55 - HANDTUTOR: AN EDUCATIONAL MULTIMEDIA SOFTWARE TO AID THE TEACHING OF HANDBALL FUNDAMENTAL SKILLS

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Introduction

Handball is undoubtedly listed amongst the most practiced sports in Brazil. However, this fact is directly opposed to the lack of human and material resources, which make the practice of this sport less propitious than the practice of other sports. Despite the growth of the software market, it is evident that those have been developed at a minimal scale for the area of physical education and sports.

The development of this study was based on the aforementioned assumption. It has been assigned on the utilization of communication and information technology in the sports field. Thus, the aim is to develop an interactive multimedia software that enables to aid the teaching of fundamental technical gestures for the practice of handball. The main focus of this study are handball beginners, therefore, neither the more complex variations of the fundamentals nor the tactics training have been covered. The technical gestures that have been approached are: hilt, pass, reception, dribbling, swindle, progression and shot.

It is known that soccer dominates the ratings in media, as well as the shelves of sporting goods stores. Consequently, it is claimed as a national preference. The general objective of this study is to provide an educational material that enables the preparation of handball instructors, as well as ease the learning of children who are aspirant handball players.

Amongst the specific objectives of this study are the diffusion of the practice of handball, the presentation and introduction of the modality, launching the possibility of a future study involving parameters such as team tactics, or opening new horizons for the development of a similar study aiming to popularize another sports modality.

The final product of this study is a DVD (Digital Versatile Disc) video. At first, the proposal was to develop a personal computer software, but with the aim of expanding the accessibility of this material, it has been decided for the distribution of the software in a medium that were more accessible. It has been concluded that, for the moment, the DVD was the most appropriate one.

Although not demanding a personal computer for its reproduction, the video does not leave his characteristics of a software behind, considering it gathers information that, when executed, lead to the desired result. It can also be considered a multimedia software given its audio-visual content. The final software has been named "HandTutor". It is free distributed and can be acquired at http://www.brunopedroso.com.br/handtutor.html.

The origin of handball

Handball is a collective sport that corresponds to its literal translation (in Portuguese). It can be practiced in a field (Outdoor handball), court (Indoor Handball) or sand (Beach Handball). The court handball is the one that is most commonly known, although beach handball is also practiced and ruled by the IHF (International Handball Federation) and in Brazil by the CHBb, the Brazilian Handball Confederation.

It is a type of fusion between basketball and soccer, but with different characteristics and rules. It is a modality that allows the development of physical, psychological, social and moral qualities. It also demands speed, strength, anaerobic resistance, emotional control, intelligence and agility (TENROLER, 2004).

As well as most collective sports, some features of handball can be noticed since antique Greece, when it was practiced with an apple sized ball and named Urania. However, modern handball is strongly connected to Danish Professor Holger Niensen, who has been the precursor of a game named Haandbold in 1848. At the same time, the Czech used to practice a similar game called Azena (TENROLER, 2004).

However, handball as we know it started to be practiced years later because Haandbold was practiced pretty much as the field handball, that is, in grass fields and with teams of 11 players.

Handball received this denomination around 1919 by German Physical Education Professor Karl Schlenz, who published rules of the sport that started being called Outdoor Handball. In 1936, in Berlin, it became part of the Olympic Games (TENROLER, 2004).

In consequence of the weather conditions in Europe, the excessive cold lead handball to be practiced in covered courts and with the reduced number of 7 players in each team. It then started being named as Indoor Handball. For that matter, it derived from the aforementioned Czech game Azena. It became more popular along the years, took over Outdoor Handball and developed to the type of handball that is practiced nowadays.

The arrival of handball in Brazil is directly related to the coming of European immigrants after World War One. They brought alongside their cultural background this sport that had been diffused in the European territory.

It became popular with the School and College Competitions. Professor Auguste Listello takes credit for such popularization because he ministered a course about handball classes in Santos, in 1954 (TENROLER, 2004).

Sporting practice of handball

As opposed to what it may seem, the learning of handball is as simple as the learning of other sports. What causes the decline of this practice in some occasions is the lack of knowledge of educators concerning the sport.

However, not only handball but other sports have a factor that is a negative influence the precocious transition between the initiation and the specialization of the sport. A child plays solely for the pleasure of practicing a playful activity, but the exaggerated demands of parents and instructors may decrease the motivation in a way the child loses the pleasure for the practice of sports.

According to Ehret, *et al* (2002, p.02), “most times there is a fall of performance that is as fast as the growth or even stagnation”. It is understood that in the same way the specialization occurs precociously, there is also a precocious sports termination - mostly caused by injuries - and almost always resulting in an athlete that is frustrated with his short highlight moment in sports.

Following a classification according to age, Ehret *et al* (2002) divides the learning of handball in four stages. According to the authors, Phase 1 includes children aging up to 12 years old:

The most important directing line of this category is the motivation of children concerning handball and the formation oriented to the development of their personality and necessities. Here it is necessary to avoid a specific training of handball. The main point is the multiple and general formation. With the aid of games in simplified and standardized situations, the basic game 4+1 is initially improved. Instead of championships, it would be ideal to provide children with festivals and tournaments, especially to kids

aging 6 to 8 years. With players aging 9 to 12 years, the number of players might be augmented up to 6 against 6, since they have previous experience with the 4+1 (EHRET et al, 2002, p.07-08).

The target of this study are children beginning sports practice, however, it is not in charge of the researcher to stipulate the way in which the HandTutor software should be used and in what extent the fundamentals must be reached. The way of working and the evolution of the training must be adapted according to the learning evolution of the population in question. Other doubts may be clarified with the consulting of the bibliographical material listed in this article.

Fundamental skills of handball

When mentioning the phrase "fundamental skills", the first reference that comes to mind is "fundamental". Based in this idea, it can be assumed that the fundamental skills of a sports modality are technical gestures that are essential to its practice. The approach of the sports technique must be conducted during the learning stage of the modality because the lack of quality in the execution of those gestures will certainly compromise the performance of the child and that will be hard to be corrected at a later time, after years of "vices" at the performance of movement considered technically incorrect.

The material that has been developed approaches the fundamental skills of handball, excluding the variation of passes, shots and swindles because they involve a greater complexity and the mastering of those fundamental skills in their most basic variations. The movement of the goalkeeper has not been included either because it involves too many variations of movements (high defense, medium defense, low defense, with legs, arms and hips). The continuity of this work may be considered at a future study, approaching a news series of motor abilities pertaining to handball, as well as tactics training.

The base for the conduction of sequence photos and videos included in the DVD has been traced with the previous theoretical knowledge of the researcher, enriched with the fundamental skills of mini handball obtained with the work of Santos (2003). This type of approach has been used because is the cornerstone of the initiation of this modality, considering the premise that the fundamental skills of both modalities are the same and that mini handball is only a simplified variation of handball, which is directed to the younger categories.

The fundamental skills approached in the HandTutor DVD are:

·Hilt: it is the simple act of handling the ball. Although some authors consider hilt as a fundamental skill, it is evident that it composes an essential technique of the handball game, since most fundamental skills are directly connected to it, making hilt a pre requisite for the other fundamental skills.

·Pass: it is the most used fundamental skill during the game; therefore it has to be mastered with great accuracy. The pass is divided into some variations, however, the shoulder pass is its basic form of conduction and it must be the first variation of the pass to be taught to handball beginners.

·Reception: it is the act of deadening the ball so it can be obtained. Perhaps the only fundamental skill of handball that does not have variations, although it is known that in the different situations of the game it may have some improvisations without deviating from the initial character of the reception itself.

·Dribbling: it is the fundamental skill that allows conducting the ball throughout the court for an unlimited time and distance. It is much used during the initiation, although its utilization has become more reduced with the improvement of the technical quality of the participants. It must be performed with caution, once it allows the conduction of the ball for unlimited time and distance, a fact that may cause the participation of few kids, excluding others from the practice.

·Progression: the three-phase progression, popularly known as the "three steps", is a fundamental skill pre requisite for the hilt performance and can also be considered a pre requisite for the shot, given the fact that most part of the shots are preceded by a progression.

·Shot: it is the act of shooting the ball in direction of the marker in an attempt of scoring a goal. It is mistakenly named as shot when, in fact, it is a throw, once the ball is tracked and not pushed. It must be mastered by all the members of the team because it is through the shot that the objective of the game is accomplished: the goal. Considering this, all the technique and tactics of the game have the objective of enabling the opportunity of shooting.

·Swindle: it is the movement used to deceive the opponent, aiming to create the opportunity of a shot. Its learning must be approached after the other fundamental skills because its execution has a higher degree of difficulty, which must be improved at the pace in which learners demonstrate abilities in order to perform such movements.

Besides the fundamental skills listed above, the presentation of the HandTutor DVD starts with a brief introduction to handball, mentioning the number of players, the court area, the time of match and the objective of handball.

Elaboration of the software

In order to conduct the present study, the images - both photo and video - have been captured. The material used to capture the images was a Sony Cybershot DSC-W7 digital camera. The resolution of the photos is 7MP (3072x2304 pixels) and the videos have a 640x480 resolution with 30 frames per second (fps).

When editing the material, the software Adobe Photoshop was used in order to resize photographs to the same resolution of the videos. The software Adobe Premiere was used to create each chapter individually by the insertion of the introduction to the fundamental skills and the sequence photos, followed by the demonstrative videos of the performance of each fundamental skill.

The conversion of the product created with Adobe Premiere to the DVD format was done with the software TMPGEnc XPress. As for the creation of the reproduction media, the software TMPGEnc DVD Author was used, where the main menu and DVD chapters were built.

Last, this product was recorded to digital media with Ahead Nero. The format used was DVD (MPEG-2, NTSC, 720x480, Interlace, 29.97 fps; MPEG-1 Audio Layer II, 48000 Hz, Stereo, 224Kb/s; Display 4:3), because it is a type of media that guarantees quality, besides using a disc with great storage capacity and because it is a communication tool that is easily accessed nowadays.

All of the softwares used during this work were shareware or trial versions, which are allowed for copy, distribution and non-restricted utilization for a limited time in which the software can be experimentally evaluated by the user. It does not characterize illegal use of the software.

The individual used as a model for filming and photography was 16-year-old male amateur player, who has practiced the modality for 3 years. The work was done at a public multiple sports court in the city of Ponta Grossa, state of Paraná. The photos and videos obtained have the authorization given by the individual who participated in them, according to their distribution for free and for educational purposes. The introductory voice-over the presentation, credits and each fundamental skill was performed by the researcher himself.

Final asserts

The result of this investigation allows to conclude that the sporting practice of handball awakens interest of any sporting practice in children. However, the lack of capacity of professionals and the lack of divulgation of this sport causes a type of rejection of handball. Such effect can be modified with the mobilization of professionals in the physical education area in a way to expand this sporting practice, enabling the correct and pleasuring performance of handball.

Another question that must be a highlight is the easiness of learning handball, which certainly does not have complex elements in its initial phase, being limited only by the excessive attractiveness of other sports, which are habitually more valued in our culture. Therefore, it is reasonable to interpret that such teaching method becomes attractive for their respective spectators, enabling a greater popularization of handball among children.

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HANDTUTOR: AN EDUCATIONAL MULTIMEDIA SOFTWARE TO AID THE TEACHING OF HANDBALL FUNDAMENTAL SKILLS

ABSTRACT

It's widely known that soccer represents a sports modality that dominates both amateur and professional sports in Brazil and makes children show less interest in other modalities. The current study aims at providing the opportunity of learning the fundamental technical gestures for the practice of handball through the HandTutor software. To do so, theoretical underpinnings were used from the existent bibliography as well as the researcher's previous theoretical knowledge on the subject. The final result of this study allows us to come to the conclusion that the learning of handball is, contrary to popular belief, as simple as other sports modalities which in turn is threatened due to the lack of preparation of the professionals who work in the area as well as the lack of knowledge of such modality. Through this software, we hope to show what handball is and also to make this sports practice more popular among the others.

KEYWORDS: handball, sports initiation, information technology, means of communication.

HANDTUTOR : UN LOGICIEL ÉDUCATIF MULTIMIDIA POUR L'ENSEIGNEMENT DES BASES DU HANDBALL

RESUME

Le football représente la modalité sportive qui domine le sport amateur et professionnel au Brésil. Cette domination provoque l'oubli des autres modalités sportives, et un désintérêt de la part des enfants pour les autres sports. Cette étude a comme objectif rendre attractif l'apprentissage moteur des gestes techniques de base de la pratique du handball à travers le logiciel HandTutor. Pour cela, nous avons fait une recherche bibliographique et nous avons utilisé la connaissance théorique préalable du chercheur. Le résultat final de cette étude nous permet de conclure que l'apprentissage du handball est aussi simple que celui des autres modalités sportives mais que les qualifications professsionelles des enseignants sont insuffisantes et la divulgation de ce sport est très faible. Nous espérons à travers ce logiciel fournir une plus ample divulgation du handball et créer une base pour la popularisation de cette pratique sportive.

MOTS-CLES: handball, initiation sportive, technologie de l´information, moyens de communication.

HANDTUTOR: UN SOFTWARE EDUCATIVO MULTIMEDIA PARA AUXILIO EN LA ENSEÑANZA DE LOS FUNDAMENTOS DEL BALONMANO

RESUMEN

Se sabe que el fútbol representa la modalidad deportiva que domina el deporte amador y profesional en Brasil, causando en ciertas ocasiones el olvido de las demás modalidades deportivas, resultando en el desinterés por parte de los niños en practicar otras modalidades. El presente estudio posee como objetivo, propiciar la oportunidad del aprendizaje motora de los gestos técnicos fundamentales para la práctica del balonmano, a través del software HandTutor. Para tanto, se utilizó una fundamentación desde material bibliográfico existente, bien como el conocimiento teórico previo del pesquisidor. El resultado final de este estudio nos permite concluir que, al revés de lo que pueda parecer, el aprendizaje del balonmano es tan simple como los demás deportes, qué por su vez es comprometida debido a la falta de capacitación de los profesionales del área, bien como la falta de divulgación del deporte. Se espera a través de este software, proporcionar una divulgación del balonmano, como también ofrecer subsidios para la popularización de esta práctica deportiva.

PALABRAS-LLAVE: balonmano, iniciación deportiva, tecnología de la información, medios de comunicación.

HANDTUTOR: UM SOFTWARE EDUCATIVO MULTIMíDIA PARA AUXÍLIO NO ENSINO DOS FUNDAMENTOS DO HANDEBOL

RESUMO

É sabido que o futebol representa a modalidade esportiva que domina o esporte amador e profissional no Brasil, causando em certas ocasiões o esquecimento das demais modalidades esportivas, resultando no desinteresse por parte das crianças em praticar outras modalidades. O presente estudo possui como objetivo, propiciar a oportunidade da aprendizagem motora dos gestos técnicos fundamentais para a prática do handebol, através do software HandTutor. Para tanto, utilizou-se uma fundamentação a partir de material bibliográfico existente, bem como o conhecimento teórico prévio do pesquisador. O resultado final deste estudo nos permite concluir que, ao contrário do que pode parecer, a aprendizagem do handebol é tão simples quanto as demais modalidades desportivas, o que por sua vez é comprometida devido à falta de capacitação dos profissionais da área, bem como a falta de divulgação do desporto. Espera-se através deste software, proporcionar uma divulgação do handebol, como também oferecer subsídios para a popularização desta prática desportiva.

PALAVRAS-CHAVE: handebol, iniciação desportiva, tecnologia da informação, meios de comunicação.