



PERCEPTION AND SPORTS PROGRAMMING IN THE STUDENTS OF THE SANTA ELENA PENINSULA STATE UNIVERSITY

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Abstract

The objective of this research has been the analysis of the effectiveness of sports performance through a program, based on the assimilation of contents from a previous diagnosis. The almost-experimental design was applied like a pre- during program. Eighty-two students from Basic Education Career of UPSE have participated in this study, developed from their homes during pandemic period using 55 training sessions. In a first phase, the adaptations of times, repetitions, weights and visual, postural and technical movements of the response time to peripheral stimuli, teachers and students evaluated stereopsis and focused selective attention during sports practice that are specified in the daily results of each WOD program. In a second phase of intervention, the progressive increase in the load is identified according to a previous diagnosis that allowed the entry of the programming from the first session. Distributed as follows: Adaptive sessions, sessions with increased load, and sessions with increases in time and repetitions, restoration sessions, sessions of the continuity of progressive increase. In addition, both students and their trainer continued evaluating each session for the mentioned progressive increase in load seen from a macro training cycle. The program continues with other more vulnerable groups. The results indicate that the training program provides statistically

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significant improvements in most of the evaluated skills (times, repetitions, weights, visual, postural and technical movements), thus enhancing sports performance.

Keywords: Attention, sports, students, performance, perception.

INTRODUCTION

At the international level, the accentuated interest in the perceptual-cognitive structure in athletes has been observed within the context of sports performance, as well as the selection of information, attention, the information process, the technical-tactical part that are decisive for the maximum performance of the athlete, it is important to identify these issues and highlight them in the national context and/or their relationship with parameters that allow future requests through standard regulations.

All sports have differences between broad features, whether collective or individual, that allows you to focus your visual capacity within sports activity. This will depend on many external factors that the athlete has for their respective vision in the activity.

It has been taken into account that the elite athlete depends on those perceptual-cognitive abilities such as physical and motor capacities (Williams, Grant, & Williams, 1999). Peripheral vision, estimation of movement speed, visual reaction time, among many other actions, will be implicit in the perceptual-cognitive part and will provide adequate motor responses (Erickson, 2007).

There are investigations focused on Perceptual-Cognitive Training with the Neurotracker 3D-MOT to enhance Performance in three sports modalities whose results are satisfactory and their evidence allows it to be focused on a laboratory. The current study is related for the first time with the literature from the perceptual-cognitive area, which will later allow it to be focused on the laboratory and thus measure training and make a comparative study with the Neurotracker 3D-MOT, with the current research differs from a laboratory work towards a more field work taking several theoretical documentations researched about the perceptual-cognitive at an international level.

The Perception and sports programming within this study, is used as an independent variable, with the change, contribution, transformation falling on the dependent variable directing the students of the Santa Elena Peninsula State University. Faced with the urgent need to provide new systems and/or elements in sports training from practice, in order to enhance sports performance online in students of the Basic Education career, we have developed the following work with the objective of determining if the perception and sports programming influences the students of the Peninsula State University of Santa Elena, in time of covid-19 pandemic and, very especially, if there is a transfer to sports performance.

Numerous investigations question whether training and visual skills are transferred to sports performance, the debate and lack of consensus among researchers directed to these areas should be

highlighted. Several authors define the enhancement of visual skills that are specifically related to the different sports modalities and that these can have at the same time an increase in sports performance, as manifested in their academic works (Antúnez, 2003) (Fradua, 1993); Quevedo & Solé, 1995; (Vivas & Hellín, 2007).

Other researchers question the possibility of any type of relationship between visual training and sports training, as they describe it in their research on expert and novice athletes, concluding in their research that these skills, as well as peripheral vision and binocular function, are totally differentiated between expert, novice and sedentary athletes, highlighting that said information collected and captured is a process of the cognitive level of each individual. (Abernethy, 1986); (Garland & Barry, 1990); (Williams, Davids, Burwitz, & Williams, 1994); (Williams, Grant, & Williams, 1999).

In the same way, (Williams, Burwitz, Davids, & Williams, 1992), he calls visual hardware the skills little worked on in some sports disciplines at the same time they have optometric instruments and techniques, emphasizing standardized instruments and functions including software that It allows to have an analysis in the selection, coding, recovery of certain visual data looking for strategies for the improvement of attention, anticipation, visual memory and visualization.

From the approach of other authors (Voss, Kramer, Prakash, Roberts, & Basak, 2009); (Williams, Grant, & Williams, 1999), describe the evaluation of these abilities as an increasingly complicated mechanism which requires unifying efforts to be able to design scientific methods, valid and reliable objectives contributing to modern eye tracker systems.

Importance of the Problem

Taking into account some considerations, it could be said that there are some hardware deficiencies in the application of this type of research and that this may constitute a limitation in sports performance (Ferreira, Julio, 2002). Other authors state with respect to the use of software the distinction between experts, novices (Abernethy, 1986; Ludeke & Ferreira, 2003).

These researchers indoctrinate that athlete are skilled at being able to select and extract information and carry it in a relevant way; organizing it, interpreting it in a much faster and more efficient way, sustaining that these cognitive aspects will determine the differences in sports performance and potentiate those that interest them (Ferreira, Julio, 2002).

Currently in the improvement of sports performance, the techniques developed in high-level sports have evolved in recent years, taking it in a sophisticated way in training; physical, tactical-technical and psychological. However, visual and perceptual-cognitive function, have not yet reached the required contributions of Antúnez, Argudo, Ruiz, Arias and García (2010), Adolphe, Vickers and Laplante (1997), or Williams and Grant (1999) who, for the most part, use spatial and temporal occlusion paradigms supported by audiovisual technology which leaves us the gap for future research.

All these investigations totally mark the difference between several authors that are cited above (Garland & Barry, 1990; Ferreira, 2002; Abernethy, 1986; Ludeke & Ferreira, 2003), where they defend that the abilities belonging to visual software provide the athlete with an important advantage over the others.

Before the urgent need to contribute to the new advances in sports training and at the same time in order to enhance sports performance, we have decided to develop the following work with the aim of determining if the training of perceptual-cognitive skills with sports programming, influences visual system function, selective attention, and transfer, to athletic performance.

METHODOLOGY

In the present research work, a quasi-experimental design is used pre-during view from 2 phases. The effectiveness of the training program has been assessed from the comparisons of the results in each of the WOD used and at the same time through a diagnosis before starting the activity, which has allowed the analysis of time and effectiveness of the training program. valued daily.

Each student has been able to identify; adaptive sessions, sessions with increased load, sessions with increases in times and repetitions, restoration sessions, sessions of the continuity of the progressive increase during sports practice. The data is recorded in the memory book in order to identify the evolution of the historical record used in each WOD. Thus, the independent variable falls on Perception and programming and the dependent variable was focused on the students.

We value that the sample reached was a total of 82 students belonging to the Faculty of Education Sciences and Languages, which participated in the research; 35 men and 40 women, all the activities were carried out inside the house in times of the Covid-19 Pandemic, looking for materials that were around them to achieve the objective achieved in each of the WODs.

Of 100% of the student body, it was identified that there was 3% that carried out physical activity, therefore the influence of the training was very marked and at the same time differentiated in the movements, repetition times, restoration in each of the exercises, however 90% of students were unaware of movements, times, repetitions, progressive increase, restoration sessions, which was marked and affected in the different aspects of sports preparation (physical, technical-tactical and psychological).

This would support the contributions of the aforementioned authors from the theory and methodology (Bompa, 1999); as well as in the control of factors and training problems focused on scientific foundations (Brogli, 1991); (Costs, 1972); (Diachkov, 1961).

The essence of sports training programming, seen from sports training methods, has allowed the progressive increase of the load. This is manifested in the validation by experts in which the participating doctors answered an online questionnaire made up of ten questions, taking at the same time a random sample of the WOD and the results. Seeking the purpose of obtaining elements that

allow the experience of validating the content of instruments, we collected the opinions of academics who have participated in various investigations from sports training.

The data was obtained through a questionnaire applied online to different academics; The participants were ten doctors with a sports training degree from four higher education institutions:

Autonomous University of Nuevo León, Mexico, National University of Lomas de Zamora, Manuel Fajardo University of Physical Culture; His work seniority ranges between sixteen and thirty-one years. The work experience of the doctors focuses on research and university teaching, and their training focuses on areas such as sports performance research, higher education, sports technology. (See figure 8).

In the memory book, it is possible to identify the achievement of the maximum sports results determined by the functional growth valued from the results and stimuli of the individual's natural environment towards a maximum manifestation of their motor skills, evolutionary motor skills, Intellectual skills, among others, achieved in the programming formation process.

Materials

In carrying out the exploration of visual, postural and technical movements, they remain in response to peripheral stimuli where the students were able to use different implements that allowed them to adapt them in each of the exercises used. buckets, broomsticks, suitcases, books, dumbbells, homemade weights, small tires and even truck tires, among other household materials. In the YouTube links you can see the videos where each of the exercises, implements, adaptations and daily results are described.

To link the videos, the memory book was used, which is found on the Moodle page of the Basic Education Career, Physical Education subject. In the memory book you can see the varied nature of sports training in the use of means that allow influencing the body of our students, at the same time, diversity has allowed to seek and develop the character of the discipline in sports practice.

The means that were used focus specifically on the general preparation exercise from the beginning, emphasizing the special preparation exercise. This imposes the use of training from the macro, meso and micro taken to the training unit.

Training and improvement are implicit from the function; macro meso, micro and training unit, the same that has been patented by other authors since the main problems of the theory of functional systems (Anojin, 1973); (Bachvarov, 1982); looking for the diversity of training, however (Bernstein, 1947) supports the Training of Movements, (Di Prampero, 1988) describes the energetic aspects of human performance.

On the other hand, the computer program used is Microsoft excel 2010, which allowed us to identify from the percentages, seen in each macrocycle, mesocycle and microcycles described in each training wod. (See graph 6).

The visualization of videos one day before served to assess the responsiveness to peripheral stimuli, involving at the same time the central task of visual control, which allows students to visualize and execute them on the day of the activity. All the exercises were done from home.

With regard to performance control, controlled in the variables of visual concentration and peripheral vision, this will allow us to later use them from a clinical laboratory involving a central task of visual control as described (Quevedo, Cardona, Solé, & Bach, 2001).

Procedures

Before starting the programming of the training, each one of the activities was taken into account; repetitions, times, nomenclature of exercises through which they were going to go through during the 55 sessions. The debatable nature of the 55 sessions that were carried out in conjunction with the proposed objectives aimed at sport as well as the morpho-functional demands of the organism. The specificity of the activity structure; the way to guarantee the technical-material and financial part during the entire training practice. The methodological theoretical conceptions and experience that should be carried in the practice of physical activity were addressed.

Some fragmented primary notions were identified about a structure in the content of the training process and the influence of exogenous factors between "pandemic and the driving role of general physical preparation during the time of confinement. These great behavioral theories of physical preparation are addressed through once by (Marshall & Saffer, 1908).

Periodization of the training process addresses the essence of the periodic changes that occur within the structure and its content under the influence of the time of the training loads. The essence of the periodization of the programming will allow to produce a structure and content with its components; parts, types causing a basic structure of training process. We are in the presence of a unit-cyclical basic structure taking into account the model of the preparation of the elite rowing athlete in Bulgaria during 1996/1997 (Neykov, 1996).

Several aspects were taken into account in relation to the meso structure, of the training process where more specific aspects are found in the different mesocycles that characterize the average waves of the adaptive process in time, weight and repetitions. In the research process, mesocycles of different content duration are identified. Some of these mesocycles will be taken into account in the process of applying the sports training program in the students of the basic education career; basic mesocycle, stabilizing mesocycle, precompetitive mesocycle, and unloading mesocycle.

In the program it is possible to identify a microstructure of the training process seen from the daily training sessions focused on the magnitude of the load as well as the structure of the training microcycles intertwined from the basic structural unit that links all the activities in an organic unit. and that represents a fragment in the entire educational teaching process, it has an average duration between 4 to 10 days. The methodology in the preparation of the training microcycles allowed the

objective regularities of the adaptive process, expenditure, recovery, super recovery and return to the initial position.

Within the control of the training process, it allowed to measure the results described in the memory book and in the videos uploaded on their YouTube accounts, as part of the evidence of the sports program. The control and regulation of sports preparation has measurable parameters seen from the three levels; integral, complex and differential. We focus on three basic forms of control in the modern training process; operational control, current control, lid control.

In the operational control we observe the immediate action of the organism in relation to the reaction of the process of the training activity, from here a series of methodologies applied in natural conditions from home were used. Despite this effort to systematize theoretical and methodological knowledge, practical experience has made it possible to clarify the basic characteristics of great sport control (Fleishman, 1965); (Zatsiorsky, Y, & P, 1969); (Celicovsky, 1972); (Grosser, 1972).

It is important to mention that the progression of load control depends on the ability of the coach to enable their athletes to optimize training loads. The complexity of this problem is conditioned by the number of the external load variant. Taking into account the load that is emitted; complex, dynamic and self-regulating. It is necessary within the programming to carry out the respective classification of the training influences by magnitude, character and orientation.

In the memory book you can see the index of the functional load where the rate of the momentary reactions of the organism are controlled by the internal (functional) load; skeletal muscles, the organs of blood circulation and respiration, we can say that these great changes are related to great energy losses.

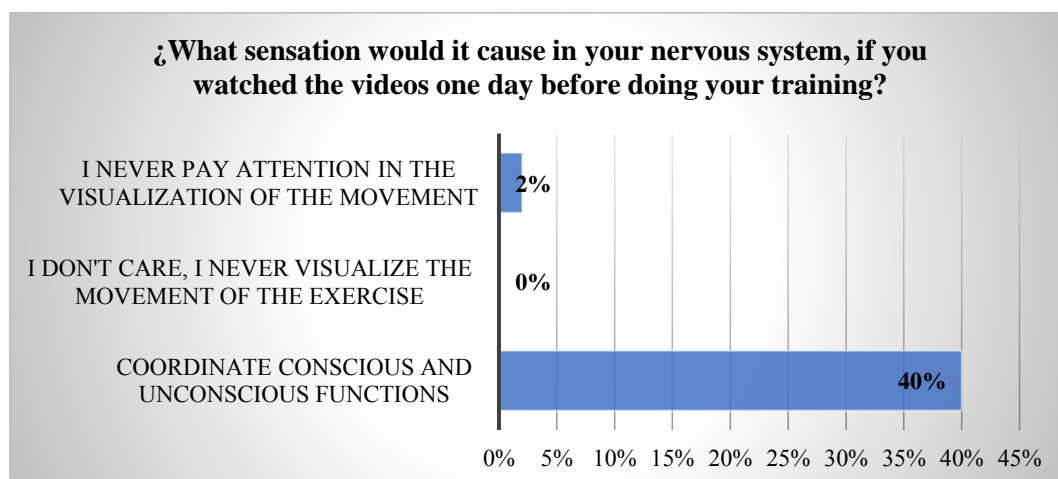
In each week a daily session is observed with a duration of 45 minutes to 50 minutes, the training program lasted 16 weeks composed of 55 sessions. The evaluations were continuous before, during and after each training, the same one that allowed to measure in time, repetitions and weights.

RESULTS

The survey was applied to students of the basic education career of the physical education signature; With this information, it is about inferring the actions generated by the perfection and sports programming in the students of the Faculty of Educational Sciences and Languages of the Santa Elena Peninsula State University.

Among the most representative results, it is highlighted that the function of the nervous system on the action of watching videos one day before exercises, 100% answered that it coordinates both conscious and unconscious functions.

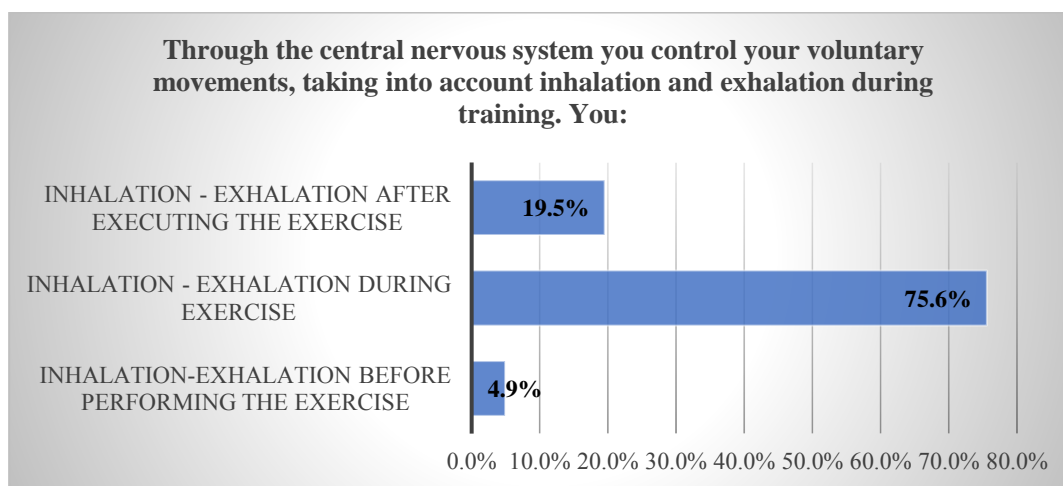
Graph 1. Function of the Nervous System viewing videos one day before the exercises.



Source: Paula Maritza, Ecuador, 2020

When asked about the role of the central nervous system in inhalation and exhalation, 75.6% reveal it during exercise, however 19.5% inhale and exhale after exercise, however 4% state that they do it before the exercise. In this scenario of doubts and answers, inhalation and exhalation during physical exercise stand out.

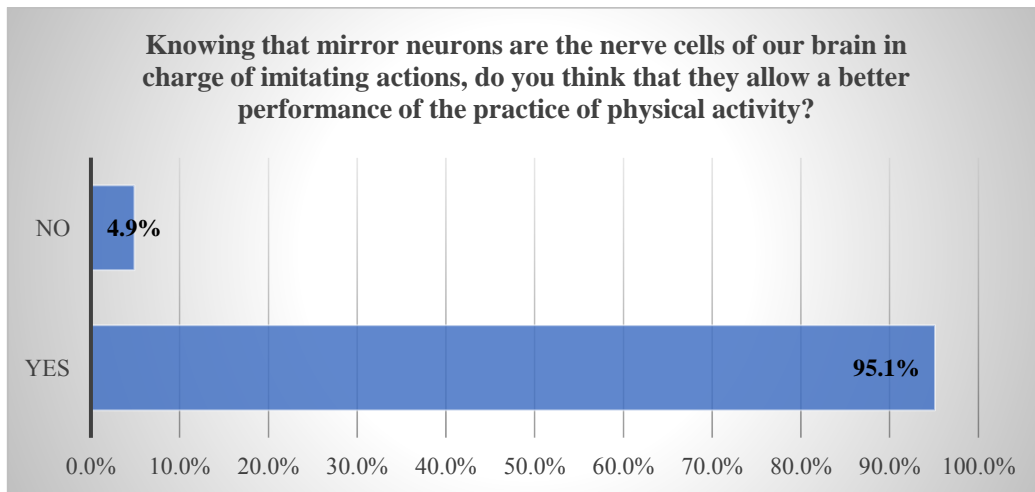
Graph 2. Function of the Central Nervous System in inhalation and exhalation.



Source: Paula Maritza, Ecuador, 2020

Asking about the mastery or knowledge of mirror neurons in the improvement of sports performance, it is identified that 95.1% do master this knowledge, however, 4.9% do not know about the practice of visualization that carries the function of mirror neurons. mirror.

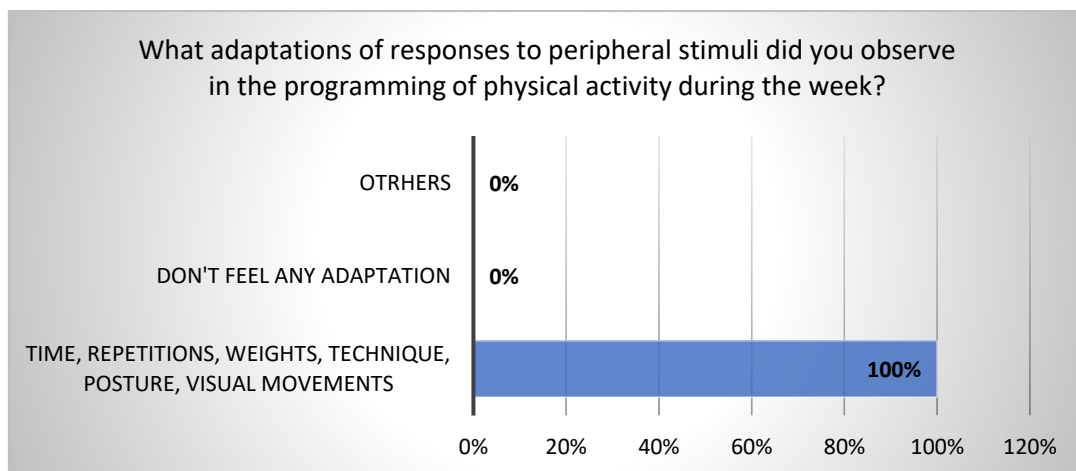
Graph 3. *Mirror neurons improves sports performance.*



Source: Paula Maritza, Ecuador, 2020

They were questioned about how the response to peripheral stimuli adapts to the weekly programming, here it is observed that 100% affirm that the response to peripheral stimuli was found during the programming in time, repetitions, weights and postural visual movements and technique. It should be noted that the search for peripheral stimuli through programming was pertinent because it is carried out on times, repetitions, visual, postural and technical movements.

Graph 4. *Adaptations to peripheral stimuli during programming.*



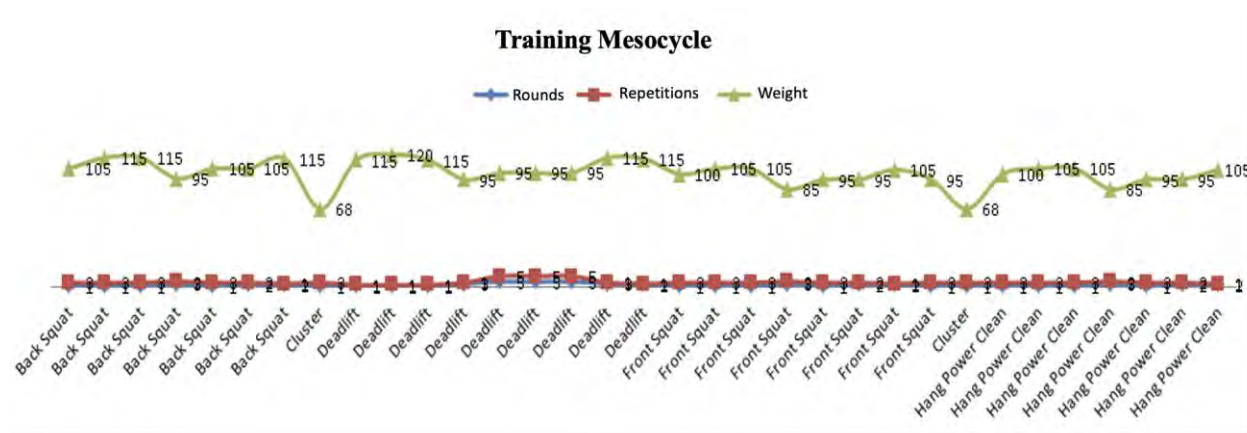
Source: Paula Maritza, Ecuador, 2020

Within the structure of the load, the development of the theory and practice of sport has been observed from a complex functional structure of components that are constantly changing on the fly in the preparation of the athlete. This graph identifies the optimal correlation between the components of a mesocycle in sports training, focused on the basic content of the coach's work.

This graph shows the magnitude of the functional load and its dosage during the training process. The improvement of the functional capacities of the organism allows in this graph to identify the increase of that external load, in the Magnitude, the character of orientation in that external load.

Within the quantitative volume, the work carried out in a session during a certain period of time is observed. The intensity is intensified by the degree of effort in each of the exercises; that is, the number of repetitions over a given time. Corroborated from the theory by several authors seen from the periodization of sports training. (Matveyev, 1965), (Platonov, 1998) (Volkov, A, & M, 1990) (Zhaliyazkov, 1986).

Graph 5. Programming seen from the individualized behavior of the loads



Source: Paula Maritza, Ecuador, 2020

Responding to the programming view of the sessions with increased load, sessions with increases in time and repetitions, restoration sessions, sessions of the continuity of the progressive increase, it is possible to observe components of the external load and functional effect that go in synonymous dependence. Due to the different adaptive possibilities of each system to assume and transform the movements seen over time, space and repetitions, the functional effect of the exercises practiced and observing the less practiced exercises allow us to distinguish the continuous process of the load.

You can see the different metabolic functions and the morpho structures seen from the macro, meso and micro depending on the training unit. This is also confirmed in his written works (Sarsania, 1991). The load with primordial a lactic influence can be observed, as well as the load with anaerobic glycolytic influence, load with mixed influence, aerobic-anaerobic, load with aerobic influence; load with anabolic influence. The systematization of training loads allows to raise the average of statistics of its magnitude, character and orientation.

Table 1. Choice of questions Validated by experts

Do you consider that visualizing the	Correct	Incorrect	Very	little
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movements allows the development of cognitive skills in the different sports disciplines?			agree
	10	0	0
Do you consider that programming is based on functions, time, repetitions and adaptations in physical practice?	Completely agree	I do not agree	Low level of programming
	10	0	0
From the expert position, what adaptations of responses to peripheral stimuli do you observe in the weekly schedule in the practice of physical activity.	Times, repetitions, weights, techniques, postures and visual movements	Times, repetitions and weights	Visual, postural and technical movements
	10	0	0

Source: Paula Maritza, Ecuador, 2020

Discussion

Several authors support the somatosensory sense for smooth motor functioning in so-called proprioception (sense of movement). Describing that the proprioceptors are found in the muscles as well as the joints and that they detect the positions, the movements, the strength of the extremities (Proske U, 2012). Recall that proprioceptive input to the brain is uniquely integrated into the vestibular system to then provide the brain with information about the internal state of the locomotor system and its proper spatial orientation.

It is evidenced by the publication in different scientific journals about specialized bibliography (Adolphe, Vickers, J, & Laplante, G, 1997); (Singer, et al., 1994). The same ones that evaluate and contrast the differences in perceptual-cognitive abilities where few works are found that investigate the effects of these types of training in improving sports performance (Antúnez, 2003); (Farrow, D & Abernethy, B, 2002). At the same time, capabilities are studied as well as those very diverse methods that facilitate the contextualization and establishment of relationships with the results in our program. For this reason, the discussion is based basically on the data obtained during the present investigation. Visual ability has been observed in this study that allows us to identify that almost all abilities have been progressively increasing and especially significant in what corresponds to movements. This allows the support of contributions from various authors such as: (Antúnez A., 2003); (Fradua, 1993); (Quevedo & Sole, 1995); (Vivas & Hellin, 2007).

These authors defend the improvement of visual skills through sports training, which in turn allows integrating joint elements with their own actions, seen from each sport. The programming of sports training seen in this work lies in the progressive increase of the load described from a macro, meso

and micro and training unit. Where training is observed as a load regulation process contributing to the improvement of visual and physical skills.

Other authors (Lasky & Lasky, 1990); (McKee & Westheimer, 1978); (Quevedo & Sole, 1995). they have seen statistically enhanced perfection, in the demonstration of this visual ability in which it improves through the training technique. Possibly the laboratory sample could be replicated in this study or in others, which allows measuring the sensitivity of the contrasts that can be observed in a significant way at the partial frequency as well as it manifests (Kluka, Love, Sanet, Hillier, & Schneider, 1995).

Several authors (Long & Riggs, 1991), (Fradua, 1993) confirm through research that both peripheral vision and visual abilities improve according to the training program that is revealed during the practice of physical activity. It is surprising that peripheral vision and responses to peripheral stimuli are essential skills during sports training (Erickson, 2007), however clinically significant, in this research we have identified during the practice the improvement of the same verified by means of empirical instruments without having a laboratory. During the investigative process, it is intended to assess future scientific work through a laboratory and provide answers to the new questions raised.

During the research process it was possible to corroborate that there has been a statistically significant improvement with the present training program in terms of selective attention. The same that a great demand was observed in focused and divided selective attention during training. As mentioned, (Hagemann, Strauss, & Cañal-Bruland, 2006). According to (Mann, Williams, Ward, & Janelle, 2007) they identify the improvement of attentional variables as a crucial part for the success in the development of the practice of physical activity.

It is noteworthy that within weeks 8 and 16 of the academic schedule of the UPSE, a slight decrease was observed in the records of all the skills acquired during the preparation time of the students due to the stoppage in week 8 and 16 partial exams of each cycle, which broke the respective continuity of the training program.

In addition, we can identify the momentary decrease in motivation and frustration that could be reached in the worsening of the acquired skills suffered by changing the protocol and going from continuous training to a week 8 and 16 of programming stoppage due to mid-term exams.

It is clearly identified that the stoppage of the programming has implied the decrease in the improvement of their movements and this allows new measures to be taken later, seeking to make a minimum duration to guarantee the improvements and in this way not to lose the progressive increase in the load. When examining sports training seen from the adaptive process from the point of view of the systematic approach, it is important to point out that this concept includes both the direct adaptive reactions of the organism and those results of the adaptive process. From the immediate dynamic and cumulative stable dimension.

These mutual relations of different links are manifested (Peña, Aguilar, & Ortíz, 2022) Allowing sporadic reinforcement training sessions to maintain optimal performance levels. All this would

reaffirm the conclusions seen by various authors such as (Antúnez A., 2003) or (Quevedo & Solé, 1995), with handball players and expert shooters/throwers, respectively.

CONCLUSION

We could conclude that the perception and sports programming in the students of the Santa Elena Peninsula State University, has been carried out in time of Confinement and has allowed the improvement of peripheral vision skills. Additionally, we could say that the selective attention focused on the exercises has improved in their techniques, times, repetitions.

At a global level, it is verified that the strengthening of the sports training program carried out with university students, in the variables of concentration; visual, perceptive speed and peripheral awareness, during sports activity carried out from home in times of the covid-19 pandemic, during 55 sessions, seen for 16 weeks, one hour a day, from Monday to Friday.

Finally, and always with due caution, we could generalize that the training of perceptual-cognitive skills with this online sports training program or similar could enhance sports performance in other sports disciplines, such as individual sports, athletics, weightlifting, as well as in other areas that allow including situations where quick reactions are required in virtual environments; for example:

Time; We could say that this type of training would be a very useful result for athletes since it allows them to measure themselves on visual time online with the aim of keeping their psychological part active and at the same time motivated, taking into consideration that training will always be present a challenge of continuous improvement, directly involved in the athlete's routine.

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