



وزارة التعليم العالي والبحث العلمي
جامعة الموصل
كلية التربية الأساسية
قسم التربية البدنية وعلوم الرياضة

تأثير تدريبات SAQ التفاعلية في عدد من القدرات البدنية والمهارية الخاصة للاعبين تنس الطاولة الناشئين

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في التربية البدنية وعلوم الرياضة

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المستخلص بلغة الرسالة

هدفت الدراسة إلى التعرف على أثر تدريبات (SAQ) في عدد من المتغيرات البدنية والمهارية لدى لاعبي تنس الطاولة الناشئين، فضلاً عن توظيف جهاز التدريب الضوئي لسرعة الاستجابة (Quickness Light Trainer – QLT) في قياس وتطوير سرعة الاستجابة الحركية. استخدم الباحث المنهج التجريبي بتصميم المجموعتين المتكافئتين ذات الاختبارين القبلي والبعدي لملاءمته طبيعة الدراسة وأهدافها. وتكونت عينة البحث من (14) لاعباً ناشئاً من لاعبي تنس الطاولة، تم تقسيمهم إلى مجموعتين متساويتين، تجريبية وضابطة، بواقع (7) لاعبين لكل مجموعة. خضعت المجموعة التجريبية للبرنامج التدريبي المعد باستخدام تدريبات (SAQ)، في حين استمرت المجموعة الضابطة بتنفيذ المنهاج التدريبي الاعتيادي. واستغرق تنفيذ البرنامج التدريبي (8) أسابيع بواقع (3) وحدات تدريبية أسبوعياً وبمجموع (24) وحدة تدريبية، وتضمن مجموعة من التمرينات البدنية والمهارية التي روعي في تصميمها طبيعة الأداء ومتطلبات المنافسة في تنس الطاولة. كما استخدم جهاز (QLT) ضمن عدد من الاختبارات والتمرينات الخاصة بسرعة الاستجابة الحركية والمثيرات البصرية. وأجريت الاختبارات القبلية والبعدية للمجموعتين في المتغيرات البدنية والمهارية قيد الدراسة، ثم عولجت البيانات إحصائياً باستخدام البرنامج الإحصائي (SPSS). وأظهرت النتائج أن تدريبات (SAQ) أحدثت تطوراً إيجابياً في عدد من المتغيرات البدنية والمهارية لدى أفراد المجموعة التجريبية، فضلاً عن تفوقها على المجموعة الضابطة في الاختبارات البعدية. واستنتج الباحث أن استخدام تدريبات (SAQ) وفق برنامج تدريبي منظم يتلاءم مع خصائص لاعبي تنس الطاولة الناشئين يسهم في تطوير قدراتهم البدنية والمهارية، فضلاً عن فاعلية استخدام جهاز (QLT) في التدريبات المرتبطة بسرعة الاستجابة الحركية. ويوصي الباحث بالاستفادة من تدريبات (SAQ) والأجهزة التدريبية المساعدة ضمن البرامج التدريبية الخاصة بلاعبي تنس الطاولة الناشئين.

Abstract

The Effect of Interactive SAQ Training on Selected Physical and Skill-Specific Abilities of Junior Table Tennis Players

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Research Summary

Table tennis is a sport that demands a high level of speed, agility, and rapid response, given the fast-paced nature of play, the brief duration of ball exchanges, and the multiplicity of visual and motor stimuli encountered during the game. In light of this, the significance of the present study lies in its attempt to develop certain physical and skill-related variables among junior table tennis players through the use of Speed, Agility, and Quickness (SAQ) training, supported by an innovative training–testing device known as the Quick Light Trainer (QLT) for reaction speed, which was designed to serve the objectives of the study and to simulate the nature of the visual stimuli and rapid motor responses inherent to table tennis.

The study aimed to design the Quick Light Trainer (QLT) device for reaction speed and to employ it in measuring and developing certain physical variables associated with performance in table tennis, as well as to construct a training program based on SAQ exercises comprising physical–motor drills linked to the actual performance requirements of the game. The study further aimed to identify the statistical significance of the differences between the pre- and post-tests for the members of the experimental and control groups in a number of physical and skill variables, and to compare the post-test results of the two groups in order to determine the superiority of the effect of the training program employed.

The researcher employed the experimental method using a design of two equivalent groups with pre- and post-tests, as it was appropriate to the nature of the research problem and its objectives. The research sample consisted of (14) junior players from Al-Futuwwa Sports Club in table tennis, selected by the deliberate (purposive) sampling method, and divided into two equal groups of (7) players each. The experimental group underwent the training program designed according to SAQ exercises, while the control group continued to follow the regular training curriculum applied by the coach.

The research procedures included conducting pre-measurements and pre-tests for the physical and skill variables, followed by the application of the proposed training program to the experimental group for a period of (8) weeks, at a rate of (3) training units per week, with a load undulation of (3:1). The SAQ exercises were implemented at the beginning of the training unit immediately after the warm-up, at an intensity ranging between (90–00%), using the repetition training method with complete passive rest between repetitions and exercises. The program also included exercises specifically targeting reaction speed using the QLT device, exercises for agility and transitional speed, as well as combined exercises integrating these components in a manner simulating actual playing situations in table tennis.

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The researcher adopted a set of physical and skill tests to measure the variables under investigation. The physical variables included explosive power of the legs, speed-strength of the arms, flexibility, acceleration over a distance of (5) meters, motor reaction speed, reactive agility, general endurance, and dynamic balance. The skill variables consisted of the forehand topspin serve, the backhand topspin serve, the forehand topspin drive, and the backhand topspin drive. After completing the implementation of the training program, post-tests were conducted for both groups under the same conditions as the pre-tests, and the data were then statistically processed using the SPSS program.

The results of the study revealed statistically significant differences between the pre- and post-tests of the experimental group across all the physical and skill variables under investigation, in favor of the post-test, indicating the effectiveness of SAQ training in developing the level of physical and skill preparation among junior table tennis players. The results of the post-test comparison between the two groups also showed the superiority of the experimental group members over the control group members in most of the physical variables, namely explosive power, speed-strength, acceleration, motor reaction speed, reactive agility, general endurance, and dynamic balance, whereas no significant differences were found in the flexibility variable.

As for the skill variables, the results showed the superiority of the experimental group in the forehand and backhand topspin drive skills, while no significant differences were found between the two groups in the forehand and backhand topspin serve skills. This indicates that the effect of SAQ training was more pronounced in open skills that require reaction speed, rapid movement, and a high degree of motor coordination during performance, compared to more stable skills such as the serve.

The researcher concluded that the training program designed using SAQ exercises contributed positively to the development of the physical and skill variables among junior table tennis players, and that the use of the Quick Light Trainer (QLT) device for reaction speed helped develop the speed of visual stimulus perception and the speed of motor decision-making, which positively reflected on motor reaction speed and reactive agility. The researcher recommends adopting SAQ training within the preparation programs for junior table tennis players, incorporating standardized physical-motor training away from the table, as well as using the QLT device as a suitable training tool for the fast-paced and variable nature of performance in table tennis.

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