I learned.	

C	An objective report covering the theoretical background of the topic and the research conducted on it.	
of	A set of objective, problem-oriented questions about the test material.	
th		
e	Discussing other people who are also being tested.	
Thirteenth: In general, I am more inclined to:		
A	Find existing methods that work and use them as much as possible.	
fo	I number the means and methods that must work.	
C	Prediction about how different methods might work together	
of	Discover better and newer methods.	
th		
e	I am trying to find ways and means that work in a new and better way.	
Fourteenth: People whose abilities I respect are likely to be:		
A	Economists and engineers.	
fo	Writers and teachers.	
C	Farmers and journalists.	
of	Philosophers and consultants.	
th		
e	Project managers and court presidents.	
Fifteenth: In general, I find an idea useful if it:		
A	It helps to clarify my own experiences and observations.	
fo	It has to do with the theories and ideas you have learned.	
C	You explain things to me in a new way.	
of	Explains relevant situations in an organized manner	
th		
e	It has a tangible practical application.	
Sixteenth: When I read an article about a controversial topic, I prefer to:		
A	The article shows me the benefits of choosing a point of view	

fo	The article highlights both sides of the issue and explains the conf	
	between them.	
C	The article summarizes the issues involved in a logical manner.	
of	The essay defines the values that the writer supports.	
th		
e	The article clarifies the facts in the field of controversy.	
Seventeenth: If I read a book outside my field of specialization, it is most lik		
because:		
A	Desire to depart from my field of specialization for a change.	
fo	Curiosity to learn a lot about this special topic.	
C	Specific interest to improve my professional knowledge.	
of	Someone I respect told me it's helpful.	
th		
e	Desire to increase general knowledge.	
Eighteenth: If I encounter a technical problem for the first time, I must:		
A	I think of a number of ways this might get in the way of solving the probl	
fo	I'm looking for methods that others might have used to solve it.	
C	I'm trying to find the best solution to solve it.	
of	Find ways to solve the problem quickly.	
th		
e	I try to link it back to a broader issue or theory.	

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The effect of third intensity zone exercises by varying the muscle elongation of the muscles of the dominant arm and the supporting leg on some physiological indicators and the performance of pushing the weight

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2171](https://doi.org/10.37359/JOPE.V36(3)2024.2171)

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Article history: Received 29/ may/2024 Accepted 5/ June/2024 Available online 28/ September/2024

Abstract

The research aimed to prepare exercises for the third intensity area with the variation of muscle elongation of the prevailing arm muscles and the supporting leg of the weight push players, and to identify the effect of the exercises of the third intensity area by contrasting the muscle elongation of the dominant arm muscles and the supporting leg in some physiological indicators and the achievement of weight pushing, and the researcher assumed that there are statistically significant differences between the results of the pre- and post-tests for the top and the time of the signal (EMG) for each of the dominant arm muscles and the supporting leg (brachial, radial brachial of the dominant arm, and rectilinear femurs). anterior, and twin leg) at the moment of the start of the rotation phase to push the weight of the players of the experimental group, and there are statistically significant differences between the results of the pre- and post-tests to accomplish the weight push distance for the players of the experimental group, the experimental research approach was adopted by designing one experimental group with tight control of the pre- and post-tests, The limits of the research community were represented by the young players in the hammer throwing event in the Etisalat Club, who numbered (9) players for the sports season (2023/2024), all of whom were deliberately selected for the research sample by (100%) from their original community in a comprehensive inventory method to represent the experimental research group, and to measure the electrical indicators of both the dominant arm muscles and the supporting leg (brachial, radial brachial of the dominant arm, anterior femoral rectum, and leg twin) The moment the rotation phase begins to push the weight The researcher adopted the (EMG) device and to measure the achievement the test was adopted Completion of the hammer throwing event in accordance with the conditions of competition in the international law of the Athletics Federation according to its international bulletin for the year (2018), and the exercises were prepared and applied with a field experiment that began with the application of the pre-tests on (16/11/2023), and then the application of these exercises for the period from (19/11/2023) to (11/1/2024), and the completion of the experiment by applying the post-tests on (14/1/2024), then the results were processed with

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the (SPSS) system. Extracts and applications are formed by the fact that the third severity area exercises help with the contrast of the muscular elongation of the prevailing arm muscles and the supporting man in increasing the summit of the EMG sign and reducing its time for both the prevailing arm muscles and the supporting man (the humerus, and the Hebrew muscles of the prevailing arm, the front thighs, and the twins of the leg) in the players The moment of the start of the rotation stage to push the weight, and helps in the development of the distance of the completion of the heavy -paying the players, and it is necessary to pay attention to the coaches of the heaviness in the physiological measurement by measuring the (EMG) signals for the prevailing arm muscles and the man who supported the players to pay the weight and plan and apply the exercises according to the physiological characteristics by adopting the results of this measurement, It is necessary not to exaggerate the training loads or how much muscular elongation resistors to reduce the problem of decreasing the speed of muscle rubble in the event of an increase in the amount of these resistors.

Keywords: the third severity area exercises, muscle elongation, physiological indicators, completion of the payment of weight.

Introduction

“Sports training in various athletics activities must be closely linked to the movements in the skill, so the physical abilities associated with basic skills must be developed by designing special training programs for each sporting activity.(Yasir et al., 2020) This means that the training program must focus on the muscles working in performance ”. same) .”Petersen & Other, 2002, P:212)

Thus“ ,third intensity zone exercises are a concept often used in physical exercise programs, and they mean exercises that target strength characterized by speed.(Idrees et al., 2022) These exercises include many fast and powerful movements that aim to improve rapid muscle strength and the ability to perform sudden and powerful movements efficiently .”.)Negra & Other, 2020, P: 132)

Also“ ,the third intensity zone works to develop a variety of physical abilities, including rapid muscle strength, and helps Exercises that focus on the third intensity in developing rapid muscle strength, which is the ability to produce great force in a short time, is useful in various sporting activities) ”.Ramirez-Campillo & Other, 2020, P: 168)

It is also“ very important that these exercises are performed correctly and under the supervision of a specialized trainer to avoid injuries and ensure that you get the most benefit from them. These exercises must also be included as part of a balanced training program that targets all aspects) ”.Baker, 2017, P: 3)

Since“ Third intensity zone exercises enhance the ability to jump and run very quickly, and are especially important in sports that require rapid acceleration, such as athletics and team sports) ”.Chaabene & Other, 2021, P:301)

Also“ ,among the distinctive exercises in the third intensity zone include exercises that combine strength and speed, such as throwing and tossing quickly and repeatedly) ”.Bompa &Haff, 2018, P: 33)

Thus, muscular strength takes precedence over the rest of the important factors in achieving the best achievement for a weight thrower, as muscular strength is defined as“ the ability to overcome or confront external resistance.(Nashwan, 2024) It is also defined as the

maximum amount of force that a muscle can perform in a single maximum muscle contraction. There are three types of muscular strength: With maximum strength, strength characterized by speed, and endurance of strength) ".Ahmed, 2019, pp. 263-264)

It is also known as "the basic element for achieving achievement in most physical and sporting activities. With regard to the term (job), (Khedir, 2018) it is the individual's specific tasks that are assigned to him, whether he is an athlete or a non-athlete, as all of these tasks require many abilities to perform) ".Manaf, 2017, p. 43)

As "ability is greater if the force is used over a relatively long distance or if the force is used over a short period of time or both together, sports games depend more on ability than on force) ".Marwan and Ibrahim, 2004, p. 106)

Also "muscular elongation is an important characteristic in activities that require a wide range of motion to perform sports skills, and the availability of this characteristic guarantees the great success of skill performance) ".Muhammad, 2008, p. 573)

Also "Muscular strength plays the main role in improving performance and preventing sports injuries? Not long ago, the information was available that muscular strength was of great importance and was considered the basic rule and an important requirement for almost all sports, (Mondher et al., 2023) but in recent years we can notice that muscular strength is definitely important ".But combine it with speed and it becomes explosive power and it will certainly be more important) ".Bompa & Michael, 2005, P: 195)

"The elasticity or elongation of a muscle is determined by the connective tissue that is formed from the sheaths of the skeletal muscle fibers in the muscle rather than by the proteins of these fibers themselves) ".Joseph & Kathleen, 2009, P: 66

Also "no matter how diverse the methods and methods for developing muscle strength are, the required improvements fall within the determinants of good planning for the application of these methods and methods, which often focus on plyometric and ballistic exercises in cycles of lengthening and shortening the muscle for rapid, high-production contraction in the effect of the force resulting from it) ".Goldberger, 2013, P: 258)

"The factors affecting the production of muscle force are determined by the number of muscle fibers stimulated, the cross-section of the muscle or muscles participating in the performance, the composition of the muscle fibers, (Mahmood & Kadhim, 2023) the angle of muscle force production, the length and relaxation of the muscle or muscles before contraction, the length of time spent in muscle contraction, and the degree of compatibility. The muscles involved in the performance, the player's emotional state before and during the production of muscle force, age, gender, and warm-up) ".Maad et al., 2010)

"It is believed that muscular contraction exercises improve muscle fiber coordination and utilize the energy storage and release mechanisms in the muscles, leading to increased explosive capacity of the muscles) ".LARKIN & O'LEARY, 2017, P: 88) "

And in explosive strength and speed strength training, trainers work to bring the muscles to their maximum ability to elongate, (Mousa & Kadhim, 2023) in accordance with the physical law of (extension) concerned with (stretch and force generation), the application of which is that the more a muscle elongates after shortening, the more it is able to produce greater muscular capacity) ".Ayed, 2009, p. 36)

As for "the strength of the arm to push the weight, it is the force that the athlete uses to push the ball or weight in athletics. This movement is part of the sport of discus throwing and javelin throwing, where the athlete lengthens his arm and then pushes the ball or weight with the greatest possible force through the air. The weight-pushing arm depends on muscle

strength and the correct movement technique. The athlete must develop the muscle strength necessary to execute the movement with sufficient force and effectiveness. It also requires training in the correct technique to transfer the greatest amount of force to the ball or weight).John & Art, 2020, P: 501)

Thus“ ,strengthening the arm that pushes the weight is important to increase the level of pushing the weight in athletics by improving the performance of explosive movements, which require the production of high force in a short period of time, especially in exercises that require the use of muscular strength to throw weights or perform strong movements with the arms, to strengthen the arms, A group of various exercises can be practiced that target this area effectively) .BRYAN & BELCHER, 2018, P:121)

Also“ ,exercises must be closely linked to the movements in the skill, and the training program must focus on the muscles working in the performance itself) ”.Frizzell & Dunn, 2015, P: 404–405)

“Developing arm strength through diversification has many benefits, the most important of which is the balance of muscle development, as when you vary exercises between muscle contraction and static, a variety of muscles in the arms are stimulated, including the biceps and triceps muscles. This helps balance the development of Muscles and avoid neglecting to strengthen certain muscles at the expense of others) ..Baker & Other, 2023, P: 92)

“Diversifying between static and muscle contraction in arm strength development exercises is of great importance in strength sports and athletics. This diversification includes the ability to strengthen the muscles when they are contracted (when bending the arm) and when static (when extending the arm), because the total strength of the arms lies in Endurance and control of strong movements in both directions) .Thomas & Newton, 2017, P: 152)

Likewise“ ,it is difficult for trainers to devise means of isolating the muscles participating in the technical performance of skills by making them work individually, which results in them resorting to diversity and exchange to include most of the muscles under the influence of resistances, provided that each resistance is proportional to the size, type, and direction of its work in that skill)”.Mc Bride & Other, 2022, P: 581)

Although muscular endurance exercises have in common their targeting of contraction volume and speed, and thus, depending on the type of effort in those exercises, they affect the neuromuscular work of weightlifters. Identifying and following up on the body’s internal reactions is a necessity for every coach or researcher in the physiology of sports training. To protect the player first and then monitor his development by inferring the physiological state, which must be associated with an improved level of performance in this event, as“ it was believed that human skeletal muscle fibers are innervated by only one nerve cell branch, but this branch may be one of Between (10-1000) similar branches, (Easa et al., 2022) the axon has the same, so every axon has axon)(It is connected through its peripheral branches to a number of muscle fibers, and this functional unit is called a motor unit (motor unit), and the size of the motor units (muscle fibers and nerve cells) varies within the muscle, as does their number)”.RONALD, 2009, P: 8)

Also“ ,the myosin heads can bind to the other actin unit furthest along the thin filament, and this bonding cycle requires electrical instructions coming from the brain to activate the process of separation and activation of the myosin repeatedly for the sliding filaments in this method and continues as long as calcium is present (in its concentration of increase) .

10come on μM (In the sarcoplasm, when calcium is returned to the calcium pump in the sarcoplasmic reticulum ..., ATPase ((and) ATP (They re-block the tropomyosin to form the crossing bridge and the muscle fiber relaxes, (Hussein and Aed, 2013, p. 69)

“The mechanism of transmission of electrical impulses from nerve fibers to skeletal muscle fibers and the occurrence of muscle contraction is summarized as follows ”: Motor area in the brain = nerve impulse = anterior horn of the spinal cord = motor nerve source = end plate of the motor nerve = acetylcholine reactions = adjustment of polarity Muscle fiber membrane = generation of a positively charged electrical potential = interference of fibrils within the muscle fiber) ”. Muhammad, 2000, p. 34)

Biochemically, to understand the mechanism of muscle contraction“ ,when the calcium ion and)...ATP (Available in sufficient quantities, the filaments interact to form actomycin and shorten by sliding over each other, and as the electrical excitation passes effectively along and below the sarcolemma, the calcium pump releases calcium ions from the sarcoplasmic reticulum to the sarcoplasm, and then subsequently works to activate and contract the row of filaments. This excitation begins The nerve stimulus reaches the muscle membrane through the motor end plate (the motor unit)) ”. Guyton, 2010, P: 147)

Because, through the limits of the researcher’s experience and academic orientation in the physiology of athletics training and repeated field visits to weight-pushing exercises at the Communications Club, she noticed the need to raise the level of achievement of the players by adopting modern methods that suit the privacy of these players and the specificity of the effectiveness, as her observation focused specifically on a weakness in control. Neuromuscular, which shows the large number of errors in crossing the throwing circle with the supporting foot, in addition to the weakness in this achievement, which affected the decline of the club players in the competitions held at the national level. (Kadhim, 2024) Thus, the research aims to prepare exercises for the third intensity zone by varying the muscle elongation of the muscles of the dominant arm and the supporting leg of the players. Pushing the weight, and identifying the effect of the third intensity zone exercises by varying the muscle elongation of the muscles of the dominant arm and the supporting leg on some physiological indicators and the achievement of pushing the weight. The researcher assumed that there are statistically significant differences between the results of the pre- and post-tests for peak and signal time) .EMG (For each of the muscles of the dominant arm and the supporting leg (the brachioradialis, the brachioradialis of the dominant arm, the anterior rectus femoris, and the gastrocnemius) at the moment of starting the rotation phase to push the weight for the players of the experimental group, there are statistically significant differences between the results of the pre- and post-tests for achieving the weight-pushing distance for the players of the experimental group.

Method and procedures:

The experimental research approach was adopted by designing a single experimental group with tight control in the pre- and post-tests. The boundaries of the research community were represented by the young players in the hammer throwing event in the Telecommunications Club, who numbered 9) Players continuing their training for the sports season 2024/2023 (All of them were chosen intentionally for the sample of the current research with a ratio of (% 100) of their community of origin using a comprehensive

enumeration method to represent the experimental research group according to the determinants of the experimental design of the research.

To measure the electrical indicators of each of the muscles of the dominant arm and the supporting leg (the brachioradialis, the brachioradialis of the dominant arm, the anterior rectus femoris, and the gastrocnemius) at the moment of starting the rotation phase to push the weight, the researcher used a device) EMG (type) Myo trace 400 (American made, sent by)...Bluetooth (With four detectors, signal results are obtained) EMG (After synchronizing between two types of digital cameras) SONY (Its speed does not exceed 75) Image.second) and analyze these signals with a program) Myo Research XP 1.06.67 (The store is stored in a laptop computer, in order to read both the peak and time of the signal in this measurement)EMG (For each of these muscles in order to infer the body's internal reactions to the third intensity zone exercises by varying the muscle elongation and the neuromuscular control processes it causes for each of these muscles. The hammer throw event test was also adopted in accordance with the conditions of competition in the International Law of the Athletics Federation, according to its bulletin. International for the year (2018) and the unit of measurement of the meter and its parts

The third intensity zone exercises were prepared by varying the muscle elongation of the muscles of the dominant arm and the supporting leg during the special preparation period and for a period of 8) Consecutive training weeks at a rate of (3) training units per week, each of which included (3-4) exercises that were applied in repetitions of (15-25) repetitions and in sets of (2-4) and with rest periods according to the phosphagenous energy system, as they were applied at the beginning of the main part. of the training unit by adopting the method of high-intensity interval training. The intensity of the exercises in one training unit ranged between (85-95%) and for a period ranging between (15-20) minutes out of the training unit's duration of (120) minutes, taking into account the gradation and undulation within the unit. Training, between one unit and another, and between one week and another

The experiment began by applying pre-tests on (11/16/2023), then applying these exercises for the period from (11/19/2023) until (1/11/2024), and concluding the experiment by applying post-tests on.(2024/1 /14)

The results were processed using) SPSS (version) V(28The percentage values, the arithmetic mean, the standard deviation, and the homogeneity of variance test were calculated) Liven ,(and test) T-test (for correlated samples.

Results:

table (1) shows the results of homogeneity of variance in the pre-tests

Measureme	Muscle	Testin	Arithmet	Standar	)Leven	)Say	Meanin
			mean	eviation			of the
							erence
(EMG) ment hing the ght	Brachialis	Peak nal (MG)	440.56	22.423	0.144	0.58	Not a
		time nal (MG)	0.579	0.034	0.123	0.66	Not a
	brachioradia forearm	Peak nal (MG)	430.78	24.407	0.466	0.03	Not a
		time nal (MG)	0.581	0.036	0.123	0.19	Not a
	Anterior us femoris	Peak nal (MG)	414	43.203	0.099	0.70	Not a
		time nal (MG)	0.592	0.044	0.136	0.68	Not a
	Leg twins	Peak nal (MG)	430	32.68	0.287	0.19	Not a
		time nal (MG)	0.557	0.036	0.401	0.07	Not a
Achievement of pushing the weight			55.78	3.153	0.203	0.17	Not a

Not significant: (Sig) (0.05) > at the significance level (0.05) and the degree of freedom n-1(8) =

Table (2) shows the results of the pre- and post-tests

Measur	Muscle	Test	Compa	The	Stan	Aver	Vari	)(	)Sa	Mea
ent			n	idle	d	erenc	e			g of
				Arith	iation		iation			erenc
				mic						
(EMG) ment hing the ght	Brachial	Pea	previo	440.5	22.4	131.	27.1	14.	0.0	Dal
		signal (MG)	the	572.2	16.2					
			t							

		time nal (G)	previo	0.579	0.03	0.12	0.03	10.	0.0	Dal
			the	0.457	0.00					
	brachior alis earm	Pea signal (G)	previo	430.7	24.4	93.6	18.0	15.	0.0	Dal
			the	524.4	9.54					
		time nal (G)	previo	0.581	0.03	0.12	0.03	10.	0.0	Dal
			the	0.454	0.00					
	Rectus oris gnum	Pea signal (G)	previo	414	43.2	135.	44.7	9.0	0.0	Dal
			the	549.4	26.8					
		time nal (G)	previo	0.592	0.04	0.13	0.04	9.2	0.0	Dal
			the	0.457	0.00					
	Leg ns	Pea signal (G)	previo	430	32.6	87.3	36.9	7.1	0.0	Dal
			the	517.3	10.5					
		time nal (G)	previo	0.557	0.03	0.10	0.03	8.7	0.0	Dal
			the	0.453	0.00					
Achievement of pushing weight			previo	48.89	3.98	6.88	3.88	5.3	0.0	Dal
			the	55.78	3.15					

Lentils) :Say (0.05) < (At the level of significance (0.05) and degree of freedom (N)-1.(8)=

Discussion

From reviewing the results of Table (2), it is clear that the weight-pushing players in the experimental group improved Physiological indicators of condyle electrophysiology and signal time) EMG (The muscles of the dominant arm and the supporting leg (the brachioradialis, the brachioradialis of the dominant arm, the anterior rectus femoris, and the gastrocnemius) at the moment of the start of the rotation phase to push the weight in the results of the post-tests were better than what these results were in the pre-tests, and also their distance of pushing the weight improved in the results The post-tests were different from what these results were in the pre-tests, and the researcher attributes the emergence of these results to the positive effect of applying the third intensity zone exercises by varying the muscle elongation of the muscles of the dominant arm and the supporting leg during the period of special preparation, as these exercises proved their effectiveness within a period of (8) weeks and their suitability. (Muhsen & Mohsin, 2020) In bringing about this physiological development with the appearance of the high peak of the signal) EMG (In a shorter time in the post-tests for each of the muscles under study, this physiological development was reflected in the ability to produce muscular force, the results of which showed an improvement in increasing the distance to complete the push of the weight, and in appropriate repetitions in increasing the speed of contraction of the muscles of the dominant arm that perform the push of the weight and tightening the muscles of the supporting leg to produce (Jawad et al., 2024) The greatest efficiency in producing muscle force, through the proper use of resistance with these exercises and through performing movements for muscle contraction, helped to increase the peak signal) .EMG (In a shorter time, by adopting the principle of varying the muscular elongation of the arm muscles in the cycle of shortening and abduction according to the type of exercise and the training intensity that suits the physical effort with these resistances and the moving and static elongation. The results of this research had a clear role in inferring the lack of muscle viscosity and the lack of internal resistances that impede contraction, in addition to the neuromuscular control factor improved at a high speed, showing results that were in line with the results of the development of weight-pushing achievement.(abdulaziz Muhsen & abdulaziz Muhsen, 2020)

As“ it is possible for the training program to bring about constant changes and adaptations in the characteristic of muscle elongation, especially if it exceeds a period of (6 weeks)) ”.Abdullah, 2010, p. 208) (H. H. Ali et al., 2020)

Thus“ ,training based on the gradual progression of the training load from one training unit to another with an appropriate increase will lead to appropriate muscular adaptation to this increase, leading to improvement of muscular strength. Accordingly, the trainee must set specific goals for his capabilities) ”.Adel, 2001, p. 254)

Also“ ,exercises that target the third intensity zone contribute to improving the performance of athletes in a variety of sports, such as athletics, speed and explosive power ”.)Lloyd & Other, 2016, P: 1239)

Also“ ,it is possible to obtain the greatest efficiency of muscular work when the muscle contracts at a moderate speed, and in the case of slow contraction or without motor output, large amounts of maintenance heat) Maintenance heat (It will be lost during the contraction process, even though no or little work is done, and thus the efficiency of muscle contraction decreases, and the highest effectiveness is obtained when the speed of contraction reaches) ”.(%30)Sylvia, 2001, P: 874)

Also“ ,third intensity zone exercises help with some functional improvements“ ”.By strengthening muscles and developing the ability to make fast and powerful movements, this type of exercise can improve daily performance and the ability to move efficiently) .”.Haff & Triplett, 2016, P: 103) (Asleawa et al., 2020)

As it is“ the explosive movement (explosive power) through which the athlete exerts the greatest amount of force and at the highest possible speed. In order for the athlete to train in this movement as quickly as possible, the weight of the resistance used must be light in order to achieve the goal of the training) ”.Duffield & Bishop, 2019, P: 249) (N. K. Ali et al., 2020)

“The rapid and changing situations that the athlete faces in applying third intensity exercises can achieve progress in performing exercises that depend on the third intensity, and can contribute to building self-confidence and belief in the body’s capabilities, and then better improving the skill factor required) .”.Lloyd & Other, 2016, P: 1247)

Thus“ ,exercises that focus on mobile contraction and exchange of muscle work work to develop fast-twitch muscle fibers and improve coordination between the nervous system and muscles. This contributes to increasing the ability to jump, run fast, and explosive power in different types of sports such as long jumping, lifting ”.Weights, throwing the ball, etc) .Ryan, 2018, P: 111) (Ahmed & Yousif, 2019)

Conclusion

Conclusions and recommendations:

-1Third intensity zone exercises by varying the muscle elongation of the muscles of the dominant arm and the supporting leg help increase the peak signal).EMG (And reducing the time for each of the muscles of the dominant arm and supporting leg (brachialis, brachioradialis of the dominant arm, anterior rectus femoris, and gastrocnemius) in players at the moment the rotation phase begins to push the weight.

-2The third intensity zone exercises, by varying the muscle elongation of the muscles of the dominant arm and the supporting leg, help in developing the weight-pushing completion distance for the players.

-3It is necessary for weightlifting trainers to pay attention to physiological measurement by measuring signals)EMG (The dominant arm and supporting leg muscles of the players push the weight and plan and implement exercises according to physiological characteristics based on the results of this measurement.

-4It is necessary not to exaggerate the training loads or the amount of resistance to muscle elongation in order to reduce the problem of decreasing the speed of muscle contraction if the amount of these resistances increases.

Appendix (1) shows examples of exercises in the third intensity zone, varying the muscle elongation of the muscles of the dominant arm and the supporting leg.

- .1 Contraction with dumbbells) Dumbbell Bicep Curl:
the From a sitting position on a bench at a 90-degree angle or standing with your feet shoulder-width apart.
the Hold dumbbells in the dominant hand facing the floor with the arms extended at the sides of the body.
the Start by gradually bending the dominant arm until the dumbbells reach the top of the shoulder, focusing on using the front muscles of the dominant arm.
the Hold this position for a moment and then slowly return to the original position.
- .2 Straight bar contraction) Barbell Bicep Curl:(
the Stand with your feet shoulder-width apart or less and hold a 20-kg straight bar toward the ground.
the Start gradually bending your dominant arm until the barbell reaches the top of your shoulder, keeping your body and supporting leg stable..
the Hold this position and then slowly return to the original position.
- .3 Iron cord contraction) Cable Bicep Curl:(
the It uses the cable rope attached to the cable machine.
the Stand by placing your feet shoulder-width apart in front of the device, holding the rope with your hands extended on either side of the body, and focusing on stabilizing the supporting leg..
the Start by gradually bending your dominant arm until the rope is at the top of your shoulders.
the Hold this position and then slowly return to the original position.
- .4 Reversed contraction) Reverse Bicep Curl:(
the Hold the dumbbells or barbell in reverse, with the palms facing down.

the Stand in a straight and comfortable position, making sure that the arms are extended on either side of the body and focusing on stabilizing the supporting leg..

the Begin gradually bending your dominant arm until the dumbbell or barbell reaches above the shoulder.

the Hold this position and then slowly return to the original position.

.5 Mild contraction) Hammer Curl:(

the Hold a dumbbell with your dominant hand in an upright position, with the back palm facing the body (as if holding a hammer).

the Start gradually bending the dominant arm until the dumbbell reaches the top of the shoulder, focusing on the front and side muscles of the arm and focusing on stabilizing the supporting leg..

the Hold this position and then slowly return to the original position.

.6 Multi-movement exercises) Compound Exercises:(

the Combine arm exercises with multi-action exercises such as pulling, extending and contracting, such as cable pull-ups and triceps pull-ups) Tricep Pushdown (And the back pull exercise) Pull-Up .(Focus on stabilizing the supporting leg.

.7 Lift weights quickly:

the Lift weights (dumbbells or bar) with the dominant arm using maximum force and as quickly as possible.

the Emphasis is placed on the rapid movement of the dominant arm and supporting leg and the explosive ability to lift weights.

.8 Quick clicks:

the Use a Chinese air ball and hold it between your hands.

the Squeeze the ball hard and release it quickly, then catch it again and prepare for the subsequent squeeze.

.9 Rapid contraction:

the Stand in front of the machine and use a cable rope or light weights.

the Contract quickly and forcefully, then slowly return to the original position, focusing on stabilizing the supporting leg.

.10AFor the strong basket) Medicine Ball Throws:(

the Keep a medicine ball or heavy ball between your hands.

the Pounce forcefully and throw the ball away as quickly as possible, focusing on stabilizing the supporting leg.

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A historical study of the Asian Men's Volleyball Championships from (1975) to (2021)

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2039](https://doi.org/10.37359/JOPE.V36(3)2024.2039)

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Article history: Received 27/February/2024 Accepted 16/ April/2024 Available online 28/ September/2024

Abstract

Studying the history of sports and knowing their achievements is of great importance as it is considered a means of advancement for societies and a measure of their culture and stages of development in all fields. One of the important sports games at the international and local levels is volleyball, which has a long history at the global level. The importance of the research lies in knowing the teams participating in the Asian championships and their most important results and where they were held from the first Asian Championship for men's teams in (1975) until the last championship held in Japan in (2021). Through the teams' participation in the Asian Men's Volleyball Championships, many teams have emerged on the Asian scene. The question here is whether there is documentation of these participations. What are the most important positions that the teams have obtained and also knowing the reasons for their development. And knowing the reasons for the fluctuations in the results and participations of some teams in the Asian Men's Championships. The most important conclusions reached by this research are that there are many achievements and participations for the teams that have not been documented. They have been documented.

Keywords: History. Volleyball. Asia.

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Introduction

The study of history is of great importance to those interested in the fields of education in general and in the field of physical education and sports sciences in particular. This is because contemporary positions and issues that impose themselves on society at the present time are not the production of the past. Therefore, any analysis of the present or planning for the future necessarily requires studying past events and linking them with the present in the form of an interconnected sequence in which the results and components of success are connected and preparing appropriate plans for development. As "sports were the first pillar of cultures and a pillar of ancient human civilizations until it became an essential part of contemporary civilizations and a manifestation of civilizational progress." (Ali, 2001, p. 3).

Volleyball is a game modified from an Italian game that was played in the Middle Ages. Then this game spread until it reached Germany in (1893) and was known at that time as (fast ball), but the emergence of volleyball was recognized in (1895). "The game was brought to America by the physical education teacher (William G. Morgan) who was born in a suburb of New York City on January 14, 1870. Morgan joined Mount Herman Preparatory School, but after a year he moved to the Christian Workers School (currently Springfield) where he developed good ideas and a broad background about some recreational skills and activities.(Kadhim, 2024) These skills that Morgan developed coincided with the most important periods of development of physical education that prevailed in the United States of America at that time. This idea was between (1890, 1900), which is considered the starting point for the movement, as it became one of the exciting games that everyone plays. The other thing that helped spread this game is that it can be played anywhere, by any number, and by both sexes. As a result, it is considered one of the enjoyable recreational games." (Kharibet, Hamdi, 1990, 2). The International Volleyball Federation has made strenuous efforts to spread the game through media publication, as well as making many investments in television broadcasting of matches, holding tournaments and development courses, as well as setting many rules and laws for the game, as well as making amendments to some of the rules of volleyball that would develop the physical and skill aspects, in addition to arousing enthusiasm among players, coaches and administrators to prepare, prepare, take initiative and find alternatives that are compatible with these amendments. The importance of the research lies in documenting the Asian championships and knowing the participating teams, their most important results and the place where they were held from the first Asian Championship for men's teams in (1975) until the last championship held in Japan in (2021). The problem of the research lies in many questions, which are: Is there documentation of the Asian championships in men's volleyball and the place where they were held for the period from (1975 to 2021)? What are the positions obtained by the teams participating in the Asian Men's Championships for the period from (1975 to 2021). Are there reasons that prevented some national teams from participating in the Asian Men's Championships

The aim of the study is to identify the results of the teams participating in the Asian Men's Volleyball Championships for the period from (1975 to 2021). Archive the results of the teams participating in the Asian Men's Volleyball Championships for the period from (1975) to (2021). Diagnose and analyze the reasons for the fluctuation in the participation

of some national men's teams in the Asian Championships for the period from (1975) to (2021).

About the history of the Asian Volleyball Federation (AVC)

At the beginning of the twentieth century, volleyball turned from its recreational aspect to a competition game on the other side of the world, i.e. the continent of Asia, as (Herzog, B) mentions that in the year (1900) the game entered China by (Galley and Robertson) and the game also entered Japan in the year (1906) by the student (Heizo Omori) who was a student at (Springtved) College in the United States of America. There was another development in the field of this game, as some Asian peoples developed the law of this game in their favor, as they slightly reduced the height of the net to suit their physical specifications, especially height, and also determined the number of players in each team to (9) players in each team, and out of their desire, they began to practice volleyball as a competitive game. Some competitive volleyball matches were held in Manila, the capital of the Philippines, in the year (1913). (Herzog, B. 2002, 8).

The Asian Volleyball Federation is the sports body responsible for volleyball, whether indoors or on the beach, in Asia and Australia. "Volleyball appeared in Asia at the beginning of the twentieth century and was played with a number of players between (6/12/16) players in each team. The first East Asian Games Championship was played with (16 players). In the Shanghai Championship in China in (1921), the system of (12 players) for each team appeared. In (1927), the number of teams was reduced to nine players for each team" (Adnan, Mahdi. 2012, 17). "In (1968), the system of six players in each team was used. The AFC has 65 members, most of whom are located in Asia and Australia, but excludes transcontinental countries, parts of which contain areas outside the Asian continent, such as (Azerbaijan, Georgia, Russia and Turkey), which are members of the European Union instead of the Asian Union, and three other states located along the western edge of Asia (Armenia, Cyprus and the Zionist entity). In 1975, the first Asian Championship for men and women was held in Australia." (Adnan, Mahdi. 2018, 18). These championships continue to the present time, as they are held every two years in an Asian country, and the country that nominates and issues a nomination letter for the championship wins the organization of this championship through the annual meeting of the Asian Federation. Due to the development of the game globally, it has greatly affected Asian volleyball, as many important developments and changes have occurred in the history of Asian volleyball. There are teams that have won the World Cup and teams that have witnessed a major revolution in volleyball, including (Iran, Qatar, Bahrain), as Iran has been able to impose its control over the Asian continent at the level of (juniors, youth and advanced) and even clubs, as Iranian clubs are among the most prominent clubs on the continent. As for Qatar and Bahrain, we note that the development that has occurred in Qatari volleyball has been noticeable in recent years through the great work done by experts and analysts who have been attracted to develop the game and through the many participations and entry into long-term camps in many European countries, which has resulted in the development of the game..

Method and procedures;

Scientific research methods.

The nature of the research required the researcher to use the historical method or what is called the documentary method, benefiting from the historical development that occurred in the Asian participation of men's teams in the Asian Championships from (1975) until (2021) the last championship held in Japan. This is due to the suitability of this method to the objectives of the study, as the historical method is "a description and recording of past facts and events, then interpreting and analyzing them to reach facts intended to draw a picture of the future" (Mohsen M, 2021, p. 64).

Research community and sample.

The research sample included the Asian men's volleyball championships, which numbered (21) championships, as they were chosen intentionally as they fall within the period under study from (1975) until (2021). The reason for choosing the year (1975) was because in this year the first Asian men's volleyball championship (national teams) was held. And the year (2021) is the last championship.

Table (1) Shows the Asian Championships for National Men's Volleyball Teams from (1975) to (1999) and their venue

t	Championship number	Host country	Year	Number of teams	First place	Second place	Third place
1	First Championship	Australia	1975	7	Japan	Korea	china
2	Second Championship	Bahrain	1979	15	china	Korea	Japan
3	Third Championship	Japan	1983	11	Japan	china	Korea
4	Fourth Championship	Kuwait	1987	17	Japan	china	Korea
5	5th Championship	1989		19	Korea	Japan	china
6	6th Championship	1991		15	Japan	Korea	china
7	7th Championship	1993		16	Korea	Kazakhstan	Japan

8	8th Championship	1995	14	Japan	china	Korea
9	9th Championship	1997	17	china	Japan	Australia
10	10th Championship	1999	14	china	Australia	Korea

Through the previous table, which showed the results of the first three teams in the Asian Men's Volleyball Championships from (1975) to (1999), it became clear to us that the team that won the most first place is the Japanese team with (5) championships, followed by the Chinese team with (3) times, then the South Korean team (twice). The Japanese team was able to win second place twice and third place in two championships. While the Chinese team won second place three times and third place twice, followed by the South Korean team, which was able to win second place in three championships and third place in four championships. (Yasir et al., 2020) There are other teams that were able to win second place once during that period, namely (Australia and Kazakhstan), as each of the two teams was able to win second place in two championships and third place in one championship for the Australian team. (Idrees, Yasir, & Rashied, 2022) state: “A sporting achievement in any sporting event or game requires giving the reasons and justifications that led to that achievement and the multiplicity of duties and activities that were used in the training environment and the work that was carried out to achieve the optimal achievement and that the best way to develop performance is through training in a style that is very similar to the style of the competition itself” (Subhan, Fleih, Star. 2015, 215).

From what was presented in the previous table, we notice that the East Asian teams have dominated the Asian scene for several years, and this is what the results indicated through the large number of participations in that tournament, as well as the development of those teams through reliance on national expertise, and also working to spread the game by hosting many tournaments, including the World Cup and the Olympic Games, (Sikhe & Yasir, 2020) as well as the work of the technical committees by nominating some figures for the presidency of the International Federation and the Asian Federation, as (Omar Saeed) told us, “In 1952, the Asian Volleyball Federation was formed under the chairmanship of Mr. (Nishikawa) from (Japan) during the Asian Games held in Manila” (Sabar. 2019, 89).

As for the Iraqi participations in those championships, there were two participations in the year (1979) in the second Asian Championship hosted by the Kingdom of Bahrain, where the Iraqi team was able to achieve eighth place. The second participation was in the year (1987) in the State of Kuwait, where the Iraqi team achieved ninth place. The game in Iraq was greatly developed, as Mr. (Alaa Shaker) who was supervising the training of the national youth team at that time told us, “The Iraqi teams in all categories were distinguished, and there was continuous work to build and develop the Iraqi volleyball game, as the national volleyball team was one of the most prominent teams at the Arab, Asian and international levels. (Idrees, Yasir, & Hammood, 2022) There was continuous

support from those responsible for Iraqi sports (the Iraqi Central Volleyball Federation) in terms of holding external camps for the Iraqi teams and interacting with international teams. There was also a distinctive and strong league between the clubs. The most prominent clubs at that time were (Al-Rasheed, Al-Jaish, Al-Shabab, Al-Quwa Al-Jawiya).

Table (2)

Shows the Asian Championships for National Men's Volleyball Teams from (2001) to (2021) and the place where they were held and the number of participating teams and the first three places.

t	Championshi p number	Host country	Year	Numbe r of teams	First place	Second place	Third place
1	Eleventh	Korea	2001	12	Korea	Japan	china
2	Twelfth	china	2003	15	Korea	china	iran
3	Thirteenth	tailand	2005	18	Japan	china	Kore a
4	Fourteenth	Indonesia	2007	17	Australi a	Japan	Kore a
5	fifteenth	Philippine s	2009	18	Japan	iran	Kore a
6	sixteen	iran	2011	16	iran	china	Kore a
7	Seventeen	uae	2013	21	iran	Korea	china
8	Eighteen	iran	2015	16	Japan	iran	china
9	nineteen	Indonesia	2017	16	Japan	Kazakhsta n	Kore a
10	Twenty	iran	2019	16	iran	Australia	Japan
11	Twenty .one	ijaban	2021	16	iran	Japan	china

From what was shown in the previous table, the table shows us that the Japanese and Iranian teams won first place in four championships for each team, and the Korean team won two championships, and the Australian team was able to obtain first place in the Asian Championship (fourteenth) for the first time in its history, which was held in Indonesia. As for the second place, the Japanese team was able to obtain it on three occasions, the Iranian team in two championships, the Chinese team three times, and South Korea, Kazakhstan and Australia once. As for the third place, we note that the Korean team ,won (5) times, the Chinese team (4) times(Easa et al., 2022) .and Japan and Iran once

Through the previous results, we saw many other teams that were able to win the championship, including the Iranian team, which was able to win the championship on four occasions from (2011) to (2021). This development did not come out of nowhere, as the Iranian team was able to win the championship through deliberate work on developing the game, and (Murray) mentioned. "If the need for achievement is strong, the individual seeks to do difficult and arduous work in order to show his ability to handle the work and organize the ideas associated with it, and thus accomplish this quickly and independently as much as possible. (Kadhim, N., & Shahr, 2013, 111). The Iranian Federation made a major revolution in the field of sports, especially volleyball, by appointing coaches from different schools in order to develop the game. The first appointment made by the Federation was to sign memoranda of cooperation with many countries, including Brazil, Italy, Russia and Serbia. The first appointment was for the coach of the Korean national team, as Korea was dominating Asia, and he worked to develop the national team and also send coaches to work with international coaches (coexistence) and also build a new generation that would be a basic tributary for the national teams through the volleyball schools that the Iranian Federation has spread in various provinces. Also, a professional league was established at a high level by attracting the best coaches and players in the world, as well as hosting many tournaments at the continental and international levels for all categories, and Iranian teams (clubs) also dominated the Asian club championships and qualified for the Club World Cup. Among the most prominent of these Iranian clubs are (Paykan, Kaleh, Bank Saipa) as well as spreading the game at the primary and secondary school level and raising awareness among the Iranian street through distinguished media. All these reasons were the reason for the development of the game there

(Jabbar, Hekmat) states, "The reason for the development of any game, whether it is a group or individual game, is correcting and processing information and performing exercises in the correct way and the learner discovering knowledge himself. This is the successful strategy in learning and developing the game and skills" (Jebbar, M., & Hekmat, A. . 2020

As for the Arab participations in the Asian championships, they were very few compared to other teams. We find that the Iraqi national team participated in (3) championships, the Kuwaiti team in two championships, the Qatari team in (5) championships, the Bahraini team in three championships, the Saudi team in three championships, the Lebanese team in two championships, the Omani team in two championships, and the Emirati team in two championships.

The weakness of Arab participations in these championships negatively affected the development of the game in Arab countries, especially Iraq, as "after reviewing the situation in Iraq, we notice that it has never stabilized, and even if it stabilizes, the period of stability is short and casts its shadow on sports in general and the game and the subject of research in particular, volleyball." (Ramadan, M. (2018 K 18).

Through the above, the number of medals won by the teams in the Asian volleyball championships for men's teams can be limited and tabulated through the following table



Table (3) shows the number of medals for the period from (1975 to 2021)

t	Team Name	Gold Medal	Silver Medal	Bronze Medal	Number
1	Japan	9	4	4	17
2	korea	4	4	9	17
3	iran	4	2	1	7
4	china	3	6	6	15
5	Australia	1	3	1	5
6	Kazakhstan	.	2	.	2
ToTel		21	21	21	63

The previous tables and chart show us the superiority of East Asian teams over others in the number of times they won first place, as the Japanese men's volleyball team won (9) first place championships, (4) second place and (4) third place, (Moayd et al., 2019) outperforming the South Korean team that managed to win first place with (4) championships, second place (9) and third place (4). As for the Iranian team, it managed to achieve first place in (4) championships, equal to the Korean team in the number of first place wins, second place twice and third place once. The Chinese team achieved first place in (3) championships, second place in (6) championships and third place (6) championships. (Kadhim et al., 2021) The Australian team followed it with one first place championship, (3) second place and once third place. The Kazakhstani team won once second place. The development that Asian volleyball has achieved through the aforementioned teams did not come from a vacuum, but rather through work and searching for what is new and advanced and using the best training and statistical methods. (Alwan et al.) tell us that “using information and statistics extracted from statistical analysis helps increase the effectiveness and motivation of team members, when the player knows that his performance is recorded moment by moment, and that this can be easily retrieved through the analysis process.” (Alwan, Youssef, 2012, 19).

Conclusions.

1- Many participations of Asian teams in tournaments are not documented and have not been addressed, and therefore there are several advanced positions that have been achieved during the period from (1975) to (2021).

2- It became clear to us that the team that participated the most in the Asian tournaments is Japan, Korea/C, and then China from (1975 to 2021

The team that has won the most first place in the Asian Men's Championships is the Japanese team, followed by the Korean team, then the Iranian team.

Recommendations

1- The need to pay attention to documenting the participation of national teams in the Asian Men's Volleyball Championships on an ongoing basis by opening special records for participations.

2- Conducting other historical studies of sports teams and the number of participations of women's national teams in the Asian Championships

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The effect of rehabilitation exercises in improving the range of motion and muscle strength of the muscles working on both sides of the spine for women aged (30-40) years

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2188](https://doi.org/10.37359/JOPE.V36(3)2024.2188)

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Article history: Received 14/ July/2024 Accepted 20/ August/2024 Available online 28/ September/2024

Abstract

The research aims to relieve pain among women members of the research sample who suffer from low back pain, improve the muscle strength of the muscles working on both sides of the spine, and improve the range of motion of the spine. The researcher used the experimental method for one experimental group using the method of pre- and post-measurements as an experimental design due to its suitability to the nature and purpose of the research. Then The research sample was chosen intentionally from women with lower back pain, numbering (14) whose ages ranged between (30-40) years. Also, a number of (4) cases were randomly selected from the research community and outside the basic sample as an exploratory sample. The researcher used a rehabilitation program. Proposed for six weeks, the following results were reached:

The use of various methods and methods helps to achieve a greater rate of improvement and in less time and cost. In light of this, the researcher recommends:

Spreading awareness and culture among community members about paying attention to early detection of lower back pain to prevent the injury from worsening to advanced degrees.

The research aims to reduce pain among women members of the research sample who suffer from lower back pain, improve the muscle strength of the muscles working on both sides of the spine, and improve the range of motion of the spine. The researcher used the experimental method for one experimental group using the pre- and post-measurement method as an experimental design due to its suitability to the nature and purpose of the research., The research sample was chosen intentionally from (14) women with lower back pain whose ages ranged between (30-40) years. Also, a number of (4) cases were randomly

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selected from the research community and outside the basic sample as an exploratory sample. The researcher proposed a six-week rehabilitation program. The following results were reached:

- The rehabilitation program has a positive effect on the injured members of the experimental group.

- The use of various methods and methods in the rehabilitation program, such as a physical therapy program, helps to achieve a greater rate of improvement and at a lower time and cost. In light of this, the researcher recommends: - Spreading awareness and culture among community members about paying attention to early detection of cases of lower back pain to prevent the injury from escalating to advanced degrees.

Keywords: rehabilitation, internal ligament, football

Introduction:

After the spine, the main support of the human body, it is one of the areas most exposed to stress, especially in its most mobile parts, such as the lumbar region, where sudden movements, accidents, weight gain, and incorrect exercises, etc., result in what are called lower back injuries, where lower back pain occurs. Back pain is among the most common reasons for visits to health care centers. Pain is usually caused by problems in the musculoskeletal system, especially the spine. Low back pain becomes more common as people age, and it is one of the most expensive conditions in terms of health care payments and disability payments. And wasting work time. The problem of the research lies in the high percentage of people suffering from chronic lower back pain from which many suffer, and the negative effects of this pain in the aspects of their working, health and psychological lives. These pains affect their movements and the failure to carry out their work and daily activities, as well as the spread of the phenomenon of random, unstudied treatments and their impact. And its side effects on those affected. The research aims to prepare therapeutic exercises to relieve lower back pain. It was found that there were statistically significant differences between the average of the pre- and post-tests of the experimental research group in the effect of the proposed exercises on the muscular strength of the muscles working on both sides of the spine and the range of motion of the spine for the individuals in the research sample, and for the benefit of the post-test. In this field, some similar studies were conducted, including the study of (Anam Majeed Al-Najjar).) which aimed to prepare three different programs and find out which of the three programs has the advantage in rehabilitating patients with chronic lower back pain, as the sample amounted to (30) patients whose ages ranged between (25-45) years. The researcher found that there were significant differences between the pre- and post-tests for some variables. Physical and electrophysiological studies of the gynecological nerve supplying

pain to the lower extremities. As for the study of Dr. Baida Razzaq Jawad (2017), the study aimed to prepare rehabilitation exercises and medical devices accompanied by a nutritional program for women suffering from a herniated disc. The researcher concluded that there was a noticeable improvement in the weight loss of the majority of the affected women, and this confirms the effectiveness of the nutritional program and also the operation of the stimulation device consisting of negative and positive electrodes. On local stimulation through the passage of intermittent and continuous current over the affected area, which in turn prepares and stimulates the exercise

The anti-gravity walking device is a technology that enables the injured to move in new ways and without pain to regain the ability to move and improve skill, motor and physical performance (Fadel & Kadem, 2021), as it allows the injured to move without restriction or pain to restore and build muscle strength, movement, balance and physical fitness. It also grants a high degree of intensive and early rehabilitation for those suffering from knee joint injuries. (Easa et al., 2022)

Rehabilitation programs have recently received great attention in increasing the number of research, as well as specialized scientific books that seek to benefit from the results of scientific studies and research. Many researchers and specialists in the field of sports medicine have addressed in their studies the issue of preparing rehabilitation programs according to the severity and severity of the injury. (Mahmood & Kadhim, 202)

Through the experience and work of researchers in sports rehabilitation, they noticed that many players suffer injuries that tear internal ligaments and take long periods of treatment, which affects the player's physical and skill level, in addition to the lack of scientific research on this injury, which has spread widely among players, which prompted the researcher to find solutions and a program. Preparing for this injury, then developing an intensive program to strengthen the muscles working in the knee joint and creating a physical program to return the player to the field as quickly as possible. (Kzar & Kadhim, 2020)

The researchers decided to study this problem by preparing a rehabilitation program to restore the functional efficiency of the muscles working on the knee joint after the rupture of the internal ligament for football players.

The researchers also want this study to be a starting point for other researchers to address other, more common injuries among football players.

Method and tools:

The researcher adopted the experimental method for one experimental group using the pre- and post-test method as an experimental design due to its suitability to the nature of the research. The research population was chosen from the Julnar Fitness Hall for Women located in Baghdad Governorate, next to Al-Karkh, Al-Jawadin District, and they numbered (14) whose ages ranged between (30- 40) years, where a person was chosen intentionally to achieve the research objectives and reach the required results. Also, a number of (4) cases were randomly selected from the research community and outside the basic sample as an exploratory sample. Table (1) shows the distribution of the research sample and its percentage:

Table (1) Description of the study population

the society	Total community		The research sample			
	the number	%	Exploratory sample		Basic sample	
			the number	%	the number	%
Sufferers of lower back pain	14	100,00	4	28,57	10	71,43

Then the researcher found homogeneity among the individuals in the research sample in each of the following variables:

Table (2): The arithmetic mean, the average standard deviation, and the skewness coefficient for the individuals in the research sample (basic, Exploratory variables (anthropometric - physical - motor range).

Variables	measruing unit	SMA	Mediator	standard deviation	Flatness	Skewness
the age	the year	59.93	59.50	2.67	0.79-	0.34
Height	right	168.21	168.50	3.02	0.87-	0.20-
the weight	kg	96.64	96.00	11.14	0.92-	0.25
BML	kg/m2	34.09	34.53	3.163	0.78-	0.05-
Back muscle strength	kg	16.00	16.00	1.71	0.55-	0.65
Bend the torso forward	degree	45.14	44.00	3.35	0.44-	0,89
The torso is arched backwards	degree	25.00	25.00	1.11	0.61-	0.79

It is clear from Table (2) the homogeneity of the members of the research sample (basic - exploratory) in all anthropometric, physical, and motor range variables, where the skewness coefficient ranged from (3), which indicates the homogeneity of the members of the research sample.

Devices and tools used

- Interview
- Registration and data dumping form
- Restameter device for measuring length
- A medical scale to measure weight
- Tape measure to measure flexibility
- Dynamo meter device for measuring muscle strength
- Stop Watch
- gym
- Whistle

Exploratory experience:

The exploratory study was conducted on (12/10/2023) on a sample of (4) female participants from outside the main sample and from within the research community

Pre-test:

The pre-test was conducted on the research sample on (12/18/2023) in the Julnar FitnessHall.

Basic experience:

The researcher applied the exercises to the research sample in the period from (12/23/2023) for a period of (6) weeks at a rate of (3) units per week on the basic research sample.

Posttest:

The researcher conducted post-tests on members of the basic research sample on all research variables On the date (7/2/2024).

Statistical processing:

The researcher used statistical software packages for the social and human sciences (Spas).

Discussing the results:

- Results of the first hypothesis:

Table (3) Significance of differences between the average of pre- and post-tests for sample members in the variables “muscular strength of the muscles working on both sides of the spine”

Variable	measruing unit	Tribal measurements		Dimensional measurements		The difference between the two averages	Calculated t value	Improvement rate %
		Q	A	Q	A			
Back muscle strength	kg	16.50	1.72	20.00	2.21	3.50	3.75	21.21

Tabulated “t” value at degree of freedom (8) and significance level (0.05) = 2.306

Results of the second hypothesis:

Table (4) The significance of the differences between the average of the pre- and post-tests of the sample members in the variables of “spine range of motion”

Variable	measuring unit	Tribal measurements		Dimensional measurements		The difference between the two averages	Calculated t value	Improvement rate %
		Q	A	Q	A			
Bend the torso forward	degree	46.10	3.51	93.50	2.01	47.40	35.14	102.82
Torso arched backwards	degree	25.30	1.16	26.50	0.99	1.600	3.14	6.32

Tabulated “t” value at degree of freedom (8) and significance level (0.05) = 2.306

It is clear from Table No. (3) that there are statistically significant differences between the pre- and post-tests, the experimental research group, in the effect of the proposed exercises on the strength of the muscles working on both sides of the spine of the sample members under study, in favor of the post-test, and the researcher confirms the positive improvement in the results of the post-test for the muscle strength variables in the group. There was also a noticeable improvement in the amount of muscle strength of the experimental group, as well as the correct upward progression that is appropriate to the nature of the disease condition, as room was available for practicing exercises throughout the treatment period on all muscle groups, and this is consistent with the study of Sarah Diani et al., Maryam Al-Sayed (2004), Mustafa Ibrahim Ahmed (2004), where the results of their study proved that there was a noticeable improvement in the average percentages of the pre-post tests in favor of the experimental group compared to the control group in the muscle strength tests for the muscle groups concerned with the study of each of them as a result of the experimental group practicing the exercises of the rehabilitation programs under study.

As for the results of Table (4), there are statistically significant differences between the pre- and post-tests for the individuals of the sample under research in the effect of the proposed exercises on the range of motion of the spine (for the individuals of the sample under research and in favor of the post-test. Here, the researcher confirms the improvement in most of the post-tests of the range of motion variables for the group. Experimental research: This improvement is due to the different levels of exercise in their effect on the range of motion of the spine, taking into account in its implementation the degree and nature of the rehabilitation stage using a varied method, and this agrees with all of Zayou

and Feng (1997AD), Abdel Halim Okasha (1999AD), and Dolan (2000AD).), Hamdi Gouda Al-Qalioubi (2004), where the results of their study proved that there are significant differences for the experimental group over the control group in tests of range of motion and joint flexibility as a result of using and practicing a rehabilitation program that leads to improvement in the range of motion of the spine and reduces muscle tension and thus reduces pain. Resulting from lower back injuries

This is consistent with the studies of Amr Ahmed Khalil (2008), Muhammad Al-Najjar (2016), Mustafa Taher (2015), Tariq Muhammad Sadiq (2014), and Naseer Jamal Muhammad (2009), which indicate that using a rehabilitation program and exercises improves motor range. For athletes and non-athletes. Through the previous presentation and scientific analysis of the statistical tables, Table No. (6), it is clear that the first hypothesis has been fulfilled, which states that there are statistically significant differences between the two pre- and post-measurements in the functional efficiency of the muscles working on the knee joint after the rupture of the internal ligament for football players, in favor of the post-measurement. On the motor range. (Abed et al., 2022)

Discussion of the results of the second hypothesis: It is clear from Table (5) that there are statistically significant differences between the pre- and post-measurements of the sample in favor of the post-measurement. The tabular t-value is at a significant level ($0.05=1.895$). It is clear from Table (5) that the significance of the statistical differences is at a significant level (0.0001) between the pre and post measurements for the research group in tests of variables that include the motor balance of the knee joint. The calculated T value ranged between ($16.52 = 18.75$) (Taha & Khalif, 2022(

It is clear from Table No. (6) that the percentages of improvement between the pre- and post-measurements in the variables of knee joint balance for the sample ranged between (20.05%-25.67%). This is consistent with the studies of Muhammad Al-Najjar (2016), Hani Abdel Aleem (2012), Wael Fouad Abdel Ghani (2007), and Naseer Jamal Muhammad (2009), which indicate that the rehabilitation program and qualifying exercises improve the players' balance, through previous presentation and scientific analysis of the tables. Statistics: It is clear that the second hypothesis, which states that there are statistically significant differences between the two measurements (pre-post) in the functional efficiency of the muscles working on the knee joint after the rupture of the internal ligament for football players, is in favor of the post-measurement on balance. (Kadhim & Mousa, 2024)

Discussion of the results of the third hypothesis: It is clear from Table No. (7) for measuring the muscular strength of the muscles working on the knee joint, where it is clear that there are statistically significant differences between the pre- and post-measurements of the sample in favor of the post-measurement. The value of the tabular t is at a significance level ($0.05 = 1.895$). Table (7) shows the significance of the statistical differences at a significance level of 0.0001 between the pre and post measurements for the research group in tests of variables that include electromyography measurements on the muscles working on the anterior-posterior knee joint. Macrophages - calves. The calculated T value ranged between (9.02-12.74). (Kadhim & Mahmood, 2023)

It is clear from Table No. (8) that the percentages of improvement between the pre- and post-measurements in the electromyography variables on the muscles working on the knee joint for the sample ranged between (63.33%-49.28%). Escobar et al. at et Escobar (2007) indicate that the development of muscle strength takes place. By choosing the exercises that are performed during the proposed training program to achieve better results for developing muscular strength. (: (85)(Kadhim & Mousa, 2024)

Abu Al-Al Abdel Fattah and Ahmed Nasr (2003 AD) confirm that the quality of a muscle can be identified by knowing the extent of what it can carry or the degree of endurance on it, as well as the amount of work it produces

This agrees with Gill et al., 2008 AD) that performing regular exercises for maximum strength due to the building of a greater number of muscle fibers (myofibrils) and causes hypertrophy in working muscle cells (Ibrahim et al., 2006), and the increased pressure also causes a positive result in growth. Ligaments and bones

Conclusions and recommendations:

1-Conclusions:

Through the research objectives and hypotheses, and according to what was indicated by the statistical treatments and in light of the presentation Discussing the results and within the limits of the research sample, it was possible to reach the following conclusions:

(1) Rehabilitation exercises have a positive effect on injured members of the experimental group in:

- Balanced development of the strength of the muscle groups working on both sides of the spine...
- Increase the range of motion of the spine.

(2) The balanced development of muscle strength, joint flexibility, and muscle elongation has an important effect in increasing the motor efficiency of the vertebrae in the lumbar region.

(3) The variety in the use of flexibility exercises, muscle stretching and muscle strength exercises had a positive impact on improving the functional performance of the spine.

(4) Using various methods and methods helps to achieve a greater rate of improvement and at a lower time and cost.

2- Recommendations:

Based on the conclusions reached by the researcher and within the limits of the research sample, the researcher recommends the following:

(1) Be guided by rehabilitative exercises and generalize their use in treatment centers, institutions, and hospitals

(2) Spreading cultural awareness among community members towards paying attention to early detection of lower back injuries to prevent the injury from escalating to an advanced degree.

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Special exercises using tools and their effect on learning the skill of landing with Salto backward tucked to stand on the horizontal bar

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2198](https://doi.org/10.37359/JOPE.V36(3)2024.2198)

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Article history: Received 13/ August/2024 Accepted 20/ August/2024 Available online 28/ September/2024

Abstract

Special exercises in individual games are an important pillar in learning their basic skills. **The aim of the research** is to prepare special exercises using tools and their effect on learning the skill of landing with Salto backward tucked to stand - knowing the effect of special exercises using tools and their effect on learning the skill of landing with Salto backward tucked to stand on the horizontal bar. **Either the research assumes** the existence of significant differences in the pre- and post-tests in learning the skill of landing with Salto backward tucked to stand on the horizontal bar in favor of the post-test. **The researchers used the experimental** method with a single sample design to suit the research problem, as the research community was determined by (12) players affiliated with the Baghdad Governorate Gymnastics Training Center and affiliated with the Iraqi Central Gymnastics Federation, and their ages ranged between (9-13) years, and they are the junior category. As for the research sample, the researchers chose (8) players, and the research sample was chosen intentionally and (4) players were excluded from the original research community, while the exploratory sample consisted of (3) players from the research community, and the research sample constituted (66%) of the research community. The exploratory sample (25%) of it. The researchers concluded: **Conclusions:** Special exercises affected learning and improving the performance of the skill of landing with Salto backward tucked to stand on the horizontal bar for juniors - The use of special tools also had a not insignificant role in learning and improving the performance of the skill of landing with Salto backward tucked to stand. The researchers recommend using special exercises using tools to teach other basic skills on the horizontal bar and other devices.

Keywords: Gymnastics, Horizon, Special exercises.

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introduction

Special exercises in individual games are an important foundation in learning the basic skills. It is a powerful tool that facilitates athletes to make the most of their physical and motor capabilities. This is done by customizing a multi-exercise educational program, in addition to the fact that there is no single educational model that suits all players, so special exercises are the ideal solution to complete the individual needs of each player. It takes into account his technical level and serves as a road map that guides the athlete towards achieving his goals .

Artistic gymnastics for men is one of the difficult individual games that require many devices and tools to learn its basic skills. Each device has a special feature for learning the basic skills on it, and the pull-up device is the sixth device in it. This device is considered one of the important devices and has very high technical requirements, and its motor skills require movement. Permanent and without stopping. When the player performs, he is not permitted to stop and lean on the bar. In addition to the requirement to leave the device, fly, and return to it again, it is a second requirement. Among the requirements of this device is the landing skill, which is the fourth group, as the player must perform a landing skill in order to obtain the group's requirement and skill. Landing with a ball of air is one of the basic skills for young people. Teaching this skill is very difficult and the player needs physical strength and special motor strength, in addition to psychological factors .**Since** The psychological factor in sports cannot be ignored and constitutes an essential part of an athlete's performance, and is no less important than the physical factor. In the landing skill, the player keeps his head and body away from the bar so that he does not collide with it and get injured. The second is landing and relying on the legs in the final stage, and from here it stands out .

The importance of research In developing innovative and unconventional exercises, using training tools, by learning the skill of landing with a back flip on the horizontal bar .**Research problem** The balled-out back flip skill is the basis of landing skills with difficulty (A), which is considered the lowest degree of motor difficulty. If the player does not master the correct movement paths, he cannot perform a more difficult skill because the player is required to have a high level of difficulty in order to obtain the value of the group requirement, which is (0.5) Therefore, the researchers used special exercises using training tools to bring the player to a high technical level of performance and reduce future mistakes in developing and performing a skill of higher difficulty. Much research has dealt with special exercises, including a study (Saadi & Lafta, 2023). The researchers concluded that the educational approach using the device The assistant has a major role in helping the student and the teacher reach the speed of learning the skill - 2 - The assistant device provided safety for the students in performing the skill. As for the study (Nasser et al., 2024), the researchers concluded that the special exercises had a clear impact on learning the skill (Healy). (The tools used in learning

the skill and its three stages, the initial, main and final parts, as for the study (Hussein et al., 2022 ((The researchers concluded that special physical exercises similar to skill performance have a significant effect in developing the performance of the Staalder and Endo skills on the pull-up apparatus, and the necessity of using devices and assistive tools in improving the performance of the Staalder and Endo skills on the pull-up apparatus. As for the study (Al-Reda et al., 2022), the researchers concluded that special exercises The stomach has a major role in learning the skill of sliding pronation based on the parallel device, and the group that learned the skill of sliding pronation based on the parallel device is better at learning the skill than the control group .

Research objective

- Preparing exercises using tools to learn the skill of landing with a rounded back air flip to stand on the barbell apparatus
- Knowing the effect of exercises using tools by learning the skill of landing with a rounded back flip to stand on the horizontal bar .

Force the search

There were significant differences in the pre- and post-tests regarding learning the skill of landing with a backflip on the horizontal bar, in favor of the post-test .

Method and tools

The researchers used the experimental approach with a single sample design to suit the research problem, as the research population was defined as (12) players belonging to the training center of the Baghdad Governorate for Gymnastics and affiliated with the Central Iraqi Gymnastics Federation, and their ages range between (9 - 13) years, and they are the junior category. As for the research sample, the researchers chose (8).) players. The research sample was chosen intentionally, and (4) players were excluded from the original research community, while the exploratory sample consisted of (3) players from the research community, and the research sample constituted (66%) of the research community. And the survey (25%) of it

Table(1)

Shows the sample size and percentages

Percentage	number	the society	T
100%	12	Research community	1
66%	8	Search sample	2
25%	3	Exploratory sample	3

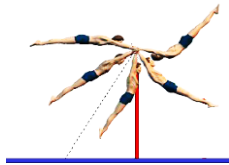
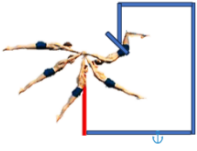
The researchers used research methods (Arabic sources and references, observation and analysis, tests and measurement, the Internet), as well as (tools and devices, including a stopwatch, a photographic camera, a legal pull-up device, a low pull-up device, a rug 1 meter high, and a sponge roller with a diameter of 20 cm) .

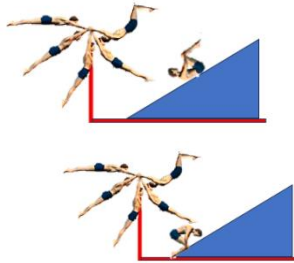
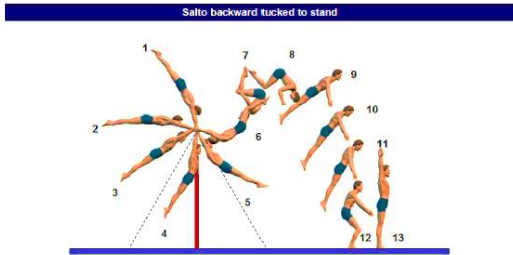
Exercises

The researchers did Preparing exercises that would teach the technical performance of the skill under research, taking into account the level of the sample and their training period, as well as the major psychological aspect of the injury that accompanies the process of training this skill, through the use of exercises with special tools, as shown in the following table.

table(2)

Explains the exercises and how to perform them

supply	Explanation and details	T
	Correct swing, with emphasis on performing the snatch under the pull-up bar correctly and reaching the insteps of the feet to the highest point above the bar	1
	The same exercise as before, after the snatch phase under the bar, the player bends his legs to prepare for the correct curl position	2
	The same second exercise, emphasizing reaching the athlete's waist and touching it with the sponge roller at the correct height of the body before the part in which the athlete begins to leave the bar .	3
	The same third exercise: When the player reaches the balling stage and leaves the bar and reaches the correct height, he leaves the bar and gets down on the mat with the correct body position.	4

	The same exercise as before, when the athlete reaches the mat and gets down on his back, he curls up and performs a back roll	5
	The same exercise as before. After leaving the bar, the player performs a backflip and lands on the mat	
	The same exercise as before raises the rug, and the player performs the full skill and lands on the legal rug	6

Field research procedures:

Exploratory experiment

The researchers conducted a reconnaissance experiment on 1/15/2024 to learn about the exercises using special tools. The exploratory experiment was conducted in the Baghdad club hall on (3) players outside the research sample, to initially try the special exercises as well as to find out whether they were suitable for conducting the curriculum on them .

Pretests

The pre-tests were conducted after conducting the exploratory experiment, which included a skills test, and were conducted on 1/20/2024. The researchers took into account all the circumstances related to the tests - in terms of time, place, tools used, method of implementation, and the supporting work team in order to work to provide them in the post-tests.

Skill tests

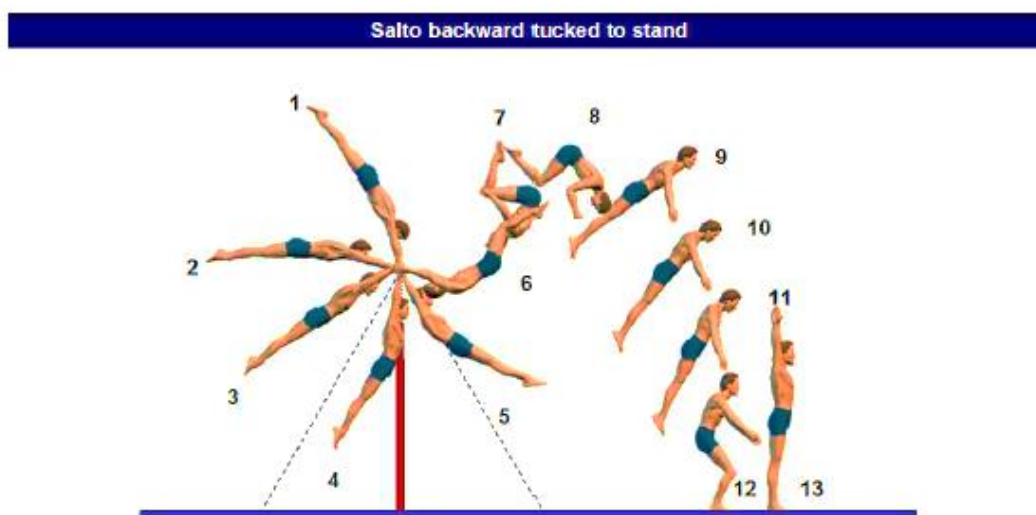
The purpose of the test Measuring the performance ability and knowing the final score that the athlete obtains for performing the skill of landing with a balled back air flip to stand up

Test tools : The mental health device is legal

Test evaluation The test is evaluated according to the technical performance according to what the arbitrators agreed upon by calculating the player's errors, as the highest score he obtains on the device is (10) degrees .

Test procedures The athlete takes the prepared position of hanging on the pull-up device, and after performing three swings, he performs the skill of landing with a rounded back air flip, and takes into account the correct form for its performance according to the international law of the game of gymnastics in terms of correct performance, rising, correct rounding, and landing with legs extended and pointed.

To register : The evaluation is carried out by four referees and according to an internal evaluation of the referees. The average of the two scores is taken and divided by (2) for the purpose of extracting the player's final score. The performance evaluation is made up of (10) scores according to agreement and as shown in the following figure .



Figure(1) Demonstrating the performance of the skill of landing with a curled up back flip on the barbell device

Exercise application:

After completing the pre-test, the researchers began applying the training curriculum and based the curriculum on the vocabulary prescribed and developed by the trainer. As for the educational curriculum prepared by the researchers, it was developed by them and aims to raise the skill level of the emerging players. The exercises were applied within the units.

The special training in the main section, which was implemented by the trainer, did not change the established vocabulary, and used special exercises in the curriculum developed for the sample. The experiment lasted for (10) weeks and included (30) educational units at a rate of (3) units per week, and the time was The total educational unit is (145) minutes of device time from the main part of the unit with a time period of (35) minutes for the horizontal bar. He also applied the principle of (repetitions) in one educational unit, and he made sure that the educational curriculum that was developed by him was in accordance with scientific foundations and principles .

Table (3) Shows the experimental design of the research group

Posttest	Pilot program	Pretest	Group
Skill performance test	Use exercises	Skill performance test	Research group

Post-tests

After completing the components of the educational curriculum for applying the skill on the floor movements mat, the post-test was conducted on 5/11/2024 at the same time and in the same manner as was done in the pre-test procedures, as the researchers prepared the atmosphere and conditions in which the pre-tests were conducted .As explained in the skill test regarding the evaluation of the players, their evaluation was carried out directly by the referees approved by the Central Gymnastics Federation, and the evaluation score was based on a range of (10) degrees for skill .The researchers adopted the arithmetic mean of the two middle scores of the judges 'scores. Divide it into two to extract the player's final score.

The researchers used the SPSS program for statistical methods Arithmetic mean, standard deviation, percentage, T-test for related samples

Results

Table (4) shows the means, deviations, their differences, the calculated (t) value, the level of error, and significance in the pre- and post-tests of the research group.

Skill	N	Online	Pretest		Posttest		F.S	F. A	T	themselves	Connotation
			Q	A	Q	A					
	8	of the	1.80	.250	4.91	.290	3.112	.258	34.02	.000	Dal

*Significant at the confidence level (0.05) if the error rate.(0.05) $\geq$

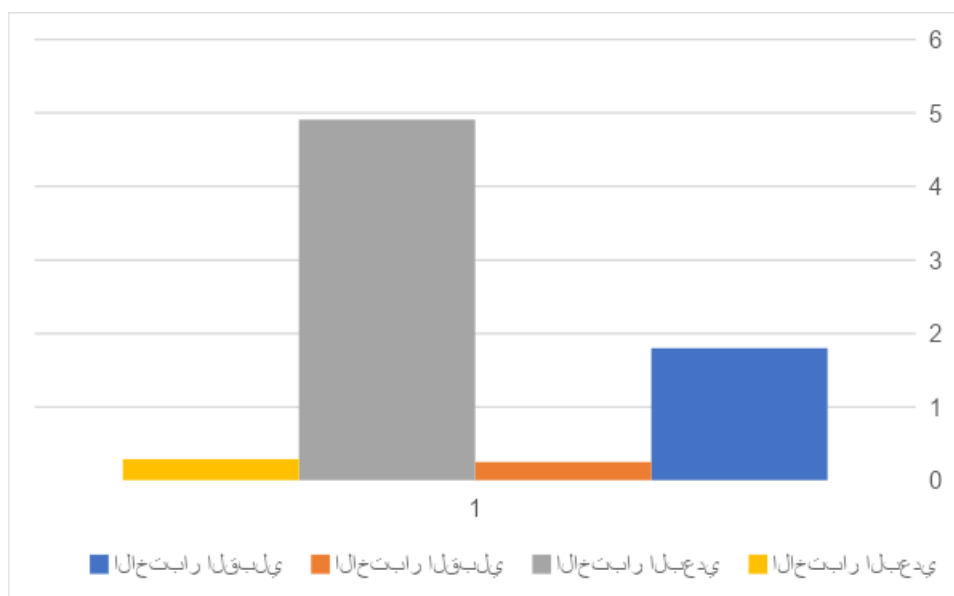


Figure (2) shows the histogram of the means and standard deviations in the pre- and post-tests for the research variables

Discussion

Through the results presented in Table (4) and Figure (2), which show their arithmetic means, the researchers see that the learning rate among the sample is clear and good because learning this skill is very difficult as it constitutes a psychological barrier for the players because any leaving the bar is accompanied by a bend in the joint of the hands and shoulder, which leads to... To the head hitting the bar, and thus the player's learning of this skill will be delayed. Through the researchers' use of a good safety group, especially the method used by leaving the bar and descending on the inclined mat, it gave them good repetitions and a good safety method. Also, using a foam roller to reach the hip to the required level before curling up and landing gave

them a path to correct performance. The researchers also believe that the arithmetic means in the first test and the second test there was an improvement in the level of the test score and in favor of the post-test of the sample, and if this indicates anything, the method used by the researchers brought about a change in the curriculum that lasted 30 training units, in addition to the true moral value, which is a very acceptable percentage, which is considered A value that indicates development because it causes a change from the pre-test of the sample, and that exercises have a role in changing the results of the test .

The tools used have a major role in learning, and as (Al-Reda et al., 2022) points out, special exercises to learn any of the skills are equivalent to giving the player an important means of assistance, as the coach must stimulate the work of the muscles working in skill performance through some exercises. On some tools and aids, as well as the correct paths of performance through neuromuscular work, i.e. the correct alignment of the paths of performance. Every skill in its form requires a special device or tool to teach it, as the form of performance is very necessary when using any form of auxiliary tools, in addition to the coach's assistance to the player. The importance of the research lies in the use of special tools (p69 Hussein et al., 2022) . (Repetition also generates knowledge of the requirements for skill performance, as Al-Rida et al., 2021 (p155) indicates .The interest of coaches in preparing players in an integrated manner requires focusing on developing the various motor abilities related to technical performance, and they can be developed as a result of practice, repetition, and the accumulation of motor experiences.

Conclusions

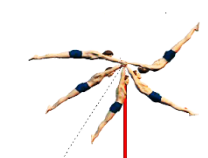
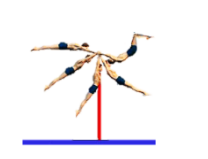
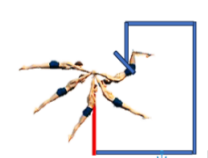
- 1- The special exercises affected learning and improving the performance of the skill of landing with a rounded back air flip to stand on the barbell device .
- 2- The use of special tools also played a not insignificant role in learning and improving the performance of the skill of landing with a rounded back air flip to stand.
- 3- The researchers suggest using special exercises using training tools to teach other basic skills on the pull-up machine and other devices

Right(1) Build a daily educational unit

Group: Research Unit time: (145)

minutes

Objective: Learn to perform artistically the skill (backward air curl). Number of group members : (8)

week	Unity	the time		the details	Figure
The first week	The first is Saturday			Correct swing, with emphasis on performing the snatch under the pull-up bar correctly and reaching the highest point above the bar with the balls of the feet	
		Aql a	35 D		
	Second Monday			The same exercise as before, after the snatch phase under the bar, the player bends his legs to prepare for the correct curl position	
		Aql a	35 D		
	Three Wednesday			The same second exercise, emphasizing reaching the athlete's waist and touching it with the sponge roller at the correct height of the body before the part in which the athlete begins to leave the bar.	
		Aqla	35D		

*Repetitions as permitted by the time of the educational unit

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The Impact of the Guidance Technique of Stopping Negative Thinking on reducing Psychological Reluctance in Swimming Lessons among Female Students of Physical Education and Sports Science

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2153](https://doi.org/10.37359/JOPE.V36(3)2024.2153)

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Article history: Received 22/ may/2024 Accepted 30/ may/2024 Available online 28/ September/2024

Abstract

The significance of the current research lies in studying the impact of the Guidance Technique (Stopping Negative Thinking) to reduce psychological reluctance in swimming lessons among female students of Physical Education and Sports Sciences highlighting the concept of psychological reluctance and how to confront it in the swimming lessons. The research provides a comprehensive and integrated theoretical framework that benefits the guiding process, contributing to the development of guiding programs that help reduce or eliminate psychological reluctance. Additionally, this research offers a psychological reluctance scale, aiding in the evaluation and diagnosis of students for the purpose of guiding them. The research addressed an important segment represented by female students of the College of Physical Education and Sports Sciences, so the aim of the current research is to identify the impact of the guidance program according to the method (stopping negative thinking) to reduce psychological reluctance in the swimming lesson among female students of Physical Education and Sports Sciences, and achieving the research goal required the construction of two tools, namely: Firstly, a psychological reluctance scale in swimming lessons for female students of Physical Education and Sports Sciences. Secondly, a guiding program using the (Stopping Negative Thinking) method, consisting of 12 guiding sessions for female students of the College of Physical Education and Sports Sciences at the University of Baghdad, who exhibited high scores on the psychological reluctance scale in swimming lessons.

To achieve this objective, the researchers employed the descriptive survey approach in developing the psychological reluctance scale and used the experimental method, with a pre-test and post-test design, for both the experimental and control groups, aligning with the research problem. The results indicated that the guiding

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method (Stopping Negative Thinking) had a significant effect in reducing psychological reluctance among female students of Physical Education and Sports Sciences, with a statistically significant difference compared to the control group.

Keywords: Guidance Technique, Stopping Negative Thinking, reducing Psychological Reluctance, Swimming.

Introduction

Sports psychology is one of the human sciences that is relied upon to harness all capabilities and potential in modifying and properly directing athletic behavior by regulating and controlling emotions, ultimately achieving the best possible performance. Numerous psychological studies and research have emphasized that many psychological conditions, as well as failures in sports performance or academic achievement and the inability to attain favorable results, can be attributed to a variety of psychological factors and causes.

Psychological guiding has become one of the important disciplines in modern human life, particularly in the field of sports, due to the increasing need for students to receive guidance in overcoming challenges and solving their problems. With the intensification of psychological pressures, guiding has a clear and specific goal: to assist students in changing their behavior, better understanding themselves, comprehending their current circumstances, and anticipating future expectations. It aims to resolve their issues and develop their various potentials, enabling them to meet their personal needs within the framework of the psychology of learning and education.

Guiding services play an effective role in fostering students' motivation, including the motivation for academic achievement, and providing technical assistance that enables students to solve their problems. guiding tasks must be based on sound principles and methods (Ali & Khalaf, 2021).

Cognitive approaches are considered important concepts in psychology due to their connection to individuals' emotions and behaviors in various situations. Through these cognitive approaches, we can reasonably predict the type of behavior individuals with different cognitive styles might exhibit when facing life's challenges. Since each individual possesses a system of cognitive processes, which are essentially functions of the brain, each cognitive process has its own distinctive style. This style reflects the individual's behavior in processing cognitive operations (Jawad & Khalaf, 2017).

The method of stopping negative thinking is considered a cognitive-behavioral technique that holds significant importance for students in identifying and addressing incorrect and negative thoughts that lead to maladjustment, defeat, and failure. This method encourages students to refrain from such thoughts and monitor their feelings and behavior towards themselves through well-planned counseling programs designed for this purpose, providing students with successful experiences to elevate them. The importance of the technique of stopping negative thinking lies in reducing incorrect and negative thoughts, enabling students to understand themselves and their environment,

and fostering a sense of responsibility by confronting situations and events that may lead to failure.

The significance of this study emerges from its aim to help students regulate negative and incorrect thoughts that manifest through illogical imaginations and behaviors, preventing their infiltration and controlling and eliminating them. This is achieved by assisting students, through the guidance counselor, in regulating incorrect thoughts and beliefs, and modifying the negative behaviors that cause psychological hesitation in learning and performing swimming skills. These thoughts and behaviors are replaced with new ones that enhance the student's effectiveness and achieve personal adjustment.

Among the previous studies that addressed this topic is the study by Ibrahim (2013), which aimed to explore a guiding program to reduce psychological reluctance among students of the College of Physical Education in some gymnastics skills. To achieve the research objectives, the researcher developed a psychological reluctance scale, relying on the scale by Firas Hussein. Another study by Sahi (2017) aimed to identify the effectiveness of two guiding methods (self-talk and stopping negative thinking) in reducing psychological reluctance among high school students by testing null hypotheses, Al-Mutani (2014) examined an educational guiding program using the self-examination approach to suppress psychological reluctance in performing the snatch lift among students of the College of Physical Education. Hatem (2013) concluded that there is a variance between the level of psychological reluctance and the accuracy of shooting in football players and found no significant difference between psychological reluctance and shooting accuracy due to the lack of attention to the psychological aspect. Therefore, the researcher recommended the necessity of psychological preparation during the implementation of training programs. Abu Al-Tayyib's (2020) study indicated that emotional intelligence and its dimensions (autonomy, social communication, and adaptability) have an impact on reducing psychological reluctance in swimmers of the Jordanian national team. Additionally, the study by Thanon (2012) sought to determine the degree of psychological reluctance among athletes of individual sports from the University of Mosul colleges and to explore the relationship between the degree of psychological reluctance and the performance level of athletes in individual sports. Finally, the study by Al-Bachari (2005) aimed to investigate the effect of the methods of stopping thinking and role-playing in developing aesthetic values among high school students.

Statement of the Problem:

Swimming is a unique sporting activity compared to other sports, as it takes place in an aquatic environment. This setting causes students to feel anxious due to their negative thoughts and undesirable ideas, leading to a state of fear and hesitation. This is accompanied by changes in cognitive functions, resulting in diminished mental abilities and difficulty concentrating. All of this stems from the way students think and their anticipation of danger when learning and performing swimming skills.

Psychological guiding programs, whether developmental, preventive, or therapeutic, have proven effective in creating positive changes in students' thoughts and behaviors.

Based on the above, and through the researcher's review of the scientific references and previous studies, it became evident that there is a scarcity of research addressing the impact of a guiding approach (stopping negative thinking) in reducing psychological reluctance during swimming lessons among students of Physical Education and Sports Sciences.

The objectives of the study were:

1. To develop a scale for psychological reluctance during swimming lessons among students of Physical Education and Sports Sciences.
2. To design a guiding program based on the method of "stopping negative thinking" to reduce psychological reluctance during swimming lessons among students of Physical Education and Sports Sciences.

Research Procedures

The two researchers used the experimental approach with two equivalent groups: a control group and an experimental group, which was deemed suitable for the research problem. The research population included students from the College of Physical Education and Sports Sciences at Baghdad University and Al-Mustansiriya University, totaling 231 students. The researcher selected a sample from the first and second-year students of the College of Physical Education and Sports Sciences, totaling 209 students. This sample included second-year students from Baghdad University (Jadriya), first-year students from Baghdad University (Al-Waziriya), and first-year students from Al-Mustansiriya University for the academic year 2023-2024. The sample was divided into: 10 students for the pilot study, 120 students for scale development, and 79 students for the main application.

Research Tools:

The researchers utilized the following devices and tools: an initial version of the psychological reluctance scale questionnaire, a questionnaire for expert and specialist opinions on the content of guiding sessions, one camera, an HP computer, a data projector, and office supplies (papers, pens).

Field Research Procedures:

Constructing Scale Items:

Constructing psychological scale items is a crucial step in completing their construction. The items were prepared in both positive and negative formats (Appendix 1), with a total of 31 items distributed across three domains. The first domain, negative thinking, consists of 11 items; the second domain, fear, contains 10 items; and the third domain, self-confidence, includes 10 items. Each item has five response options: "Completely applies to me," "Applies to me," "Sometimes applies to me," "Does not apply to me," and "Does not apply to me at all."

Scientific Foundations of the Scale:

1. Logical Validity:

Achieved by defining the theoretical concept of psychological reluctance, determining its domains, and developing items for each domain.

2. Apparent Validity:

This type of validity is achieved by presenting the scale items to a group of experts before its application, in order to assess the appropriateness of these items in measuring the intended characteristic. The experts also evaluate whether the wording of the items is suitable for second-year students of the College of Physical Education and Sports Sciences and whether each item belongs to its respective domain. The panel consisted of 11 experts specialized in the field of sports psychology. The scale designer ensures the reliability of their opinions and feedback, taking into account the judgments agreed upon by the majority. Based on this, the researcher reformulated some items according to the experts' suggestions and deleted others due to lack of agreement, while keeping the items supported by the majority. The percentage of acceptance or rejection of these items was calculated. Through the experts' scientific observations, it was confirmed that the psychological hesitation scale measures the variable for which it was designed. This type of validity was thus confirmed for the psychological hesitation scale, establishing its logical soundness.

3. Construct Validity:

The researcher verified the construct validity (theoretical validity) of the psychological hesitation scale through the following indicators: Calculating the Discriminatory Power of the Items: This was done using the extreme groups method, based on the scores obtained by the sample group during the construction phase. The researcher identified the items that were able to distinguish between different levels of psychological hesitation and retained them, while weak items that failed to distinguish were excluded. Item-Total Correlation Method: All items of the psychological hesitation scale showed acceptable and statistically significant correlations at the (0.05) level. The researcher used the item-total correlation method to evaluate the relationship between each item's score and the total score of the scale. Correlation of Each Domain's Items with Their Respective Domain: Pearson's correlation coefficient was used, and the results showed that all items within each domain (negative thinking, fear, and self-confidence) had acceptable and statistically significant correlations at the (0.05) level. Relationship Between the Domains of Psychological Hesitation: The correlations between the three domains were also examined, further supporting the validity of the scale. Moreover, Anastasi (1976, p. 154) emphasized that internal consistency of the scale's items, as well as the item-total correlation within each domain, are key indicators of construct validity. The researcher confirmed this in the statistical analysis of the scale's items, with all items showing statistically significant results. Based on these indicators, the scale is considered valid both in terms of content and construct.

Reliability

To calculate the reliability coefficient, the scale was administered to a sample of 79 students, selected randomly.

The researcher used two methods to calculate the reliability of the scale:

- Cronbach's Alpha for Internal Consistency:

The researcher employed this method to determine the reliability of the psychological reluctance drive scale. This type of reliability, known as internal consistency, indicates the strength of the correlations between the items on the test. If all items are truly measuring the same trait, they should be correlated with each other. The degree of internal correlation among the items is what determines the alpha coefficient (Bahie, 1999, p. 18).

To calculate reliability using this method, 120 reliability forms were used, and the Cronbach's Alpha formula was applied. The resulting reliability coefficient was (0.71), indicating that the scale is internally consistent, as this formula reflects the degree of internal consistency of the scale's items.

- Test-Retest Method:

The reliability coefficient calculated using the test-retest method is referred to as the stability coefficient, as it represents the correlation coefficient between the scores of the first and second applications of the test on the same individuals, with a time interval in between (Murphy, 1988, p. 65).

To calculate the reliability coefficient using this method, the researcher administered the test to a sample of 100 female students from the College of Physical Education and Sports Sciences. The test was reapplied to the same group two weeks after the initial administration. Pearson's correlation coefficient was then computed between the scores of the two test administrations, resulting in a reliability coefficient of 0.80 with a significance value of 0.00, confirming the test's validity and reliability.

Objectivity of the Scale:

After collecting and analyzing the data from the test and its retest, it was evident that all items were clear to the sample. The test featured multiple-choice options that allowed only one correct answer per item, with no open-ended questions. Thus, the questionnaire demonstrated a high level of objectivity, ensuring that there could be no discrepancies in the scores obtained by the sample participants.

Final Application of the Scale:

After analyzing the items of the psychological reluctance scale and determining the discriminative power of each item, as well as calculating the correlation between the score of each item and the total score of the scale, the final version of the scale consisted of 25 items. The response options were based on a five-point Likert scale (correction key) as follows: "Completely applies to me," "Mostly applies to me," "Sometimes applies to me," "Does not apply to me," and "Completely does not apply to me," with corresponding scores of (5, 4, 3, 2, 1) respectively. For negatively worded items (1, 2, 3, 4, 5), the scoring was reversed. The maximum score on the scale is 125, the minimum score is 25, and the hypothetical mean is 75 points.

Application of the Guidance Method:

After randomly distributing the sample into two groups, the researcher applied the guidance method to the experimental group, leaving the control group without any intervention. The experimental group underwent the "Stop Negative Thinking" technique following an agreement with the participating students. The application of the method lasted for six weeks, consisting of 12 guidance sessions, with two sessions held each week. The program began on Wednesday, February 21, 2024, and concluded on Sunday, March 31, 2024. Each session lasted 45 minutes.

The first guidance session for the experimental group took place on Wednesdays from 9:30 AM to 10:15 AM, while the second session was held on Sundays during the same time. The sessions were conducted weekly on Sundays and Wednesdays. After completing the guidance method, the researcher administered a post-test of the psychological reluctance scale to both groups. A follow-up test was scheduled for Sunday, April 14, 2024, to verify the continuity of the program's impact and its effectiveness. The sessions were conducted in locations such as the pool and the exam halls.

Statistical Methods:

- 1) Independent Samples T-Test: Used to compare the means of two independent groups.
- 2) Paired Samples T-Test: Used to compare the means of two related groups.
- 3) Pearson Correlation Coefficient: Measures the strength and direction of the linear relationship between two variables.
- 4) Standard Score Formula: Calculates the standardized score or z-score for individual data points.
- 5) Cronbach's Alpha Coefficient: Assesses the internal consistency or reliability of the scale.
- 6) Standard Error Formula: Determines the standard deviation of the sampling distribution.
- 7) Percentage Calculation: Used to express data in terms of percentages.

The researcher utilized the Statistical Package for the Social Sciences (SPSS) for analyzing the research data.

Presentation, analysis and discussion of the results:

The presentation and discussion focus on the results of comparing the mean scores between the pre-test and post-test for the experimental group using the psychological reluctance scale. This analysis aims to evaluate the effectiveness of the intervention by examining changes in the average scores of the participants before and after the implementation of the "Stop Negative Thinking" technique.

Table 1

This table shows the mean scores and standard deviations of the experimental group, as well as the t-value, before and after applying the guidance program (the "Stop Negative Thinking" technique) on the psychological reluctance scale.

variable	pre		post			Standard error	Calculated t-value	Indicator value	Indicator
	E.G	D	E.G	D					
psychological reluctance	87.70	5.20	53.60	4.29	34.10	1.26	27.06	0.000	moral

The results presented in Table 1 indicate that the pre-test mean score for the experimental group was 87.70. According to the scale used in this study, this mean score reflects a high level of psychological reluctance among the participants. The standard deviation for the pre-test was 5.20.

Following the application of the guidance program using the "Stop Negative Thinking" technique, the post-test mean score was 53.60. This suggests a reduction in psychological reluctance among the participants. The standard deviation for the post-test was 4.29.

To determine the statistically significant differences between the pre-test and post-test mean scores, the calculated t-value was 27.6, with a significance value of 0.000. This indicates that the differences between the pre-test and post-test scores are statistically significant at the 0.05 level, with 9 degrees of freedom, favoring the post-test scores.

The researcher attributes these results to the impact of the guidance program and the techniques used in the "Stop Negative Thinking" approach, which was applied to the experimental group over twelve sessions. The program effectively reduced psychological reluctance by employing cognitive-behavioral techniques and activities, leading to significant changes in the participants' scores and demonstrating the effectiveness of the "Stop Negative Thinking" method.

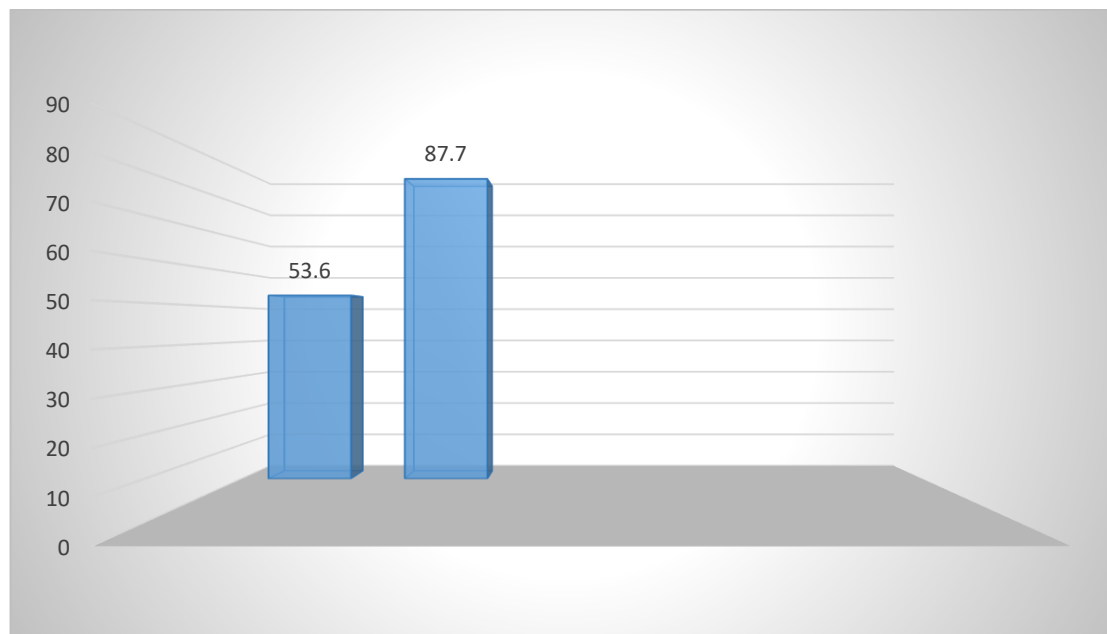


Figure (1) shows the arithmetic averages between the pre-test and post-test results of the experimental group on the psychological reluctance scale
Presenting, analyzing and discussing the results of the post-tests of the research groups on the psychological reluctance scale:

Table (2)

Tukey's test values for balancing the mean scores of the students on the psychological frequency scale

Comparison number	Groups	Arithmetic average	Variance Between Mean Scores:	value Tukey) (	Indicator value	Statistical indicator	Variances Direction
1	Experimental group	53.60	33.20	4.33	0.00	indicate	for the experimental group
	Control group	86.80					

It is observed that there is a significant difference in the psychological reluctance variable between the experimental group and the control group. The researcher attributes these differences to the fact that the experimental group received the guidance program using the "Stop Negative Thinking" technique regularly, whereas the control group did not receive any guidance program and only experienced the teaching method employed by the swimming instructor.

The researcher attributes the results to the following reasons:

- 1) Effectiveness of the Guidance Techniques: The guidance program was effective and successful in changing the students' thoughts and behaviors. The techniques used played a significant role in helping students move away from mental distractions, such as fear and anxiety about injury, drowning, hesitation, and confusion when entering the swimming pool. (Salih et al., 2024)
- 2) Impact of Psychological Factors on Performance: Performance is greatly influenced by psychological factors, such as whether the student perceives the swimming lesson environment as safe or threatening, based on their thought patterns. Psychological reluctance is, from the researcher's perspective, (Nashwan, 2024) a direct result of the student's self-perception and their view of the surrounding environment (the swimming lesson). The guidance program worked to alter the student's perceptions of the swimming lesson, helping them to view it as a safe environment. The use of positive reinforcement by the counselor to correct negative thoughts and replace them with rational and logical ones had a noticeable effect on modifying the student's behavior and the success of the guidance program. (Kadhim, 2024a)

Scientific Approach to Guidance Theories and Techniques: The application of guidance theories and their techniques in a scientific manner had a clear impact on the success of the counseling process. Cognitive-behavioral guiding, (Nashwan & Alzoubi, 2022) which involves cognitive processes such as thinking, perception, and imagination, directly affects individuals. (Abdulhussein et al., 2024) This approach helps the counselee learn new behavioral skills and cognitive structures. The guide's role is to diagnose distorted cognitive processes and organize learning experiences that will change unwanted beliefs and behavior patterns. Additionally, the "Stop Negative Thinking" approach, based on cognitive-behavioral theory, effectively helps the counselee recognize false beliefs by training them to identify distorted or unrealistic emotions and deal with problems to alleviate them. (Kadhim, 2024b) This method aims to identify and address incorrect thinking and manage pressures that lead to false beliefs, with the goal of replacing them. Collaboration between the counselor and the counselee, and building a relationship to take responsibility and make sound decisions based on credibility in confronting illogical thoughts, is crucial. This involves reorganizing the counselee's thoughts to make them more rational (Beck, 1985, p. 1432).

Conclusions and Recommendations:

- 1) The two researchers found that the guidance program based on the "Stop Negative Thinking" technique was effective and demonstrated success in reducing psychological reluctance among physical education and sports science students.
- 2) It was evident that the techniques used in the "Stop Negative Thinking" approach had a significant impact on decreasing psychological reluctance during swimming lessons for these students.

The researchers recommend placing a strong emphasis on cognitive-behavioral guidance programs due to their effective role in modifying students' psychological

perceptions of sports activities taught in the College of Physical Education and Sports Science, such as swimming, gymnastics, and others. Further research should be conducted to explore the relationship between the current variable of psychological reluctance and the performance of specific skills in other sports studied in the College of Physical Education and Sports Science. The researchers also suggest encouraging swimming instructors to prioritize guidance programs, as they play a crucial role in the learning process of swimming.

Appendices Appendix (1)

Psychological Reluctance Scale in its Initial Form

Dear Student,

The researcher aims to conduct a study titled: "The Impact of Two Guiding Techniques (Stopping Negative Thinking – Self-Talk) on Reducing Psychological Reluctance in Swimming Lessons Among Physical Education and Sport Science Students."

Therefore, you are kindly requested to fill out the attached questionnaire with accuracy and honesty, expressing your personal opinion, while considering the following notes:

- Read each statement carefully, and once you understand its meaning, mark (√) next to the statement that applies to you.
- Answer directly based on what applies to you personally. Please note that there are no right or wrong answers; all responses are based on your personal assessment.
- There is no need to mention your name.
- Be assured that your responses will remain confidential and will be used solely for scientific research purposes. Therefore, please answer all statements accurately and truthfully without leaving any unanswered.

The answer is as in the following example:

No.	Paragraphs	Completely applies to me	Applies to me	Sometimes applies to me	Does not apply to me	Doesn't apply to me at all
1		√				
2				√		

The researcher
Tiba Zaid Hikmat

The supervisor
Prof. Dr. Ali Subhi Khelef

No.	Paragraphs	Completely applies to me	Applies to me	Sometimes applies to me	Does not apply to me	Doesn't apply to me at all
1	I find learning how to swim difficult.					
2	The fear of failure makes me hesitant to enter the swimming pool.					
3	I feel capable of learning swimming skills.					
4	I believe my physical abilities do not qualify me to learn swimming.					
5	I fear drowning when I enter the swimming pool.					
6	The mockery of some students distracts me.					
7	I become pessimistic when I enter the swimming class.					
8	I am afraid of learning swimming skills because they are performed in a water environment.					
9	I feel ashamed, which causes me to lose confidence in the swimming class.					
10	The swimming class is my weak point.					
11	I am afraid of getting injured.					
12	I feel hopeless about achieving a high grade in the swimming subject.					
13	No matter how hard I try, it is difficult to learn swimming.					
14	I avoid the swimming class due to the fear of failure.					
15	I have the ambition to improve my swimming skills.					

16	At the beginning of the new academic year, if I fail to learn swimming, I won't learn it afterward.					
17	I fear being mocked by others in the swimming class.					
18	I feel that my academic performance in swimming is weaker compared to my peers.					
19	Everything around me in the swimming class makes me feel bored.					
20	The blame from others increases my fear of the swimming class.					
21	I feel frustrated when the swimming instructor criticizes me.					
22	I will compensate for my failure in learning swimming through success in other subjects.					
23	I feel tense when I enter the swimming pool.					
24	I feel embarrassed by the looks of the instructors and classmates in the swimming class.					
25	I feel that females are incapable of learning swimming skills.					
26	I feel anxious before entering the swimming pool.					
27	I have the experience to learn swimming skills.					
28	When I enter the swimming pool, I think negatively.					
29	Failing to learn swimming skills diminishes my value in the eyes of others.					
30	I feel brave when entering the swimming pool.					
31	When I fail to learn swimming skills, I feel extremely frustrated.					

Appendix (2)
Sample of a Guiding Session
Experimental Group for the Negative Thinking Stopping Technique

Session Title: Reducing Feelings of Anxiety
Session Duration: 45 minutes

Session Title	Needs	General Objective	Specific Objectives	Techniques and Activities	Formative Assessment
Reducing anxiety	1- To introduce the experimental group members to the concept of anxiety and its manifestations in a simplified scientific manner. 2- To reduce feelings of anxiety. 3- To identify the incorrect and negative thoughts and beliefs that trigger hesitation and anxiety among the experimental group members.	Helping the members of the guiding group understand the importance of effective confrontation of problems and thoughts that lead to feelings of anxiety.	Enabling the counselee to: 1. Understand the meaning of anxiety and its manifestations. 2. Comprehend anxiety in general and how the feeling of anxiety can be reduced.	1- Welcome and greet the members of the experimental group. 2- The researcher will employ various techniques to reduce feelings of anxiety through methods such as questioning, role-playing, and discussion. 3- The researcher will explain the concept of anxiety and then outline the steps the students should follow to handle situations and events occurring in the swimming class and how to reduce feelings of anxiety.	1- The meaning of anxiety and how to reduce feelings of anxiety, along with a summary of what was covered during the session. 2- The level of benefit and understanding of the topic, and their impressions about the importance of confronting incorrect and negative thoughts and beliefs that trigger anxiety in the swimming class, as well as developing skills that can reduce anxiety.

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Design and standardization of a test of spatial awareness and distance for the skills of passing from above and below for volleyball players aged (12-14 years)

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2195](https://doi.org/10.37359/JOPE.V36(3)2024.2195)

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Article history: Received 13/ August/2024 Accepted 31/ August/2024 Available online 28/ September/2024

Abstract

The research aims: Designing a test of spatial awareness and distance for the skills of passing from above and below for volleyball players aged (12-14 years) and extracting standard scores and levels. The descriptive survey method was adopted. The research sample consisted of players from specialized schools for sports talent in volleyball, numbering (120) players in (6) specialized schools (Baghdad, Diwaniyah, Anbar, Samawah, Babylon, Kirkuk), as the researcher chose the players. Males aged (12-14 years). After that, the researcher divided the selected sample into a survey consisting of (10) players. To build the test, (50) players were selected, and the scientific foundations were found, and (60) players were chosen to codify the test and extract grades and standard levels. After that, the researcher designed a test. Spatial perception and distance for the skills of passing from above and below, out of his belief in evaluating the level of skill of the player at the level of the two skills. The scientific foundations of honesty, consistency, and objectivity were extracted, as well as the standards and levels that led to conclusions and recommendations, the most important of which are: A test was reached that takes into account distance and location for volleyball players. At the ages of 12-14 years, the largest percentage of results appeared within the Very Good level, which indicates that the sample's level of perception was positive towards the test. The necessity of researching and investigating variables, whether physical, motor, or mental, that work to improve skill performance. It is necessary to use the test on an ongoing basis for the purpose of evaluating the player and identifying his level, as well as evaluating training programs.

Keywords: design, spatial perception, scrolling from top to bottom.

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Introduction

One of the requirements of age groups is the continuous evaluation process of curricula and training, and perhaps one of the foundations upon which these curricula are built are the new tests, especially those that target mental and skill abilities together, because these groups constantly need mental motor changes that enable them to master the skill and help them with motor connection. Therefore, the role of tests and measurement came in this regard, and those responsible for it are still continuing to research and investigate the various situations that reveal to us the true level of the age groups in volleyball and what they have reached. To bring the skills to the stage of high quality in their application, mastering basic skills is the basis for mastering tactical and technical aspects in the training stages (Farhood, Mohammed, and Khudair 2023) and the reality of the situation indicates our lack of such tests that work to reveal mental abilities through skill performance. Moreover, the Most tests focused on the physical or skill aspect only, so attention must be paid to re-evaluating these measures and tests, identifying some of their advantages and disadvantages, and working to present them and then re-correct them. Through this study, (Zahraa and Ali 2022) we will design a composite test between two skill characteristics, which are passing from above and below and perception of distance. And time, and this gives the player to simulate different places on the field, and because the two skills are important for this group of the sample, because they use the two skills in trading to a very large extent, and because they lack or are weak in other skills, (Kadhim 2024) therefore it was necessary Thus, from the above, the researcher, who specializes in training age groups, sees the importance of constructing a test for perception of place and distance, as it gives objective results to the coach so that he can address the weak points and enhance the strengths. (Khlaif and Shnawa 2022) Among the previous studies that dealt with the process of constructing and codifying tests of perception of place and distance, especially in volleyball, there are many of them, including: Study (Rahman, 2022) The aim of the research is to identify the relationship of kinesthetic perception and its relationship to the accuracy of scoring from free throws in basketball among the players of the College of Physical Education and Sports Sciences team - Al-Qadisiyah University. Accordingly, the researcher assumed the existence of a significant relationship between sensory-motor perception and its relationship to the accuracy of scoring from free throws in basketball among the players of the College of Physical Education and Sports Sciences team - Al-Qadisiyah University. (Sabhan and Abd AL-Hussein 2015) The researcher used the descriptive, correlational approach to suit the nature of the research. The research sample included Al-Qadisiyah University basketball team players, who numbered (13) for the academic year 2021-2022, out of the research community, who numbered (17). Thus, the percentage of the sample from the total population was 76.47%. The researcher used the kinesthetic sensation test and the basketball free throw test. The tests for the research variables were conducted on the research sample on Monday, February 24, 2022, in the

closed hall of the College of Physical Education and Sports Sciences, Al-Qadisiyah University, at 11 a.m., with the assistance of the work team. (Nashwan and Alzoubi 2022)

As for the study (Abdi, 2018) The study aimed to identify the effect of integrated training in gaming situations on the development of sensory-motor perception (distance and time), and the researcher assumed the positive effect of playing position exercises on the development of some sensory-motor perception. (Nashwan and Allawi 2021) He used the experimental method, and the research sample included 34 players in an intentional manner, 16 players as an experimental sample to which the program was applied with the integrated training strategy over a period of 8 weeks (microcycle) in a period The first competition, where we relied in this program on the method of training in the style of playing situations, which contains a group of exercises similar to the real competition situations that the player can face during matches, and 16 other players as a control sample to which the traditional program was applied based on the method of separate training, which does not achieve a relationship with The real scenario that the player faces during the competition, and he achieved an improvement in the results of most tests for the experimental group in the sensory-motor perception tests. The positive effect of sensory-motor perception on the development of some basic skills. (Easa, Shihab, and Kadhim 2022) It is recommended to use mental training programs and place them in educational programs, as they contribute to facilitating learning and acquisition. And mastering the basic skills in the sport of football, especially for young people and children. It is also recommended to adopt training programs in playing situations because of its benefit in improving the level of achievement. (Kazim, M. J., Zughair, A. L. A. A., & Shihab 2019) As for the study (Mohammed, K. S., Flayyih, M. S., & Rumeeh), the research aimed to build a measure of the level of tactical performance of volleyball players applying for the Iraqi Premier League for the 2018-2019 season. The nature of the research problem. Then the researchers selected the research sample in an intentional manner for players from Iraqi clubs in the Premier League (B, A). (Kadhim, M. J., Shihab, G. M., & Zaqair 2021) The researchers adopted the entire community as a sample for the research, and their number reached (156) players distributed among (13) clubs. The sample was divided into (12) players, an exploratory experiment player representing (the police club), and (100) players representing the building. After a maximum period of two months had passed since the scale was applied to the construction sample, the researchers applied it to the standardization sample, which consisted of (144) players, which is the same as the construction sample, in addition to the rest of the number, which was (44) players, and the researchers extracted the grades and standard levels. The researchers reached several conclusions, the most important of which is: constructing a measure of the level of linear performance with (36) items. The scale was also codified in its final form, and its grades and standard levels were extracted. The researchers recommended using the current scale for volleyball coaches to identify the level of the sample with the aim of developing their own plans to improve or improve the level of planning performance. Building a measure

of the level of plan performance among volleyball players for other samples and from different age groups.(Salman, KADHIM, and SHIHAB 2022)

As for a study (Mohammed K., 2023) It aims to determine grades and standard levels for some mental skills by researchers, which is considered of great importance, especially if it matches the targeted research sample, as conclusions were obtained, the most important of which are: The standard levels of mental skills reached the results of the sample studied within the level limited to (very good, good, average, and acceptable). And weak). The number of players at the (average) level was greater than the number of players at the other levels according to the results of the research scale. Then the researchers recommended: working on using training programs accompanied by psychological programs that would develop the psychological, physical, skillful and tactical aspects side by side. It is necessary to conduct other studies on similar samples using axes of mental skills different from the axes of this research. As for the study (Fadil, 2022), it aimed to design and apply a test to measure the accuracy of receiving a volleyball using a forearm pass for female students. Study participants for the 2018/2019 academic year. The number of female students who were recruited reached 73. Based on the results of this study, the researcher concluded that the accuracy of receiving in volleyball and the use of the forearm pass for the female students who were analyzed was below average, as most of them showed below average performance. The researcher recommends adopting the test prepared in this study. The aim of this study is to evaluate the students' level of accuracy, in order to determine the degree to which they enjoy development. The researcher also recommends paying attention to developing accuracy among students by giving them more time to train on accuracy during volleyball lessons. As for the study (Ahmed. 2019)) The research aims to: Identifying motor satisfaction and physical self for advanced volleyball players. And extracting the scores and standard levels for the two scales of motor satisfaction and physical self. To achieve these goals, the researchers used the descriptive method in a survey style to suit the nature of the research problem. The research community included elite volleyball club players distributed among (6) clubs (Police - South Gas - Bahri - Peshmerga - Habbaniyah - Kufa), numbering (80) players. The researchers chose (70) players who represent the research sample in an intentional manner, and this constitutes The number is (75%) from the original community. As for the remaining players from the community, the researchers excluded them in order to conduct the exploratory experiment on them. The researchers divided the sample as follows: (40) players to experiment with the scientific foundations of the motor satisfaction and physical self scales, and (30) players to sample the main experiment as well. On the researchers' use of the motor satisfaction and physical self scales by Muhammad Hassan Allawi. The researchers verified the validity of the scales in Chapter Four. The researchers extracted the scores and standard levels for the scales. The researcher concluded: The use of (5) standard levels for the two scales indicated that the scores were not dispersed. The volleyball players enjoyed a good level of motor satisfaction and an average level of

physical self-satisfaction. After that, the researchers made several recommendations, including: paying attention to studying other psychological variables for volleyball players. Conducting other studies on other sporting events.(Yaroub, Alkhafaji, and Sabhan 2024)

From the above review of previous studies, the researcher finds the importance of the process of constructing and codifying a test that takes into account the skill and movement aspect (distance and location) to determine the levels of the age group (12-14 years) as they are at the beginning of mastering the skill, which must be built on basic determinants that will cast astray in the future. To develop competition (Mahmood and Kadhim 2023)

The research aims: to design a test of spatial awareness and distance for the skills of passing from above and below for volleyball players aged (12-14 years) and to extract scores and standard levels.

Method and tools:

The descriptive survey method was adopted, because it agrees in solving the research problem, while the research sample consisted of Players from specialized schools for sports talent in volleyball, numbering (120) in (6) specialized schools (Baghdad, Diwaniyah, Anbar, Samawah, Babylon, Kirkuk). The researcher selected male players aged (12-14 years) and then the researcher divided the selected sample. To conduct a survey consisting of (10) players, and to build the test, (50) players were selected, to find the scientific foundations, and (60) players were chosen to codify the test and extract grades and standard levels. Table (1) shows the division of the sample.

Table (1) shows the division of the sample

Legalization sample	Construction sample	Sample exploratory experiment	number	School name	T
4	4	10	18	Baghdad	1
10	12	-	22	Diwaniyah	2
10	9	-	19	Anbar	3
10	5	-	15	Heaven	4
13	10	-	23	Babylon	5
13	10	-	23	Kirkuk	6
60	50	10	120	the total	
50%	41.66%	8.33%	100%	Percentage	

. Define the search variable:

The tests for the skills of passing from above and below in scientific sources take into account the evaluation of performance and accuracy of the place and through the

researcher's experience as a player, coach and volleyball specialist, as well as the opinions of experts and specialists in the field of testing, measurement and volleyball. attached (1) It was found that there is a need to estimate distance because these players have learned the skill, but it is likely that there is a weakness in estimating location and distance, especially in volleyball matches for children. Therefore, the researcher decided to design a test that takes into account location and distance to influence the opposing player and for this test to be a criterion for players to build Training programs that develop them in this direction because the exercises that the trainer sets must have sufficient information to be well codified. After that, the researcher designed the test

attached (2) The aforementioned changes were made to it, and the test was presented to experts and specialists attached (1) To demonstrate its validity for measurement, the validity of the test was determined according to two indicators: the coefficient of difficulty and ease of the test and the discriminatory ability of the test.

Exploratory experience:

To ensure the suitability of the test to the level of the sample, as well as to determine the time required for application, as well as to know the obstacles that may be encountered in the main experiment of the test, the exploratory experiment was conducted on a sample of (10) players representing the Specialized School of Volleyball in Baghdad in the closed hall of the Volleyball Center. Specialist for Sports Talent, through which the appropriate test for the sample was reached, as well as knowledge of the difficulties and requirements needed by the researcher.

Main experience:

The test was applied to a sample of (50) players for a period of (4) days at the sports festival held by the Ministry of Youth and Sports in Baghdad. The results were recorded for statistical treatments for the purpose of construction, and the scientific basis for the sample scores was extracted.

Scientific parameters for the test:

Validity of the test:

For the purpose of extracting the validity of the test in question, the researcher extracted the validity of the test in two ways.

Firstly: Content veracity:

After the questionnaire for the test in question was distributed to experts and specialists attached (1) In the field of testing, measurement, and the game of volleyball, the researcher used the validity of the content to explore their opinions on the ability of the test to measure what it was designed for. "The test becomes valid if the experts or specialists in the field of testing agree, and measurement is that it measures what it was

designed for, as most of them agreed on It is valid with some modifications” (Jasem, (2024)), as he took into account these modifications out of the researcher’s belief in their sobriety and scientific value, which improves the test. Moreover, “one of the most important elements of validity is one of the most important standards of quality of the test or measurement, as he points out The truth or accuracy with which we measure the thing or phenomenon that it was designed to measure (Al-Mashhadani, 2015, p. 69)

Ease and difficulty level:

The researcher presented the statistical description of the test Testing spatial awareness and distance for handling passes from above and below in volleyball The subject of the research was that the arithmetic mean, standard deviation, and skewness coefficient were extracted, as it was shown through Table (2) that the values of the skewness coefficient are less than (1□) This indicates that the sample. Moderately distributed, as the test is considered appropriate if its distribution is normal, provided that the tests do not constitute a severe skewness (Allam, 2000, p. 78).

Table (2) Values of the means, standard deviations, and skewness coefficient for the candidate tests

Torsion coefficient	standard deviation	The mediator	In the middle of a calculation	Unit of measurement	Statistical treatments	T
-.477	2.09294	44.0000	43.5200	centimeter	Testing spatial awareness and distance for handling passes from above and below in volleyball	1

Discriminating ability:

After the data for the skill test subject of the research was collected and transcribed, the researcher arranged the raw scores for each test in ascending order from “the lowest score to the highest score,” from which (33%) of the highest scores and the same number of lower scores were selected in order to identify the test’s ability to discriminate. between the high-level group and the low-level group” (Allah, 2011).

Table (3) shows the discriminatory ability of the spatial awareness test and distance for handling passes from above and below in volleyball.

Calculated value		Low level		High level		Unit of measurement	Testing	T
Significance values	T	± A	Q	± A	Q			
0.000	12.373	.7185	45.4412	1.2554	41.1000	degree	A1	1

Significant < 0.05 degrees of freedom (32)

Stability:

“Test reliability means the extent of the test’s accuracy in measurement and the consistency of its results when applied multiple times to the same individuals.”(Al-Yasiri, 2010, p. 75) To know the stability and balance of the test, the researcher tested a group of the sample numbering (20) and retested the same sample after (7) days had passed from the first trial of the test and by observing the significance values that are less than the significance level (0.05), which indicates a significant correlation, as shown in Table (4).

Objectivity:

It was calculated by (correlation between the scores of two arbitrators (2□)They set scores for one group of individuals at the same time, as the results showed high reliability

Arbitrators:

1-A. M. Dr. Laith Abdul Razzaq Muhammad, University of Baghdad/ College of Physical Education and Sports Sciences.

coefficients by noting the significance values, which are less than the significance level (0.05), which indicates the significance of the correlation, as shown in Table (4).

Table (4) shows the reliability and objectivity coefficient for testing spatial awareness and distance for handling passes from above and below in volleyball.

Indicative value	Objectivity	Indicative value	Consistency	Unit of measurement	Test name	T
.000	.893**	.020	.515	degree	A1	1

The main experience of legalization:

After the test was designed and the foundations for its construction were extracted, its suitability for standardization was completed. The test was applied to a standardization sample of (60) players for a period of (4) days at the sports festival held by the Ministry of Youth and Sports in Baghdad. The results were recorded for statistical treatments for the purpose of extracting grades and standard levels. The scientific basis for the sample scores was extracted.

Statistical methods:

The researcher used the statistical package (SPSS). .

- Arithmetic mean.
- Standard deviation.
- The mediator.
- Torsion coefficient.
- Correlation coefficient (Pearson)
- Standard score (Z).
- Modified standard score (T).

Results and discussion:

Standards:

Standards mean a set of scores derived through statistical methods from raw scores and are used to compare the level of an individual's performance with the level of performance of the group to which he belongs. They are created by collecting the scores of a group of individuals who are similar in age and gender, in addition to some characteristics related to the subject in which we use the standards, and then analyzing the data with statistical methods. To obtain the levels (Hani, 2018), the standards were extracted according to the following law (arithmetic mean - raw score / standard deviation), and then this equation was entered by extracting the standard score (T). As shown in Table (5).

Table (5) Standard Score (Modified) The objectivity of testing spatial awareness and distance for handling passes from above and below in volleyball

Standard levels of testing:

Repetition	Adjusted standard scores	Z standard scores	Raw scores	T	Repetition	Adjusted standard scores	Z standard scores	Raw scores	T
1	48.74	-0.13	43.3	22	1	75.09	2.51	38.9	1
2	48.14	-0.19	43.4	23	1	72.69	2.27	39.3	2
1	47.54	-0.25	43.5	24	1	70.3	2.03	39.7	3
2	46.95	-0.31	43.6	25	1	64.91	1.49	40.6	4
1	45.75	-0.43	43.8	26	1	61.92	1.19	41.1	5
1	45.15	-0.49	43.9	27	1	60.72	1.07	41.3	6
1	44.55	-0.54	44	28	1	60.12	1.01	41.4	7
2	43.95	-0.6	44.1	29	1	59.52	0.95	41.5	8
1	42.75	-0.72	44.3	30	2	58.92	0.89	41.6	9
2	40.96	-0.9	44.6	31	2	58.32	0.83	41.7	10
1	40.36	-0.96	44.7	32	1	57.72	0.77	41.8	11
1	39.76	-1.02	44.8	33	3	57.13	0.71	41.9	12
1	39.16	-1.08	44.9	34	2	56.53	0.65	42	13
1	37.96	-1.2	45.1	35	2	55.33	0.53	42.2	14
1	37.37	-1.26	45.2	36	1	54.73	0.47	42.3	15
1	36.77	-1.32	45.3	37	2	54.13	0.41	42.4	16
1	35.57	-1.44	45.5	38	1	52.34	0.23	42.7	17
2	34.37	-1.56	45.7	39	2	51.74	0.17	42.8	18
1	33.77	-1.62	45.8	40	3	51.14	0.11	42.9	19
1	33.17	-1.68	45.9	41	3	50.54	0.05	43	20
1	25.99	-2.4	47.1	42	2	49.94	-0.01	43.1	21
The total number of repetitions is 60									

The researcher chose (5) levels to measure his test, and when the standard scores were distributed among the approved levels, the standard levels appeared, as shown in Table (6).

Table (6): Levels and their specific percentage in the normal distribution and raw and standard scores (Za and T), the number of practices, and the percentage of the test Spatial perception and distance for handling passes from above and below in volleyball.

Ratio	Sample number	Limits of the standard score T	z-score limits	Raw grade	The proportion determined in a normal distribution
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5%	3	70.3- 75.09	2.03- 2.51	39.7- 38.08	2.14% very good
6.66 %	4	60.12- 64.91	1.01- 1.49	41.4- 39.8	13.59% good
70%	42	40.36- 59.52	-0.96 – 0.95	44.7- 41.5	Average 68,27%
15%	9	33.17- 39.76	-1.68 - -1.02	46.43- 44.8	13,59% popular
1.66 %	1	25.99	-2.4	48.1- 46.44	2.14% weak

Table 6 shows that the percentages of standard levels shown by the sample in the test under investigation are as follows:

The sample showed varying percentages compared to the percentages determined at the first standard level (very good). The sample achieved a percentage of (5%), which is a higher percentage than determined for it in a normal distribution. At the second standard level (good), the sample achieved a percentage of (6.66%)(This is a percentage lower than that determined for it in a normal distribution. At the third standard level (average), the sample achieved a percentage of (70%)(This is a higher percentage than determined in a normal distribution, and at the fourth standard level (acceptable), the sample achieved a percentage of (15%This is a percentage higher than what was determined for it in the normal distribution. At the fifth standard level (weak), the sample achieved a percentage of (1%), which is a percentage lower than what was determined for it in the normal distribution. We note from the above that the test results for the sample were limited to the levels (very good, average, and acceptable). (Salih et al. 2024)

The researcher attributes these levels to the importance of the two skills, especially for this age group, as those responsible for training the age groups in specialized schools work to pay great attention to these two skills for their multiple uses, including attacking the opponent, including receiving the serve, (Saharuddin et al. 2018) and including preparing for the teammate, in addition to the fact that the trainers take into account the most accurate and important positions of training. On a continuous basis by dividing, it into small and large areas. Perhaps the player's awareness of these places came through these exercises that take long times and many repetitions because repeated practice of the skill leads to achieving the correct performance of the skill with consistency, harmony and control and without stiffness or tension. "Repetition and training gives the skill More mastery, competition, and more precise motor brilliance" (Fadil and Mohammed 2022)

Although there is variation in these levels, this is due to the principle of individual differences. Therefore, the sample's achievement of good percentages is due to increased training in motor and cognitive abilities through the skill in order for it to be a criterion for the player in achieving good results while practicing the skill in mini volleyball matches, and this is what he indicated. (Abdul-Khaleq) "Improvement in skill performance depends

on the extent of attention and development of the physical and motor aspects related to the skill” (Ahmed and Yousif 2019)

The process of mastering skill performance in terms of perception of location and distance cannot be achieved except through the fundamental connection between mental processes and skill performance on the one hand and physical performance on the other hand, (Jasem et al. 2024) as the researcher was keen to measure the two skills and give accurate information about the training situation, so this test was one of the Those tests that were previously applied gave information about skills, but on the other hand, the levels were fairly good, and they are a step in the right direction for evaluating the training process in general and the level of spatial awareness and distance in particular. (Setar Mohammed, Aed Shamkhi, and Jabar Mohammed 2023)

Conclusions:

1. A test was developed that takes into account distance and location for volleyball players aged 12-14 years
2. The largest percentage of results appeared within the very good level, which indicates that the sample's level of perception was positive towards the test.
3. The necessity of researching and investigating variables, whether physical, motor, or mental, that work to improve skill performance.
4. It is necessary to use the test on an ongoing basis for the purpose of evaluating the player and identifying his level, as well as evaluating training programs.
5. It is necessary to take into account the sample category when designing tests and to commit to achieving the test goal easily when applied.
6. Constructing other tests on samples similar to the current research sample, as well as applying the test to other samples and extracting its scientific foundations.

Appendices

Appendix (1) Names of experts and specialists

Workplace	Specialization	Name of expert And the scientific title	T
University of Baghdad/ College of Physical Education and Sports Sciences	Tests and measurement	Prof. Dr. Thaer Daoud Salman	1
University of Baghdad/ College of Physical Education and Sports Sciences	Volleyball tests and measurements	Prof. Dr. Fares Youssef Shaba	2
University of Baghdad/ College of Physical Education and Sports Sciences	Learn to move	Prof. Dr. Tariq Nizar Al-Taleb	3
University of Diyala/ College of Physical Education	tests and measurement/ volleyball	A. Dr. Muhammad Walid	4
University of Baghdad/ College of Physical Education and Sports Sciences	tests and measurement/ volleyball	or. Dr. Asmaa Hikmat	5

Appendix (2) Test

Test: Handling from above and below from over the net to the opposite court

Purpose of the test: Measuring spatial awareness and distance for handling passes from above and below in a volleyball.

Tools used: Miniature volleyball court, measuring (14" long x (6" wide), (2) poles, (2) high, (2) blinds, (10m) long and (2m) wide, (5) volleyballs, tape, measuring tape.

Performance Specifications: The playing field opposite the laboratory is divided using adhesive tape into (5) areas for accuracy, including (2) in the two back corners of the playing field, (2) in the two front corners of the playing field, and the fifth square in half of the playing field in exactly the center of (6). The five squares measure (1.5 m x 1.5 m) and are given These squares are numbers, as the square in the corner of the playing field is given in (center 1) (3), the square in (center 5) (4), the square in (center 6) (5), the square in (center 2) (1), and the square in (center 4) (2). As in Figure (1), the columns are placed at a height of (2 metres) and a cloth is attached to them, a length of (10 meters) and a width of (1.5 metres) to block the view from the laboratory, and they are parallel and adjacent to the net.

The tester stands in area (A), which is drawn at a distance of (1 m) from the attack line (front) in the middle of the field, and as shown in Figure (1), the person conducting the test (the coach) stands in the opposite field, specifically in area (B), also at a distance

of (1 m). From the offensive line in the middle of the field, in turn, he throws the ball with both hands, along with the number of the square to which the tester must direct the ball, passing it from above or below.

Registration method:

- ❖ (2) trial attempts are given for each pass from above and below Without blocking sight.
- ❖ Each laboratory is given (10) attempts (5) for each skill, the average of which is calculated for the laboratory.
- ❖ The distance is calculated from the place where the ball falls to the player's designated area.
- ❖ A ball that falls outside the boundaries of the designated area is recorded for its distance from the place of its fall to the designated area.
- ❖ The ball that falls outside the boundaries of the playing field is discarded and is counted among the ten attempts.

2- It is given (Zero) for the ball that falls within the specified area.

Note: The lower the ball's falling distance, the higher the tester's perception rate.

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Sports marketing strategy and its relationship to the competitive advantage of institutional clubs in Iraq

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2071](https://doi.org/10.37359/JOPE.V36(3)2024.2071)

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Article history: Received 29/ March/2024 Accepted 21/April/2024 Available online 28/ September/2024

Abstract

The research aimed to identify the correlation between the sports marketing strategy and the competitive advantage of institutional sports clubs in Iraq. The researchers used the descriptive approach using the analytical survey method and correlational relationships, in order to suit the requirements and procedures of his research. For the purpose of achieving the objectives of any research and studying its variables, it is necessary to know the original society with its characteristics and components. Because the use of any method is considered an incomplete case unless the study population is described clearly and accurately. The research population was determined from members of the administrative bodies of institutional sports clubs in Iraq, who numbered (404) members of the administrative body, distributed among (49) sports clubs, and a sample was determined. Search from the origin community by a percentage of (.86.63) Since the research sample was approved as (350) members of the administrative body out of the total number, the questionnaires were distributed to the application sample, which numbered (150) members of the administrative body in the institutional clubs on 3/28/2022, and the phrases were arranged randomly so that the respondent would not be limited to one area. One particular over the other. Then the questionnaires were collected after a specific period, and they were rearranged in an organized manner according to each field in preparation for subjecting them to statistical treatments. The researchers used the SPSS statistical package, through a set of statistics that suit the requirements of the research and methods for obtaining the required results. The results of the sample proved Application: There is a moral correlation to the results of the significance level values between the two research measures (sports marketing strategy) and (competitive advantage). The researcher attributes this to the moral correlation in the variables being that competitive advantage requires successful management that believes in organizational change to develop a sports marketing strategy that will be a center for achieving imports. The additional

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level is under specialized marketing management, and all the results of the three measurement areas have been discussed in detail.

Keywords: strategy, sports marketing, competitive advantage, institutional clubs.

Introduction

All sports clubs and federations seek to be among the accelerating pace of change for the better, so as not to miss keeping pace with development and not to remain confined to traditional frameworks and administrative monotony in their management. Therefore, they are obligated to search for innovation and to possess the elements that make them among this accelerating pace, if the competition is Among these clubs and sports federations lies several characteristics that may distinguish one club from another, such as human resources, financial resources, methods of marketing their outputs, and investing their resources as an aspect of organizational change for their performance .

Sports marketing is a broad field of research and investigation into its requirements, procedures, application methods, plans and programmes, in order to improve its structure towards continuous development and growth as an aspect of supporting sports and competition towards optimal achievement.

Today, sports marketing has become an integrated system with foundations, characteristics, and programs with an administrative strategy that aligns with scientific, commercial, and economic acceleration to interact with each other in creating a new structure in the field of sports marketing, which has made this term the primary concern of many scholars of management, trade, and economics to strive towards expanding ideas, programs, and systems. related to it, to represent one of the important courses in the field of academic education and specialized training courses to prepare administrators in this important field.

In order for sports clubs and federations to keep pace with development and advancement in their field of work and to achieve their presence within the ranks of competition and excellence in achievement and to attract fans, those interested and followers of sports and to know what is going on around it; What requires them to deal well and behave in setting all goals and planning marketing methods with systematic and studied strategies based on real facts and information and their analysis, and dealing with all the details, obstacles, and elements of success, and improving the quality of work according to internal and external variables and available capabilities, and employing them in determining the sports marketing strategy, in the work of these clubs and federations. Sports on an ongoing basis, and the extent of its relationship to the type of excellence required in all its sports programs and the orientation towards competition in attracting sponsors on the one hand and beneficiaries on the other hand to ensure Sustaining the work of sports clubs and achieving financial profits is a major aspect of developing sports.

From the above, the researcher's interest was directed to this problem, studying it, and identifying its causes through the sports marketing strategy in achieving competitive advantage in institutional clubs in Iraq.

The importance of the research lies in several directions that quickly integrate in their contents to generate a scientific destination concerned with the sports marketing strategy for the aspects of the administrative work of clubs to strive towards excellence in the internal circle

of sports competition as a main gateway to global competition, as well as the relative modernity of the sports marketing process to create a competitive advantage for sports clubs. In addition to this, the growing interest of sponsors and the desire to finance sports clubs through systems and programs prepared in a way that ensures keeping pace with global development in this profitable field. As well as the desire of sports clubs to address the issue of sports marketing, the extent of its relationship with beneficiaries and funding bodies, and the nature of change to move towards the field of excellence and competition to achieve good attraction for its followers. And attract the attention of responsible authorities in giving a comprehensive view of this topic in light of sports competition and the importance of marketing programs and administrative practice from a modern and contemporary perspective. (Salman et al., 2022)

(Previous and related studies) There are many studies that used this strategy, and I mentioned a study (Muhammad bin Khamis 1999), which aimed to determine the extent of the interest of the Omani private sector in developing strategies for developing sports marketing, and the extent of their conviction in the importance of the sport aspect in the Sultanate of Oman as a means of promoting the product and brand, (Nashwan, 2024) then Revealing the reasons leading to the weakness of the sports marketing process, following the descriptive analytical approach on a sample of workers in economic establishments (33%) according to a questionnaire designated for this purpose to reveal the themes Sponsorship, financing and promotion, as the study concluded that sport has become a profitable commercial operation and sports marketing has become one of the most important types of marketing, in addition to considering corporate sponsorship of sporting events as an advanced marketing tool that is distinguished from other means. It was also found that a large percentage of Omani private establishments have sponsored events and activities. Sports events held in the Sultanate, and this sponsorship varied between a main sponsor, an official sponsor, and joint sponsorship (Al-Husseini, 1999, p. 50). & (Nashwan, 2024)

The study (Qasi Islam and Rizq Tar 2017) was mentioned, which aimed to determine the effects of sports marketing in private economic institutions on the development of sports, and the expected benefit for the sports sector from sports marketing for private economic institutions, using the descriptive analytical approach and correlational relationships on a sample consisting of (68) clubs. An athlete in the state of Bouira, with a specific questionnaire that included several questions to the heads of sports clubs, as it was found that private economic institutions have a constant willingness to support the sports sector, and that private economic institutions rely on sports marketing to promote Its products, and the increased profitability of private economic institutions due to the methods of promotion and sale that sports marketing provides, and it recommended activating the friendly sale of the products of private economic institutions through major and official sponsorship of sports clubs, which increases the popularity of their products (Islam and Tariq, 2017, p. 3) .

The study (Soha Abdel Moneim 2020), which aimed to identify the impact of sports marketing activities on the organizational effectiveness of sports institutions represented by the Egyptian Olympic Committee, and the relationship between marketing activities and organizational effectiveness, was mentioned on a sample of (102) managers in the Olympic Committee, and the study concluded that there is an important relationship between Research variables and application of marketing thought to the components of promotion, distribution, pricing, and benefiting from advertising rights. It recommended focusing on paying attention to the needs of the market and the desire of the beneficiaries to Covering their requirements to support sports in general and gain the trust of its followers (Muhammad, 2020, pages 34-87) .

The study (Ibrahim Ali 2019), which aimed to know the general reality of the sports marketing strategy in the internal and external environment and the extent of sports institutions' interest in developing marketing strategies, was mentioned on a sample of (101) officials and leaders of the Ministry of Youth and Sports, marketing experts, and the Olympic Committee. The study concluded that there is reluctance in developing marketing strategies. Clear marketing strategies advance its work, and it recommended attention to developing a strategy with a specific mechanism that keeps pace with the global acceleration in the sports factory circle (Gharab, 2019, Pages 4-5). & (Nashwan & Alzoubi, 2022)

The study (Nasri Abdel Qader 2015) mentioned that it aimed to know the organizational and planning policy with which sports bodies are linked to achieve the marketing process by working to provide areas of sponsorship, advertising and promotion of sports, cultural, social and artistic activities for employees, on a sample of (100) consisting of leaders and employees. In professional football clubs, the Olympic Committee, and officials of telecommunications companies, the study concluded that there was a difference in the strategic planning processes for sports marketing and recommended a strategic planning policy approach for all their marketing programs to support sports in accordance with the principle of marketing policy. (Abdel Qader, 2015, p. 23).

The study (Tariq Ali 2015), which aimed to identify the current reality of the process of marketing sports club services in the Kingdom of Saudi Arabia in the Western Region as an outlet for self-financing, was mentioned in a study of (500) people from the public who benefit from the club's administrative services. The study concluded that there is no specialized marketing department. And a marketing team within the organizational structure of Saudi sports clubs, and there is no database for the audience's data, requirements, and future desires. It recommended placing a main aspect in the organizational structure that works to manage sports marketing and expand knowledge of the reality of the public and what it desires to gain their trust towards Sports clubs (Dahem, 2015, p. 17).

The study (Ibrahim Ali Saleh 2010), which aimed to know the extent of the availability of policies and laws to cover the field of sports marketing in sports institutions and federations, and the extent of the importance of sports marketing to them, was mentioned on a sample of (105) people who work in the sports field for the Ministry of Youth and Sports, sports federations and clubs, and specialized experts. The study concluded that there are no provisions and regulations that define the laws regulating the science of sports marketing, as well as a weakness in marketing management by the leadership of sports clubs and federations. The study recommended increasing awareness of And the culture of sports marketing in clubs and federations, developing systematic programs to improve the sports marketing strategy, and adopting research and studies supporting this purpose (Gharab, 2010, pages 35-36)..

The study (Haider Radi and Abdullah Hazza 2019) was mentioned, which aimed to know the administrative trend towards sports privatization of Baghdad clubs participating in the Iraqi Premier Football League from the point of view of coaches and players. The researcher used the descriptive approach using the survey method to suit it with the nature of the problem, and the research sample consisted of coaches. The number of Baghdad club players participating in the Iraqi Premier League for the sports season (2018-2019) is (110). Individually, the researcher proposed (25) phrases for the scale and presented them to (17) experts who agreed on (20) phrases. After that, the scale was applied to the research sample to extract and discuss the results of the study, and it appeared that there was a desire on the part

of coaches and players for the Iraqi Premier League football clubs. In the administrative trend towards sports privatization (Raheem & Hazza, 2019)

Method and tools

The researcher used the descriptive method using the analytical survey method and correlational relationships, in order to suit the requirements and procedures of his research. This approach is considered one of the most common and widespread approaches, especially in educational research, which “is concerned with evaluating trends, seeking to find out points of view, aiming to collect demographic data about individuals, or aiming to know work conditions and means”. Al-Kazemi, 2012, p. 17 “(The research community was determined from members of the administrative bodies of institutional sports clubs in Iraq, who numbered (404) members of the administrative body, distributed among (49) sports clubs. The research sample was determined from the original community by a percentage of (86.63). The research sample was approved as (350) administrative body members out of the total number, and then the sample was divided according to scientific conditions into (the exploratory experiment sample, the construction and preparation sample, and the application sample) ,Sample exploratory experiment :The sample of the exploratory experiment consisted of (30) members of the administrative body, with a percentage of (8.57), who were selected randomly.

Construction sample :The sample for constructing the research criteria included (170) members of the administrative body, with a percentage of (48.57), who were selected randomly.

Application sample :The sample for applying the standards included (150) members of the administrative body, with a percentage of (42.85), who were selected randomly .

The researchers used the following methods, tools and devices.

· Arab and foreign sources and references.

· Personal interviews with specialists.

· Field visits to collect information.

· A special questionnaire for the purpose of identifying the most important areas and phrases of search criteria.

· Data collection and emptying form.

· International electronic information network (Internet).

· Dell electronic calculator.

A stopwatch (Casio) to know the time to answer the statements of the two scales

In order to achieve the research objectives, the researcher adopted the questionnaire as a main tool for his research, as it is “the only easy means to expose respondents to carefully selected and arranged variables for the purpose of collecting data”. (Dallin, 1984, p. 395) as the appropriate tool for collecting information and data, and provides an opportunity for the subjects to express their opinions freely. Therefore, in order for the research tool to be accurately prepared in designing the questionnaire, sources that provide information were used in its construction, as follows:

· Reviewing a set of ready-made questionnaires and standards in a section of Arab and foreign studies that dealt with the topic and variables of research in sports marketing strategy and its relationship to competitive advantage among members of the administrative bodies of sports clubs in Iraq .

·Reviewing some literature and references related to the theoretical aspects of research variables in sports marketing strategy and its relationship to competitive advantage among members of the administrative bodies of sports clubs in Iraq .

·Personal interviews with some specialists in colleges of physical education and sports sciences, and workers in sports clubs, Ministry of Youth and Sports .

Sports marketing strategy scale :The scale consists of (61) distributed items (7) areas, as the scale enjoyed high consistency, high discriminatory ability, and a reliability coefficient whose value reached (0.753). This represents the correlation of half of the statements, as the researcher later found the reliability coefficient for the scale using the Sieberman-Brown correlation coefficient, which showed a value of.(0.827)

Results

Table (1) shows the results of the statistical description

Scale	Arithmetic mean	Standard deviation	Torsion coefficient	The mediator	minimum degree	higher degree
Sports marketing strategy	176.653	13.4708	4000.	176.000	150.00	215.00

Competitive advantage measure :The scale consists of (30) distributed items (5) areas, as the scale enjoyed high consistency, high discriminatory ability, and a reliability coefficient whose value was (0.733), and this represents the correlation of half of the statements, as the researcher later found the reliability coefficient for the scale using the Sieberman-Brown correlation coefficient, which showed a value of.(0.789)

The data was processed statistically using the SPSS program to obtain the results, and among these statistical methods that the researchers used are: - (arithmetic mean, hypothetical mean, standard deviation. (t) test for symmetrical and asymmetrical samples.

Table (2) shows the results of the statistical description

higher degree	minimum degree	The mediator	Torsion coefficient	Standard deviation	Arithmetic mean	Scale
133.00	76.00	99.000	0.165	10.7232	100.583	Competitive advantage

Table (3) It shows the arithmetic mean, the standard deviation, the calculated (T) value, the hypothetical mean, and the level of significance.

Variables	Arithmetic mean	Standard deviation	Degree of freedom	value)T(	Indicative value	Significance level
Sports marketing strategy	176.653	13.4708	149	5.770-	0.000	Dal
Hypothetical mean	183					

·The significance value is significant if it is $0.05 >$

Table (4) It shows the arithmetic mean, the standard deviation, the calculated (T) value, the hypothetical mean, and the level of significance.

Variables	Arithmetic mean	Standard deviation	Degree of freedom	value(T)	Indicative value	Significance level
Competitive advantage	100.583	10.723	149	12.048	0.000	Dal
Hypothetical mean	90					

·The significance value is significant if it is $0.05 >$

Table (5) shows the level of correlation between the two research metrics

Search metrics		Sports marketing strategy	Organizational change	Competitive advantage
Sports marketing strategy	Correlation coefficient	1	0700.	0850.
	Moral value		3950.	3020.
	Sample number	150	150	150
Competitive advantage	Correlation coefficient	0.085	0 939.	1
	Moral value	3020.	0.000	
	Sample number	150	150	150

·The significance value is significant if it is $0.05 >$

Discussion

Table (3) shows the results of the T test. When comparing the achieved arithmetic means, it turns out that there are statistically significant differences in favor of the hypothesized mean for the scale) Sports marketing strategy ,(as the moral value reached (0.000), which is smaller than the significance level (0.05), in addition to the results of the achieved hypothetical mean level being greater than the arithmetic mean value of the scale.(Kazar & Kazim, 2020)

This is due to the fact that all sports clubs affiliated with government institutions are proceeding correctly in the marketing process, but very slowly and in limited aspects, and do not consider developing a real marketing strategy. We can summarize some of the marketing processes in some Iraqi clubs with the following points:

- Marketing players, as we found all the clubs, especially some of the major clubs such as (Al-Zawraa - Al-Quwa Al-Jawiya - Al-Shorta - Al-Karkh) depends heavily on paying attention to age groups, developing talents, progressing them until they reach the first level, and then marketing them internally or externally through professional contracts that go back to managing the club and the player at the same time. With good money, and this matter is excellent because these clubs, throughout their long history, are considered a football school.(Salih et al., 2024)

Benefiting from the infrastructure of some clubs and properly using their halls and facilities brings in money, no matter how relatively small it is given the size of the club's disbursements, but it is another source of money. Al-Karkh Club is considered the biggest beneficiary in this aspect due to its location in the heart of the capital, Baghdad, in a commercial location, and its ownership of a large number of shops that It generates money for them in addition to the advertising pieces that are rented by private sector companies on a monthly basis, and they also have problems with the Ministry of Education because of these imports and are prohibited. The Ministry stops funding the club from time to time due to the club receiving direct imports from shops and advertising pieces. (HalahAtiyah et al., 2024)

- Taking advantage of sponsoring companies to put their logo on players 'clothes and achieving relatively good imports. It is noted that sponsoring companies are the ones who benefit most from this process, as they are looking for elite clubs only or for football clubs in the Premier League, and they are not interested at all in the rest of the games, whether they are group or individual, as well as companies. The sponsor takes advantage of the sponsorship price because there are not many competitors, and during our dialogue with some club administrations, such as the Kahraba Club, they complained of their inability to agree with the companies sponsoring the private sector. Because of their direct affiliation with the Ministry of Electricity, the Ministry is arguing with them to develop a slogan (rationalizing consumption affiliated with the Ministry). It was noted that some of the club's administrators have no desire to develop the marketing process for fear of problems with the Ministry.(Mahmood & Kadhim, 2023)

- Benefiting from renting advertising pieces in agreement with advertising marketing companies during the club's matches or at the club's website.

- Match tickets are a mechanism that interacts with the federations organizing the games.

- Benefiting from television broadcast revenues for matches, which amounts are considered very small, even though they are limited to football and basketball and their Premier League only. As for the rest of the games, they do not have any direct transmission or any imports for broadcast rights.

Selling sportswear that bears the club's logo is not managed properly and does not generate many profits for the club, in addition to the fact that the majority of buyers are fans of the club, so this is limited to the big clubs only.

Sports clubs in Iraq seek to make their marketing successful through the work of committees determined by members of the Sports Authority, but they do not care about developing a real marketing strategy through the presence of specialists in this field who have full time for this process. We have also noticed that there is no marketing department or marketing director whose primary duty is the complex marketing process. In many areas of the club, they can bring in other new imports. (Kadhim, 2024a)

Tawfiq (2005) (1) defines strategy as "a unified, integrated, and comprehensive plan that links the organization's competitive advantages and environmental challenges, which is designed to ensure the achievement of the organization's basic goals through their good implementation by the organization, and that all strategies are based on the four stages of success (select what you want ". Do something, notice what happens, change what you do until you get what you want (Abdul Rahman, 2005, p. 166).

Al-Shafi'i and Hijazi (2009) (2) believe that developing a strategy for sports marketing and investment is one of the most important directions to achieve marketing competition, advanced marketing development, and effective investment in the sports institutions sector, if we want to raise the level of sports and raise the level of local, international and global sports teams, and this requires adopting advanced procedures. To raise the level of sports awareness by clarifying the importance of sports practice, changing the goals of the sports institution and supporting it economically, achieving these goals necessarily requires providing Professional management in addition to volunteerism, achieving competition between different sports institutions, paying attention to self-development in addition to providing high-level and quality sports services, achieving self-satisfaction with the activities provided and increasing them (Al-Shafi'i and Hijazi, 2009, p. 49). & (Abdulhussein et al., 2024)

Table (4) shows the results of the (T) test. When comparing the achieved arithmetic means, it turns out that there are statistically significant differences in favor of the arithmetic mean for the competitive advantage scale, as the moral value reached (0.000), which is smaller than the significance level (0.05), in addition to The results of the achieved arithmetic mean level are greater than the hypothesized mean value of the scale.

This is due to:

All institutional clubs have a competitive advantage towards development and competition between themselves and other clubs of the same class through the leagues in which they participate, through the games in the club, from the various group games or the various individual games, and as everyone knows, we do not have a club that contains all the team and individual Olympic games together. (Mousa & Kadhim, 2023)

The competitive advantage that exists in the clubs constitutes a support for the process of development in its many forms, whether from the sporting aspect of its sports or from the administrative aspect that leads to sporting development, and despite the disparity in ability between the major clubs that suffer from delayed financing or the need for more financing and the differences in funding amounts from a fan club to another. Another popular club, and also among the small clubs that complain of lack of funding, therefore we see that money constitutes a great advantage and an urgent need for the continuity and development of sports work and to remain in continuous competition. (Farhan et al., 2016)

Janawi Sharif and Janawi Ishaq, 2022 explained that the importance of competitive advantage lies in the elements below (Sharif and Ishaq, 2022, p. 32):

v Creating value for customers that meets their needs and ensures their loyalty, and promotes and improves the reputation and image of the organization in their minds.

v Achieving strategic distinction from competitors in the goods and services provided to customers with the possibility of excellence in the resources, competencies and strategies pursued in light of a highly competitive environment.

v Achieving a market share for the organization as well as high profitability to survive and continue in the market.

v Competitive advantage is the strategic concept that reflects the good and continuous competitive position of an organization vis-à-vis its competitors.

v Outstanding performance of internal resources and strategic competencies within the various systems, strategies, activities and operations of the organization.

It is one of the most important elements of competitive advantage (Jaafar, 2020, page 13)

- Examine the project carefully.
- Understand customer mentality.
- Testing distinctive strengths.
- Monitor competitors' activities.
- Brand.
- Studied prices.
- Collect information.
- Relying on technology.

It is clear from Table (5) of the results of the application sample that there is a significant correlation to the results of the significance level values between the two research measures (sports marketing strategy) and (competitive advantage). (Kadhim, 2024b)

The researcher attributes this to the fact that the moral correlation in the variables is that competitive advantage requires successful management that believes in organizational change to develop a sports marketing strategy that will be a center for achieving additional imports under specialized marketing management. (Kadhim, 2023)

The development of sports in general and the development of the sports marketing process in particular confirms the necessity of the club operating as commercial companies operate and changing or modernizing its organizational structure by having departments or a division or merging a specific department with another important department such as the media department, the marketing department, the media and marketing department, or the investment and marketing department. (Kazim et al., 2019)

If we compare the work of important telecommunications companies that rely heavily on modern technology, such as Asia Cell, Zain Iraq, Korek, Earthlink, or Fastlink, we find that they have several departments, all of which are under the umbrella of marketing and the marketing department, such as:

- Marketing manager for their product (Sim card - Internet... etc.).
- Manager responsible for road advertising pieces, television advertisements, and social media advertisements.
- Sponsorship manager for shops.
- Director of sponsorship of events, conferences and exhibitions.
- Director of juvenile care and communication with the community and citizens.

·sales manager.

What is interesting about the matter is that all managers must express their comments and approval to complete any new work.

These companies and others do not have a long history like the history of institutional sports clubs. Rather, their history is much shorter than some clubs. Here we are not comparing the club to commercial companies, but we are comparing the marketing work and the success of the marketing operations in them, which placed the marketing department and marketing director within its organizational structure since the opening and collected information about The market and developed a correct marketing strategy that can be constantly updated, and competition began from the start of work.(Kadhim et al., 2021)

Having a similar marketing strategy, albeit in a simpler form and with specialized and efficient management, will significantly increase the club's revenues and reduce reliance on government grants and funding, thus developing the club's games and facilities, increasing competition with everyone locally, regionally and internationally, gaining qualified athletes and coaches, and increasing the fan base.

The presence of specialists in the marketing process does not necessarily give them full powers, but they have full powers to exercise their duties and assist them in various available ways. Therefore, the president and members of the club's management body are the ones who make the final approval decision.

Conclusions

1. Institutional clubs rely heavily on government funding.
2. Lack of suitable infrastructure for investment and obtaining additional funding for a large number of institutional clubs.
3. Weakness in rehabilitating the infrastructure built for a number of fan clubs and benefiting financially from the development of infrastructure.

Recommendations

1. A marketing manager who specializes in marketing work and has experience in this field. His duty is to develop plans, ideas, and follow up on the marketing and investment process in a way that is interconnected with the club's programs. The club management can rely on a person from the club after refining his talent through intensive courses in modern marketing.
2. An employee fluent in Arabic and English and proficient in electronic designs and technological work.
3. Two assistant employees whose responsibilities are determined by the Marketing Director and are ready to work inside or outside the club.

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The effect of cardiorespiratory fitness training on developing speed endurance, heart rate adaptation, and men's 1500-meter running performance

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2052](https://doi.org/10.37359/JOPE.V36(3)2024.2052)

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Article history: Received 18/ March/2024 Accepted 20/ August/2024 Available online 28/ September/2024

Abstract

The problem of the research is that there is a weakness in speed endurance, which has a direct impact on achievement, as it leads to early fatigue, lack of concentration, and a low level of effectiveness of performance, which made the researchers interested in this problem and finding solutions to it. Hence the importance of the research is evident: preparing cardiorespiratory fitness training to develop speed endurance and rate adaptation. The heartbeat that occurs in runners is a continuous result of training and the use of a type of training that suits the requirements of the 1500-meter running competition. The researchers used the experimental approach with pre- and post-testing for the experimental and control groups. The research community was identified as players in the 1500-meter competition for the elite men's category of the Iraqi Athletics Federation for the 2024 sports season. The number of them was (12 players), and the sample was divided into two groups, the experimental group and the control group, with (6 players) for each group. The researchers concluded that the results showed a noticeable superiority between the pre- and post-measurement of cardio-respiratory fitness training to develop speed endurance and adaptation of heart rate and achievement for the experimental group and in favor of the post-measurement. The researchers recommended conducting similar studies and research on different age groups.

Keywords: cardiorespiratory fitness, speed endurance, heart rate, and achievement

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Introduction

Sports games, including individual games, have become one of the modern manifestations that reflect the country's progress and advancement. The Olympic, international, continental and local world meetings are forums in which the splendour of physical performance is evident. In light of this, the special preparation processes for this event Through the exchange between the period of maximum effort and the period of rest, which is one of the fastest and most influential in cardiorespiratory fitness because it directly affects the heart muscle and blood vessels for the short periods of great, high effort that follow the rest times, from which the coach must strive to build exercises in order to develop endurance. Speed and heart rate adaptation using modern exercises and various training methods in order to raise the physical level and physiological aspect of the players to reach the desired level by controlling the intensity of the exercise and its duration or repetition times. According to the objectives of the training load, the requirements for running events in athletics are many and comprehensive for the organs and functions of the runner's body, especially the 1500-meter running competition with special physical specifications. Therefore, it is necessary for coaches to develop endurance and adapt to the runner's maximum heart rate when working at a pulse (170 – 180 V/min). Because achievement is one of the basic goals in the training process, which both the player and the coach aspire to . (HalahAtiyah et al., 2024) The problem of the research is that there is a weakness in endurance for speed, which has a direct impact on achievement It leads to early fatigue, lack of concentration, and a low level of performance effectiveness Which made the researchers interested in this problem and finding solutions to it, as the researchers decided to apply modern training methods based on actual experimentation that aim to develop achievement .(Kadhim, 2023b) to Numbers Cardiorespiratory fitness training to develop speed endurance, adapt heart rate, and complete the men's 1,500-meter run .

Many studies have been addressed, including the study (Muhannad Habib Matar Hussein, 2020), which aimed to prepare HIIT exercises in cardiorespiratory fitness, some physical abilities, and endurance of the offensive performance of young football players, and the experimental approach was used to achieve the objectives of the study ,, .The research community was defined by youth football players aged (18 - 20) years who were officially registered in Diyala Sports Club for the season (2019 - 2020), numbering (27 players). The research sample was selected for the entire community and they were randomly distributed into two groups equally (11 players for the control group and 11 players for the experimental group .(Kadhim, 2023a)As for the study (Sana Sami Rahim Kateb, 2022), the study aimed to prepare D. Cardiorespiratory fitness exercises according to some laws of biomechanics in the most important blood variables and lung efficiency for female students. The researcher used the (experimental) approach in the style of two equal groups with pre- and post-tests. The research population represents Al-Budour Al-Sata'a Secondary School for Girls affiliated with the Directorate of Education in Al-Najaf Al-Ashraf. Fourth-year science students were identified. They numbered (75) female students, and the researcher selected a sample of (30) female students from the community of origin in a random manner, and they were distributed to Two groups (experimental and control), with (15) each group .(Al-Dulaimi & Easa, 2023)

Hence the importance of research into preparing cardiorespiratory fitness training To develop speed endurance and adapt the heart rate that occurs in runners as a result of continuing training and using a type of training that suits the requirements of the 1500 meter running competition.(Eisa & Qasim, 2024)

Method and tools

The researchers used the experimental approach with an experimental design with a pre- and post-test for two equal groups (experimental and control) to suit the nature of the research. The research population was identified as players in the 1500-meter competition for the elite men's category at the Iraqi Athletics Federation for ages over 20 years old for the 2024 sports season, and they numbered (12 players). The sample was divided into two groups, the experimental group and the control group, with (6 players) for each group ,The researchers homogenized the sample as shown in Table.(1)

Table (1) Homogeneity of the research sample members

Variables	Unit of measurement	Arithmetic mean	The mediator	Standard deviation	Torsion coefficient
height	m	170.221	170.000	1.632	0.211
Cluster	kg	68.212	68.000	1.322	0.145
the age	year	24.114	26.000	1.476	0.387

The value of the skewness coefficient is limited to ± 1 , which indicates a moderate distribution of the population

The researchers also extracted parity between the two groups, as shown in Table.(2)

Statistical significance	Error level	Calculated t value	Control group		Experimental group		Variables
			A	Q	A	Q	
Not a sign	2.754	3.783	2.765	1.31.32	2.821	1.30.21	Endurance speed He ran 600 metres
Not a sign	2.632	4.763	4.821	178.12	2.562	177.11	Heart rate
Not a sign	4.659	5.486	2.491	3.59.10	6.476	3.58.12	Achievement 1500 metres

Significant below a significance level of ≤ 0.05 and below a degree of freedom of 10

For the study variables, a group of specialized professors and coaches in athletics were consulted, and the research variables were determined as follows:

- Speed endurance, running 600 metres Fahem Abdul Wahid Easa. (2021)
- Heart rate (F. A. W. Easa et al., 2022)
 - The sample began implementing training on 1/7/2024 until 3/7/2024.
 - Duration of the training program: (8) weeks.
 - Number of total training units: (24) training units .
 - Number of weekly training units: (3) units.
 - Weekly training days: (Sunday - Tuesday - Thursday) .
 - The training method used: high-intensity interval training. And iterative
 - Training intensity used.(%100 - 80) :

After implementing the training program The researchers conducted post-tests on Thursday, March 10, 2024, at the stadium of the Specialized School for Talent Care in the Ministry of Youth and Sports / Baghdad Governorate .(L. D. F. A. W. Easa, 2021)

Statistical methods used in the research :The researchers used the statistical package (SPSS) to find appropriate statistical treatments .

Results

Presenting and analysing the results of the differences between the two research groups (experimental and control) for the variables under study

Table(3) It shows the results of the pre- and post-tests of the experimental group on the research variables Analyse and discuss it

Physical variables	Pretest		Posttest		A F	Calculate d t value	Error level	Statistical significance
	Q	A	Q	A				
Endurance speed Heran 600 metres	1.30.21	2.743	1.29.14	2.567	2.576	5.843	0.000	Dal
Heart rate	177.10	2.534	175.12	3.487	3.589	3.435	0.002	Dal
Achievement 1500 metres	3.58.12	3.867	3.57.14	1.259	0.767	6.489	0.000	Dal

Significant below a significance level ≤ 0.05 and below 5 degrees of freedom

Presenting, analyzing and discussing the results of the pre- and post-tests of the research variables in the control group

Table(4) It shows the results of the pre- and post-tests for the control group regarding the research variables

Physical variables	Pretest		Posttest		A F	Calculate d t value	Error level	Statistical significance
	Q	A	Q	A				
Endurance speed Heran 600 metres	1.31.32	2.456	1.30.17	2.623	1.468	5.421	0.001	Dal
Heart rate	178.12	3.678	177.02	3.356	2.534	4.893	0.002	Dal
Achievement 1500 metres	3.59.10	0.489	3.58.23	2.496	0.345	6.564	0.000	Dal

Significant below a significance level ≤ 0.05 and below 5 degrees of freedom

Presentation, analysis and discussion of the results of the post-tests on the research variables for the control and experimental groups

Table(5) It shows the results of post-tests on the research variables for the control and experimental groups

Physical variables	Experimental group		Control group		Calculated t value	Error level	Statistical significance
	Q	A	Q	A			
Endurance speed He ran 600 metres	1.27.22	0.634	1.29.10	1.654	5.389	0.000	Dal
Heart rate	173.31	1.498	176.01	2.378	6.845	0.001	Dal
Achievement 1500 metres	3.55.01	0.145	3.57.03	0.421	7.462	0.000	Dal

Significant below a significance level of ≤ 0.05 and below a degree of freedom of 10

Discussion of results :

The pre- and post-tests showed the results of the variables investigated for the research sample, and the results showed that there were significant differences in the post-test in favor of the two groups, the researchers attribute the reason for these differences to the training method, (KAREEM, n.d.) as it was based on cardiorespiratory fitness training to develop speed endurance, adapt the heart rate, and achieve a 1,500-meter run for men. (Hammood-Lec & Easa, 2024) the importance of codifying the training load used so that it matches the level of the players .This indicates the development of the level of performance of this group that was exposed to speed endurance training, which was reflected in performing the maximum possible degree of speed relatively and in the shortest possible period of time (Mohamed, A. F & ,Al-Shamaa, H. F. (2021), and the researchers believe that endurance training methods Speed for the experimental group It raised the level of achievement for 1,500-meter runners, indicating that speed endurance training leads to an adaptation of the heart rate at rest and to less-than-maximal loads, and to an increase in the stroke volume (Sharky B.J. (1997). In this regard, a decrease in the pulse rate at rest is considered the outcome of speed endurance training (Wilmore J.H. and Costfl D (1994) is that a good runner in moderate running must have special physical abilities. Accordingly, the basis is training during the preparation period to focus on endurance training while maintaining adaptation of the heart rate to contribute to achievement (Spencer, M.R.; Gastin, P.B (2001).

-Conclusions

-The results showed a noticeable superiority between the pre- and post-measurement of cardiorespiratory fitness training to develop speed endurance and heart rate adaptation for the experimental group, in favor of the post-measurement.

-The results showed a significant difference between the pre- and post-measurements Cardiorespiratory fitness training to develop men's 1500-meter running performance for the experimental group and for the benefit of the post-measurement.

-Paying attention to cardiorespiratory fitness training to develop speed endurance, adapt heart rate, and complete the men's 1,500-meter run.

-Conduct similar studies and research on different age groups.

Appendices

T	week	Training unit	Distance	Severity %	Repetition	Rest period in minutes according to pulse rate	Totals
1	the first	1	150m	80	5	Pulse returns to normal 120 N.D	2
		2	300m	80	4		1
		3	600	85	4		1
2	the second	1	400m	85	4	Pulse returns to normal 120 N.D	2
		2	800m	85	4		1
		3	1200 AD	80	3		2
3	the third	1	150m	85	4	Pulse returns to normal 120 N.D	2
		2	300m	80	6		1
		3	1200 AD	80	5		2

The training model used

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Self-confidence and its relationship to completing the 100-meter freestyle race

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2240](https://doi.org/10.37359/JOPE.V36(3)2024.2240)

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Article history: Received 14/ August/2024 Accepted 20/ August/2024 Available online 28/ September/2024

Abstract

This study explored the relationship between self-confidence and the achievement of running the 100-meter freestyle among fourth-year female students at the College of Physical Education and Sports Sciences at the University of Baghdad, using the descriptive approach. A purposive sample of 20 female students was selected, and data was collected using the self-confidence scale (Allawi, 1998) and the 100-meter freestyle running test. The results showed a strong significant correlation between self-confidence and the 100-meter freestyle running test ($r = 0.892$, $Sig = 0.000$). This result supports the hypothesis that self-confidence plays a crucial role in achieving athletic achievement. I concluded that the study supports the importance of self-confidence in improving athletic performance. Some recommendations were reached, the most important of which is conducting similar studies at other educational levels, using the self-confidence measure in other activities, and conducting Similar studies on males. This study contributes to enhancing scientific understanding of the relationship between self-confidence and athletic achievement.

Keywords: Sports performance, self-control, motor skills, sports achievement, sports psychology.

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Introduction

Mental abilities are among the most important basic components that contribute to the process of reaching the highest levels for male and female players alike, and they constitute an essential axis of preparation and psychological training to reach the desired goals, as recent studies have tended to evaluate and develop many sports games. Including the 100-meter running competition, by paying attention to developing and developing all the mental abilities that the athlete needs, because of their great importance in improving performance .

Mental abilities are also one of the important basic components that athletics coaches need, as they work and help develop motor abilities, develop tactical skills, and contribute to linking movement sequences by developing motor skills and self-confidence in female athletes .(Matrood & Alshamma, 2019)

Also, the digital development and the rise in the technical level in various sports in general and in track and field events in particular, there has been a great and actual development as a result of many research and studies conducted in individual and team sports, including the 100-meter freestyle running competition, which was distinguished by its reliance on abilities. Personal and psychological to the same extent as it depends on physical and skill abilities .(Mondher et al., 2023) Gaining self-confidence is an important motivator at the digital level, achieving achievement, and providing opportunities for success that the coach prepares for his players to gain self-confidence and the proficient performance that is generated in them based on the self-confidence motivation, which is a psychological concept that develops among female players due to experience and competition towards achieving the best results during the competition. Or the match .

From the above, the importance of the research lies in trying to identify the importance of studying self-confidence and trying to study its relationship with the 100-meter freestyle running competition, as it is an athletics event that needs development and modernization, in addition to the contribution of the current study, along with previous studies, in enriching the sports library. Everything that is useful in the field of developing the competition and serves both players and coaches alike (Nashwan, 2024)

Research problem

Given the importance of psychological factors among athletes and non-athletes and their impact on general behavior and motor behavior, especially among athletes of the 100-meter freestyle event, which is one of the reasons that may lead to fluctuation in the digital level of female athletes in this competition during competition or training, the effect of self-confidence on Level of achievement. From here, the research problem begins, as it consists of identifying one of the psychological factors - which is self-confidence - and trying to find out its relationship to the level of achievement of the 100-meter freestyle running competition among female students.

Therefore, the research problem focuses on trying to answer the question posed in the minds of the two researchers, which is related to the possibility of a relationship between self-confidence and the level of achievement in running the 100-meter freestyle among fourth-year female students at the College of Physical Education and Sports Sciences at the University of Baghdad.

Research objective

Identifying the relationship between self-confidence and the achievement of running (100 meters) freestyle among female students

The fourth stage, College of Physical Education and Sports Sciences / University of Baghdad.

Research areas

It included fourth-year female students at the College of Physical Education and Sports Sciences/University of Baghdad and practices in the 100-meter freestyle running competition for the academic year 2024-2025 AD .The period is from 2/11/2024 until 4/18/2024 AD, and the tests were conducted in the main outdoor stadium for athletics events at the College of Physical Education and Sports Sciences / University of Baghdad .

Method and tools

Where it was done The descriptive approach was used to suit the objectives of the study, and the research population was chosen intentionally, represented by female students of the fourth stage at the College of Physical Education and Sports Sciences / University of Baghdad for the academic year 2023 - 2024 AD, and (20) students were chosen to practice the event of running (100) meters freestyle and have the desire to run The tests were conducted on them, and (5) female students from the fourth stage and from outside the boundaries of the work sample were selected as a sample for the exploratory experiment. Excluding them from work, the researcher used the following :

- .1 Arabic and foreign references .
- .2 International Information Network (Internet) .
- .3 Tests and measurement .
- .4 Personal interviews .
- .5 An individual registration form for a self-confidence test .
- .6 An individual registration form to test the completion of a 100-meter freestyle run.

7 Whistle to record time.(4)

For the purpose of measuring the self-confidence variable, the (Self-Confidence Scale) was used (Allawi, 1998, p. 56), which was designed by (Robin Feely - 1986) to try to measure the trait of sports confidence, entitled (Trait Sport Confidence Inventory), as it is an important dimension of Dimensions of self-confidence. It was Arabized by (Muhammad Hassan Allawi). The self-confidence scale consists of (13) statements, The athlete answers the statements on the list on a scale of (9) points that characterize the athlete in general. When the athlete competes or trains in the sports field, this is compared to another student, whether in her team or another team, who is characterized by a higher degree of self-confidence in general, as shown in the table .(1)

The purpose of the scale is to measure (the level of self-confidence) among the research sample, and that the tools of the scale are its items, and when the answer scores on all the items of the scale are collected, the total score is (117), while the lowest score is (13), and the closer the total answer scores are to For the research sample, grade (117), this indicates that the player is distinguished by a greater degree of athletic confidence.

Table (1): Items of the self-confidence trait scale

T	Phrases	1	2	3	4	5	6	7	8	9
1	When performing the motor skills necessary to achieve excellence through sports competition									
2	he ability to make decisive decisions during sports pressures									

3	the ability to perform in competition under nervous stress									
4	the ability to implement successful plans in competition									
5	the ability to focus well in order to achieve success									
6	the ability to adapt to different playing situations in order to win the competition									
7	the ability to accomplish what is linked to competition									

8	In the ability to be successful in competition									
9	In the ability to continue my success									
10	In the ability to think and respond successfully during competition									
11	In the ability to face the challenge during competition									
12	In the ability to try to succeed even if the competitor is stronger than me									
13	In the ability to perform successfully after performing successfully									

The exploratory experiment is considered a practical training to identify the negatives that researchers may encounter while conducting the experiment in order to avoid them in the future. Therefore, the tests, represented by a self-confidence scale and a 100-meter freestyle run test, were applied to a sample of (5) female students from the fourth stage at the College of Physical Education and Sports Sciences / University of Baghdad on 2/12/2024 AD, and after three days the tests were re-administered to the same female students on 2/15/2024 AD. The aim of conducting the exploratory experiment was to extract the scientific foundations for the test and scale by extracting the following :

Firstly / Honesty :

The self-confidence scale was presented to a number of experts and specialists in the field, testing, measurement, and sports psychology, and all of them agreed 100% on the validity of the scale used in the research to measure the purpose for which it was developed .

secondly / Constancy :

The reliability coefficient of the test was found after applying the scale and running a (100) meter freestyle test on a sample outside the main research sample, the number of which was (5) female students from the fourth stage at the College of Physical Education and Sports Sciences / University of Baghdad for the academic year 2023 - 2024 AD, then the scale was re-applied. The same test and a 100-meter freestyle run test on the same sample three days later, using Pearson's simple correlation coefficient between the total scores of the scale in the first and second measurements. Likewise, between the scores of the 100-meter freestyle run test in the first and second measurements, it was concluded that the scale and the 100-meter freestyle run test enjoyed high reliability because the values of the significance level (Sig) for both of them were smaller than (0.05), which is the value approved in the statistical program, and as Shown in Table .(2)

Third / Objectivity :

The objectivity of both the self-confidence measure and the 100-meter freestyle test was extracted by calculating the value of Pearson's simple correlation coefficient between the scores of the first and second judgements. It was concluded that they are highly objective because the significance level (Sig) values for both of them were smaller than (0.05). This is the value approved in the statistical program and as shown in Table .(2)

Table (2): shows the validity, reliability, and objectivity of the self-confidence measure and the 100-meter freestyle running test.

T	Variables	Constancy	Say	nnotation	Objectivity	Say	nnotation
1	Self-confidence scale	0.864	0.000	Dal	0.912	0.001	Dal
2	Run test (100)freestyle meters	0.814	0.002	Dal	0.923	0.000	Dal

and A 100-meter freestyle running competition test was conducted for female students, and the time for covering the total distance of the test was measured for each student and recorded in an individual registration form .

After confirming the validity of the self-confidence scale and the 100-meter freestyle run test, which were candidates for application, the main experiment was conducted on February 18, 2024 AD, and the self-confidence scale and the 100-meter freestyle run test were applied to the main work sample of (24) male and female students. The fourth stage at the College of Physical Education and Sports Sciences / University of Baghdad for the academic year 2023-2024 AD, by distributing the scale to the sample It was explained how to answer it, and the questions that were asked by the research sample were answered, and some phrases were clarified, and then the standards were collected and the data was transcribed for the purpose of implementing the required statistical methods .

The statistical methods that were used through the SPSS program are as follows

- .1 Arithmetic mean .
- .2 Standard deviation.
- .3 The mediator .
- .4 Torsion coefficient .
- .5 Pearson's simple correlation coefficient.

Results

The arithmetic means, standard deviations, and median value were extracted, in addition to the value of the skewness coefficient for the total score of the self-confidence scale and for the 100-meter freestyle running test.

Shown in Table (3), it was found that all values of the skewness coefficients were smaller than $+1$, which indicates good sample distribution and homogeneity .

Table (3): shows the arithmetic means, standard deviations, and value of the skewness coefficient for the total score for the self-confidence scale and for the 100-meter freestyle running test.

T	Variables	Arithmetic mean	Standard deviation	Median	Skewness Coefficient
1	Self-confidence scale	114	0.258	110	0.138
2	Running test (100) at a leisurely pace	16.5	1.412	14.5	0.874

Table (4): shows the matrix of correlation coefficients between the self-confidence measure and running (100) meters freestyle.

Testing	Run (100) meters freestyle	Significance level (Sig)	Connotation
Self-confidence scale	0.892	0.000	spiritual

Discuss the results

The simple Pearson correlation coefficient was used between the total score of the answer to the self-confidence scale and the achievement of running (100) meters freestyle in order to identify the type of relationship between them, as in the matrix of correlation coefficients shown in Table (4), as it is noted that the calculated and reported value of the correlation coefficient (0.892) is at the significance level (Sig) of (0.000), which is smaller than the value of (0.05), which is the value approved in the statistical program, which indicates There is a significant correlation between the measure of self-confidence and the achievement of running (100) meters freestyle .(Easa et al., 2022)

It was noted that there is a significant correlation between the measure of self-confidence and the completion of a 100-meter freestyle run. This is a logical result and is consistent with scientific sources, as it is not possible for the athlete to be able to cover the distance as quickly and accurately as possible without possessing a high degree of self-confidence, despite the presence and multiplicity of The external stimuli that the athlete faces while running to cover the race distance .(Husein, 2012)

The result reached is consistent with what was indicated by (Ismat Darwish and Nihad Mounir 1996) that“ the importance of self-confidence lies in its impact on the individual’s ability to achieve high achievement ”.

(Al-Kurdi and Al-Batikhi, 1996, p. 61), and it also agrees with what was indicated by (Tariq Hamoudi and Walid Waad Allah 1995) that“ focus is one of the important means of raising the level of athletes and their ability to notice things accurately and clearly ”(Amin and Ali, 1995, p. 259), and a significant correlation was observed It indicates the student's ability to perform the race distance with consistent steps and a constant and excellent frequency of steps in order to obtain high achievement as a result of her possession of high self-confidence(Kadhim et al., 2021) .

This result is consistent with what Wasan Jassim 2002 stated“ :The player feels, perceives, thinks, and harmonizes his nervous and muscular systems in a more comprehensive way, and mental abilities play a distinct role in the individual’s comprehension and acquisition of information, and among these abilities is sensory-motor perception, which is responsible for actions ”.Movement, its interpretation and implementation through identifying the surroundings and the environment within which the movement is to be performed) ”Al-Qaisi, 2002, p. 2)

Conclusions

There is a significant correlation between the self-confidence scale and the achievement of running (100) freestyle for fourth-year female students at the College of Physical Education and Sports Sciences / University of Baghdad .

Recommendations

- 1- Conduct similar studies at other educational levels that were not covered in the current study in the field of athletics .
- 2- Using a self-confidence scale and trying to know the type of relationship with other activities that were not covered in the current study .
- 3- Conduct similar studies on males and in the field of athletics .
- 4- Conducting similar studies on the physiological, psychological and physical aspects related to the achievement of running 100 meters freestyle, which were not addressed in the study .

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The effect of the listening triangle strategy on cognitive organization and the performance and accuracy of some basic football skills

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2241](https://doi.org/10.37359/JOPE.V36(3)2024.2241)

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Article history: Received 27/June/2024 Accepted 20/ July /2024 Available online 28/ September/2024

Abstract

This study aims to build a scale of cognitive organization in football, prepare educational exercises with football in the strategy of listening to students, identifying the impact of the strategy of listening triangle in cognitive organization and the performance of the extinguishing skills of the sole of the foot and the extinguishing of the chest and the accuracy of the skill of the football for students, and I adopt the method of experimental research By designing the experimental and controlled groups, the community's limits were for fifth -grade middle school students in the morning study at Al -Fursan High School for Boys for the academic year (2023/2024) of the total number of (166) students, all of whom were deliberately chosen in a comprehensive inventory by (100%), were chosen (10 Rangeous students of the exploratory sample at (6.024 %) of the origin society, and (100) students were chosen to build the cognitive regulation scale in football, and they represent (60.241 %) of the origin society, and the remaining (56) students from two divisions to represent the application sample in proportion (33.735 %) of the origin community, according to the design requirements, two random divisions were chosen, so that the 28 students were chosen, and the control reached (28) students, The scale of cognitive regulation in football was built by adopting systematic steps and statistical treatments, preparing educational exercises in the seat strategy, and applying them to students of the experimental group for a period of (12) weeks by (1) lesson a week and for each skill (4) lessons, and the period of time for research procedures has reached From the date (4/10/2023) to the date (12/28/2023), and after the end of the experiment, the results were addressed with the system (SPSS) to be the most important conclusions and recommendations that the scale of cognitive organization in football is suitable And it enjoys the foundations and scientific transactions for its transmission, and the employment of educational exercises in the strategy of listening triangle to perform the extinguishing skills of the sole of the foot and the burning of the chest and the accuracy of the skill of the handling of football in practical lessons is suitable Performing my outside ring skills with the soles of foot, chest extinguishing, and the accuracy of the skill of handling football for students who study it, And by superiority over their peers who study without them, it is necessary to focus on practice and repetition in improving the performance of the extinguishing skills of the sole of the foot and infection in the chest and the accuracy of the skill of the handling football in the middle of the good employment of the listening triangle in teaching and not to exaggerate the explanations to support the cognitive structure of the performance of performance and its accuracy in football.

Keywords: the listening triangle strategy, cognitive organization, performance and skill of football.

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introduction

Most of the principles and concepts of learning and teaching were derived from educational psychology, which is one of the branches of general psychology. To explain this, schools put forward several theories, including behavioral and cognitive, and some followed the philosophy of selection and reconciliation between the behavioral and cognitive schools. The teaching methods that are recommended to be used mainly consist of Trying to maintain an atmosphere in which learners are not exposed to pressure, and also provide options for individuals to learn in ways they are satisfied with (Al-Naushi, 2019)

Also activating the active learning environment works to develop social relationships and create positive interaction between students, and through it, the learners 'previous knowledge constitutes a guide when learning new knowledge, (Salih et al., 2024) and through it, students also get sufficient reinforcements regarding their understanding of new knowledge, and retrieve information from memory for more (Abdulhussein et al., 2024) .From a topic and then linking them together, it changes the image of both the teacher and the learner, and contributes to expanding students 'perceptions and imaginations and works to increase their motivation) .(Awad and Magdy, 2010)

Considering that“ the environment surrounding the individual has a clear influence or may depend on most of his thinking and determines it, (Kadhim, 2023) and whenever the environment is psychologically healthy, healthy thinking will be the result of its support. In contrast to that, an environment with weak components or full of unstable events may lead to disturbances in thinking in people .The individual towards that environment. (Mikhail, 2022)

The researcher believes that teaching football is characterized by the fact that it is not devoid of cooperation among students, given that the game is a group game and intellectual understandings are necessary between these learners. (Salman et al., 2022) It is necessary to focus on the cognitive structure so that teaching the performance of its skills is based on application supported by knowledge of the performance requirements of physical movements and operations. A mentality to produce the skill in its desired, purposeful form.

In teaching the performance of sports motor skills, several methods and strategies are used, including that students watch a specific sports motor skill and observe how it is implemented, and then try to apply it themselves. (Mondher, H. A., & Khalaf, 2023) The students are divided into small groups and each student practices its implementation. Then they exchange experiences and observations on how to implement and improve them, then they design projects that include exchanging experiences and observations on how to implement and improve them, by playing games that include their effective application, and then exchange experiences and observations on how to implement and improve them) .Brooker & Butterworth, 2019, P: 2)

The researcher believes that the specificity of performing football skills and their accuracy, which are among the open-ended skills, and the many variables surrounding the student that attract his attention here and there, (Kadhim et al., 2021) which requires organizing their perception of audio or visual information related to determining the paths of the required

performance and the accuracy required in the lesson, which calls for this matter. Or delve into the knowledge of perception processes and cognitive organization in order to harness them towards achieving educational goals in the practical football lesson.(Nashwan & Allawi, 2021)

He defines the process of perception as“ a mental process that allows the individual to assimilate and understand the information surrounding him through his senses and experiences, and it includes a group of mental processes that work together to collect, process and interpret various information from the environment (Sternberg & Sternberg, 2016)

Thus, perception is the first level of Albez-Simpson’s classification of the psychomotor field, which ends with creativity and originality. The level of perception refers to interest and awareness of the extent to which the organs are used to perform their functions, which results in selecting the functions that must be performed, and then linking knowledge to performance, and behavioral actions. Suitable for use at this level (identify - distinguish - link - choose - pay attention), and the learner is expected to do the following: (Al-Haila, 2014, p. 101)

- R Feeling the right time to start a movement.
- R Pay attention to the signals that indicate the beginning of movement.
- R Select a signal from a group of signals to start making a movement.

As" the process of perception does not take place directly, but is governed by mechanisms and principles called the principles of perceptual organization, through which individuals are able to understand and distinguish things .(Al-Zaghloul and Al-Zaghloul, 2017)

Cognitive organization“ is an important aspect of the perception process that includes arranging and arranging the various information that we receive from the environment, in order to form an understandable and logical meaning. Cognitive organization here includes organizing, assembling, classifying, and linking information to each other. It also helps in assembling various information from the environment and transforming it into Logical and understandable meanings, and this important aspect plays a role in building our understanding of the world, our decision-making, and our interaction with our surroundings(Reisberg, 2018)

As if Cognitive organization is a concept that refers to the ability to organize information related to sports skills in a way that enables the individual to interact and deal with the surrounding environment effectively, and there are many methods that can be applied to enhance cognitive organization in physical education lessons (Till & Copley, 2021)

Also“ ,cognitive organization can facilitate the transfer of experiences and knowledge from experienced learners to new learners. This contributes to accelerating the process of developing players ’skills and their understanding of the basic foundations of skill performance. Through learners and teachers sharing their experiences and advice, improvements in skill performance can be achieved. Exchange can Continuing knowledge guides learners towards continuous improvement and development (Cropley & Other, 2017)

Cognitive organization can help direct learners towards reliable sources of knowledge, as cognitive organization for knowledge exchange plays an important role in learning skill performance, by directing discussion, (Easa et al., 2022) stimulating participation, and providing support. Continuous improvement in performance and development of learners can also be achieved ".And the team in general, this role contributes to building an educational culture based on cooperation and knowledge exchange, which is one of the keys to success in the world of sports (Lauder & Piltz, 2015)

Also“ ,cognitive organization can provide a periodic evaluation of the knowledge exchange process and provide feedback to improve it. This includes identifying possible successes and improvements, as all learners must be involved in the cognitive organization process for knowledge exchange, and this is what ensures achieving greater effectiveness in transferring knowledge and improving performance (Louws 2017)

“Play is the main means of developing imagination, intelligence, language, social skills, and cognitive and sensory abilities (Al-Dulaimi, 2009)

The researcher believes that meeting the requirements for improving mental and skill players in football requires a teaching strategy that provides support for the cognitive structure of performing each skill, in a way that activates the student's role and defines his tasks in the lesson in a cooperative and exciting manner through which he derives knowledge of performance so that the student overcomes difficulties or weaknesses in performance and accuracy without stress. Due to the large number of variables or the lengthy explanation and presentation processes that lead to confusion in organizing information related to performance, he decided to try the listening triangle strategy.(Mahdi & Altay, 2023)

The listening triangle strategy is one of the active learning strategies that makes the learner effective and active, relying on his own skills and ability, cooperating and busy in thinking, reviewing, and participating with the students in the three groups, all of whom think about what they have learned and listen to. (Al-Taei, 2014) He is a speaker, a listener, an observer, and a summary of the questions, because the listening triangle strategy It is one of the modern strategies that is characterized by its high ability to attract students 'attention because it possesses an element of suspense and interaction with the lesson and works to engage students. positively in the learning process (Parwati, 2018)

Also“ ,the listening triangle strategy can be used in skill learning to improve these skills effectively, and although skill learning may take time and effort, hard work and continued practice, application, and development can achieve positive results (Pritchett, 2019)

Also, to apply the listening triangle strategy in practical football lessons, the teacher divides the students into three groups (speaker, listener, observer), and each student in each group has a specific task in his group, and then switches roles among the students so that each student takes the other's role in succession. And as follows (Hunsaker 2016)

R The first student: His role is as a speaker, and he intends to explain the lesson or clarify the idea, concept, etc., according to the educational goal of the lesson .

R The second student: His role is a good listener, and he proceeds to ask the first student questions to obtain more details that help learning by clarifying the idea or concept .

R The third student: His role is to monitor the process and the course of the conversation between his two colleagues and provide feedback to them. He writes or evaluates what is going on between the other two students and is more like a reference.

The Listening Triangle strategy is based on the principle of cooperation between learners and encourages speaking and listening between them, which makes them link what they learn to their daily lives in light of realistic practices (Al-Anbaki, 2016)

Also“ ,the listening triangle strategy can be implemented easily and, in a manner, appropriate to different types of individuals, such as children, adolescents, adults, and the elderly, and it can be adapted and modified to suit the needs of each individual individually. Also, by using this strategy, listening skills can be improved and benefits can be gained ”.The listening triangle strategy in skill learning and in many other academic and professional fields (Pritchett, 2019)

After this digression, linking the researched variables, which in their entirety aim to improve the desired improvement in skill performance in football and its accuracy, and through the work of the academic researcher in the methods of teaching physical education in football, and repeated field visits to the physical education lesson in middle schools, he noticed the continued weakness among beginner students when teaching them performance skills. The skills of suppression and accuracy of handling, and the teachers 'lack of reliance on mental measurement represented by the cognitive organization that supports that skill performance, which is a mental skill that requires measurement on Considering that it is not apparent, this problem resulted in the necessity of having a specialized measurement tool in football to measure this type of perception to organize knowledge and employ strategic vocabulary such as listening to the practical application of educational exercises and practicing them by students after urging them to cooperate, exchange information and evaluate it in a way that helps reduce common mistakes. As an attempt by the researcher to supplement the scientific efforts made in providing assistance to the student and teacher in the methods of teaching physical education, the research aims to build a measure of cognitive cognitive organization in football, and prepare Educational exercises in football using the listening triangle strategy for students, and identifying the effect of the listening triangle strategy on cognitive organization, performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the handling skill in football among the students. The researcher assumes that there are statistically significant differences between the results of the pre- and post-tests for the two experimental research groups. Controlling perceptual organization, the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill. There are statistically significant differences between the results of the post-tests of the experimental and control groups in cognitive organization, the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill.

Method and procedures

The problem of the current research imposed the adoption of an experimental research method by designing the experimental and control groups that were exactly equivalent with the pre- and post-tests. The boundaries of the community were represented by the students of the fifth grade of middle school in the morning study at Al-Fursan Secondary School for Boys within the formations of the Second Rusafa Directorate/for the academic year)2024/2023) their total number)166(students, distributed by nature into)5(Study subjects. The reasons for their study were because they represent the population of the problem of the current research themselves, as they were all deliberately selected from this limited population in a comprehensive enumeration method ,(100%(and they were treated as one total sample, and based on the research requirements for testing the scale, they were chosen (10) Random students from Class C of the survey sample with a percentage of % 6.024) of the community of origin, as chosen (100) Asking sections (B, C, and D) to sample the construction of a measure of cognitive organization in football due to its sufficient size to suit each paragraph)5) Students of statistical analysis representing the percentage (% 60.241(of the original community, and the remaining (56) Students from the two groups (A and E) representing the application sample by % 33.735) of the original population, and according to the design requirements, one of the two classes was randomly chosen to be the experimental group from the students of Class A, which numbered)28) students, and Division (E) controlling it, which is numbered (28) student.

The researcher intended to build a paper-and-pencil scale of cognitive organization in football to be specialized in educational situations in football and to suit the level of the students of the sample targeted for measurement and take into account their privacy in a way that is consistent with achieving the objectives of the current research, as it is after defining the theoretical framework of the concept of cognitive organization and employing it in the direction of skill performance and its accuracy. In football, the paragraphs were built by adhering to the specifics of formulating the content of their phrases, and were closed with three alternatives (always applies to me, sometimes applies to me, It does not apply to me at all), and by using the Likert key to correct it (2,1 ,3) ,respectively for each of these weights, as the researcher committed to methodological procedures and statistical treatments according to the following steps:

R The researcher prepared a paper opinion survey questionnaire to verify the apparent validity of the Football Cognitive Organization Scale and its logical validity, and attached to it the scale's paragraphs and instructions in its initial form on)19) An expert in methods of teaching, psychology, measurement and evaluation in physical education and sports sciences, and they agreed between them more than (%80) to keep the paragraphs, their alternatives, the correction key, and the scale instructions as they are without any modification or change.

R The researcher deliberately piloted the scale on Wednesday, October 4, 2023, after agreeing on its initial version on the students in the survey sample, who numbered ,(10) to overcome the obstacles to applying the measurement through it, and to ensure that the content of the scale statements, their alternatives, and the instructions for answering them are understood by the students, in addition to calculating the average response time, which amounted to (7) minutes,

and the researcher realized the necessity of reassuring the research sample later that the results of the scale had no relation to their success in the practical lesson in football.

R The researcher verified the strength of discrimination of the scale's items by applying its paper copy to the students in the statistical analysis sample, which numbered 100. Demanding, adopting the method of the two extreme groups in proportion (27% of the sample of the structure in descending order of the scores for each item, which amounted to 27 for each group (to be the number for both the upper and lower groups, and the scores of the two groups were verified using the (T) law for uncorrelated samples to find statistical differences, as shown in the results of the table: (1)

Table (1) shows the results of the discriminatory ability of the items of the Football Cognitive Organization Scale

T	Group	N	Q	$\pm A$	t	Say	Statistical difference	Paragraph highlighting
1	Supreme	27	2.19	0.396	7.56	0.000	Dal	Featured
	The world	27	1.3	0.465				
2	Supreme	27	2.74	0.447	16.646	0.000	Dal	Featured
	The world	27	1.07	0.267				
3	Supreme	27	2.81	0.396	17.386	0.000	Dal	Featured
	The world	27	1.11	0.32				
4	Supreme	27	2.89	0.32	17.386	0.000	Dal	Featured
	The world	27	1.19	0.396				
5	Supreme	27	2.85	0.362	17.292	0.000	Dal	Featured
	The world	27	1.15	0.362				
6	Supreme	27	2.93	0.267	25.495	0.000	Dal	Featured
	The world	27	1.07	0.267				

7	Supreme	27	2.7	0.465	14.65	0.000	Dal	Featured
	The world	27	1.11	0.32				
8	Supreme	27	2.78	0.424	11.718	0.000	Dal	Featured
	The world	27	1.33	0.48				
9	Supreme	27	2.85	0.362	17.292	0.000	Dal	Featured
	The world	27	1.15	0.362				
10	Supreme	27	2.78	0.424	12.233	0.000	Dal	Featured
	The world	27	1.30	0.465				
11	Supreme	27	2.74	0.447	16.646	0.000	Dal	Featured
	The world	27	1.07	0.267				
12	Supreme	27	2.22	0.424	9.294	0.000	Dal	Featured
	The world	27	1.19	0.396				
13	Supreme	27	2.81	0.396	14.272	0.000	Dal	Featured
	The world	27	1.22	0.424				
14	Supreme	27	2.59	0.501	10.326	0.000	Dal	Featured
	The world	27	1.26	0.447				
15	Supreme	27	2.3	0.465	10.902	0.000	Dal	Featured
	The world	27	1.11	0.32				
16	Supreme	27	2.93	0.267	20.539	0.000	Dal	Featured
	The world	27	1.15	0.362				

17	Supreme	27	2.96	0.192	19.438	0.000	Dal	Featured
	The world	27	1.22	0.424				
18	Supreme	27	2.78	0.424	14.272	0.000	Dal	Featured
	The world	27	1.19	0.396				
19	Supreme	27	2.44	0.506	12.44	0.000	Dal	Featured
	The world	27	1.07	0.267				
20	Supreme	27	2.63	0.492	7.466	0.000	Dal	Featured
	The world	27	1.63	0.492				

Acceptance of paragraph highlighting) :Say (0.05) < (At the level of significance (0.05) and degree of freedom(52)

R The researcher verified the validity of the internal consistency of the Football Cognitive Organization Scale by finding simple (Pearson) correlation coefficients between the score of each item and the total score of the scale based on its application scores on a sample of (100) Asking the same discriminatory ability mentioned above, not deleting any of the paragraphs, as shown by the results of the table:(2(

Table (2) shows the internal consistency of the Football Perceptual Organization Scale

T	(t) Between the item score and the total scale score	Sig	Significant correlation	T	(t) Between the item score and the total scale score	Sig	Significant correlation
1	*0.617	0.000	spiritual	11	*0.416	0.000	spiritual
2	*0.557	0.000	spiritual	12	*0.521	0.000	spiritual
3	*0.544	0.000	spiritual	13	*0.832	0.000	spiritual
4	*0.633	0.000	spiritual	14	*0.479	0.000	spiritual
5	*0.604	0.000	spiritual	15	*0.586	0.000	spiritual
6	*0.431	0.000	spiritual	16	*0.451	0.000	spiritual

7	*0.659	0.000	spiritual	17	*0.548	0.000	spiritual
8	*0.511	0.000	spiritual	18	*0.449	0.000	spiritual
9	*0.701	0.000	spiritual	19	*0.494	0.000	spiritual
10	*0.666	0.000	spiritual	20	*0.455	0.000	spiritual

* Acceptance of item consistency: (Sig) (0.05) < at degree of freedom (98) and significance level(0.05)

R The researcher verified the stability of the Football Perceptual Organization Scale by finding the simple Cronbach's Alpha coefficient based on its scores and applying it to the students of the construction sample, which numbered 100 a student, who has reached 0.849 (at the level of significance) 0.05 (and freedom) 98 (

R To verify the suitability of the scale for the research sample, its scores were processed statistically to extract the value of the normal, moderate distribution, and the same scores were applied to the students in the construction sample 100 student, as shown in the table results: (3 (

Table (3) Shows the final statistical parameters and normal distribution for the Football Perceptual Organization Scale

Number of students in the construction sample	Number of paragraphs	Total score	Unit of measurement	Arithmetic mean	Standard deviation	The value of the torsion coefficient
100	20	60	Degree	34.02	2.723	0.043

Moderately normal distribution: The skewness value is defined between (± 1)

After completing this procedure, the researcher completed building the football cognitive organization scale to have a final score with a total score ranging between (60-20) and by hypothetical means, (40) as explained (Appendix.1)

To measure the performance of the suppression skills with the sole of the foot and the chest, the performance evaluation is measured by photographing each student in these two tests and adopting the tester's performance evaluation in each of the two tests without accuracy, and the technical performance score is judged by experts, and the score distribution is as follows:

R Preparatory section: grade.(3)

R Main section: its grade is.(5)

R The final section: its grade is.(2)

To measure the accuracy of football handling, a test was adopted (Appendix 2).

As for preparing educational exercises to employ strategic vocabulary and the listening triangle in the practical lesson on football, they were as follows:

First: The content of the educational exercises that were employed in the vocabulary of the Listening Triangle strategy included individual exercises for each of the students in the experimental group, at a rate of (4) exercises in one practical lesson, with a time for each exercise (6) minutes, and to take into account the vocabulary and specificity of the strategy and its requirement of exchanging tasks on the applied side. From a practical football lesson.

Second: The vocabulary of the listening triangle strategy is applied in the main section of the practical lesson on football for the students of the fifth year of middle school in both the educational aspect and the applied aspect, for the students of the experimental group at a rate of (1) lesson per week according to their schedule in the prescribed curriculum. The time of each lesson reached (45 hours).) minutes, and for (30) minutes of its main section, and the rest of the unit sections of the preparatory (10) minutes, and the final (5) minutes are left to their teacher without any intervention from the researcher.

Third: (4) practical lessons were allocated for each skill, and they continued for a period of (12) weeks, so that the total duration for the students to receive these strategy exercises was (360) minutes of the time of the practical lesson units in total football.

Fourth: Employing the educational exercises in the applied aspect of the vocabulary of the listening triangle strategy after the teacher divides his students into groups of nine triplets and the remaining (28) students are distributed among the groups fairly, and the tasks in the educational exercise are distributed among them by following the following steps, Appendix :(3)

R The first student's task is to explain one of the football skills and present ideas about it, which the teacher asks of him.

R The second student's task is to listen carefully to the first student's explanation of one of the skills in football. Then he begins asking him various questions after he finishes explaining the skill specified in the practical lesson.

R As for the third student, his task is limited to being an observer of the first student and the second student, as he proceeds to write down what the first student says and what the second student says, and then begins to narrate what took place between the two students in terms of explanation, asking questions and answers, application and practice, by saying, for example , “The student mentioned The first) received the following information, and the second student asked the following question... and so on. This can only be done by comparison with the determinants of the skill model presented in the lesson through flex, which represents the three stages of the skill and in detail its performance on Considering that the student being monitored is still in the early stages of learning, he must make judgments about skill performance and accuracy according to the requirements of the listening triangle strategy.

R After the three students finish their tasks, the roles of these tasks are swapped among all the students, and each student takes the other student’s task in the same educational exercise, and so on.

As“ the listening triangle strategy focuses on the learner’s role and makes him learn self-learning, and is based on listening and speaking, listening and speaking, paying attention, discussion, the power of observation and concentration, and then feedback, and thus relies on the principle of reinforcement to make the learner’s role active and effective in the education process ”.(Al-Samarrai and Al-Badri). (2019, p. 131)

Also“ ,under the listening triangle strategy, the learner is considered the focus of the learning process and the center of attention, as he intends to perform the tasks and activities assigned to him by the teacher. He is responsible for his learning, a participant in the management and evaluation of learning, a listener, a speaker, and a summary of the dialogue taking place between his two colleagues) . ”.Abu Khasuna, 2019, p. 38(

After preparing the scale in its final form and the requirements for performance tests and skill accuracy for each of the four dependent variables, the research experiment began by applying the pre-tests at exactly ten o'clock in the morning on Tuesday, corresponding to the date (10/10/2023), by applying the mental scale of cognitive organization in football and from Then a test to measure the accuracy of the football handling skill, and then two tests of the football suppression performance under study by adopting their perceptions for each of the

students of the two research groups and presenting it to evaluators. Three to measure the technical performance of these two skills, and then apply the listening triangle strategy to the students of the experimental group. As for the students of the control group, they apply the method followed as it is in their practical lessons, for the period from Wednesday, corresponding to the date (10/11/2023), until Wednesday, corresponding to the date (12/27/2023) in the closed hall of Al-Forsan Secondary School for Boys, and this experiment will be completed by applying the post-tests on Thursday, 2023. To date.(2023/28/12)

After the end of the research experiment, the results were processed by a system (SPSS)To extract the percentage, arithmetic mean, standard deviation, and test for homogeneity of variance(Liven ,(and test) t-test (for uncorrelated samples, and test) t-test (for correlated samples.

Results:

Scale, tests and group		N	Q	$\pm A$	Liven	Sig	t	Sig	the difference
Cognitive organization in football (degree)	empiricism	28	34.21	2.672	0.257	0.614	0.485	0.630	Not a sign
	Female officer	28	33.86	2.838					
Performing the skill of quenching with the sole of the foot (degree)	empiricism	28	2.5	1.036	0.314	0.577	0.744	0.460	Not a sign
	Female officer	28	2.29	1.117					
Performing the chest suppression skill (degree)	empiricism	28	2.32	1.442	1.666	0.202	0.883	0.381	Not a sign
	Female officer	28	2	1.277					

Table (4) shows the results of the pre-tests between the experimental and control groups

Accuracy of handling skill performance (degree)	empiricism	28	1.75	1.175	0.275	0.602	1.085	0.283	Not a sign
	Female officer	28	2.11	1.286					

The difference is significant: (Sig) (0.05) < at a significance level of (0.05) and degree of freedom (54), unit of measurement (degree)

Table (5) shows the results of the pre- and post-tests for the experimental and control groups

Scale and tests	Group	Comparison	Q	$\pm A$	F	A F	t	Sig	the difference
Cognitive organization in football (degree)	Experimental (28)	previous	34.21	2.672	13.857	2.953	24.832	0.000	Dal
		the next	48.07	0.766					
	Officer(28)	previous	33.86	2.838	8.429	3.426	13.019	0.000	Dal
		the next	42.29	1.843					
Performing the skill of quenching with the sole of the foot (degree)	Experimental (28)	previous	2.5	1.036	5.286	1.049	26.661	0.000	Dal
		the next	7.79	0.418					
	Officer(28)	previous	2.29	1.117	2.893	1.499	10.211	0.000	Dal
		the next	5.18	0.945					
Performing the chest suppression skill (degree)	Experimental (28)	previous	2.32	1.442	4.786	1.524	16.616	0.000	Dal
		the next	7.11	0.629					
	Officer(28)	previous	2	1.277	3.25	1.206	14.263	0.000	Dal
		the next	5.25	0.928					
Accuracy of handling skill performance	Experimental (28)	previous	1.75	1.175	5.393	1.1	25.939	0.000	Dal
		the next	7.14	0.591					

nce (degree)	Officer(28)	previous	2.11	1.28 6	3.143	1.55 7	10.68 3	0.00 0	Dal
		the next	5.25	0.84 4					

The difference is significant: (Sig) (0.05) < at a significance level of (0.05) and a degree of freedom of n-1 for each group, the unit of measurement (degree)

Table (6) It shows the results of the post-tests between the experimental and control groups

Scale tests and group		N	Q	$\pm A$	t	Sig	the difference
Cognitive organization in football (degree)	empiricism	28	48.07	0.766	15.338	0.000	Dal
	Female officer	28	42.29	1.843			
Performing the skill of quenching with the sole of the foot (degree)	empiricism	28	7.79	0.418	13.353	0.000	Dal
	Female officer	28	5.18	0.945			
Performing the chest suppression skill (degree)	empiricism	28	7.11	0.629	8.766	0.000	Dal
	Female officer	28	5.25	0.928			
Accuracy of handling skill performance (degree)	empiricism	28	7.14	0.591	9.719	0.000	Dal
	Female officer	28	5.25	0.844			

The difference is significant: (Sig) (0.05) < at a significance level of (0.05) and degree of freedom (54), unit of measurement (degree)

Discussion:

Referring to the results of Table (5), it is clear that the students of the two research groups improved their levels of perceptual organization, the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill in the post-tests, compared to what these results were in the pre-tests, and by referring to the results of Table (6). For the post-hoc comparison between the two research groups, it becomes clear that the students in the experimental group outperformed their peers in the control group in each of these four dependent variables, and the researcher attributes the emergence of improvements in the results of the students in the experimental group. Their superiority was due to their application of the listening triangle strategy, which helped the

students to be able to employ the information that the students derived from their peers after referring to the skill model in practice and actual application, which resulted in their better understanding of that cognitive information and its arrangement or classification for each stage of performance and its accuracy according to the three researched skills, as The role of exchanging ideas and delving into their details was extremely important in applying them specifically and gaining confidence in controlling the ball's impact, whether with the chest or the sole of the foot, which increased the empowerment of The student is able to focus on controlling the ball and being calm to grasp the ball in a way that enables the player to act appropriately afterwards, and start with easy, light balls and then increase the difficulty of the exercise, which the researcher focused on preparing on the principle of diversity by using different types of balls and positions to increase the student's ability to adapt to different circumstances. During matches, the listening triangle strategy helped provide feedback through more than one source, including continuous explanation and feedback to students about performance or accuracy to help them improve their skills, as well as exchanging The educational tasks provided by the strategy to provide space and freedom in the application and practice based on knowledge and its organization in a way that suits the performance of each of the skills, as all of these reasons were in improving the levels of perceptual-cognitive organization, the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill among the students of the experimental group. Those who studied it and excelled in each of these four variables investigated.

“Explaining procedures clearly by providing simple verbal directions, repeating and interpreting directions in a concise and clear manner, as well as providing immediate feedback to students about performance can help learners visualize the operations and movements required) ”.Till & Cobley, 2021, P: 81(

As" the athlete's cognitive awareness develops through repetition, practice, and the support of personal experience and the athlete's competence and ability. Whenever he practices a movement or skill, his awareness of this skill develops) ".Al-Saadi, 2002, p. 127(

Also“ ,cognitive organization shows an important role for knowledge exchange in enhancing the skill learning of learners. By exchanging expertise and experiences and providing advice, the team can achieve continuous development in its performance and achieve greater successes) ”.Araújo & Davids, 2016, P: 281(

“Realizing high self-efficacy in organizing knowledge enables the learner to diagnose errors and correct them through the organized knowledge he summons in the brain) ”.Al-Jasser, 2006, 38)

Also“ ,when diverse ideas and innovative experiences are exchanged, an environment can be created that encourages innovation in applying volleyball skills. Female students can be inspired by the ideas of others to try new and effective methods) .”.Capranica &Other, 2020, P: 165)

It is “the collection and exchange of knowledge and experiences between learners and teachers, which includes managing and organizing the process of transferring valuable knowledge and experiences between the various individuals participating in the lesson, whether they are learners or teachers)”. Ribeiro & Other, 2021, P: 161-170)

Also “active learning in motor skill learning must encourage systematic thinking and the development of deduction, analysis, and critical thinking skills, through conducting experiments and practical activities, analyzing the results, and learning from mistakes)”. Al-Issa, 2017, pp. 50-52)

The teacher must “seek to redesign the curricula, their topics, and their activities in a way that helps in understanding and assimilating knowledge, awareness of mental processes, and practical activities for skill performance applications, by adopting many methods when processing and employing information, by choosing the teaching strategy well to achieve better retention of the information, and retaining it for a longer period)”. Al-Mutrafi, 2018, p. 28(

Likewise “group circles can be organized where learners share experiences and advice among themselves, teachers can guide discussion and provide technical supervision, and team performance indicators can be used and evaluated regularly to measure continuous improvement and identify areas that need development)”. Harvey & Other, 2019, P: 485(

“It is not possible to ignore the basic knowledge necessary for the skill, provided that there is no exaggeration in increasing attention to the role of that knowledge as a component of the skill, considering that the component of actual performance applications is the most important in the skill, and one of its conditions is that it be completed quickly, masterfully, effectively, with little effort, and at little cost)”. Al-Hayek, 2018, p. 144(

Also “cognitive processes have a major role in behavior, as Bandura believes that the major function of thoughts is to enable the individual to predict events and develop methods that help control what happens in his life)”. Al-Saadawi, 2021, p. 166(

“Cognitive organization is important in encouraging communication and cooperation among students, as cognitive organization for knowledge exchange leads to enhancing communication and cooperation among team members. Shared knowledge can bring together the various team members and increase their integration)”. Crotty & Other 2018, 619(

Likewise “notifying the learner of the results of his work, comparing him to his colleagues, and being aware of the extent of his progress or lag is considered one of the strongest motivations for learning, while it was found that neglecting the learner and not being notified of his position or paying attention to the extent of the progress or lag he has achieved would lead the learner to boredom and slackness)”. Al-Azzawi and Al-Bayati, 2013, p. 62(

“Therefore, it can be said that the Listening Triangle strategy is an effective tool for enhancing skill learning of skills and understanding social messages between learners and human communication in general. This strategy is particularly important in our current era, as

there are many challenges in human communication in skill learning) ".Brooker & Butterworth, 2019, P: 101(

“Using the listening triangle strategy achieves results to develop skill performance, and the necessity of using modern strategies increases focus and skill, cognitive, and scientific awareness) ”.Nasrallah, 2019, p. 31(

Conclusions and recommendations:

-1The measure of cognitive organization in football is suitable for fifth-grade middle school students, is suitable for what it was prepared for, and has the scientific foundations and parameters for its acceptance.

-2Employing educational exercises using the listening triangle strategy to perform the skills of tamping with the sole of the foot and tamping with the chest and the accuracy of the football handling skill in practical lessons is appropriate for fourth grade preparatory students.

-3Applying educational exercises using the listening triangle strategy helps improve the level of cognitive organization in football among students who study with it, superior to their peers who study without it.

-4Applying educational exercises using the listening triangle strategy helps improve the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill, among students who study with it, with superiority over their peers who study without it.

-5It is necessary to adopt mental measurement, especially cognitive organization, for each student in practical lessons to support the improvement of the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill.

-6It is necessary to focus on practice and repetition in improving the performance of the skills of tamping with the sole of the foot and tamping with the chest, and the accuracy of the football handling skill through good use of the listening triangle in teaching and not exaggerating in the explanation processes to support the cognitive structure of knowledge of performance and its accuracy in football.

Appendix (1) shows the measure of cognitive organization in football

T	Paragraph phrases	Alternatives to answer paragraphs		
		It always applies to me	Applies to me sometimes	It never applies to me
1	I find myself excelling in thinking about the requirements for performance and accuracy of football skills.			
2	I am able to utilize the information provided by the teacher and peers to perfect the performance and accuracy of soccer skills.			
3	I find myself able to challenge the obstacles of interpreting performance information and accuracy of soccer skills.			
4	I accept ideas that help me complete the performance and accuracy of soccer skills.			
5	I am able to identify the weaknesses of peers in a lesson on teaching performance and accuracy of football skills.			
6	I can predict my results before I perform soccer skills and accuracy.			
7	I can understand the teacher's and students' directions to hone my football skills and accuracy.			
8	Feel confident to interpret information and apply exercises for the skill identified in the soccer lesson.			
9	I trust my awareness to make it easier for me to perform and accurately perform soccer skills.			
10	I can overcome common mistakes when performing football skills and accuracy.			

11	I listen when I listen to the directions of my colleagues after performing football skills and accuracy.			
12	I can direct my thinking to the determinants of proper performance when performing football skills and accuracy.			
13	I pay attention to the details of the skill before performing football skills and their accuracy .			
14	I am able to organize in my mind the sequence of movements required when performing football skills and their accuracy.			
15	I react to visual information quickly, such as reacting quickly to the movement of students or the direction of a football.			
16	I accurately perceive sequences of sounds and auditory information when performing soccer skills and accuracy.			
17	Organize the visual space, such as choosing the optimal angles for the field of view on a football field			
18	I can evaluate my overall performance when performing soccer skills and accuracy.			
19	I can understand the relationships between the details of football skill performance and accuracy.			
20	I am able to evaluate my peers at every stage of football skill performance and accuracy.			

Appendix (2) shows the accuracy test of football handling skill

Handling towards a small target 20 meters away: (Hamza, 2009, p. 14)

- Test objective: To measure the accuracy of football handling skill.
- Tools used: (5) soccer balls, a small goal (dimensions 110 cm x 63 cm)

·Test procedures: A starting line is drawn with a length of (1) m, and at a distance of (20) m from the small target, we place a fixed ball on the starting line as shown in Figure.(1)

·Description of the performance: The tester stands behind the starting line, facing the small target, and begins when the signal is given by handling the ball towards the goal to enter it. Each tester is given (5) successive attempts.

·Scoring: The grade is calculated by the sum of the grades obtained by the laboratory from handling the five balls as follows:

- Two points for each correct attempt that goes to the small goal.
- One score if the ball touches the post or crossbar and does not enter the goal.
- Zero if the ball leaves the small target.
- The maximum score for the test is (10) points.

Figure (1) shows the handling test diagram towards a small target 20 m away

Appendix (3) shows a model of educational exercises using the listening triangle strategy.

In the educational part, the suppression skill is presented and explained, and the strategy tasks are explained to the students.

As for the educational aspect, (4) educational exercises are applied.

First exercise :Static suppression with the chest: The student stands in a fixed position, and another partner throws the ball to him directly to chest level. The performing student is asked to suppress the ball with the chest by absorbing the shock by making the chest move back slightly, so that the ball falls to the ground quietly.

Exercise notes on the practical side :The first student's task is to explain the performance of the chest suppression skill and provide ideas about it. He emphasizes bending the knees slightly to distribute the weight in a balanced manner, and moving the upper body back slightly when touching the ball to reduce the bounce. The second student's task is to listen carefully to the first student's explanation. The third student has his task determined. As an observer for the first and second students to provide narration and evaluation, the exercise is repeated for (6) minutes, exchanging tasks according to the vocabulary of the listening triangle strategy.

Second exercise :Chest suppression with movement: The student stands in a movement position, and the ball is thrown to him by a partner while running slowly. The student tries to suppress the ball with the chest while continuing to run to stabilize the ball and then pass it to another partner.

Exercise notes on the practical side :The first student's task is to explain the performance of the chest suppression skill and emphasizes focusing on continuing the movement after the suppression to prepare for the next pass, and raising the chest slightly forward to help the ball descend naturally towards the foot. The second student's task is to listen carefully to the first

student's explanation. The third student has his task determined. As an observer for the first and second students to provide narration and evaluation, the exercise is repeated for (6) minutes, exchanging tasks according to the vocabulary of the listening triangle strategy.

Third exercise : Chest suppression under pressure: The student stands in an area surrounded by small cones or lines, and a partner throws the ball to him. The student is asked to suppress the ball with the chest while moving the ball within the area, then passing it to another partner.

Exercise notes on the practical side : The first student's task is to explain the performance of the chest suppression skill and emphasize good suppression of the ball before trying to control it in the limited space, and gradually increase the speed of performance to enhance the ability to suppress under pressure. The student must start with easy, low-speed balls and then graduate to fast balls, and encourage the student to relax and not Stiffness when receiving the ball to facilitate the extinguishing process. It is important to direct the student to control their breathing and keep their heads raised after extinguishing the ball to prepare for the next movement. The second student's task is to listen carefully to the ball. Explanation of the first student. The third student's task is to be an observer for the first and second students to provide narration and evaluation. The exercise is repeated for (6) minutes, exchanging tasks according to the vocabulary of the listening triangle strategy.

Fourth exercise : Chest suppression with immediate handling: The student stands facing another student at a distance of 10-15 meters, and the other student throws the ball at chest level. The performing student must suppress the ball with the chest and immediately pass with one touch to the other student using the foot.

Exercise notes on the practical side : The first student's task is to explain the performance of the chest suppression skill and emphasizes absorbing the ball well when suppressing so that it descends smoothly on the foot, and directing the pass towards the partner accurately while maintaining body balance. The second student's task is to listen carefully to the first student's explanation. The third student's mission is determined to be Monitor the first and second students to provide narration and evaluation. The exercise is repeated for (6) minutes, exchanging tasks according to the vocabulary of the listening triangle strategy.

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Comparison of Certain Specific Physical Abilities Between Discus Throwing and Shot Put for Elite Advanced Athletes.

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2155](https://doi.org/10.37359/JOPE.V36(3)2024.2155)

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Article history: Received 25/May/2024 Accepted 9/ June /2024 Available online 28/ September/2024

Abstract

The study aimed to compare in some of the special physical abilities the explosive force - the maximum force - the force characteristic of speed) between the discus throwing and weight pushing activities of elite players in the category of applicants. The researchers used the descriptive approach in the comparative study method, represented in the research curve that reached (10) athletes by (5) weight pushing players and (5) discus throwing players. Special physical ability tests were applied to the research sample. If the results show that there are significant differences in the explosive strength tests of the arms between the effectiveness of discus throwing and weight pushing, there are significant differences between both effects in the variables studied (the strength test characteristic of the speed of the arms - the maximum strength test of the arms) because the two events are throwing sports, and the researchers recommended not to conduct similar research to study the relationship or comparison between the effectiveness of discus throwing and weight pushing, being (effective) describing among the throwing activities

Keywords: physical abilities, discus throwing and weight pushing.

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Introducing

Sport is one of the most beautiful areas in which peoples are interested. ‘Achievement of sport is a supreme national value carried by heroes as an important type of discrimination in developed societies and they are proud of it for generations to come. This achievement was not a result of chance or a stroke of luck, as it is said, but rather was achieved through the joint efforts of the strenuous and great sponsor and the supportive trainer and athlete in light of the rapid scientific development at various levels, whether as training courses or assistive devices. ‘In recent years, athletics and its various events have witnessed a great and tremendous development. The difference in achievement is almost a fraction of a second or some centimeters. Various sciences have contributed to the achievement of these world records, which sometimes reach the unexpected digital achievement.

Sports training based on sound scientific standards and foundations had the upper hand in changing the vocabulary of the prepared and planned training curricula, whether short, medium or long-term planning and document On the basis of the nature of the competition and the number of training peaks during the training year, which may be mono-double or multi-peaks in a physically integrated, functional, skilled and planned preparation, and to a large psychological interaction that deals with the expected and unexpected situations, whether in the preparation stages of the competitions of all the above, indicate that the effectiveness of throwing the javelin and pushing the weight is one of the interesting sporting events that depend on achieving the furthest distance to throw according to a skillful serial technique for the shooter entitled the precise skill mastery of the parts that contribute to the body, whether limbs or muscles, and what it requires of very large throwing power, in which physical and motor abilities contribute significantly and influentially to achieving the furthest distance to throw. The circle in which the shooter moves, which diameter is seven feet(2.135m/cm) and the presence of the arresting plate measures(10cm) represents additional determinants/burdens the shooter in addition to the development and acquisition of physical and motor abilities according to privacy Effectiveness‘ The stage of pushing the weight and leaving the hand of the pitcher is one of the most important stages that the pitcher passes, which is either high and as far away as possible and the same throwing stage has important parts (force mode - basic acceleration – arm movement). In the effectiveness of throwing the discus, the rules of throwing the iron ball itself and the discus throwing circle diameter (2.5m/cm) and the world number of men (74.80m/cm) are applied. In order for the discus player to get the longest possible distance, the discus must be launched at the maximum possible speed and at a certain angle and rotate around the same cycle and a half and throw with an arm with lateral movement and fly the discus in the air. ‘These and other requirements are precise peculiarities in the performance of throwing and pushing the discus and weight. They constitute a great training burden for practicing athletes. They must bear large training volumes for the purpose of developing the physical capabilities of performing each event in order to increase the number of centimeters of the tool to achieve achievement. Both events need strength in throwing by the tools used for the purpose of achieving the discus throwing performance requirements, including the pre-throwing stage - the privation stage and the actual basing of drawing on the discus. Then the stage of rotation depends on the specificity of each shooter, so the end of the throwing or the so-called pivot stage

is followed by the stage of disposal and leaving the discus at the beginning of the start of the discus. The last stage is represented by the way in which the shooter is balanced and organized. 'These kinetic positions require the players of the exercises to perform the muscles of the arms and shoulders, the weight or the discus, to get rid of here. The importance of the research in the comparison is some physical and kinetic abilities, sports discus throwing and throwing the weight of the research sample represented by the elite players of the category of applicants.

The studies that dealt with the subject of research,)Ghanem ,Faisal و ,Ahmed(2017 , which aimed to identify the values of some biomechanical variables for the stages of weight throwing, while identifying some errors in the mechanical performance of the stages of weight throwing, with the development of proposed corrective exercises, some extinguishing the mechanical performance of the stages of weight throwing. The researcher used the descriptive approach of the research sample and his sample represented the players of the Iraqi national team to throw weight. As for the (Jasim & Naji, 2019) study, the study aimed to find special strength exercises in the development of working muscles in the stages of throwing and final throwing of the discus. The purpose of the research is to identify the impact of these exercises on some variables in the motor path of the working muscles in the throwing and final throwing of the discus for the players of the national team 'If the research sample reaches (7) of the players of the national team for youth, the experimental approach was used to design the two equivalent experimental groups), while the study of (Yahya Ghabban Bargam'2018) as the proposed program positively affected all Of the strength of the working muscles, as these muscles contribute mainly to the performance of the main section at the moment of the start of the disk, and in a study, it (Ali B. A., 2014) was mentioned that the exercises according to the torque with different resistances according to the increase of these resistances by training on a scientific basis as well as according to the speed of skills led to an improvement in the ability of the muscles of the arm and shoulders explosive and that the development of the explosive ability is clear when comparing the results of the experimental group with the results of the control, in a study (Amer Fakhre Shafaki 'Walid Jalil Ibrahim' Raja Abdul Karim Hamid '2019), each of which stated that the use of exercises (weights - body weight) contributed to the development of the components of fitness for shooting final The achievement of the effectiveness of throwing the discus. As for (height'2010), it was mentioned that increasing the rotational energy of the arm aimed at the discus has a positive impact on the speed of starting the discus and then achieving a better completion distance. The difference and the research was to prepare special force exercises and identify their impact on the variables of the kinetic path of the muscles working in the throwing mode and the final throwing of the discus for the players of the national youth team.

Materials and Method

The two researchers used the descriptive approach in the method of (comparative study) in order to suit the research objectives, and the research community included (12) players representing the two events , and then deliberately selecting the research sample, which are (10)players who make up (83.33%) and by (5)players pushing the weight and(5)players throwing the discus in order to confirm some of the important points represented in the validity of the tests and their precedence when performing the efficiency of the assistant team and the time allocated

for each test and the suitability of the place and its conduct, for the purpose of obtaining accurate and reliable results, the scientific research report confirms the conduct of the exploratory experiment, which is defined as "practical training for the researcher to stand by himself on the negatives that meet him during the test to avoid". The researchers also used a number of information collection methods, including Arabic and foreign sources, observation and tests, and the use of the following tests:

Table (1). Physical measurement

Physical capacities	UOM	Honesty	Stability	Objectivism
Explosive force	Meters	91	O	0.85
Full throttle.	kg	0.78	0.88	0.95
Power Characteristic of Speed	w	0.67	0.98	0.78

Tests used in the study Appendix (1)

For the purpose of confirming the validity of the tests, the two researchers found the scientific basis for the tests. The validity represents (the validity of the content) by distributing the questionnaire to determine the physical abilities (Appendix1) and their tests to the experts (Appendix2). The validity of the content is "a measure of the extent to which the tests represent the aspects of the measured aspect of their research and logically analyze the test materials and elements to determine the functions and aspects and attribute each of them to the entire test." (Bahi, 1999) As for the stability, it was done by using the test and returning it. 'Objectivity was also found, which means the clarity of the instructions for applying the test and calculating grades (Bahi '1999) Table (1) The coefficients of validity, stability and objectivity tests the physical and motor abilities of the players of the disc and weight.

Table (2). Coefficient of torsion and normal distribution of the research sample

Variables	UOM	Hours	W	Mediator	Modulus of torsion
Age	Year	7000.	2.28279	9000	713
Weight	kg	107	7.79530	107	.743
Length	cm	9000	6.12917	7000.	034.
Training Age	Year	9000	10050	10050	.238

* The value of the torsion coefficient is within the limits of + -1 for the variables of Table 1, so the data is within the normal limits

The two researchers also found the torsion coefficient and the normal distribution of the value of the research Table (2) and the researchers' list after those procedures; the tests representing special physical abilities (Appendix 3) apply separately for each discus throwing players. The

weight was pushed on Monday, 29-4-2024. The researchers used statistical means through the statistical bag (spss) and the use of relevant statistical laws (mean) and standard deviation 'torsion coefficient and tests of interrelated samples). The time research procedures were determined from (29/4/2014-12/5/2024)

Results

The researchers presented the results in the form of a table and as follows:

Table (3)

Results of the Special Tests for Physical Abilities, Including Mean Values, Standard Deviation, Differences between Means, Standard Error of Differences, Value of (t), and Significance Level (sig) for the Two Groups under Study.

Two groups under consideration

Tests Special Physical Abilities	UOM	SPG	0-	W	Calculated o	Sig	Significance
Explosive force	meter	counterbalance	7.89	24	6 766 047	.000	Legal
		Disk	8.76	.20			
Power Characteristic of Speed	kg	counterbalance	16.8	1.48	1.540	.162	immaterial
		Disk	15.2	1.78			
Full throttle.	w	counterbalance	130	7.90	.060	073	immaterial
		Disk	141	8.94			

Below the significance level (0.05) and the degree of freedom (5+5-2 =8) Table score (2.31)

Discussion

Through the statistical analysis of the results shown in the above table, we note through a comparison in the results of the two groups in the explosive strength test of the arms that there are significant differences in favor of the disc players due to the quality of the exercises used by the disc players in the training units. It is noteworthy (Jasim & Naji, Special Strength Training to Develop the Working Muscles During the Shot Preparation and Final Throw Phases, and Its Effect on Discus Throwing Performance for Youth., 2019) that the moving strength training contributes to the development of most types of strength. This is confirmed by current research findings.

The two researchers agree with the idea that general force exercises contribute to the development of explosive force, but in the test, the strength distinguished by speed, the results

indicated that there are no significant differences between (throwing the discus and pushing the weight), because the calculated value (T) is greater than the table value under the level of significance greater than (0.05) players of both events.

In a study of explosive force, it was shown that there is a statistically significant correlation in the explosive force of the effectiveness of throwing the discus and pushing the weight. The researcher attributes the reason for the emergence of this relationship to the fact that the effectiveness of throwing the discus and pushing the weight depends mainly on the explosive force of the muscles of the arms in terms of training loads, tension and volumes in their training. Ali Sadiq)Sadiq(2016 , says about Raysan Kharibat that explosive force exercises improve the ability of the athlete to activate the number of fast contracting muscle fibers at the same time and as soon as possible, as these Effective is the one-time implementation of the performance, called explosive power or explosive force (Salam & Dhaha, 2023), as well as the use of force in the shortest time to produce movement. The two researchers use the exercises for each of the three shooting events in order to increase the development of this important and necessary physical trait and thus develop it in an optimal manner. Shorouk Mahdi agrees that the use of special exercises leads to the development of the explosive power of the two men (Easa et al., 2022), as it is associated with various sports skills, and Shaimaa believes that there is a direct relationship between explosive power and skills (Kadhim, 2024) , as well as it is inherent to the speed trait to achieve optimal achievement As it is the ability to give strength at maximum speed, the researcher attributes to the use of exercises that are practiced by discus throwing players and pushing the weight led to these non-significant results. The researcher also sees the reason for the development in the effectiveness of discus throwing and pushing the weight due to the exercises used by players that are effective in developing the strength characteristic of the speed of the muscles of the arms through the results obtained, through the gradient in the exercises performance movements to serve the motor activity and the goal of using muscle groups involved in discus throwing and pushing the weight Force characterized by speed as "the ability of the neuromuscular system to produce rapid force, which requires the degree of compatibility in integrating the attribute of strength and the attribute of speed into one component")Ahmed , Naser(1993 , and the results showed that there are no significant differences between the two groups throwing the disk and pushing the weight, which amounted to (0.073) because the two activities depend greatly on the maximum force and body mass, and this is what players are constantly trained to do. The two groups are characterized by a good ability of maximum force and there are no differences , the maximum force is one of the most important physical qualities and necessary types of sports activities if it requires the athlete to exert The maximum strength it has against external resistance and due to what the sport needs to throw the discus and push the weight of the maximum force well to all the muscles of the arms and torso "" the maximum strength that the muscle or group can produce through the process of contraction" (Hussein, 1998)

Conclusions

In light of the results, the researchers reached the following conclusions:

1. It is clear from the research results that the discus throwing group is better than the weight pushing group in the explosive strength test of the arms, and this is due to the training system followed by the discus players.
2. The connection was made to the lack of significant differences between the discus throwers and the pushing of the weight in the test of the strength characteristic of the speed of the arms and the maximum strength of the arms

Recommendations

1. The researcher recommends not conducting similar research to study the comparison and the relationship between the effectiveness of discus throwing and pushing the weight of special physical variables as there are no statistically significant differences, if any, which are rare because they are classified as throwing activities.
2. The two researchers recommend conducting research on the directions of experimental variables on the same research sample.
3. The researchers recommend the use of modern devices based on electronic scales to measure variables.

Appendix (1)

Questionnaire to indicate the validity of physical tests and movement at throwing events

Dear Sir, Mr.

Greetings...

The two researchers conducted a study of the tagged research:

(A study comparing the special physical abilities between the two discus throwing activities and pushing the weight of elite players to the advanced category) in determining the special physical abilities and nominating their tests for the current study

Thank you for your cooperation

Expert name

Academic title:

Major

Place of Work

Date

Signature:

Researchers

Physical and Motor Abilities Selection Form

		Repair	It does not fit
Physical capacities	Explosive force		
	Full throttle.		
	Power Characteristic of Speed		

Comments

Adding physical abilities and other motor skills according to the expert's opinion:

- 1.
- 2.
- 3.
- 4.
- 5.

Sr	Special Physical Aptitude Test	repair	It does not fit
1	Explosive Strength Test of the Arms		
2	Speed Characteristic Strength Test		
3	Maximum Arm Strength Test		

Appendix (2)

Showing the names of experts in arbitration Names of the experts

Sr	Name of the Expert	Scientific title and name	Jurisdiction and Place of Work
1-	Abd al-Nabi	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Square - Injuries
2.	Entisar	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Square - Biomechanics
3.	Haider	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Field - Training
4-	Ismail Alani	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Field - Disabled
5.	MAZIN HUSSAIN	Lecturer	Physical Education and Sports Sciences/ University of Baghdad/Square and Square

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The Effect of Special Speed Exercises on The Variables of The First Arc of 400-Meter Hurdles Race Under 20 Years of Age

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DOI: [https://doi.org/10.37359/JOPE.V36\(3\)2024.2033](https://doi.org/10.37359/JOPE.V36(3)2024.2033)

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Article history: Received 18/ February/2024 Accepted 26/ February /2024 Available online 28/ September/2024

Abstract

The research aims to prepare special speed exercises in the variables of the first arc of running the 400 m hurdles under 20 years of age and to identify the effect of special speed exercises in the variables of the first arc of running the 400 m hurdles under 20 years of age. To achieve the goal, the researchers used the experimental method by designing one group with two pre-and post-tests to suit the research problem. The research community included elite runners in the youth 400 m hurdles event for the year (2021-2023) and those with similar levels, numbering (8) athletes, who are of a community of origin. The sample was chosen intentionally and consisted of (6) players, representing 75% of the original population. After the tests and variables to be studied were determined, the researchers conducted the exploratory experiment as well as the pre-test, and then the exercises were applied during the training units. After completing the training units, the researchers conducted the post-test on the sample, and the researchers used the statistical package (Spss) (arithmetic mean, Standard deviation, paired samples t-test. The researchers concluded that special speed exercises contributed to increasing the rate of explosive power, as well as having a positive effect on the variables related to the first arc investigated, and that relying on the use of more specialized exercises by mechanical principles and laws contributes to improving the level of the runner in terms of abilities and indicators related to effectiveness. As well as that training the athlete according to the centrifugal principle had a positive impact in standardizing the training intensity for 400m/hurdles event runners, The researchers recommend the need for trainers to rely on regulating training intensity according to mechanical indicators and laws that are specific to effectiveness, and the need to pay attention to the mechanical aspects that constitute a factor influencing the success of the event, in addition to paying attention to special speed training because it effectively affects the variables of the first arc and achieving 400-meter hurdles event.

Keywords: Special speed, variables of the first arc, 400m hurdles run.

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Introduction:

Sports training science, in addition to the basics of biomechanics, is considered an applied science and one of the foundations that can be invested in developing motor performance and achieving better results. This is done through achieving training goals through continuous training, using the latest methods and means, and introducing modern devices and auxiliary tools as modern training methods for player development. The use of special exercises contributes to facilitating the training task, as well as contributing to identifying strengths and weaknesses in performance to identify the real problem that hinders the progress of the players level, especially in events with high speed and highly compatible technique that must be carried out according to specific movement paths based on correct biomechanical foundations. (Kadhim, 2024) Running in a curve (arc) differs from that in a straight line, especially in body positions, as the curve causes the body to tilt into the pitch because of the centrifugal force, and this leads to a reduction in the player's speed, and also as the left foot turns somewhat inward to help guide while running, as well. The right foot also turns slightly inward for the same goal. (Mahmood & Kadhim, 2023) It can be noticed that the work of the right leg is clear and to a greater extent than the left, as the thrust is inward to resist the centrifugal force, while the torso also leans inward somewhat. The right arm works to a greater extent than the left, and the right shoulder is higher than the left shoulder and the head leans inward somewhat. The change in body position is aimed at overcoming the centrifugal force, and if the player tries to apply these positions during the passing step, (Moayd et al., 2019) he will achieve better achievement by harnessing all the biomechanical variables in the best body positions during each step of passing through the two curves. The method of special speed training is based on a mechanical law, which is the law of relative speed, which states that (the absolute speed of the body for a specific distance without a tool - the speed of the body itself for the same distance with the tool), (Mohsen et al., 2024) which can be applied to 400m hurdles, as the decrease in the difference between the two speeds gives significance about integrating the player's speed without disrupting technical performance. Among the previous studies that dealt with such a topic is a study by (Ali Naeem, 2020), which concluded that special training was developed according to the runner's mass for running curves, by controlling centrifugal variables in some special physical abilities and biomechanical indicators, and achieving the achievement of running the 400-meter hurdles for under 20 years of age. A study by (Ali Naeem and Sarreh Al-Fadhli, 2020) concluded that training according to the centrifugal law had a significant effect on improving the achievement of running the 400-meter hurdles, and a study by (Ihab Dakhel, 2017) concluded that training for absolute endurance had a clear impact on the development of the achievement and biomechanics of the hurdlers' steps for the research sample. (Dhiab et al., 2020) Whereas the study by (Saif Sabar Naji, 2013), in which it was concluded that exercises using aids according to the performance that were used within the exercises, special and established strength are effective in developing achievement, and also a study by (Mohammed Abadi Abd, 2007) concluded special speed training to develop special endurance capabilities and some physiological indicators, and the achieving of 800-meter running for juniors. Likewise, (D. I. R. Hameed, 2020) a study by (Muhammad Abdullah Janjoun, 2014) determined the design of a device to reduce a percentage of body weight to develop special speed endurance and the achieving of 400-meter freestyle sprint for ages 14-16 years. Furthermore, a study by (Reda Mahdi Kazem, 2016) concluded with the development of special exercises indicative of decreasing comfort in developing special speed endurance and some physiological indicators and running the 400 m for the disabled of the T46-T47 classification for men. From the above, the study's importance is to take into account the law of centrifugation in preparing special speed exercises and identifying its effect on the variables of the first arc, by setting a real training

intensity according to the mass of each runner and relying on the radius of the curve and the circumferential speed on the curve to be special training for 400m/ hurdles in the curves so that the variables of the first arc are in their ideal shape.(I. R. Hameed et al., 2020)

The study problem

The distance of the two curves constitutes 58.87% of the overall distance of the event since the development of the curve running time should be a significant addition to the overall race time, in addition to the intervention of modern methods and means in harmony with the special physical laws in developing the special speed in the variables of the first arc which leads to the development of achievements. On this basis, these exercises may constitute one of the scientific solutions that contribute to the development of athletic achievement in running the 400 m hurdles. The training of curves, in particular, may achieve a level of performance in the 400 m hurdles, and this is what can be observed in the training of world champions, and this is what can not be found in the training of runners locally, as the runners were not trained to control the variables of the physical laws that particularly affect curves by dealing with the curve as in the straight in the training intensity setting, while the curve differs significantly from the straight, as the external forces are more influential in the curve, and this is what can be noticed in the centrifugal force. The motor path of the body and parts of the body in the curve also differ from the straight.

Therefore, the objectives of the study were:

Preparing special speed exercises in the variables of the first arc for running the 400 m hurdles under 20 years of age.

Identify the effect of special speed exercises on the variables of the first arc of the 400 m hurdles under 20 years of age.

Research procedures

The researchers used the experimental method by designing one group with pre-and post-tests to suit the research problem. The research community included elite runners in the 400 m youth hurdles event for the year (2021-2023) and those with similar levels, numbering (8) athletes who are of the community of origin, and the sample was chosen. In an intentional method, the number of players is (6) and they represent (75%) of the community of origin.

Research tools

The researchers used the following devices and tools 2 cameras with a speed of 120 rpm, Casio type, 4 tripods, 2 IMATION CDs, 1 hp computer, 1 stopwatch, (10) hurdles, (1) whistle, (1) rubber rope, (1) weighted wrists for the legs and arms, (50) cm high bench, CDs.

Tests used in the research:

The explosive power of the legs by jumping the farthest horizontal distance from the prepared position (starting)

The test objective: to measure the explosive power of the legs for starting.

Tools used: starting tool, starting restraints (block), distance measuring tape, and a registration form.

Performance method: The starting tool (the block) is placed on the field of the close-run near the edge of the hole. The runner takes a sitting position for the start, by placing the insteps of the first foot on the front restraint and the insteps of the other feet on the back restraint and leaning on the toes of the hands so that the distance between the palms is like the width of the chest and the shoulder is pushed forward, and the hip is higher than the shoulder level, and this is the position of preparation for the start. Then the runner pushes the restraints with both legs and the hands leave the

ground at the same moment. The push is for the furthest horizontal distance, as in jumping from a stand and then landing on the feet in the pit. The jumping distance is calculated, then the explosive power is extracted using the power law

$$p = \frac{\text{mass} \times \text{speed}}{\text{time (t)}}$$

$$\text{speed} = \frac{\text{distance (s)}}{t}$$

$$\therefore \text{speed (v)} = \frac{\text{jumping distance}}{t}$$

This applies to all runners.

Scoring method: Each runner is given two attempts, and the best attempt is taken into account. The distance that the athlete jumps during the attempt is measured with a measuring tape, from the front foot of the restraints to the last trace close to the foot in the hole.

Starting and launching up test until the first hurdle

The test objective: to measure the increase in speed.

Tools used: stopwatch (3), starting device (1), hurdle (1), registration form, camera (1).

Method of performance: After hearing the runner's instruction (on the line) from the supervisor, the runner takes a low sitting position on the starting line to start, then prepares with an instruction (prepare) and with the start signal, the runner quickly takes off towards the first hurdle and begins recording the time with the launch to the first hurdle and the clock is stopped with the runner's foot touching the ground after the hurdle, a camera is fixed at a distance of (6) meters and a height of (1) meter.

Running test of the first arc with the presence of hurdle (1-2).

The test objective: to measure the maximum speed of performance.

Tools used: stopwatch (3), hurdles (5), launching device (1), registration form.

Performance method: From the low starting position, upon hearing the instruction, the athlete proceeds to pass (5) hurdles at maximum speed.

Recording method: Adopting the time that the player travels after the moment that the runner's foot touches the ground, taking the middle hour time between 3 hours.

Achievement test 400 m hurdles

The test objective: to measure the level of achievement of the 400 m hurdles event.

Tools used: (10) hurdles, a stopwatch.

Performance method: Conducting a 400-meter hurdles running test by international law in the first area. Each one from the research sample runs a 400-meter hurdles test from the beginning of the distance until the end.

Recording: The time is recorded using a stopwatch.

The two researchers conducted the exploratory experiment on the field of the College of Physical Education and Sports Sciences - University of Baghdad, on players on (Sunday)

corresponding to (18/12/2022) at four o'clock in the afternoon, to ensure the operation of the assistive devices and tools used during the performance of the special exercises and the player's ability to perform with the help of the assistant work team. This experience was used to know the pros and cons of the devices and tools, as well as the dimensions and number of cameras used in the test. Where the used cameras benefited in tests, as camera No. (1) was placed (6) meters from the first hurdle to photograph the phase before, during, and after the passing, at a height of (1) m, provided that it was perpendicular to the player's movement path in the first curve. Then Camera No. (2) was placed with the same dimensions on the second hurdle to photograph the biomechanical variables during the step of the hurdle and the steps between the hurdles. After proving the exploratory experiment, the correctness and safety of the steps and procedures that were implemented, as well as their suitability to the research sample and the surrounding circumstances, the pre-test was conducted over two days (Tuesday, and Wednesday) corresponding to (24-25/1/2023) at exactly (4) in the afternoon, with the help of the assistant work team, the first day's tests included a test of (the explosive power of the legs, jumping the farthest horizontal distance from the prepared position (starting), a test of starting and launching up to the first hurdle, and a test of running the first arc with the presence of hurdle (1-2), on the athletics track at the Ministry of Youth and Sports in Baghdad. In addition to conducting video filming to measure the biomechanical variables of the first arc, while the second day included a test for achieving 400-meter hurdles, special speed exercises were started on (5/2/2023) on (Sunday) by applying (3) training units per week for (8) weeks, that is (24) training units, in which the researchers intervene in the main part of the training unit, which includes special exercises on the assistive devices used to develop the player's physical capabilities to perform. The researchers used the type of rubber rope that is attached to the player's waist and foot to increase the resistance on the leg during the passing. They also used wristbands for the arms and legs at a rate of (2%) of the weight of the player's body part. These tools will be part of the special exercises, and training on the first auxiliary device which will control the height of the body's center of gravity and the time of passing the hurdle, and the second auxiliary device, whose variables will include developing speed, time, and acceleration between the hurdles. These exercises are used in a repetitive training manner during the main part of the training unit and observing the extent of the impact of these exercises on the runner's ability and thus their impact on the passing step and trying to raise the level of the athlete and reduce the passing time because this activity represents high speed in performance and maintaining speed, knowing that the athlete will pass (10) hurdles along the race distance. After completing the implementation of the training units within the prescribed period, the researchers conducted the post-tests for the research, which were determined on the days (Tuesday, and Wednesday) corresponding to (18-19/4/2023). The researchers took into account the same procedures that were followed in the pre-research tests, under the same temporal and spatial conditions, and the method and implementation of conducting the tests chosen in the research. The researchers used the statistical package (Spss) (arithmetic mean, standard deviation, t-test for samples).

Results

Table (1) shows the arithmetic mean, standard deviation, and t-value calculated for the research variables

ests	pre-test		post-tests		Differences	Standard differences	Calculated t value	Sig	Significance
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation					
Explosive power	2.533	0.155	2.593	0.157	0.6000	0.00516	11.619	0.000	S.
The time of the first hurdle	6.243	0.065	6.190	0.050	0.05333	0.00760	7.016	0.001	S.
The time of the first arc	11.658	0.129	11.521	0.076	0.13667	0.03062	4.463	0.007	S.
Achievement	60.803	2.871	60.558	2.883	0.24500	0.04766	5.140	0.004	S.
* significant < (0.05) at a degree of freedom (5) and below the level of significance (0.05)									

The table shows that all variables showed significant differences in the post-test, where the explosive power increased by (2.36%), at the time of the first hurdle decreased by (0.85%), in the time of the first arc (1.18%), and the time of Achievement (0.40%).

Discussion

The existence of significant differences in the explosive power test between the results of the pre-and post-tests shows that jumping exercises have affected the development of explosive power from the starting position significantly. Most studies confirm the importance of jumping exercises in developing explosive power when used accurately and in a scientific manner studied according to the requirements of the distribution of correct training load during the specified period and taking into account the sample capabilities in the application of appropriate exercises according to their physical capabilities. (Enad Jarjis and Kamal Suleiman, 1999, 55) observed that improving the level of long jump consistency from the starting position was the result of jumping exercises that had a positive effect on the result of muscle strength. Moreover (Brain, 1996, 74) mentioned that jumping exercises develop the efficiency of the neuromuscular system to perform fast and strong movements in opposite directions while reducing the performance time of these opposite variables and this is what gives them preference in jumping. The researchers believe that the importance of jumping exercises is due to the speed of muscle contractions by emphasizing the overcoming of the resistance to gravity strongly and quickly, as the muscle length increases during eccentric contraction quickly and suddenly in a very short time to produce explosive power in the central contraction. (Mansour Jamil 1995, 34) states that the production of the greatest strength can be obtained in the use of large muscle groups, creating harmony between muscle work and producing greater strength. The achievement stage at its beginning is characterized by the strong rapid movement of the free (front) leg, which begins at passing the first hurdle, which is semi-elongated, and here the torso tends towards the front and the opposite arm extends over the free leg, that leads

to a decrease in the torso. However, the time sense factor is an important factor and has a great relationship to achieving a large angular momentum by reducing the moment of inertia during the achievement stage, which achieves the highest possibility of maintaining the body speed during the achievement stages. This is confirmed by the application of special speed exercises to overcome fatigue and work in these conditions as high as possible in the distinctive technical performance by applying mechanical conditions. The researchers focused in the exercises on applying the correct technical performance by achieving the torso angles and the arms and leg movement with the least possible moment of inertia to maintain the highest speed of the body. As a result of the application of special exercises, helped the runners to adjust the distance between the center of gravity of their body which is represented by (the hip point) and the hurdle in line with and achieve the ideal passing that takes place in the shortest possible time, this is what appeared when calculating the values of the arithmetic mean of the passing time variable for the pre- and post-tests through the numbers that appeared from the kinetic analysis of their performance. (Mondher et al., 2023) These changes led to an improvement in the level of performance, especially since the hurdle's effectiveness depends mainly on covering distances in the shortest possible time, and reducing the time required to cross the hurdle is certainly an indicator that indicates the level of improvement of the player performance and thus improving the level of his digital achievement. To reach the speed at the moment of passing, the runner must organize well and have better timing for working the leg correctly according to the kinetic path to reach the time of the ideal running of hurdles (Hussein and Shaker, 2000, p. 165). Also, the height of the center of gravity of the body slightly before and after the hurdle and the decline of the center of gravity of the body above the hurdle was evidence that the kinetic path of the body occurs smoothly and without geometric fractures in the kinetic path of the body during passing, this led to a quick passing process with the least time. Also, reducing the passing time is affected by the torso angle, as the change in the center of gravity trajectory during passing (before, above, and after the hurdle) affects the value of the torso angle above the hurdle, as it became less and affected together the passing time. (Sareeh Abdel Karim) mentions the application of all the time characteristics during the occurrence of movement without stopping and without any sharp refractions in the kinetic paths of the centers of body parts mass and the body itself (Al-Fadhli, 2010, p. 89). So, the special exercises that help in the development of the muscles work in running lead to an improvement in the speed of their steps and thus the maximum speed of less than (0.6) seconds or more. So, it is logical that the time of the hurdle step develops, especially when using rubber ropes, as the repetition of running and passing exercises with the presence of ropes and resistances enhances the duration of muscle contraction as quickly as possible and gives the real path of movement smoothly and this shortens the performance time at passing (Talib Faisal, 2003, p. 54). The table which shows the significant differences that appeared for the variable of the first arc time and the pre- and post-tests, showed the significant results in the post-test. The researchers attribute this improvement in the post-test to special speed exercises through the control of the unbalanced weights added to the runner, which was developed due to the analysis of readings of the runner's steps and their frequency in the curve. This gave the impression that the runner is unbalanced in the length of the step and its frequency during the curve, which reflects the weakness of the muscles for pulling and extending the legs during normal running steps. In addition to the hesitation before entering the hurdle step, which affected the average speed in general. These exercises gave priority to the development of the leg muscles working in running by improving the explosive power of the legs to carry out the process of momentary continuous balanced push during running in the curve, so the runner was able to increase the speed and the possibility of controlling the length and frequency of the step perfectly, and this is what (Bomba, 1999, 375-379) pointed out "Running with

faster steps requires the development of muscular endurance of performance and rapid strength and endurance application of weighted rhythm and effective running steps and control that indicate better increase speed." As for the test of achievement running 400 m hurdles, the researchers attribute this development in the results of the post-test to the special speed exercises, which were developed by the researchers help to progress in a certain part of the effectiveness of 400 m hurdles. (Easa et al., 2022) The general result showed an improvement in the digital level of achievement of the event, and the use of exercises according to a scientific context gives the trainer the ability to achieve achievement most shortly. The special speed exercises are based on a mechanical principle (centrifugal force), where the body mass is adopted as the basis for the exercise's work, as the runner performs the training by its mass by relying on its maximum centrifugal force ratio. Therefore, the researchers were keen to put additional weights on the lower limbs in a manner consistent with the runner mass, also confirmed the performance of exercises during the curves correctly to achieve the goal as well as to avoid injuries and errors, in addition, to make the curves with a radius less than the real curves and put in a set of exercises hurdles to perform passing while retaining somewhat the speed of running inside the curves, which increased the load and resistance on the working muscles. This is what greatly raises the rapid strength as a result of the adaptations taking place in target muscles. Moreover, the researchers agree with the statement of (Sareeh Abdul Karim, 2003, 175) "that muscle fibers can produce a large force by changing the type of resistance so that the number of working motor units will increase, thus their ability to produce energy increased," Hence the researchers believe that the overall exercises of the sample have increased the physical and skill possibility of a runner in terms of speed of passing the hurdle and therefore all these indicators help the runner to shorten fractions of a second from the achievement time of 400 m / hurdle.

Conclusions and recommendations:

Special speed exercises have contributed to increasing the rate of explosive power as well as having a positive impact on the variables of the first arc surveyed. The use of more specialized training by mechanical principles and laws contributes to improving the level of the runner in terms of abilities and indicators associated with the event. Also, sports training according to the principle of centrifugation had a positive impact on ration the training intensities for 400 m / hurdles runners, and improving the technical performance of the runner within the boundaries of the curve contributed to improving all variables for the first arc and achievement. However, the researchers recommend that trainers should rely on ration the training intensities by the indicators and laws that are specific to the event, and that attention should be paid to the mechanical aspects that constitute a factor affecting the success of the event, as well as special speed training because it effectively affects the variables of the first arc and the achievement of 400 m hurdles.

Appendix (1)

Exercises used in research

Running 2 hurdle of the first arc of a standing position

The same exercise by wearing rubber ropes

The same exercise by wearing heavy weights

Running 5 hurdles first and straight arc

The same exercise (4) by wearing rubber ropes

The same exercise (4) by wearing heavy weights

Exercise (8) First and Straight Arc hurdles

The same exercise (7) hurdles by wearing rubber ropes and then heavyweights

Appendix (2)

Training Unit Template

Seq.	Exercise number	Repetition	Comfort between repetition	Groups	Comfort between repetition	Intensity
1	1+2+3	2	3 min	2	4 min	85%
2	4+5+6	2	2 min	2	4 min	85%
3	7+8	1	-	-	-	90%

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Volume (36) - Issue (3) - 2024



Journal of Physical Education

**Quarterly Reviewed Scientific Journal
For Sport Sciences Issued by
College of Physical Education and Sport Sciences
University of Baghdad**

<http://jcope.uobaghdad.edu.iq>
DOI: [https://doi.org/10.37359/JOPE.V36\(3\) 2024](https://doi.org/10.37359/JOPE.V36(3) 2024)

P-ISSN: 2073-6452
E-ISSN: 2707-5729