Impact of the Constructivist EDGA Model on Learning Some Basic Volleyball Skills for Middle School Female Students

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Abstract

Study purpose. This research aimed to identify the effect of using the constructivist EDGA model on developing female students' performance of some basic volleyball skills.

Material and methods. The researcher used the experimental method with an equivalent group design with a pre-test and post-test to suit the nature of the research problem. The researcher then identified the research population as the fourth-grade middle school students at the March 11 Girls' Middle School in the Kirkuk Education Directorate, who numbered (151) students. The researcher used the statistical package to reach scientific results on which she based her research conclusions.

Results. The study found significant differences in basic volleyball skills (underhand serve, overhand pass, and underhand pass) in favour of the experimental with the arithmetic mean for basic volleyball skills (36.700, 28.950, 25.350), respectively. However, the control group obtained the arithmetic mean (26.050, 20.850, 18.150), respectively. The constructivist EDGA model was used in the curriculum, stimulating students' minds and helping them develop. The development unit's clear goals, aligned with the student's current level, will enhance learning and help achieve the educational objectives.

Conclusions. One of the most important of these is using the educational curriculum according to the constructivist EDGA model, which has achieved remarkable development in basic volleyball skills. Using the stages and steps of the EDGA model, along with the nature of the skills and the sample level, led to the theoretical and practical learning of research skills. The research recommendations came as follows: Emphasizing the adoption of the EDGA model in educational curricula related to learning sports skills. Urging the use of modern methods and models in learning basic volleyball skills.

Keywords: Constructivist EDGA Model, Volleyball Skills, Middle School

Introduction

Physical education represents an important field of education as it prepares the individual physically, skillfully, and emotionally (Ramadhan, Riki, Fauzan Effendy 2023) ; (Sari, W. A., Warni, H. ., & Arifin 2024). Many countries and institutions are working to develop their educational programs by using effective and new teaching methods and techniques to achieve effective teaching. Teaching methods are the link between two parties: the first is the students, and the second is the curriculum. It helps to create a state of positive interaction among them by correctly directing activities and events and providing students with experiences through which they can face various educational situations. Modern trends in teaching methods call for moving away from traditional methods. It depends on the lengthy explanation and presentation of the live model of skill performance and the trend to use more advanced educational models to reach the best level of performance among female students (Carmen, P. ., Dănuț, M. G. ., Neculai, H. ., Constantin, U. B. ., & Alexandru 2024). Therefore, we must introduce modern methods in teaching as the school is not the sole source of knowledge. Instead, it aims to make students the focal point of the educational process by encouraging them to express their opinions, ask questions, and find suitable solutions to develop their physical and skill capabilities. One of these methods is the constructivist EDGA model, which is a modern educational model that motivates students in the classroom by presenting a situation or raising an educational problem in front of the student and then motivating students to solve it in an analogical and cooperative manner based on their previous experience.

This model integrates the most important principles of the three theories, which are primarily concerned with the learner and increasing his motivation to learn and solve problems cooperatively and participatory (Hassan D. 2023). This model emphasizes the learner's active and continuous information processing, allowing them to discover solutions independently. This is what constructivist theory suggests. It suggests that learning is more effective when learners deal with problems, which increases motivation and encourages cooperative problem-solving (Nurhuda, A., Al Khoiron, M. F., Azami, Y. S. I., & Ni'mah 2023). The model is based on the learner's previous experiences and information, allowing them to build knowledge through purposeful discussions or brainstorming sessions. The educational model presents educational situations cooperatively, directing learners to solve problems using their previous experiences. This cooperative approach helps learners build their knowledge and improve their learning experience (Al-Awini 2021; Lascsakova 2024). This is what was approved by the constructivist theory. In addition, this model allows the students to find solutions to the problems presented using their mental and physical abilities. This model helps develop thinking, enhance the language of dialogue, and develop the spirit of cooperation and participation among learners. This model is based on raising an educational problem among learners and then trying to find appropriate solutions through dialogue and discussion between learners, expressing opinions, and accepting other opinions. This model also facilitates understanding some difficult concepts that are difficult to understand using traditional methods. This model aims to help the learner use his previous experiences to acquire new experiences, exploit the learner's energy in solving the problems he faces, and develop his thinking. It helps the learner use new methods of education and thinking (Mishaan, F. A., & Jajan 2022; Ngo, 2024).

Skills that the learner acquires when using this model: The skills that the learner acquires when using this model help learners acquire skills such as thinking, data processing, linking prior knowledge, searching for information, and dialogue through social interaction. It helps students defend their point of view, convince others, and listen to and accept others' opinions, ultimately consolidating the educational goal in their minds (Ngo 2024) The

importance of this work is that Volleyball is one of the group games that enjoys a large popular base because this activity contains many skills, whether defensive or offensive, as basic requirements for practicing it. Therefore, it is necessary to develop the performance of these skills so that one can obtain a direct point that gives precedence in making progress. Hence, the importance of research becomes apparent through the optimal investment of time and effort for the purpose of achieving effective education through the use of the constructivist EDGA model in developing basic volleyball skills.

One of the important demands in the educational process is to pay attention to the learners and have an active role in the educational process by developing creative minds capable of solving problems and making them more independent in decision-making. All of this comes through the application of modern methods in education. A competent teacher can continuously make the effort and make the learner's attitude during the educational process a positive one, not a negative one. There is a significant percentage of female teachers in the field of physical education in schools who still use traditional teaching methods. These methods do not consider individual differences in students' abilities, do not give them the freedom to make decisions, and do not develop their creative side and thinking about the problem they are exposed to. Therefore, the researcher decided to use the constructivist EDGA model to make female students the focus of the educational process, which could be the ideal solution for developing volleyball skills. This does not mean we abandon educational methods simply by describing them as traditional. However, instead, we must rely on practical experiences by following the principles and practices supported by the results to reach the best model that guarantees mastery of the skill to achieve the desired goals of the educational process.

The research aims to identify the impact of using the constructivist EDGA model in developing female students' performance of some basic volleyball skills and the superiority of influence between the constructivist EDGA model and the model used in developing female students' performance of some basic volleyball skills. The researcher assumed two hypotheses: the positive effectiveness of the constructivist EDGA model in developing female students' performance of some basic volleyball skills, and there is a discrepancy in the effect of the constructivist EDGA model and the method used in developing female students' performance of some basic volleyball skills. The human limit is fourth-grade female students, the time limit is from 10/1/2023 to 1/20/2024, and the spatial is March 11th Intermediate School for Girls in Kirkuk Education Directorate.

Material and method

The researcher relied on the experimental method to achieve the study objectives. The study sample was divided into two equal groups, one representing the experimental group and the other representing the control group.

Study Participants

The study population was 151 female fourth-grade students at the 11th of March Girls' Secondary School in Kirkuk Education Directorate. The research sample was chosen randomly from the population and through a lottery model, and its number is 40 female students, constituting a percentage of (26.46%) of the research population. It is an appropriate percentage to represent the population. The two research groups (experimental and control) were chosen randomly. The sample was divided into two groups, experimental and control, with (20) female students for each group. The responsibility for implementing the development units and the constructivist EDGA model for the experimental group and the model followed for the control group was assigned to one school.

Study organization

Before starting to implement the development approach and to control the variables that affect the accuracy of the research results, the researcher verified the homogeneity of the sample (high, weight, and age) by finding the AM (arithmetic mean), Sd (standard deviation), M (median), and skewness coefficient, as shown in Table 1.

Table 1. Homogeneity of the sample in the variables of high, weight, and age

No	Variable	Measuring unit	AM	Sd.	M	S kewness Coefficient
1	Age	month	192	3.67	160	+1.63
2	high	cm	139.8	9.51	137	+0.88
3	Weight	Kg	41.6	6.04	40	+0.79

Since the skewness coefficient is limited to (± 1), which indicates the homogeneity of the sample. In order to verify the equivalence of the two research groups and before starting to implement the educational program according to the constructivist EDGA model. The researcher compared the performance of the experimental and control groups in basic volleyball skills tests. They planned to use the T-test for independent samples with equal numbers but found that the significance values exceeded the 0.05 level. This suggests that there are no statistically significant differences in the variables measured between the two groups. This indicates the equivalence of the two groups in these variables, as shown in Table 2.

Table 2. Equivalence of the two research groups in basic volleyball skills tests

Basic skills	Measuring unit	Sample No.	Experimental		Control		t-Calculated	Sig value	Sig
			AM	Sd	AM	Sd			
Underhand serve	Degree		22.400	4.761	22.650	6.183	0.143	0.887	non-significant
Overhand pass		40	16.950	3.410	17.550	4.593	0.469	0.642	non-significant
Underhand pass	Repetition		16.200	4.502	15.300	3.757	0.686	0.497	non-significant

Electronic stopwatch (Fox) (2), weight measuring device, electronic calculator, and computer device. Length measuring tape, adhesive tape width (5cm), assistive tools designed by the researcher, serving belts (20), circular ring (10), multi-height portable net (1), rubber straps for overhand and underhand skills (20), hanging balls (3), inclined rings (4), vertical rings (2), closed net (3), assistant board (20), movable mesh rings (2), and triple rings (2) are the tools and equipment that used in this work. The researcher used the following methods to

gather accurate data and information: Arabic, foreign sources and references, the international information network (the Internet) and a form to identify the most critical skill tests.

The volleyball skills used in the research were determined according to the Ministry of Education's curriculum for the middle stage (fourth grade) and as a result of the researcher's knowledge about most of the sources related to volleyball and the sources of measurement and evaluation that are related to basic skills tests (under research). Three tests were chosen for each skill and presented to several experts and specialists to obtain their opinions, demonstrate their validity and suitability for the age stage of the research sample, and nominate the best and most appropriate of them. The tests that obtained the highest percentage of agreement were selected. The researcher selected the following skills: Underhand Serve Test (Ihsan, N., Mario, D. T., & Mardesia 2023). Underhand serves are a crucial technique in volleyball for beginners, providing more control over ball landing and easier return. They are often used to initiate rallies or warm-ups and are vital in tennis, especially during learning. Passing Test on Set (Li, W., Dai, B., & Zhu 2024). It is a crucial technical skill in volleyball, making up 20% of the skill set. It is essential for creating offensive combinations and is implemented in various ways and positions based on the setter's ability and capacity, regardless of the team's level. Underarm pass test (Li, W., Dai, B., & Zhu 2024). Table 3 shows the tests that were presented to the experts. It is a fundamental volleyball skill that involves using your arms to pass the ball. It is often used in tight areas to escape congested areas when a powerful overarm pass is not feasible.

Table 3. Tests presented to the experts

Basic skills	Sr.	Tests	Percentage %
Serve	1	Underhand serve skill test	70
	2	Testing the accuracy of underhand serve (1)	30
	3	Testing the accuracy of underhand serve (2).	0
Overhand pass	1	Test the ability to pass as far as possible.	20
	2	Testing the repetition of pass-on setting	70
	3	Testing ability, speed, and how to past	10
Underhand pass	1	Testing the tester's skill in receiving the serve.	10
	2	Testing the skills of receiving and passing towards the net.	30
	3	Testing the repetition of underhand pass on setting	60

The exploratory experiment: The researcher conducted the first pilot experiment for the tests used in the research on Monday, October 3, 2023, on a sample of (10) students who were statistically excluded from the main research sample.

Test Validity: The researcher relied on the content's validity to determine the test's validity. The tests were presented to experts and specialists in testing, measurement, and motor learning/volleyball. The validity of the tests was proven after experts agreed that they achieved the purpose for which they were developed and were appropriate to the sample level.

Test stability: The researcher applied the tests within the exploratory experiment for skill tests on Monday, October 8, 2023, at 8:30 in the morning. The tests were repeated seven days later, on 15/10/2023, simultaneously and on the same sample of (10) female students from outside the research sample. The researcher used the simple correlation coefficient (Pearson)

to determine the reliability of the test. It became clear that a high correlation coefficient characterizes the tests. In other words, a high degree of stability, as shown in Table 4.

Table 4. Correlation coefficient for selected basic skills tests

Tests	Stability coefficient
Underhand serve test	0.87
Overhand pass test	0.86
Underhand pass test	0.81

The tabular value (0.602) is at (0.05) level, and the DF (degree of freedom) is (8). Table (4) clearly shows that the calculated value for all tests is greater than the tabular value, which confirms that the tests have a high degree of stability.

The objectivity of tests: The researcher verified the objectivity of the skill tests and their suitability to the sample level. This is because the unit of measurement used is (time and degree), which are units that are not subject to the personal opinions of the arbitrators. The results showed that the skill tests are highly objective. The expert's personal or subjective factors do not affect the evaluation results from the above.

Pre-tests: The pre-tests for the research sample were conducted on Tuesday, 9/10/2023, for the experimental group and on Wednesday, 11/10/2023, for the control group. The equivalence test indicates the pre-test results after implementing two educational units within the curriculum. As shown in Table No. (2).

The educational program, according to the constructivist EDGA model: After completing the implementation of the pre-tests, the application of the developmental curriculum started on 16/10/2023 and continued until 25/12/2023. The curriculum included (16) educational units that took (8) weeks to implement, at (2) development units per week, and the time of each development unit was (45) minutes.

The experimental group: The experimental group used the educational curriculum prepared by the researcher according to the steps of (the constructivist DGA model). The curriculum prepared for the experimental group must meet the following:
1. The implementation of the curriculum in the time allotted for a period of (8 weeks) at two units per week was implemented by the subject teacher.
2. The teacher relied on the information and exercises provided by the researcher for the experimental sample.

After reviewing and observing the sources, the researcher divided each educational unit according to its three sections, which are:
First, the preparatory section (10 minutes) included two parts. The first is general preparation, which includes different movement exercises for each part of the body. The second part, which includes development exercises for the skills under study, aims to prepare the body with all its parts to reach the appropriate readiness to implement the curriculum items. There were also exercises specific to the skill to be taught.
Second: The main section (30) minutes was intended to teach the skills under study within the middle school guide for the middle school teacher and for the subject of volleyball.

Educational activity (10) minutes

1. Explanation of the skill (2 minutes): The teacher begins by explaining the skill and its specifications. *Conditions required for correct performance. *Explaining how to perform the skill. *Performing the presentation. *Feedback.
2. The excitement stage (2 minutes) (linking the previous topic to the new topic and arousing and motivating the students).
3. Dialogue stage (2) minutes (using cooperative groups and brainstorming). The school gives a number of signs on how to perform correctly.
   a. How to make an appropriate distance between the feet?
   b. How to swing the arms strongly when serving?
   c. How can the fingers be spread and extended?

Training on skill performance (2 minutes): The school sets up several items (among those suggested for the students) to assist in correct performance, such as placing a rope for jumping and lowering the net height.
   a. The students choose the best ideas presented (2) minutes.
   b. Practical activity (20 minutes). The best ideas chosen by the students are applied.

For the skill of underhand serving:
   a. Place a specific device to develop the skill, and from walking, practice the skill.
   b. From running to emphasize the three steps, then rise and perform correctly.

For the skill of preparing from below:
   a. From standing, performing the skill without a ball on a low-height net.
   b. From lying down, standing up and performing the movement on the net.
   c. After completing the exercises, the teacher divides the students into groups to play on the net and then judges, with feedback given by the teacher.

Third: The concluding section (5 minutes) includes some recreational games that serve the goal of the implemented educational unit and calming and relaxation exercises.
Control group: The control group applied the prescribed curriculum and followed it to study volleyball.
Post-test: The researcher administered post-tests to the experimental group on January 3, 2024, and to the control group on January 4, 2024. The tests were conducted under the same conditions as the pre-tests.

Statistical analysis
The researcher used the SPSS educational package to obtain results for her research variables.

Results
Result of the pre-and post-tests of the experimental group for basic skills (understudy) in volleyball. Table 5 presents the pre-and post-test results of the experimental group for basic volleyball skills. It includes the differences in AM (arithmetic means), Sd (standard deviations), t- t-calculated value, and significance values between the pre-and post-tests for the experimental group's skills.

Table 5. AM, Sd., t-calculated value, and the significance values between the pre-and post-tests (experimental group of skills (understudy))

Variable	Measuring Unit	Samples No.	AM	Sd	t-calculated	Sig. Values	Sig.
Underhand serve	Degree		14.300	5.676	11.266	0.000	Significant
Overhand pass		20	12.000	4.768	11.255	0.000	Significant
Underhand pass	Repetition		9.150	2.833	14.441	0.000	Significant

Result of the pre-and post-tests of the control group for basic skills (understudy) in volleyball: Table 6 presents the differences in AM (arithmetic means), Sd (standard deviations), t- t-calculated value, and significance values between the pre-and post-tests for the control group in volleyball skill development.

Table 6. AM, Sd, t-calculated value, and the significance values between the pre-and post-tests (control group for the skills (understudy) in volleyball

Variable	Measuring Unit	Samples No.	AM	Sd	t-calculated	Sig. Values	Sig.
Underhand serve	Degree		3.400	3.662	4.152	0.001	Significant
Overhand pass		20	3.300	3.062	4.810	0.000	Significant
Underhand pass	Repetition		2.850	2.059	6.190	0.000	Significant

Result of the post-tests for the experimental and control groups in the basic skills (under research) in volleyball: Table 7 shows the AM, Sd., calculated and tabulated (T) values, and significance values in the post-tests for the experimental and control groups in the basic skills (understudy) of volleyball.

Table 7. AM, Sd., t-calculated and t-tabulated values, and significance values in the post-tests for the experimental and control groups

Basic skill	Measuring unit	Sample No.	Experimental		Control		t-Calculated	Sig. Value	Sig.
			AM	Sd.	AM	Sd			
Underhand serve	Degree		36.700	6.951	26.050	6.361	5.054	0.000	Significant
Overhand pass		40	28.950	6.176	20.850	4.912	4.590	0.000	Significant
Underhand pass	Repetition		25.350	6.268	18.150	3.572	4.463	0.000	Significant

Result of the post-tests for the experimental and control groups for basic skills (under investigation): Table 8 shows the results of the post-test and retention tests for the experimental group of basic skills

Table 8. Results of the post-test and retention tests for the experimental group of basic skills

Variable	Measuring unit	Posttest		retention tests		Percentage %	Sig
		AM	Sd.	AM	Sd.		
Underhand serve	Degree	36.700	6.951	34.500	5.722	15.38	Significant
Overhand pass		28.950	6.176	27.350	5.530	13,33	Significant
Underhand pass	Repetition	25.350	6.268	24.150	4.666	13,11	Significant

Table 9. Results of the post-tests and retention tests for the control group for basic skills

Variable	Measuring unit	Posttest		Retention Tests		Correlation coefficient	Sig
		AM	Sd.	AM	Sd.		
Underhand serve	Degree	26,050	6,361	24,940	5,223	0,513	Significant
Overhand pass		20,850	4,912	19,000	4,535	0,542	Significant
Underhand pass	Repetition	18,150	3,572	17,100	2,688	0,559	Significant

Discussion

From the results previously presented in tables (5 and 7) and the post-test results in tables (8 and 9), it was found that there are statistically significant differences between the pre and post-tests of basic volleyball skills for both the experimental and control groups and in favour of the experimental group, which is based on the constructivist EDGA model. The researcher attributes these differences to the fact that the curriculum applied the constructivist EDGA model, which helped stimulate the students' minds. Thus, it helped in their development. The development unit's clear goals, aligned with the student's current level, will enhance learning and help achieve the educational objectives. Clearly defined goals in behavioural terms or specific performance levels will be meaningful and effective (Najm 2022). Using the constructivist EDGA model helped avoid relying on the school during the lesson. In this model, the reliance is entirely on the students in terms of presenting and applying those ideas during the lesson. They also used different net heights to consider the students' heights. Also, to master the skill at a lower height than the legal level of the net, the skill technique will be maintained if the height is increased gradually.

The alternative solution is when two students hit their hands together and on the opposite side. This solution helped the students first increase their jumping ability. Secondly, extend the arms fully. It led to the development of skills, and this solution increased the students' motivation and enthusiasm. This helped the students create an atmosphere of democracy, freedom of action, expressing opinions, and breaking away from the previous norm because the one who jumps higher and raises his hands above the other is the best. This helped in developing jumping and arm positioning. Thus, he indirectly developed the technical performance and precision of the skill, which helped create an atmosphere of

cooperation and expressing opinions by presenting ideas and relying on the ideas of others in building a new idea. It also increased self-reliance through the democratic atmosphere in the session, encouraging them to put forward ideas. Preparing the physical education lesson using the constructivist EDGA model helps increase and diversify the ideas presented. Thus, they produce ideas and solutions that may seem worthless to the student, but in fact, they may be good, especially if other students use entrances or stimuli for other ideas so that they are more profound than the first (Razouki 2016).

Thus, they helped reduce the burden on the school compared to other teaching methods, which depend entirely on the school, in terms of explaining and displaying the motor model, giving exercises that help development, dividing into groups for playing and judging, giving them feedback, and then leaving. As for the control group, they relied on the school only and applied what it asked of them, which was dividing the students into groups to play, judge, and give feedback when a mistake occurred. The percentage of development and retention shown in Tables (8 and 9) indicate that the constructivist EDGA model used by the experimental group led to their development in basic volleyball skills. This is through the clear differences in the percentages of development between the pre-and post-tests. The researcher attributes this to the fact that expressing opinions and diversifying ideas helped achieve the goal, that is, the occurrence of development. For this reason, the researcher attributes the reason for the development in the performance of skills to creative solutions in the learning process. That "solving problems with a creative solution" by using the constructivist EDGA model can be understood to a deep degree as the applications progress, stage after stage, and with the repeated use of exercises. This model helped the students increase their experience in thinking processes and develop more than one way to solve any problem they face, whether in school or the environment (Al-Dahrawy, M. M., Rabie O. M., Ahmed M. M. 2016); (Hassan D. A. 2023)

Additionally, increasing the number of exercise repetitions in each session helped create more opportunities for optimal performance, leading to improved proficiency in both skills. For the exercise to be effective, two basic things must be considered: the amount of exercise and the type of exercise. This helped develop the experimental group and, thus, its superiority over the control group. So, there must be diversity in the methods used in teaching and not rely on one model or one type of exercise (Hussein, A., Majid, S., & Hassan 2023). Table 6 shows that the results of the control group showed that there was very little development in the skill performance and accuracy of the two skills and that they were not at the required level. The reason for this is the model that the school followed in teaching, which required students to adhere to the motor model and repeat constantly and not stray from it until they were able to perform the game in a manner similar or identical to the model. This means not performing operations that help in the abundance of ideas, as it does not stimulate his constructive processes. Whereas focusing on a specific response makes students unable to offer new solutions and find difficulty in changing their ideas, this has led to a lack of the desired development.

There is also an apparent effect of the educational curriculum used according to the constructivist (EDEA) model, which helped the experimental group that was applied according to the constructivist EDEA model outperform the usual method in testing enjoyment in the lecture. In addition, they rely on solving their educational problems on their own (Muhammad, 2019). Confirms that encouraging students to solve their educational problems significantly affects their understanding and awareness of learning. When students are pushed to think critically and work to solve problems independently, they learn how to deal with challenges effectively, enhancing their cognitive abilities and analytical skills. In addition, this model is characterized by dialogue. After identifying a problem is completed,

the school wants to inform the students about that problem by talking to them. The constructivist EDGA model is one of the practical educational models that help people learn volleyball skills quickly and effectively. Underhand serving and underhand and overhand setting are among the most essential basic skills in the game of volleyball. The skills (under study) contribute to achieving success and winning in matches. Therefore, the constructivist EDGA model is necessary to learn the three volleyball skills correctly and properly.

Modern teaching emphasizes using teaching models that motivate students to improve their performance by providing positive and constructive feedback on their performance (Carmen, P. ., Dănuț, M. G. ., Neculai, H. ., Constantin, U. B. ., & Alexandru 2024). This enhances their self-confidence and their ability to improve their skills. This is confirmed by (Majed 2022): Modern learning aims to build self-confidence and independence in learning. It also enhances memory and improves one's ability to retrieve and apply information in new situations.The EDGA model provides continuous and repetitive training on correctly performing both skills, ensuring that students acquire the necessary basic skills (Hassan D. 2023). This confirms that the constructivist EDGA model serves as a valuable educational tool for achieving success in learning skills, especially volleyball skills. This model improves female students' performance and increases their chances of winning matches.

Conclusions:

Based on the results we obtained, we can conclude that there are statistically significant differences between the pre-and post-tests of the basic skills of volleyball for both the experimental and control groups, which came in favour of the experimental group by relying on the EDGA structural model. The researcher attributes these differences to the fact that the curriculum helped stimulate the minds of students and thus helped develop their skills and increase their motivation and enthusiasm. Not to mention the development of technical performance and skill accuracy. Preparing a physical education lesson using the EDGA structural model helps increase and diversify the ideas presented, develop skills and solve problems creatively. The researcher recommends the necessity of relying on modern curricula in addition to the curricula and methods used previously, taking into account development, diversity and individual differences among students.

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