198 - ELABORATION AND REPRODUCIBILITY OF A QUESTIONNAIRE FOR SELF-EFFICACY METACOGNITIVE ATHLETES FOR BEGINNERS IN COLLECTIVE MODES

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1.INTRODUCTION

Flavell was one of the first to write about what is known as metacognition (Anselmé, 2003). The author of this work was limited in the research on the processes related to metamemory or more precisely the "... set of ideas and feelings about the memory "(Flavell, 1979). The results arising from this preamble did touch on new concepts about the functioning of the human mind. In 1979, there is one of the first concepts for the topic of metacognition:

> Metacognition refers to knowledge that a person has their own cognitive processes, their products and anything related to them, for example, the relevant properties of the learning information or data. [...] Also refers among other things enables the assessment, regulation and organization of these processes in terms of cognitive objects or data on which they are traveling, often to achieve a goal or objective case (FLAVELL 1979, p.23, apud NOEL, 1996).

Initially, the scarce work on metacognition and took up only the area of pedagogy and issues relating to the difficulty students had in solving mathematical problems and reading. Later, in recent decades, new concepts were incorporated into the study of metacognition and new areas have appropriated a body of knowledge already structured on the subject, in order to benefit from such studies. One such area was the physical education, more specifically, in sports training.

The first studies were related to the analysis of metacognitive knowledge in sports, such as chess and basketball (VASCONCELLOS, 2005), soccer (ALBINO, 2003) and volleyball (AMARAL, 2004). Considering the results of these studies, little doubt can be raised about the existence of a clear relationship between the metacognitive competence and success in a motor task.

In sports, it is known that the performance comes not only from the physical work itself, but depends on a whole mental preparation for the individual to reach the balance needed to succeed (MACHADO, 2006). The models now exposed as ratify the Albino (2003), about the need to focus on the teaching content relevant to both physical and technical preparation, and the related aspects of the tactics of the game itself, considering the latter as components mental processing of intellectual actions related to them.

Communicating in the same thought Vasconcellos (2005), we believe that this is "... an organic condition desirable for every athlete, "and therefore, should be included as contribution for methods aimed at a good sporting performance.

However, we realize that the empirical investigation of metacognitive activity has been suffering from a lack of theoretical consensus as well as lack of validation measures (GRENDENE, 2007). The incipient presence of reliable data on the subject, made, to go to investigate the bibliography to speak of tools and metacognitive assessments. In this review, we observed that the growing interest in metacognitive phenomenon contrasts with the difficulty of measuring it, and that the search for an instrument to respect the concept of metacognition is necessary.

When it comes to sports, Albino (2003) in their study: "Metacognition and hemisphericity in young athletes: a direction for teaching pedagogy of sport" has an instrument called "Form Note Metacognitive. This instrument became a reference for other work (VASCONCELLOS, 2005, SILVA, 1999, AMARAL, 2004), however, stands as the only alternative in this.

From the description of the problem carried over to this introduction, which was characterized as a literature review, it became important to develop an instrument, which would serve as a parameter for coaches who deal with athletes of basic categories.

To submit to such development, the strategy used was the self-efficacy. According to Bandura (1982), self-efficacy consists of images of what we ourselves think we are, what we think we can achieve what we think others think of us and also would like to be. In addition, self-efficacy or metacognitive metacognitive beliefs can be seen with a summary of how each can be seen interacting with others through activities of a reflective and strategic in most of the time (emphasis added).

The study proposed here refers to the creation of an easily applicable test by technicians, in order to investigate psychological constructs of higher order (metacognition and self-efficacy) and individual and group differences in novice athletes.

2. REVIEW

The observation of current teaching practice in the teaching of sports in general makes clear a marked tendency to focus on more technical development of content to be taught, than for cognitive factors relating to the game itself. This fact has been corroborated by several authors (TEODORESCU, 1984; BAYLE & ALMOND, 1983, STARK, 1987) of current cognitive emphasizing the importance of carrying out less technical methodologies that permeate the usual practice in this area.

However, it is clear that the success of young people in sport depends largely on the teaching-learning, training specific cognitive mode in question, the coaches aware of their mediating role in the process, among others. In any case, the genetic potential, training and pedagogically systematic diversification of activities are factors that can directly influence the acquisition and maintenance of intelligent habits in sport, enabling them to better results.

In the tactical training, seek to develop more complex systems, both offensive and defensively, through the strategies. On this subject, we turn to studies of Garganta (2000), in which the author highlights some important factors for the training of tactics in collective sports games: the need to examine the structure and internal dynamics of each game sports collective, to configure its specificity, and also determine the power lines that allow the mold training in accordance with the competition. For this analysis, metacognition acts as an essential contribution to the awareness and subsequent monitoring of the actions of cognitive order.

This relevance is attributed to the setting of the previous principles, actions and rules of game management that

guided the direction of training and to regulate the competition. Another relevant factor is the increasing emphasis on the cognitive development of the performance of athletes. The relevance of cognitive occurs in that the habits of each player's turn to read the game, thus avoiding stereotypical moves that prevent creativity in tactical actions.

In collective sports games, it is important to develop the players, skills that transcend the actual implementation, focusing their cognitive abilities in the principles governing the actions the game, or communication among the players, getting excellent placements in the empty spaces and perception of the early actions of opponents.

All the above comes down before the great relationship between the development of mental functions and motor performance (ALBINO, 2003), therefore the development of new methods and tools of analysis appear to facilitate search and drive new lines of work.

In our view, the teacher / coach basis, the role it occupies in the educational process, is required to meet such theories and, if convinced by them, you must enter them in a systematic way, in the teaching-learning adapted to the level of their students / athletes.

Given the circumstances, to encourage metacognition, the teacher has every advantage to increase the number of open situations creativity, solve complex problems of the game, during which the subject is led to choose among alternatives and anticipate the consequences of these choices. Only this kind of activity can give the beginner, especially if you have difficulties, the opportunity to drive in a manner reflected their own cognitive operations.

3. METHODOLOGY PRELIMINARY

3.1 PROCEDURES

When you start a more detailed discussion on the subject, it should be noted that the study now exposed, I feel just the verification of the psychometric properties of the proposed instrument for its validity, both by excluding the possibility of intervention and analysis of data collected, to draw the profile of metacognitive self-efficacy of participating in the test-retest reliability, a fact that would be linked to a second phase of studies.

According Sampieri et al. (1991) the first step towards the construction of research instruments is conducting a review of the literature of the subject being studied and the verification of other instruments that have measured the same variables they intend to measure.

We used a search of electronic databases LILACS - Latin American and Caribbean Health Sciences, and MEDLINE (1997-2009) - International Literature of Health, as well as in bibliographic staff. We defined the descriptors in Portuguese and English of the following words: metacognition, self-efficacy, psychometry, psychometrics tests, questionnaires, validity and reliability / reproducibility of results; and their combinations.

After the removal of the questionnaires used to collect information involving studies in the area of metacognition and self-efficacy, we tried to select parts of the instruments that they would compose each dimension of the questionnaire and preparation of the parties to the proposed survey.

Regarding the aspect of measuring, we opted for a questionnaire with questions such as closed and Likert-type scale of three points. The closed questions are pretty straightforward and require less effort on the part of those to whom it is applied (GIL, 2008). Since the Likert scale presents a series of three propositions, of which the respondent must select only one, may be: "never", "sometimes" or "always." At the end of a quotation is made of responses ranging from consecutively: 0 = never, sometimes = +1, +2 = always.

For the preparation of instruments of this study, we used the instrument entitled "Survey of Metacognitive Self-Efficacy for Athletes - QAEMA, which consisted of a table with 16 closed questions and for each of three areas related to their responses. For each answer the research subject should respond by codes (never, sometimes or always). The scores of the QAEMA were obtained by the sum of the results for each item. In each item, stated as a question, the score could range from zero to two points.

Therefore, sixteen alternatives should be scored. Understanding of the statement was part of the questionnaire, so that an unanswered question or two alternatives was scored marked with zero. The varieties of scores met the following criteria: score of zero for code 1 (never), scores for a code 2 (sometimes) and two scores to code 3 (always). The questions were answered in the form of unique alternative. So we would have a minimum score of 0 (zero) and maximum of 32 (thirty-two).

In this version of QAEMA, to assess the level of self-metacognitive awareness we used the following classifications: absent (score = 0), very low activity (score = 1 to 7), low activity (score = 8 to 15), medium (score = 16 to 23), high activity (score = 24 to 31); high metacognitive activity (score 32).

Thus, the 16 items were presented by construct, ie, grouped by subject block. The theoretical model used for the preparation of the issues sat in studies of Flavell (1979), and its categories of metacognitive knowledge: (a) personal (self-knowledge), (b) inter-individual (interactions), (c) in variable of the task and (d) the level of strategy.

3.2 VALIDATION COMMISSION OF JUDGES

According to the literature, content validation (also known as face or apparent) is based on "common sense", there is the wording of the questions posed and whether they have form and vocabulary appropriate for the target audience be investigated. In this sense, Nachmias and Nachmias (1996, p.165-166) believe that this kind of life "... is based on the assessment of the researcher on the validity of the measuring instrument. It is advisable that such verification is performed by a jury of experts in the field to be searched.

Given this assumption, to verify the validation of content, were sent to three experts on the subject, a letter explaining the research objectives and an evaluative questionnaire in order that they should issue its opinion on the clarity, applicability and efficiency of test measure the metacognitive self-efficacy, and then the responses were tabulated. The content analysis of the test was conducted through the assessment of your items to judge the relevance of these to the construct studied. A match of at least 80% of the experts was the criterion used for retention of items. Reliability was asserted by the high percentage of registered agreements, most (14 items) above permissible limits of 80%.

Two questions were below this margin of 80%, being considered inapplicable in the evaluation about the population of the study and were discarded or upgraded later. In light of the foregoing, accepted in most of the suggestions posited by the committee of experts, performing the necessary reformulation of the original instrument. Finally, this initial qualitative validation was completed with the pre-testing of the instrument previously designed.

3.3 RESEARCH PILOT

The literature recommends that pre-tests are performed in individuals with characteristics similar to the population to be investigated. This preliminary test should be performed personally, that is, it is essential the presence of the researcher, as part

of this "early" a further discussion of the issues with the respondents. It is therefore critical that researchers be alert to all the reactions and comments of the respondents (before, during and after), and are also recorded comments, criticisms and suggestions of the researcher (difficult, ambiguous points, etc).

Trying to operationalize these concepts, we refer to the pilot study conducted in August 2009, during the School Games of Maranhão - JEM'S 2009. The target competition annually brings together athletes from 11 to 14 years in eight (8) sports: soccer, volleyball, basketball, handball, athletics, judo, chess and swimming. The environment for the research was the city of São Luís - MA.

Data collection was performed by the researcher and had the sample (n = 120), athletes with a mean age of 12 years, both sexes, participants in collective arrangements. The type of sampling was chosen as the non-probabilistic. The model questionnaire were distributed at times that preceded the fighting / start / evidence of the investigation. After application, asked for feedback on the participants' understanding of items and appropriateness of the content of the questions.

4. RESULTS

Through the analysis of semantic and conceptual clarity, it was found that the understanding of some items did not meet the desired concepts. For example, in item 15 (fifteen), was asked, "challenges the professor," meaning whether the athletes during training, were questioning the teacher or challenged to perform tasks in different ways, showing in essence, the control aware of the process and strategies related to the task.

However, a large number of athletes reported that no one would hit, because, from their perspective, this attitude would be "an affront to the authority of his coach." Thus, this final item was withdrawn.

Another problem reported in the pilot research was about the lack of examples to facilitate a better understanding of each issue. Following the suggestion of several participants, were included examples in the more complex issues. Additionally, it was found that the structure of the questionnaire with two response alternatives, the first, rarely / never last and often / always presupposed the presence of multiple interpretations and thus, possible distortions. Moreover, the large number of questions (16) factor was perceived as disappointing and boring.

Thus, the final version adopted a small number of items (10), and the responses of three alternative simple choice (Likert scale of 3 points), with only one option for each (never / sometimes / always).

Finally, all these limitations motivated the development of a second version of the original questionnaire. In reality, this new version was called Questionnaire Metacognitive Self-efficacy for Beginners athletes in team sport - QAEMA / IMC.

4. CONCLUSIONS AND RECOMMENDATIONS

A pertinent question is whether the instrument adequately measure metacognition perceived or reflected only the desire to dominate the respondents themselves. This question, among others, points to the continuous refinement and deepening of the instrument and also for comparison with a conceptual model that can reliably assess the actual level of metacognitive research subjects.

In a perspective of future studies, the next step in the development of Qaem / IMC refers to the verification of its psychometric properties across studies of trust. Thus, it is a posteriori, check both the internal consistency by Cronbach's alpha as the consistency or stability of responses over time (test-retest).

With this set of studies we intend not only to develop a psychometrically valid instrument, but also to confirm a theory that today it needs work using the metacognitive process as the center of the experimental analysis. In practice, the identification of the level of metacognitive awareness can assist in implementing new teaching approaches, strategies in creating a tactic in search of basic psychological processes and the inspiration of new technologies to increase the motor performance.

ABSTRACT

Data from the literature tend to show a great relationship between the development of mental functions and motor performance in various sports. Therefore, the development of new methods and tools of analysis appears to facilitate the search and drive new lines of work. In the case of the categories of basic or beginners, there is a constant demand by athletes smarter tactically or know "read" the game quickly and effectively. Metacognition becomes essential for this purpose as it covers the cognitive processes of higher order, or more precisely the "thinking about thinking." In the literature, we observed that the growing interest in metacognitive phenomenon contrasts with the difficulty of measuring it, and that the search for an instrument to respect the concept of metacognition is necessary. To this end, the sheet Note Metacognitive Knowledge (ALBINO, 2003) was initially reviewed. This initial analysis thus resulted in a version called Questionnaire Metacognitive Self-Efficacy for Beginners athletes in team sport (QAEMA -IMC). In a pilot study, this version was administered to athletes (n = 120) of both sexes, practice sports conferences, at the School of Maranhão - JEM'S 2009. The difficulties reported by participants led to the development of a second version of the original questionnaire. Finally, looking ahead to the reproducibility of the instrument in relation to content validity, it passed the examination of three experts. Reproducibility was asserted by the high percentage of registered agreements, most of the above limits of 80%.

KEYWORDS: reproducibility of the instrument, metacognition, self-efficacy.

RÉSUMÉ

Données de la littérature tend à montrer une très bonne relation entre le développement des fonctions mentales et les performances motrices dans différents sports. Par conséquent, le développement de nouvelles méthodes et outils d'analyse semble faciliter la recherche et lecteur de nouvelles lignes de travail. Dans le cas des catégories de base ou les débutants, il existe une demande constante de la part des athlètes plus intelligent sur le plan tactique ou de savoir «lire» le jeu rapidement et efficacement. Métacognition devient essentiel à cet effet car elle couvre les processus cognitifs d'ordre supérieur, ou plus précisément la "pensée sur la pensée». Dans la littérature, nous avons observé que l'intérêt croissant pour métacognitives phénomène contraste avec la difficulté de le mesurer, et que la recherche d'un instrument de respecter le concept de la métacognition est nécessaire. À cette fin, la note feuille de connaissances métacognitives (ALBINO, 2003) a d'abord été examinés. Cette première analyse a donc donné lieu à une version appelée Questionnaire d'auto-efficacité métacognitives pour les athlètes débutants dans le sport d'équipe (QAEMA -IMC). Dans une étude pilote, cette version a été administré aux athlètes (n = 120) des deux sexes, les sports conférences pratique, au Maranhão School - JEM 2009. Les difficultés signalées par les participants a conduit à l'élaboration d'une deuxième version du questionnaire original. Enfin, la perspective de la reproductibilité de l'instrument par rapport à la validité du contenu, il a réussi l'examen de trois experts. Reproductibilité a été assurée par le pourcentage élevé d'accords enregistrés, la plupart des seuils au-delà de 80%.

MOTS-CLÉS: la reproductibilité de l'instrument, la métacognition, l'auto-efficacité.

RESUMEN

Datos de la literatura tienden a mostrar una gran relación entre el desarrollo de las funciones mentales y el rendimiento del motor en diversos deportes. Por lo tanto, el desarrollo de nuevos métodos y herramientas de análisis parece facilitar la búsqueda y la unidad de nuevas líneas de trabajo. En el caso de las categorías de base o de los principiantes, hay una demanda constante por parte de los atletas más inteligentes tácticamente, o saber "leer" el juego de forma rápida y eficaz. La metacognición se convierte en esencial para este propósito, ya que cubre los procesos cognitivos de orden superior, o más precisamente el "pensamiento sobre el pensamiento." En la literatura, se observó que el creciente interés en el fenómeno de metacognitivas contrasta con la dificultad de medir, y que la búsqueda de un instrumento para respetar el concepto de la metacognición es necesario. Con este fin, la hoja de notas Conocimiento metacognitivo (Albino, 2003) fue examinado inicialmente. Este análisis inicial de lo que resultó en una versión llamada Cuestionario de Auto-metacognitivo de eficacia de los atletas principiantes en el deporte de equipo (QAEMA -IMC). En un estudio piloto, esta versión se administró a los atletas (n = 120) de ambos sexos, conferencias de la práctica de deportes, en los Juegos de Escuelas de Maranhão - Jem 2009. Las dificultades señaladas por los participantes llevaron a la elaboración de una segunda versión del cuestionario original. Por último, de cara a la reproducibilidad del instrumento en relación con la validez de contenido, pasó el examen de tres expertos. Reproducibilidad está garantizada por el alto porcentaje de acuerdos registrados, la mayoría de los límites anteriores del 80%.

PALABRAS CLAVE: reproducibilidad del instrumento, la metacognición, la auto-eficacia.

RESUMO

Dados da literatura especializada tendem a revelar a grande relação existente entre o desenvolvimento das funções mentais e a performance motora nas mais variadas modalidades esportivas. Por conseguinte, o desenvolvimento de novos métodos e instrumentos de análise surge para facilitar a pesquisa e orientar novas diretrizes de trabalho. No caso das categorias de base ou iniciantes, há uma exigência constante por atletas “inteligentes” taticamente ou que saibam “ler” o jogo de maneira rápida e eficaz. A metacognição torna-se fundamental para tal intento, já que abrange processos cognitivos de ordem superior, ou mais precisamente o “pensar sobre o pensar”. Na revisão bibliográfica, foi possível verificar que o interesse crescente no fenômeno metacognitivo contrasta com a dificuldade de mensurá-lo e que a busca de um instrumento capaz de respeitar o conceito de metacognição se faz necessário. Para tal, a Ficha de Observação de Conhecimento Metacognitivo (ALBINO, 2003) foi inicialmente revisada. Esta análise inicial resultou assim, em uma versão, denominada Questionário de Auto-Eficácia Metacognitiva para Atletas Iniciantes em Modalidades Coletivas (QAEMA-IMC). Em um estudo piloto, esta versão foi aplicada a atletas (n=120) de ambos os sexos, praticantes de modalidades coletivas, nos Jogos Escolares Maranhenses – JEM'S 2009. As dificuldades relatadas pelos participantes motivaram a elaboração de uma segunda versão do questionário original. Por fim, perspectivando a reprodutibilidade de tal instrumento, em relação à validade de conteúdo, este passou pela análise de três especialistas no assunto. A reprodutibilidade foi assegurada pela elevada percentagem de acordos registrados, a maioria acima dos valores limites de 80%.

PALAVRAS-CHAVE: reprodutibilidade de instrumento, metacognição, auto-eficácia.

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