

Functional thinking style and its contribution to learn the accuracy of block and smash serve in volleyball among university students

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ABSTRACT

This study aimed to analyze functional thinking style and its contribution to learn the accuracy of block and smash serve in volleyball among university students. The sample was composed of 120 students of the College of Physical Education and Sports Sciences of the University of Baghdad (academic year 2021/2022). The statistical analyses were carried out with the statistical software SPSS and correlation analyses were conducted. It was found that functional thinking style significantly contributed to learn the accuracy of block and smash serve in volleyball among university students. Therefore, it is necessary to intensify efforts to increase the level of functional thinking among university students, by adopting academic sports experiences in the field of skill learning.

KEYWORDS

Functional thinking; motor learning; volleyball

1. INTRODUCTION

The twenty-first century imposes new variables and a rapidly changing world in which knowledge, technology and the Internet invade all public and private life facilities. The world of the future, where machines and electronic minds will do the routine work and leave the creative and innovative work to the human being (Abass et al., 2022). All this prompts us to think seriously about developing the intellectual abilities of the learners starting from the early stages of their lives and to

review ourselves and change our way of thinking in order to qualify us to deal with future sciences, discoveries and creations (Saadi, 2000; Alwan, 2021).

Many educational conferences have stressed the need to develop students' different types of thinking through preparing new curricula and following modern teaching methods in various subjects that raise students' ability and motivate them to form balanced personalities capable of solving problems they encounter (Waleed, 2005; Hussein, & Salih, 2022). Thinking is also a mental process in which the learner develops her/his abilities through the processes of mental interaction between the individual and the experiences he acquires in order to develop cognitive structures and reach new assumptions and expectations (Qatami, 2001).

In order to develop the higher levels of thinking among students, we should help them to acquire metacognitive thinking skills that refer to awareness and control of our capabilities, strategies, resources and means we need to perform tasks more effectively. Students in the era of the knowledge and technological explosion, especially in the fields of science, technology, informatics and communications (Ahmed & Hakam, 2013; Alwan, 2023).

It is clear from the views and ideas about cognitive learning and the growth of thinking and its stages that: Learning is an active and continuous process that leads to the learner's creativity of new cognitive structures (cognitive systems), which achieve successful interaction with perceived environmental stimuli and benefit from the learner's acquired experiences in new attitudes." (Kawthar, 2007; Hussein, & Salih, 2022).

Moreover, the more closely those methods are related to the nature of the school learning process and the cognitive, emotional and social factors that affect it, the more successful and effective they are in the emergence of new meanings and ideas that may be used in new educational situations or in solving problems (Thaier & Khaled, 2009). It is also no secret that every individual has her/his own way of thinking, and it is difficult to predict the ways of thinking of others, and the thinking style measures individuals' linguistic and cognitive preferences and their levels of flexibility in working and dealing with others (Al-Atoum, 2004).

In the functional style of thinking in terms of legislative functions, the students tend to enjoy formulating and planning solutions to the problems they solve, and they are not inclined to the issues that have prior solutions, and this function includes innovation, formulation, planning ideas, strategies, and they prefer to realize their own ways to do things and decide for themselves what and how to do it, with their own laws (Al-khoury et al., 2022). They prefer problems that are irregular or not prepared in advance, they tend to build order and content for how to solve the problem, and they enjoy doing things their own way (Saleh & Muhammad, 2007).

As for the executive function of the functional thinking style, students in the executive style prefer specific tasks, and they abide by rules and laws within the existing systems. The owners of this method do not prefer to develop new systems of their own, as they implement the ideas of others, that is, they tend only to follow the existing rules, as the word “executive” refers to these mental functions included in the investigation and not in planning, and that the executive function is to implement more than to plan, as for the executive processes, they are those that implement the legislative plans (Samiya, 2005).

While in the judgmental job of the functional thinking method, students prefer the judgmental method to pay attention to evaluating the stages of work and its results, as well as evaluating the activities and actions carried out by others (Al-Sayed, 2007).

In the studies and research of motor learning in volleyball, the learners cannot be stripped of the importance of thinking, especially the job that deals with the tasks required by the nature of performance, according to what he possesses of abilities and capabilities that call for a specific idea to activate it in order to serve the skillful motor duty entrusted to her/him in the educational unit.

As "in order to know how to convey a message for the future in an understandable way", we must learn how to choose the appropriate methods of thinking, which is the key to our success in this. In addition, our knowledge of thinking methods is part of the skills we need to deal with different cultures. The educational guidance is an advanced educational and professional process that has become with specific limited values and concepts, clear objectives, and codified methods that all respond to the required guiding needs (Al-Asadi, 2003).

During the researchers' work in teaching volleyball skills at the university level and this job's nature, they noticed that many modern educational methods and strategies are applied to students of the CPESS, which are concerned with the cognitive structure and mental processes, and in fact it requires an effective tool to enable learners to visualize and encode what they receive of information and experiences that require recall in the educational situation. This calls for giving importance to addressing thinking when applying these methods and strategies. Hence, the problem of the research is an attempt by researchers to find out the relationships that support the educational environment to bring forth bolster and guidance to those responsible of motor learning, as well as informing students of the importance of all that participates in building the proper motor program for the skill to be learned by finding ways to learn the appropriate way of thinking for this skill. Thus, this study aimed to analyze functional thinking style and its contribution to learn the accuracy of block and smash serve in volleyball among university students.

2. METHODS

2.1. Participants

The sample was composed of 120 students of the College of Physical Education and Sports Sciences of the University of Baghdad (academic year 2021/2022).

2.2. Instruments

The tests were selected for the skills investigated: the accuracy of the skill of the repeated blocking with a total degree of 10 degrees, the accuracy of the smash serving in the diagonal and straight directions with a total degree of 40 degrees. The specificity of the research and the type of the target sample for measurement were imposed. Global FT (for Harmson), which consists of 18 items with 5 alternatives, each of which has a weight according to the graduated Likert scale (1-5), with a total score of 18-90. The hypothetical mean was set to 54 to ensemble the specificity of the target sample. For computation, and by adopting the steps of statistical treatments, 80% or more of the experts agreed on this formation to obtain the plausible soundness. To be academically accepted the formative construction with statistical treatments and sequentially methodological, with their hard copy questionnaire sheet, steps are achieved on the specified statistical analysis sample, which consisted of 30. The stability was verified by the split-half approach and was applied using Guttman L.A. equation (0.899) at a significance level of 0.05, with degree of freedom 28. Then the scale and the tests were applied on the sample after they completed their classes for learning the two skills under study.

2.3. Statistical analyses

After completing the survey with the three measurement tools for the variables investigated, the researchers analysed the research results using the Statistical Package for Social Sciences (SPSS) version (V28). The statistical techniques used were: percentage, mean, standard deviation, simple correlation coefficient (Pearson), Alpha Crunbach equation, skew coefficient (Pearson), t-test for uncorrelated samples, one-sample t-test, linear coefficient, regression, linear correlation coefficient, contribution ratio, F test for the good fit of the regression model, and slope (effect) using the T test of linear regression.

3. RESULTS AND DISCUSSION

Table 1 showed that the mean results of the first variable (functional thinking), second variable (blocking) and third variable (smash serving) were 67.07, 6.84 and 31.13, respectively. The result of the variable functional thinking was higher than the hypothetical average of 54. As for the second variable (blocking) and the third variable (smash serving), the results of the arithmetic mean were lower than the hypothetical mean. As for CV, the values of the variables were 0.21, 0.21 and 0.07; the result of CV shows the extent of the absolute dispersion and the deviation of the answers of the sample members from its arithmetic mean, as it indicates a low dispersion in the answers of the sample members. As for the relative importance, it indicates that the first variable (functional thinking) and the second variable (blocking) had the same importance, which was 21%, while the third variable (smash serving) had a relative importance of 7%, which is low compared to the first and second variables. Finally, the result of functional thinking was positive while the rest of the variables were negative.

Table 1. Descriptive Statistics

Variables	Mean	SD	CV	Relative importance (%)	Skewness	Results
Functional thinking	67.07	14.33	0.21	21	0.2	+
Blocking	6.48	1.35	0.21	21	-0.626	-
Smash serving	31.13	2.33	0.07	7	-0.043	-

Table 2 showed the results of the Pearson correlation coefficient values for the variables studied. Functional thinking was strongly and positively correlated by a factor of 0.816 with the blocking variable, and was correlated with a factor of 0.815 with the smash serving variable. Linear regression coefficient (R^2) was 66% for both variables respectively, meaning that functional thinking explained 66% of the changes in both the blocking and smash serving. As for the remaining 34%, it is attributed to other contributions that have not been addressed by the researchers.

Table 2. The correlation between the variables

Influencer measurement	Test	Simple correlation coefficient (R)	Linear regression coefficient (R^2)	Contribution percentage	Standard error of estimation
Functional thinking	Blocking	0.816	0.666	0.663	0.785
	Smash serving	0.815	0.664	0.661	1.358

In Table 3, the calculated F value of the first model amounted to 235, which is higher than the tabular F value of 4.19 at the level of significance of 0.01, and this means that there is a statistically

significant effect of functional thinking in blocking. The calculated F value for the second model amounted to 233, which is higher than the tabular F value of 4.19 at the level of significance of 0.01, and this means that there is a statistically significant effect of functional thinking in smash serving.

Table 3. The results of the regression tests

Influencer measurement	Test	Sum of squares	Degree of freedom	Mean of squares	Calculated F value	Sig degree	Sig.
Functional thinking	Blocking	145 72	1 118	145 0.61	235	0.000	Sig.
	Smash serving	430 217	1 118	430 1.844	233	0.000	Sig.

In Table 4, the coefficient of the variable β of blocking was 0.07, which means that any increase in the percentage of functional thinking leads to an increase in blocking by 7%. As for the significance of the model, it was statistically significant. The coefficient for the variable of smash serving was 0.13, which means that any increase in the percentage of functional thinking leads to an increase in smash serving by 13%. As for the significance of the model, it was statistically significant.

Table 4. ANOVA variances

Influenced	Variables	Beta (β)	Standard error	Calculated t value	Sig degree	Significance level
Blocking	Constant term	1.314	0.344	3.815	0.000	Significant
	Functional thinking	0.077	0.005	15.35	0.000	Significant
Smash serving	Constant term	22.236	0.596	37.333	0.000	Significant
	Functional thinking	0.133	0.009	15.274	0.000	Significant

It is evident from the results of the correlation values that the functional thinking style is related to learning the accuracy of the skills of blocking and smash serving among the students of the CPESH, and this method of thinking contributes to learning these two skills, as the results of the good matching values prove the quality of the regression model, as well as a relationship. This type of thinking was influential in this skilful learning in volleyball, as it allows this type of thinking to provide a space in the kinetic memory that helps the learners to complete information processing, in order to serve the construction of the motor program and to reach the skill model required to be performed, by delving into the details of the movements and activating the interrelationship of experiences related to each of these two skills.

This type of functional thinking is formed when using analytical and empirical methods and comprehended planning. Also, this type of thinking must be learned perfectly. If self-reflection is

intuitive thinking that incorporates values and moral judgments, then functional thinking is the thinking of formal logic, structural research, efficiency and sufficiency (Youssef, 2005). Mohammed (2010) indicated that human beings learn responses because of the interrelationship of experiences. Also, we have to learn how to choose the appropriate thinking styles, which is the key to our success. Finally, our knowledge of thinking styles is part of the skills we need to deal with (Al-Asadi, 2003).

4. CONCLUSIONS

It was found that functional thinking style significantly contributed to learn the accuracy of block and smash serve in volleyball among university students. Therefore, it is necessary to intensify efforts to increase the level of functional thinking among university students, by adopting academic sports experiences in the field of skill learning.

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All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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