

# The impact of flexible aggregate strategy in learning some of gym skills

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## ABSTRACT

The aim of the research is to identify the impact of an educational curriculum for the strategy of flexible groups and the traditional method of learning some of the skills of the technical gym for men and to identify the differences between the members of the experimental group that used an educational method for the strategies of flexible groups and members of the control group that used the traditional method in the post test in learning some of the skills of the technical gym of men. The research community was represented by the second stage students in the College of Physical Education and Sports Sciences - Basra University for the academic year 2016-2017, they were (100) students distributed among (6) Sections, and a sample was chosen from that community by (36) students in a simple random way. The sample was divided in to experimental and control groups (18) students for each group. The application of the curriculum for the strategy of flexible groups was launched on 24/2/2019 and at the rate of two educational units per week and finished applying the curriculum on 13/4/2019, after processing the results of per and post tests using appropriate statistical means the researcher concluded the following: The use of both the flexible group strategy and the traditional method has shown a positive effect in learning the skills of the artistic gymnastics under study; The flexible group strategy is better than the traditional method for learning the technical gymnastics skills under study.

**Keywords:** Flexible aggregate strategy; Technical gym; Kinetic skills.

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## INTRODUCTION

When teaching kinetic skills, many variables overlap in one way or another in the input of the lesson and in a way that may not be controlled by the teacher, so the procedures within the lesson are affected and reflected on the outputs of the lesson do not achieve the objectives of the educational units in their full form, and these variables are individual differences between the level of one academic stage, Thus, in the second half of the 20th century, educators were called for the uniqueness of education, and methods emerged to deal with these differences and teachers began to diversify teaching using strategies implemented by creating a teaching environment based on (students are different in nature and learn in different ways). Teachers have begun to use strategies based on the diversification of teaching, emphasizing what the educators have called for and what the work priorities of the international gymnastics federation emphasize sought to use modern methods in education, which is almost difficult because of the small size of the stadium, and the small number of gymnasts.

One of these strategies (flexible aggregates) , which emphasizes that the learner 's educational process axis, each student has educational alternatives to choose from what suits him, they are in line with their abilities and inclinations and give him a chance to choose a group that wants to work with and the number of students who will work with them, This is done after the teacher has planned and designed a variety of activities commensurate with the interests and possibilities of learners. Here we will move from teaching directed to all students to dividing the class into non-fixed groups where the work within the groups continues for a specified period according to the objectives that the teacher wishes to achieve and then the teacher returns to work with the learners collectively.

This strategy provides a variety of educational options for the learner and is to change his group after working with them for a while in agreement with the teacher, that giving the learner this freedom to change and under the supervision of the teacher to choose what suits him colleagues to work with them which gives him a motivation to learn and develop his abilities, Ahmed Helmi and Hussein Bashir have confirmed *“it is best to organize the study in the form of areas or groups of decisions, including the student chooses according to his inclinations and abilities and aptitudes and the choice among groups within a group”* (Ahmed Helmy Al-Wakeel, Hussein Bashir Mahmoud, 1990) Allowing students to engage in a variety of group activities that meet the needs and inclinations of students will facilitate the learning process.

The development of gymnastics to the level it has reached now did not come by pure chance, but rather as a result of the efforts made by experts and specialists and the introduction of various sciences such as training science, biomechanics, kinetic learning and teaching methods to serve this sport. It has also entered as an important topic within the curriculum of the general program for the Colleges of Physical Education for male and female students in the country, and one of its most important goals is for them to learn the art of performing and teaching basic skills in artistic gymnastics.

The importance of the research lies in the fact that the curriculum prepared by the researcher with its exercises and its application according to the strategy of flexible groups based on taking into account individual differences has a positive effect to learn the performance of some basic skills technical gymnastic for men and the researcher hopes to put his efforts in the hands of workers in the educational process of the faculties of sports education in order to benefit him in teaching those skills.

### **Research problem**

The great diversification of teaching methods used in higher education is an important means of promoting equal learning opportunities. This is recommended by the international, Arab and regional educational conferences in (Cairo, Dakar, UNESCO). That each student has the right to have an understood individual need, and the need to provide a good education for all students and improving the quality of education by diversifying the teaching processes of all subjects at different levels of study. UNESCO also stressed in its guide to Iraqi teachers and trainers that the great diversification of teaching methods used in higher education is important means of promoting equal learning opportunities. (UNESCO and the Ministry of Education, 2005).

The second year in the college of Physical Education and Sports Sciences represents a stage of university education and falls within the content of the subject of the study for this stage learning the skilled performance in the technical gym and therefore there are a number of strategies through which can diversify teaching, one of these strategies the strategy of flexible groups, which constitutes a basic type that provides educational alternatives to the student in line with the tendencies and desires of each in the strategy he prefers during learning skills, and because the researcher practiced this game and studied and realized that when teaching basic skills some Students prefer to work with the group based on the experience of colleagues, which is reflected through the interaction of the individual with the group, which is increasing his motivation towards learning, he resorted to trying to experiment with the strategy of flexible groups in special physical education lessons in learning some skills in the technical gymnastic for men.

### **Research objectives**

Identify the effect of an educational curriculum according to the strategy of flexible groups in learning some of artistic gymnastics skills.

Identifying the differences between the members of the experimental group that used the educational curriculum according to the strategy of flexible groups and the control group members who used the traditional method in the post-test in learning some gymnastics skills.

### **Research hypothesis**

There is a positive effect in using the curriculum prepared according to the flexible group strategy in learning some of artistic gymnastics skills for men.

There were statistically significant differences between the experimental group members used the curriculum prepared of flexible aggregates and members of the control group used the traditional method in the post-test in learning some of the skills of gymnastics artistic men.

### **Research fields**

The human field: Second-level students at the Faculty of Physical Education, Basra University.

The Spatial field: gymnasium hall in College of Physical Education / University of Basra.

Time field: from 10/12/2018 to 24/4/2019.

## THEORETICAL STUDIES

### ***Diversifying teaching methods***

The difference of teachers in following different teaching methods is due to the differences between them, some of whom said that this theory is difficult to convey to the practical reality and apply it in the lessons, and some of them said that the diversification of teaching is the solution to many of the obstacles they face during teaching and this group is a lot of those who work in education and this preference because the diversification of teaching makes the learner the focus of the educational process. The diversification of teaching is to find multiple ways to provide students with different learning abilities and desires opportunities to understand, understand and use concepts in certain situations.

### ***Strategy flexible aggregates:***

This strategy is based on an important basis, which is that each student is a member of several different and variable groups formed by the teacher in light of the objectives of teaching and learning and also in light of the characteristics of the learner. In this strategy, it is allowed to move from one group to another according to their educational needs, and the teacher should follow the student through Moving and roaming between groups to facilitate the process of learning and follow-up. The place is prepared and provided with appropriate learning resources for each group separately, commensurate with the nature of the content presented and suited to their characteristics

The teacher should be concerned with evaluating the learners individually according to the level of performance achieved by each of them, and the basis for forming groups differs according to the educational position, sometimes the groups are homogeneous capabilities, inclinations, or preparations, and other times the group members differ in educational styles, inclinations, or previous experiences and information about the subject matter and the active teacher who will make use of this diversification to obtain better learning. *"The flexible group strategy is implemented by creating a teaching environment based on the premise that students are different by nature and learn in different ways"* (Jaber Abdel-Hamid, 2006).

### ***Landing from rear-swinging on a parallel device***

Technical aspects:

1. Taking into account the technical aspects of the crossover position.
2. Taking into account the technical aspects of the swinging by the crossover position.
3. Feet reach the highest possible level in the swinging front and back.
4. Strong push by the far hand to the landing area and reliance on the close hand.
5. Landing the body outside the parallel beam, close to the place of landing, as a result of pushing with the distal hand.
6. Re-catch the bar near the landing side with the distal hand and land with the feet together.

### ***Jump open on jump table device***

Technical aspects:

1. Approach at equal length steps with increased speed.
2. Raise the feet together and land on the jump ladder in the specified area.
3. Flying to its highest altitude with the body straight before starting the process of pushing with the arms.
4. Open the legs of the pelvic joint to the outside and push the arms with the lifting of the trunk up.
5. The arms are straightened during movement.
6. Landing on the feet together with the knees slightly bent.

**Landing by air solstice attached in gym rings**

1. Taking into account the technical aspects of the attachment position and the grip of the rings with a normal grip.
2. Taking into account the technical aspects of swinging front and back below the two rings.
3. Bending the thigh joint to stop the movement of the legs during the forward swing and upon reaching the body to a vertical position on the ground (just below the two rings).
4. Reach the inverted corner attachment mode.
5. Going through the position of back attachment and leaving the two rings before reaching this position.
6. Lifting the chest up and landing with the feet together, the arms in front to maintain the balance of the body, then next to the body.

**METHODOLOGY****Research methodology**

The researchers used the experimental approach to suit the nature of the problem to be solved.

**Research community and sample**

The research community is defined by the students of the second stage in the college of Physical Education and Sports Sciences / Basra University for the academic year 2018-2019 which contain (100) students (The fact that the gymnastic is one of the methodological subjects planned for this stage in terms of learning the skills under study).

A sample of that community was selected by 36 students in a simple random way the sample was divided into two experimental and controlled groups for each group (18) students, where the experimental group is studied in the style of flexible groups, while the controlled group used the traditional method and did not homogenize the members of the research sample in terms of (height, weight, age) because they are from one stage of study.

The researchers conducted parity between the experimental and control groups in all research variables, and this is what is shown in Table 1.

Table 1. Equivalence of the two groups.

Sq.	Variables	Measuring unit	Experimental group		Control group		(t) Calculated Value	Level indication
			Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation		
1	Landing embracing	Degree	1.888	0.600	2.111	0.600	0.788	0.440
2	Skill of jump open from jump table device	Degree	2.222	0.618	1.944	0.527	1.027	0.318
3	Falling from rear-weighted on a parallel device	Degree	2333	0.707	1.888	0.546	1.494	0.152

It is evident from Table 1 that the statistical significance is greater than the level of significance (0.05), which indicates that the differences are not significant, and this indicates the parity of the experimental and control groups.

### **Methods of collecting data**

Personal Interviews (Appendix 2).

The researcher conducted personal interviews with some specialists in the field of teaching methods and gymnastics to benefit from their opinions regarding information related to the subject of research.

Questionnaire and registration forms.

Tests and measurements.

Statistical methods.

Arab and foreign sources.

Scientific observation.

Each skill was evaluated from (10) degrees by means of pictorial view and stored on disk (CD) By the evaluators, and the researcher has sought the assistance of five arbitrators (Appendix 3) accredited by the Iraqi Federation of Gymnastic, as the evaluation process is done through deleting the highest and lowest degree, the three grades are combined and divided by (3) to extract the final score for each student.

### **Devices and tools used**

- Rugs of various sizes and thickness.
- Video camera with accessories (Sony).
- PC computer (HP).
- parallel device.
- Table jumping device
- Gym rings device

### **Tests used in the research**

- Landing from rear-weighted on a parallel device
- Jump open on jumping table device.
- Landing by air solstice attached in gym rings

### **The exploratory experiment**

The researcher conducted his exploratory experiment on 21/2/2019 on a sample of (6) students who were excluded from the community, the experiment was aimed at:

- Knowing the time taken to perform the tests.
- The safety of the devices and tools used.
- Overcoming errors that the researcher may encounter in conducting the main experiment.

- Test some of the exercises given in the curriculum.
- Training the assistants on how to take measurements according to the conditions of the tests.

The experiment has achieved its goal and was identified the best number of repetitions, which gives the student the opportunity to master the exercises according to the difficulty of each exercise and also to recognize the average performance time besides identifying many problems that may stand in the way of the main experiment.

### **Field research procedures**

#### **Pre-Tests**

The researchers gave two identification units before the test to all members of the sample, for the purpose of enabling students to know the form of the initial skill and how to perform it, then conducted pre-tests on 23/2/2019, the conditions related to all tests were installed to overcome the same conditions during the post tests.

### **Formulation and implementation of the educational curriculum in accordance with the strategy of flexible aggregates**

The application of the curriculum was initiated using the teaching methods of the flexible group strategy on 24/2/2019 at the rate of two educational units per week for the experimental group in Monday and Tuesday, for the purpose of adjusting this variable, two educational units were implemented per week for the control group as well, the time of the educational unit (90) or the curriculum adopted in the college in Sunday and Wednesday, the duration of the application of the curriculum of the experimental group ended on 13/4 / 2019.

#### **Post-Tests**

The researchers conducted a post - tests of the sample on 14/4/2019, the researcher provided similar conditions and requirements that have been in the pre-tests.

### **Statistical methods**

The researcher used statistical laws. (2009:3).

Arithmetic mean.

Standard deviation.

The researchers used the statistical bag SPSS Version 14 in data processing.

## **DISCUSSION**

### **Presentation and analysis of the results of the artistic gymnastics skills (under discussion) for the experimental group**

It appears from the results presented in Table 2 that the values of (t) Paired Samples Test in (Landing by back air solstice attached in gym rings, device, jumping open, landing by rear swinging on the parallel device), it reached respectively (25.267,32.265,25.164) and the attached statistical significance appeared smaller than (0.05), which indicates that there are significant differences between The results of these pre and post tests for the benefit of the post tests.

Table 2. Mean, standard deviation, standard error, (t) Calculated value for the results of the artistic gymnastics skills (under study), pre and post, for the experimental group.

Variables	Measuring unit	Pre-test		Post-test		Standard error	(t) Values	Indication level
		Mean	Standard Deviation	Mean	Standard Deviation			
Landing embracing	Degree	1.888	0.600	8.333	0.250	0.256	25.164	0.000
Skill of jump open on jump table device	Degree	2.222	0.618	8.777	0.195	0.203	32.265	0.000
Falling from rear-weighted on a parallel device	Degree	2.333	0.707	8.861	0.282	0.258	25.267	0.000

### **Presentation and analysis of the results of the artistic gymnastics skills (under discussion) for the control group**

It appears from the results presented in Table 3 that the values of (t) Paired Samples Test in (Landing by back air solstice attached in gym rings, jumping open, landing from rear-weighted on a parallel device), it reached respectively (21.429,20.872,34.878) the attached statistical significance appeared to be less than (0.05), which indicates that there are significant differences between The results of these pre and post tests are in favour of the post tests.

Table 3. Mean, standard deviation, standard error, and (t) Calculated value for the results of artistic gymnastics skills (under discussion) per and post for the control group.

Variables	Measuring unit	Pre-test		Post-test		Standard Error Mean	(t) Values	Sig. (2-tailed)
		Mean	Standard deviation	Mean	Standard deviation			
Landing embracing	Degree	2.111	0.600	6.555	0.446	0.207	21.429	0.000
Skill of jump open on jump table device	Degree	1.944	0.527	6.416	0.500	0.214	20.872	0.000
Falling from rear-weighted on a parallel device	Degree	1.888	0.546	6.194	0.410	0.123	34.878	0.000

### **Presenting the results of the tests of the research variables and the level of the (post) technical performance of the experimental and control groups**

It appears from the results presented in Table 4 that the values of (t) independent Samples Test in the (Landing by back air solstice attached in gym rings, jumping open, landing from rear-weighted on a parallel device), it was respectively (10.432,13.198,16.079) It also appeared that the attached statistical significance value is smaller than the significance level (0.05) indicating the existence of differences Significance between the two groups (experimental and control) in favour of the experimental group.



Table 4. Mean, standard deviation, and (t) Calculated value for the results of the technical gymnastics skills (understudy) post for the experimental and control groups.

Variables	Measuring units	Experimental		Control		(t) Values	Sig. (2-tailed)
		Mean	Standard Deviation	Mean	Standard Deviation		
Landing embracing	Degree	8.333	0.250	6.555	0.446	10.432	0.000
Skill of jump open on jump table device	Degree	8.777	0.198	6.416	0.500	13.198	0.000
Falling from rear-weighted on a parallel device	Degree	8.861	0.282	6.194	0.410	16.079	0.000

### **Discussing the results of the pre and post tests for the control and experimental groups**

Through previous results presentation and analysis of pre and post tests for the two groups of research experimental and control that there are differences significant spirits between the results of the post-tests in basic skills for the benefit of flexible aggregates, the researcher attributed this superiority to the regularity and continuity in the educational units of the curriculum, which had an impact in evolution the level of skill performance, as the gradient in providing skill from easier to difficult and from simple to complex led to the access to positive results, as well as the gymnastics is characterized by the multiplicity and diversity of skills and attitudes which contributed to creating an atmosphere of fun and desire to learn skills and progress by students.

Where students studied a strategy that dealt with their desires and inclinations, the strategy of flexible groups provided an opportunity for students to invest the various activities and exercises created by this method so that they know their true level and the activity they perform, The availability of a number of alternatives represented by various activities and flexible groups led to the student studying and learning the skills of the gym by choosing the appropriate activities, and colleagues who agree with him in the tendencies, trends and skill level. They have never been so well educated, which has increased the possibility of learning skills. Saad Mohsen confirms "The curriculum inevitably leads to the development of the level if it is based on a scientific basis in the organization of the educational process, and the selection of exercises for the degree of difficulty takes into account the individual differences being beginners and the use of educational means under the supervision of a specialized teacher under good educational conditions in terms of space, time and tools used" (Saad Mohsen Ismail, 1996).

The thoughtful planning that is based on the educational curriculum leads inevitably to the development of learning and this is consistent with what was stated by Mahmoud Abdel-Fattah that "the main goal of the educational curriculum is to acquire new skills, master and develop them in advance because learning is the way in which information or skills are acquired. Or capabilities, whether that is a result of experience, practice, or training" (Mahmoud Abdel Fattah Othman, 1983).

As well as the educational curriculum, which prepared the experimental group by flexible aggregates strategy contributed significantly to increase the amount of learning skills under discussion for a group that have been studied by the strategy of flexible aggregates, the researcher attributed the reason that these strategies make the student to work in groups that differ number, When the application of skill or exercise start, he works with the one big group which includes all the students in the class by seeing each other while applying activities, He receives information about performance from his colleagues according to the goal of the educational unit and then leaves this group to belong to a small group chosen by him or the teacher according

to his experience, which will find in the members of his new group a lot of similarity and agreement to exchange experiences according to inclinations and directions and in the last stage of the application returns to join the large group to perform more repeats and get more experience when returning to the big group . *"Students tend to remember and enjoy learning more when they learn by giving them the freedom to choose their colleagues when performing skills, and they achieve better learning from situations where they are not diversifying,"* says Laith Mohammed, quoting Cohen (Laith Muhammad Daoud, 2011). *"Teaching methods and methods are very important in the educational process, and they affect the speed of learning,"* said Nizar al-Talib (Nizar Majeed Al-Taleb, 1987).

The teacher provided a number of suitable alternatives for all levels, as he used his experience through his dealings with the content of the singular that takes into account the personal characteristics of the students, which is when he designed the sources of learning was taking into account the abilities, inclinations and readiness of students according to the goal of the educational unit represented by exercises and groups flexible number , he follows the performance progress within each group and compares the level of all totals so the student learns the level of performance and according to the activity he chooses .His transition from a group activity imposed on him to a chosen one and a few colleagues contributed to this positive development. Jaber agrees with the findings of the research that *"the teacher must be prepared to integrate his educated students by creating different options that vary in the level of difficulty"* (Jaber Abdel-Hamid, 2006).

This strategy has also made the individual differences between students a factor that helps to succeed in the skilled performance as the availability of a number of alternatives represented by various activities and exercises that gave each student the opportunity to choose the appropriate exercises according to his inclinations, desires and abilities, that the freedom to move from a group activity imposed on them to a group activity chosen by them with a small number and the opportunity to choose colleagues who wish to work with them increased their response to learning , Laith quotes Nadia Abdul Azim. *"The reason for the diversification in teaching is due to the individual differences of the learners in terms of their abilities, preparations, motivations and experiences that develop through continuous interaction with the educational environment, and which motivates them to respond in each educational situation"* (Laith Muhammad Daou, 2011). The researcher also attributes the results of the development of the strategy of flexible groups, that this strategy provided an opportunity for the teacher to move between groups easily to show some observations about the performance of the students in each group, Ahmed Helmy and Hassan Bashir agree with the findings of our research *"that the teacher should be ready to integrate his educated students by giving different and different options in the level of difficulty, as his presence and the provision of guidance and assistance if necessary effectively contributes to motivating them to perform better"* (Ahmed Helmy Al-Wakeel, Hussein Bashir Mahmoud, 1990).

Likewise, we cannot overlook the role of motivation for performance, which was represented in the excitement and competition among students of the experimental group for the variety of exercises of the prepared curriculum and its different forms, and the curriculum prepared by the researcher to help teach these skills is new to students and raises a state of curiosity and the desire to experiment and get rid of the situation Boredom represented by the adherents of traditional methods that diverge in some aspects from suspense and excitement, although the control group was providing theoretical information about the learned skill and that information is available in the textbook, and reliance is on the preservation of this information, but the experimental group had the differences in its favour in increasing The amount of theoretical learning of these skills is caused by the educational curriculum, which was prepared for the experimental group and whose goal was giving students the ability to acquire knowledge and practical information to solve their problems as *"Cognitive aspect is one of the basic conditions for the implementation of any motor skill and without it one*

of the main elements of learning is absent" (Furat Jabbar Saadallah, 2001). This demonstrates the importance of cognitive learning as well as practice in increasing the amount of skill learning, (Mahmoud Othman, 1983) asserts that "the knowledge field is the first set of qualities and attributes that connect and deepen knowledge and take the form of multi-dimensional skills based on focus in order to record, retrieve and process the individual's information" (Mahmoud Abdel Fattah Othman, 1983).

## CONCLUSIONS AND RECOMMENDATIONS

1. The use of the flexible group strategy achieved better learning than the traditional method of learning the gymnastics skills under study.
2. The use of the proposed educational program has played a positive role in increasing students' motivation for basic skills in the gym.

### Recommendations

Among the most important recommendations that the researcher recommends are the following:

1. Use the proposed educational program to teach artistic gymnastics skills because of its importance in developing basic skills.
2. need to take into account the individual differences between the student by the teachers of gymnastics.
3. Conducting other studies to use the flexible group strategy in teaching the other subjects approved in the College of Physical Education.
4. The necessity to prepare developmental courses for teachers of the College of Physical Education to use different educational methods and to urge them to learn based on thinking, innovation and creativity.
5. Making research about the impact of Teaching with flexible groups strategy to learn other skills in gymnastics.

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**APPENDIX 1.**

The aim of the unit is to teach the open jumping skill		
First and second week		Number of students:
Time: 90min		Educational unit
Devices and tools: carpet, 3 jumping horse, 3 leapers		

Sections of the educational unit		Time	Exercises used	The regulatory side	Notes
Preparatory 15 min	General warm-up	5 min	Walk and jog, arms rotation with jogging, rising knees up with jogging, side jogging with arms moving.	***** 8	Emphasis on warm-up for all parts of the body and performance is accurate and lively
	Physical exercise	10 min	Running with a lift on the leaper (Based on a jumping horse) walking forward and backward. From the slanted flat, pushing the arms and clapping. (Sitting on four) Standing on the hands, squatting, then pushing with the arms. (Inverse horizontal flat, the heel edging on the box) Bending the arms. (Flat, hands crossed behind, legs fixed) Extend the torso back ( Reverse support )crawling on hands and feet.	***** ***** ***** +	Ensure that the exercise is performed correctly
the main 65 min	The educational part	20 min	Explain the skill of open jumping and gradually teach it and provide a good model with giving feedback		Emphasis on students 'understanding of the technical aspects of performance

	Application part	45 min 15 sec 15 sec 15 sec	Work within a large group (performing the open jump) using a leaper. Working with small groups (performing the open jump) from over the wooden box Working with a large group (performing the open jump )		During this activity the student moves to work with a large group , which includes all students to work with his small group that chosen by the teacher then return to work with the large group , to encourage team play.
Final 10 min		10min	Entertainment Game + Relaxation	***** +	

**APPENDIX 2.**

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2. Dr. Ahmed Abdul Aziz / Teaching Methods / College of Physical Education and Sports Sciences / Basra University.
3. Dr. Hussein Ali / Teaching Methods / College of Physical Education and Sports Sciences / Basra University.
4. A.M. Laith Mohammed Hussein / Learning Dynamics - Gymnastic / College of Physical Education and Sports Sciences / Basra University.

**APPENDIX 3.**

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4. D. Ghazi Fatha Hussein.
5. D. Kazem Issa Kazim.



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