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Original article

IMPACTS OF VISUAL AIDS ON UNDERHAND VOLLEYBALL SERVE FOR CHILDREN WITH MILD MENTAL RETARDATION

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Abstract*

Aim. Teaching with visual aids keeping students motivated and actively engaged in their classes can be a challenging task. However, there are some simple strategies, which used to help enhance our students' interest and keep them involved by using visual stimuli, we are more likely to maintain student attention and encourage active participation. The purpose of this study was to investigate the effects of visual aids on underhand volleyball serve for children with mild mental retardation.

Methods. Fifteen children with mild mental retardation were randomly allocated to receive either an 8-week intervention of the learning program with visual aids ($n = 6$) and learning program only ($n = 5$). In addition, control group receiving 8-week of traditional program only ($n = 4$). The data collected before and after the program for the two groups.

Results. Statistical analyses showed that:

- The experimental group had significantly higher than the control group in performance level of underhand volleyball serve.

Conclusions. Under the conditions of our study, use of visual aids as a learning tool for children with mild mental retardation resulted an improvement in underhand volleyball Serve. These results have to be taken into account by instructors in order to better understand and implicated of these concepts for technical effects of teaching.

Keywords: Visual Aids, Mental Retardation, Volleyball

Introduction

Visual aid is any image, model, object or resource that provides a Concrete visual experience for the student in order to introduce, build, enrich or clarify abstract concepts, developing appropriate attitudes and stimulating further activity on the part of the student (Donald, 1970).

Visual aids are those instructional aids that work through their visual modalities providing learning stimuli (Ay, 2011).

A visual aid is a clarification; it is the way we can translate or transforming verbal to visual information. Therefore, an alternative code to oral language or instrumental use seeks to improve understanding. (Ouellette, 2004).

Visual aids stimulate presentation, accelerate learning and Group activities. Events, concepts and processes become more meaningful for the students; written or spoken words are better conceptualized.

In reality, visual aids save time; Ensure more Effective vocabulary and permanent retention to do instruction verbally (Cohen & Weaver, 2006).

Visual aids are means used in oratory to express "Visually" a concept or an idea and serve to stimulate the imagination of the listeners or to highlight a basic idea in our speech.

Scientifically it is proven that visual

communications are synthetic messages that speak to the eyes and are more effective than words. These visual aids may be chalkboard, overhead projector, slides, movies, maps, diagrams, drawings, and even scale models.

They serve as a complement to verbal forms and contribute to presenting the topic more clearly and more convincing (Abebe & Davidson, 2012)

Visualization is gaining more importance in everyday life, as well as in the education. The current volume of information is processed quickly and efficiently.

It is hardly necessary to leave the scope of the daily experience to bring to mind the importance of representation visual, in the formation of lasting impressions.

That which has been unusual and has been clearly seen is remembered. Magazine, book or newspaper that does not use relevant and abundant illustrations is limited in Circulation and popularity.

The industry has found in the films, the slide, the photography and the graphic one great success for the training of the people, in showing the processes of manufacturing and in encouraging the public to buy. On the other hand, it has been accused of affecting daily life with great strength, surpassed only by the influence combined press and radio.

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Images are the most efficient and complete mechanism for transmitting information on a given stimulus. The more visual the information the UCCM (Mind -Brain -Body Unit), the greater the chances that this is recognized and stored in memory or remembered.

This phenomenon is as dominant and important as to have received a name own: Effect of pictorial superiority. "a picture is worth more than a thousand Words, "is correct; for example, in an oral presentation, the public present Will remember 10% of what was heard at 72 hours, if you attended the presentation. (Tojet, 2011)

The figure amounts to 75% if images were added. The quality and impact of them undoubtedly affects even more to be kept in the memory.

Therefore, do not forget: "less text and more images" in a presentation, since as we have seen, the latter, are the best element to transmit information. (Ouellette, 2004).

According to (Murtaza et al., 2011) theory of the learning by discovery or Theory of the Instruction, shows the way in which a person describes, understands, or learns identifying three modes of representation.

These are successive and interconnected with each other:

1. The enactive representation (replicative) that corresponds to the representation by the action. This process corresponds to learning through Do, either by acting, imitating and manipulating objects. Therefore, they are recurrent processes in the first years of the child's life. From similar way to complex activities, adults also use this model.
2. The iconic (imaginative) representation that develops when the child is finally able to represent the world itself through an image or a spatial scheme that is relatively independent of action.
3. The symbolic representation, corresponding to the one who uses the word written and spoken. Language, which is the main symbolic system used by the adults in their learning processes, increases the efficiency with which they acquire and store knowledge and communicate ideas.

Bruner considered the three modes to represent the systems that process information; Are three instruments that humans use to build models of your world; through action, image and language. Although Bruner considers it important to show slides, films and visual teaching, identifies the need for conscious criteria for the use of them, leaving in evidence that a pictographic representation of the trivial is not effective for your learning.

Visual aids can help achieve goals by emphasizing what is being said. Sharp images multiply the level of comprehension of the material

presented to students, and should be used to reinforce their message, clarify points and create excitement, involving students requiring a change from one activity to another: from listening to seeing. With images, concepts or ideas that can be presented are no longer just words. If students do not clearly understand the spoken word, a visual can help them absorb the information better.

Visuals can help make complex information more understandable. They provide a change from just listening; images often stimulate interest more easily than words (Buttner, 2007).

The definition of mental retardation has undergone numerous changes over the last 40 years, both in its terminology and IQ-based cutoffs. (IC) and the role of adoptive behavior as a diagnostic criterion. Each change reflects the effort made by different disciplines to improve understanding of the condition of mental retardation.

The concept of mental retardation has traditionally been associated with intellectual or cognitive deficit, usually expressed in terms of IQ.

*The most commonly accepted definition is the one proposed by the American Association on Mental Deficiency (AAMD), an organization that has been defining mental retardation for the past 119 years and which, following successive revisions, establishes the following definition (Grossman, 1983).

Mental retardation means a generally lower-than-average intellectual functioning, which occurs alongside deficits in adaptive behavior and manifests itself during the developmental period." (Ouellette, 2004)

Mental retardation refers to a particular state with substantial limitations, characterized by the simultaneous occurrence of remarkably below-average intellectual functioning and related limitations occurring in at least two of the following areas of adaptive skills: communication, personal care, Social skills, self-direction, leisure and work, home-based behavior, community resource use, health and safety, and functional academic skills. Mental retardation manifests before age 18 (Luckasson et al., 1992).

This definition has allowed to delimit to this population of other groups with pathologies, dysfunctions or diverse disabilities; Has achieved a consensus among all professionals; And has stipulated the basic concepts in working with mentally retarded people; The adoptive functioning. In addition, adoptive behavior.

Mental Deficiency refers to a level of functioning that requires, on the part of society, more than average training procedures and greater advantages in adaptive behavior, which manifest themselves throughout life. The person with mental



deficiency is characterized by the level of energy required in his training process to learn, not by the limitations with which he learns.

Mental retardation affects about 1 to 3% of the population and there are many causes, but doctors find a specific reason in only 25% of cases.

A family may suspect mental retardation if motor, language, and self-help skills do not seem to develop in a child or when they are developing at a much lower rate than their peers.

Deficiency to adapt (adjust to new situations) in a normal way and to grow intellectually can be evident in the first years of the child's life. (Pugach & Warger, 1996)

In cases of mild retardation, the recognition of these deficiencies may take up to school age or later.

The degree of impairment due to mental retardation varies widely from delay with profound deterioration to slight or borderline delay.

Less emphasis is now being placed on the degree of delay and more on the degree of intervention and care required for daily life.

The primary goal of treatment is to maximize the potential of the individual. Training and special education can start from breastfeeding, which includes social skills to help the person perform in the most normal way possible.

It is important for a specialist to evaluate other affective disorders in the person and to provide them with treatment. Behavioral approaches are important for people with mental retardation.

Since the year 2000, the incorporation to the special school has been introduced; the Prioritized Programs and the audiovisual media, such as computers, videos and others have contributed to the development of skills and abilities in the young students with mental retardation, leading to significant advances in the Social behavior, learning, communication and social relations. (Agran et al., 2002)

In the field of Physical Education, since the 80's, programs and methodological guidelines have been developed, corresponding to each of the special educational needs, as in the present context, for students with mental retardation. Nevertheless, it is necessary to make some adjustments in correspondence with the levels of the mental retardation gradient presented in the students, an aspect towards which the proposal of the present work is oriented, given the following contradiction.

Early childhood need to play and practice many sports, not just to meet their movement needs. But also the cognitive, communication and especially in the understanding of their primary or secondary defects, but, the author's practical experience has experienced that in the 5th grade

there is: Little mastery and precision in the movements making it impossible to compliance with the content reflected in the Physical Education Program (Floor Jockey, Basketball, Softball and Volleyball), which has been designed for students with mild mental delay and not for those with moderate mental retardation. These students form a single class group, so a new program cannot be developed separately, i.e. one for the mild and one for the moderates. As a result, schoolchildren with moderate mental retardation present the impossibility of playing and practicing sports games and sports, because of the demands reflected in them.

Therefore, the fundamental problem situation is in the necessary correspondence of the demands of the content of the programs and the possibilities in Physical Education of children with moderate mental retardation.

Defining the problem with the following question. How to adapt the content development programmed for the teaching of physical education to the possibilities of children with moderate mental retardation? And as objective of the study: To adapt by means of proposals of physical activities, the development of the programmed content, for the teaching process of physical education in children with moderate mental retardation. (Pugach & Warger, 1996)

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Methods

Fifteen children with mild mental retardation were randomly allocated to receive either an 8-week intervention of the learning program with visual aids (n = 6) and learning program only (n = 5). In addition, control group receiving 8-week of traditional program only (n = 4). The data collected before and after the program for the two groups.

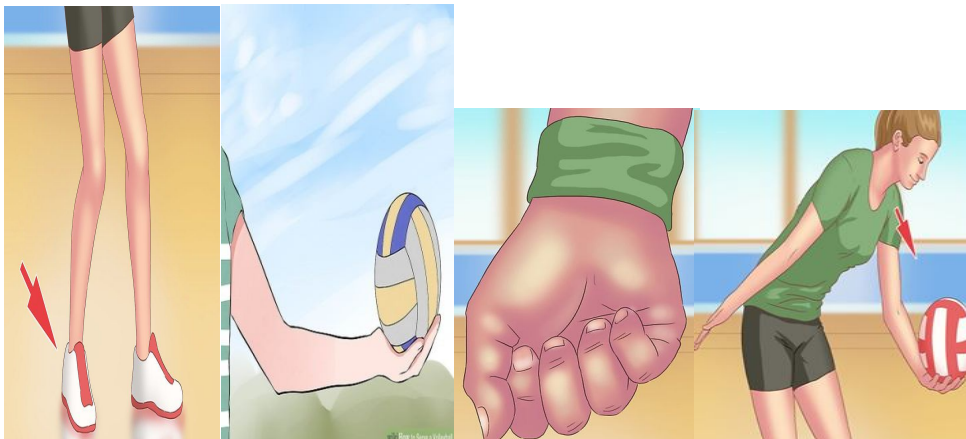
Rules to be observed when using the visual aids:

- A) Determine the purpose of using the medium.
- B) Boot to use the medium.
- C) Fit the medium with the level of student perception.
- D) Ensuring that all students see the means during their presentation.
- E) Ensure that all students interact with the medium.
- F) Allow students to participate in the use of the medium.

- G) Not to prolong the presentation of the means to avoid boredom.
- H) Not to shorten the contradiction in the presentation of the means.
- I) Not to overload the lesson with a large number of means.
- J) Not to keep the means for students after the completion of use to avoid their departure from follow-up of the remainder of the explanation.
- K) Answer any questions that the learner needs about the method



1. Getting In Position



2. Performing the Serve

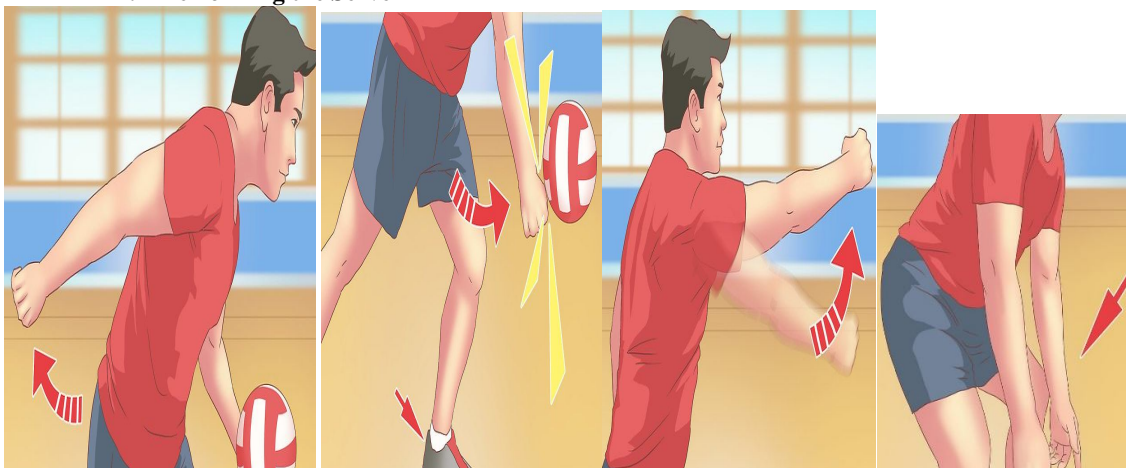


Fig 1 show the underhand serve stages.

Statistical analysis

Used the Statistical Package of Social Sciences (SPSS) version 17. Means, standard deviations, One-Way Univariate ANOVA (F-test) and Scheffe test were used to investigate the hypotheses.

Results

Table 1. Anthropometric Characteristics of the Groups (Mean ± SD)

Group	N	Age [years]	Weight [kg]	Height [cm]	IQ
Experimental 1	5	10 ± 2.32	25 ± 6.4	128 ± 7.5	63.23.2.45
Experimental 2	6	11 ± 1.85	23 ± 5.8	129 ± 6.8	59.49.3.24
Control	4	10 ± 2.54	24 ± 6.7	129 ± 7.8	62.11.2.12

Table 1 shows the age, anthropometric characteristics and IQ score of the subjects. There were no significant differences observed in the variables between the different groups.

Table 2. ANOVA "F" Test between the three groups in Getting in Position and Performing the Serve

Variables		Sum of Squares	D.F	Mean Square	F	Sig.
Getting In Position	Between Groups	16.795	2	8.398	362.057	.000
	Within Groups	.278	12	.023		
	Total	17.074	14			
Performing the Serve	Between Groups	15.186	2	7.593	68.804	.000
	Within Groups	1.324	12	.110		
	Total	16.510	14			

ANOVA F-test shows there is a significant difference in means between the groups we may want to perform multiple comparisons to determine how they differ by Scheffe test.

Table 3. Scheffe test

Variables	(I) variables	(J) variables	Mean Difference (I-J)	Std. Error	Sig.
Getting In Position	Group1	Group2	-.91300*	.09222	.000
		Group3	1.72700*	.10216	.000
	Group2	Group3	2.64000*	.09831	.000
Performing the Serve	Group1	Group2	-1.18067*	.20115	.000
		Group3	1.32600*	.22284	.000
	Group2	Group3	2.50667*	.21443	.000

*. The mean difference is significant at the 0.05 level.

It is clear from Table (3) that statistically significant differences between the posttests for the second experimental group that used visual aids in underhand volleyball serve.

Discussion

The use of visual media is used to illustrate situations in the teaching. For the respective information the written language in the expression, the monologue as a form of conversation and the standard or technical language (Posner et al., 2003).

In sport lessons, for example, sketches, drawings and illustrations to provide a better understanding of exercise, organizational framework or tactical clarification. (A. Kirsch, 1984).

Kirsch (1984) noted that the advantages of static-visual aids are:

- View motion sequences at a glance in their entirety

- View individual images as often as you like
- The focus is on the main phase of the movement; error correction by comparing the set point with the actual value of the motion implementation becomes
- The learners can independently understand and describe the movement
- The organizational and technical effort to represent the movement slow"

Visual aids help to emphasize a point, which is another benefit to using them. They also help to divide the information into manageable chunks for an audience to absorb. Visual aids can benefit people financially too as presenters can effectively



teach a topic to a large number of people without having to buy expensive implements.

Visual aids is that they stimulate learning because interactive effects can be used to reinforce the material learned. Colors, effects and formatting can all be customized for effective teaching that helps an audience. These aspects also help presenters because visual aids are simple to create.

We must give the child tasks that he knows between the things that we try to teach him and exploit the skills and working to develop with the encouragement and motivation to praise his work. We must be careful not to continue to mention the mistakes of the child and to be faithful to our promises to him or the child will not trust us. If the child threatens that, you will deprive him of something.

According to Newall, (2011) figure is a representation; that is, that awakens in the viewer the idea of someone else typically absent. In addition to images, represent words, phrases, maps, diagrams, codes, sculptures, badges and so on.

Zamora, (2007) indicated that visual aids helps the child understand the instructions more than if the speaker is speaking loudly. Good behavior, we also use the tone of enthusiasm and give the child various and natural support means.

Many students have more developed visual memory than the auditory. That is why when they look at an image, the memory of it is engraved in memory more easily and thus remember the meaning of the object it represents.

When selecting the figures with which you are going to work, you must consider that the figures should illustrate at a glance, what you want to teach. In addition, colored figures attract more attention than those in black and white, serving at the same time, for other purposes. Sometimes it is surprising how images can change a lesson, though; they are only used in extra exercises or just to create the atmosphere.

Dale, (1996) indicated that almost 85% of the learned skills are transferred to the brain from visual sense. For hundreds of years, people have known that they remember what they see.

Conclusions

Under the conditions of our study, use of visual aids as a learning tool for children with mild mental retardation resulted an improvement in underhand volleyball Serve. These results have to be taken into account by instructors in order to better understand and implicated of these concepts for technical effects of teaching.

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