

The Effect of Learning Patterns on Achievement Motivation Among Public School Students

Dr. Mohamad Ahmad Saleem Khasawneh

Assistant Professor, Special Education Department, King Khalid University, Saudi Arabia,
mkhasawneh@kku.edu.sa

Abstract

This research aimed to identify the effect of learning patterns on the achievement motivation of public-school students in Irbid governorate. The descriptive correlative approach was used to achieve the goal of the research, and a questionnaire was selected as an instrument to collect data. The sample of the study included 277 students who were chosen by the simple random method. The results of the study showed that public school students tend to use different learning styles during the learning process at a high level, where the mean scores for the learning styles dimension reached (4.0587). The results also revealed that public school students have a high level of achievement motivation, where the mean score was (3.8621). The findings showed that there is a direct statistically significant relationship between learning patterns and achievement motivation among public school students, and there is a statistically significant effect of learning patterns on achievement motivation among public school students, and the possibility of predicting achievement motivation through learning patterns among public school students.

Keywords: learning patterns, motivation, academic achievement, public schools.

Introduction

Learning patterns are one of the ways and methods through which a subject is perceived, used, and interacted with, where the learner processes skills, information, and trends with available abilities, preparations, strategies, and mental processes (Zayd and Radi, 2016). Learners learn in a variety of styles and methods that affect their achievement and performance. Individual differences between learners must be taken into account when starting to present educational content to them, and learners have different mental levels due to environmental and genetic factors. This affects the process of obtaining similar educational outcomes within the required standards, as individuals differ in intelligence, experiences, mental processes, and personal preferences. Therefore, the teacher must allow the learner to choose the style that suits him in the learning process (Al Bayat et al., 2020). Students differ in the rate and patterns of their learning, as some students prefer that the teacher write down all the information on the board, while others prefer to listen to the explanation, and others may prefer to work in small groups or learn through pictures and charts (Al-Nazir, 2015).

Achievement motivation is an important factor in activating the behaviour of the individual, directing him, understanding and interpreting the behaviour of the surrounding individuals, and his awareness of situations. The individual has better ways of life and greater levels of human existence, and the individual's creativity, achievements, and degrees of activity when performing the tasks entrusted to him are attributed to motivation (Shater et al., 2023; Hasnain, 2015). Achievement motivation is one of the most prominent forms of motivation, especially among school students. Having achievement motivation is a key factor for academic success (Shroff, 2017), and the importance of achievement motivation in the educational field lies in its role in the learning process because it helps to delay the feeling of mental stress. It also helps in increasing focusing students' attention, which leads to their superiority and increases their academic achievement (Al-Suhaibi, 2020).

Statement of the problem

School students' enjoyment of achievement motivation is necessary and inevitable because achievement motivation provides them with self-confidence and self-acceptance, completing tasks quickly develops their abilities to participate in social responsibility and constructive competition with others, and increases motivation for perseverance and effort. Attention to achievement motivation among students affects

their self-confidence, social and psychological compatibility, positive interaction with others, and the development of their desire for distinction and excellence. This desire contributes to making their performance high compared to others to achieve self-realization and overcome the problems and obstacles they are exposed to, which generates a feeling of satisfaction.

Therefore, it is necessary to pay attention to the learning patterns used in schools, as they are one of the ways that reflect a large extent the differences between learners and the methods, they prefer in dealing with information during the education process. The learner's knowledge of learning patterns improves their attitudes toward learning. However, teachers' ignorance of learning patterns that are appropriate for students leads to their exposure to educational patterns that do not correspond to their abilities and preparations, which leads to the failure of the educational institution to fulfil its roles to develop students' abilities, information, and skills. The problem of the current research is to identify the impact of learning patterns on the achievement motivation of public school students, which provides teachers with a broad ground that enables them to diversify in teaching methods that correspond to the common learning styles of students, as this has a major role in the success of most skills and subjects.

Questions of the study

The main question of this study is: "Is there an effect of learning patterns on the achievement motivation of public-school students in Irbid Governorate?"

To answer this question, the following sub-questions were formulated:

1. What are the most preferred learning patterns among public school students in Irbid Governorate?
2. What is the degree of achievement motivation among public school students in Irbid Governorate?
3. What is the relationship between learning patterns and achievement motivation among public school students in Irbid Governorate?
4. Is it possible to predict the achievement motivation through the learning patterns of students in public schools in Irbid Governorate?

Research objectives

The main objective was to "recognize the impact of learning patterns on the achievement motivation of public-school students in Irbid Governorate." The study specifically aimed at:

1. Identifying the most preferred learning styles for students of public schools in Irbid Governorate.
2. Determining the degree of achievement motivation among students of public schools in Irbid Governorate.
3. Identifying the relationship between learning styles and achievement motivation among public school students in Irbid Governorate.
4. Detecting the possibility of predicting achievement motivation through learning patterns among students of public schools in Irbid Governorate.

Significance of the study

This study contributes to enriching scientific research on learning patterns and achievement motivation. The study covered an important segment of society, which is the category of students, due to the importance of this category in meeting societal needs and its prosperity and progress for the better. The results of the research are useful in developing programs to develop achievement motivation among students in schools, to improve their academic level and academic achievement. This study draws the attention of those concerned that there are individual differences between students, and highlight the role of learning styles in the teaching and learning process.

Limitations of the study

- Thematic limits: This research deals with the effect of learning patterns on the achievement motivation of public school students

- Human limits: public school students.
- Spatial limits: government schools in Irbid Governorate, Hashemite Kingdom of Jordan.
- Time limits: This research was applied during the first semester of the year 2021/2022.

Literature Review

Learning patterns

Recently, researchers have been interested in studying learning patterns, which led to the emergence of many theories related to learning patterns. Several different tools have been used, some of which focus on studying learning patterns from the theoretical side, while others are concerned with the link between learning patterns with university specialization, the level of academic achievement, or teaching methods (Jaafar, 2016).

Learning patterns are defined as “the methods used by the individual during the process of learning and assimilation of information” (Al-Zahrani, 2020, p. 184). It was also defined as “the learning method that the learner prefers and uses, and by which information is processed, stored, encoded and retrieved” (Sassila, 2015, p. 143). Abdel Moneim (2016) defined it as “a broad concept that includes several psychological, cognitive and sensory variables such as visual, auditory and kinesthetic preference, and it represents how these variables are translated into perceived learning behaviours and preferences that produce a set of preferred methods of behaviour described as a learning style” (p. 411).

Identifying the students' preferred learning patterns is crucial to the education process. Atiya (2016) argued that it helps determine how each learner learns, and what is the best style for the learner to learn, such as acting, singing, movement, or chants. It helps in explaining the learners' movements and behaviour during the learning process. It also helps the learner to choose the necessary experiences that match the learners and their personal preferences and in making the learning and teaching processes more effective and effective in the behaviour of the learners. Learning patterns help to make the learning process easier, more efficient, and sustainable, and reduce cost and time. It increases learning motivation and makes it more positive. It also helps the teacher to classify learners based on their similarities to preferred learning styles and assists the teacher to address learning difficulties and obstacles and invest the learners' abilities in a more effective way (Khasawneh, 2021).

There are several models for learning patterns. The VAR model is the most common. This model categorizes learning styles into (Abu Zaid and Brizat, 2022) visual learning, auditory learning, literacy, and learning by movement.

Achievement Motivation

Attention is paid to achievement motivation in all scientific, practical, and applied fields, such as the administrative, educational, academic, and economic fields. Achievement motivation is an unimportant factor in activating the individual's behaviour and directing his attitudes. It also helps in understanding behaviour and is a basic component for the individual to achieve self-realization and achieve a better life and higher levels of human existence (Abu Samra and Hamrasha, 2014).

Achievement motivation is defined as “the individual's ability to achieve things that others see as difficult, to control the physical and social environment, to control ideas, to properly address and organize them, to speed performance, to be independent, to overcome obstacles, to reach standards of excellence, to excel oneself, to compete with others and to excel over them, and to be proud of oneself and appreciating the mature practices” (Hasnain, 2015, p. 284).

Achievement motivation is also defined as “a set of efforts and forces exerted by the individual to overcome obstacles and accomplish difficult tasks as quickly as possible. It has many aspects, including striving to do difficult work, competing with others, taking up ideas and organizing them, while achieving this quickly” (Amin, 2018, p. 62). It was also defined as “the extent of an individual's willingness and inclination to strive to achieve a goal and to succeed in achieving and mastering that goal, as this goal is characterized by certain characteristics, traits, and criteria” (Muhammad, 2016, p. 94).

The goals of achievement motivation are divided into several parts (Abu Al-Nasr, 2022). First, the learning objective describes the prevailing trend among students who perceive learning experiences as an opportunity to master information and acquire knowledge. One of its most important characteristics is the desire for continuous improvement, increasing personal efficiency, and a positive attitude toward learning. Second, performance objective describes the prevailing trend among students who are interested in performance only, and consider it a reason for their activities, and one of its characteristics is that they do not have ways to distinguish them in learning, do not search for new information, and tend to show high abilities in front of others. The third is avoiding work, which is the belief that success comes without hard work (Khasawneh & Al-Rub, 2020).

Previous studies

Abu Zaid and Brizat (2022) identified the effect of learning patterns on the educational learning relationship of primary school students in private schools during the Corona crisis. The descriptive analytical approach was used, and the questionnaire was used as a tool for data collection. The study sample consisted of (698) male and female students from the basic stage in private schools in Amman Governorate. The results of the study showed that the common learning patterns of the students of the basic stage came at an average overall rating level in favour of the auditory learning pattern and that the forms of educational learning relationships for students in the basic stage came at an average overall rating level, and in favour of the traditional educational relationship pattern.

Muhammad and Falih (2022) investigated the achievement motivation of the students of Al-Mustansiriya University and used the descriptive approach and a questionnaire as a tool for data collection. The results showed the absence of statistically significant differences in the level of achievement motivation according to the gender variable, and the presence of statistically significant differences in the level of achievement motivation according to the variable of specialization in favour of scientific disciplines.

Shana'a et al (2022) explored achievement motivation and its relationship to the level of academic achievement from the point of view of primary school teachers in Tulkarm Governorate in Palestine. The descriptive correlative approach was used, where a questionnaire was distributed electronically to a sample of (230) teachers. The results of the study showed that the achievement motivation of the basic stage students from the teachers' point of view in Tulkarm was at a high level. The results showed a correlational relationship between achievement motivation and the level of academic achievement, and that there is no statistically significant difference between the opinions of the study sample about achievement motivation and its relationship to the level of academic achievement among basic school students from the point of view of their teachers due to the variables (age, specialization, and qualification).

Al-Sabbagh and Hamed (2020) investigated the learning preferences of the common first-year students at Umm Al-Qura University in Mecca. The study used the descriptive approach and was applied to a sample of 105 students. The results of the study indicated that the kinesthetic learning style is preferred by students, then the "visual" learning style, followed by the "auditory" learning style. The results showed that there is a statistically significant relationship between learning styles and students' motivation to learn.

Methods

Based on the nature of the research and the goals that it seeks to achieve and the data to be obtained, the descriptive correlative approach was used, which is defined as "one of the descriptive approaches used to measure the relationship between two variables (independent variable and dependent variable), and whether this relationship is positive or negative, and then predicting the level of a certain amount of significance in a digital form" (Al-Mar'i et al., 2021, p. 29).

Sampling

The research population is represented by students of public schools in Irbid Governorate for the first semester (2021/2022). The research sample was chosen by the simple random method, and the research sample consisted of (277) students. An electronic questionnaire was distributed to them to obtain and analyze data.

Instrument of the study

After reviewing previous studies related to the topic of the current research, a study instrument was a questionnaire, which was prepared to identify the impact of learning patterns on the achievement motivation of students in public schools in Irbid Governorate. The questionnaire included two parts. First, the learning patterns questionnaire, which consisted of (15) items, was divided into (3) main dimensions as follows, sensory (kinesthetic) learning (5 items), visual learning (5 items), and auditory learning (5 items). Second, the achievement motivation questionnaire, consisting of (15) items, was divided into (3) main dimensions, perseverance (5 items), ambition (5 items), and bearing responsibility (5 items).

Likert's five-Scale was used to measure the participants' responses to the questionnaire items, as shown in the following table.

Table 1. The measurement used in the questionnaire

Level of agreement	digital weight	Mean score category	Level
Strongly agree	5	5-4.21	Very High
Agree	4	4.20-3.41	High
Neutral	3	3.40-2.61	Medium
Disagree	2	1.81-2.60	Low
Strongly disagree	1	1-1.80	Very low

Validity of the instrument

After preparing the questionnaire in its initial form, it was presented to a group of judges and specialists in the field of psychology and teaching methods in Jordanian universities to express their opinions and viewpoints in terms of the integrity of the wording and its compatibility with the dimensions of the research. In light of their comments, the necessary modification and deletion of the paragraphs of the questionnaire were made before distributing it to the target sample.

Internal consistency was also measured for the instrument of the study. Internal consistency is the extent of the surface of each paragraph with the dimension to which the item belongs. The internal consistency of the dimensions was calculated by obtaining the correlation coefficients between each item of the resolution dimensions with the dimension to which it belongs. The following table presents the results.

Table 2. Correlation coefficients between each item of the learning patterns dimensions with the total score of the dimension

NO.	Correlation coefficient	NO.	Correlation coefficient	NO.	Correlation coefficient
1	.673**	6	.720**	11	.781**
2	.756**	7	.822**	12	.819**
3	.773**	8	.801**	13	.759**
4	.743**	9	.745**	14	.766**
5	.785**	10	.713**	15	.818**

The table shows the correlation coefficients between each item of the learning patterns dimension with the overall average of the dimension. The results revealed that the correlation coefficients shown in the table are all significant at the significance level (0.01), and thus the items are considered true for what they were designed to measure.

Table 3. Correlation coefficients between each item of the dimensions of achievement motivation with the total degree of the dimension

NO.	Correlation coefficient	NO.	Correlation coefficient	NO.	Correlation coefficient
1	.612**	6	.627**	11	.580**
2	.662**	7	.763**	12	.791**
3	.744**	8	.655**	13	.733**
4	.691**	9	.751**	14	.680**
5	.678**	10	.671**	15	.733**

The table shows the correlation coefficients between each item of the dimensions of achievement motivation with the overall average of the dimension to which it belongs. The results revealed that the

correlation coefficients shown in the table are all significant at the significance level (0.01), and thus the paragraphs are considered true for what they were designed to measure.

Reliability of the instrument

The reliability of the instrument means that the results are stable and do not change significantly if they are redistributed to individuals many times during a certain period. To verify the stability of the search resolution, Cronbach's alpha coefficient was used, and the minimum acceptable value is (0.70) (Gagnon et al., 2017).

Table 4. Results of Cronbach's alpha coefficient to measure the instrument's reliability

Dimension	Number of items	Cronbach's alpha coefficient
sensory (kinesthetic) learning	5	.943
visual learning	5	.949
auditory learning	5	.946
Learning patterns	15	.977
perseverance	5	.802
competition	5	.816
Taking responsibility	5	.847
achievement motivation	15	.917

The table shows that the values of Cronbach's alpha coefficients for the dimensions were acceptable, as the value of Cronbach's alpha coefficient in the learning patterns' dimension was (.977), and the Cronbach's alpha coefficient in the achievement motivation dimension was (.917), which indicates that the research instrument is reliable.

Results

1. Identifying the most preferred learning patterns among students of public schools in Irbid Governorate.

To achieve the first objective of the research, the data was analyzed and focused on the highest and lowest items of the questionnaire, and the results were interpreted and compared with previous studies.

Table 5. The results of the mean scores and standard deviations of the dimension of the sensory learning pattern among public school students

Item	NO.	Mean score	St. Dev	Rank	level
I try to read aloud and use my fingers to trace the words	277	4.0650	.91847	1	High
I tend to compose and analyze things multiple times to try to learn them	277	3.9531	.91760	4	High
I move around a lot during the learning process and don't stick to the same place	277	3.9458	.97093	5	High
I use my hand while learning in an interesting way	277	4.0217	.93613	2	High
I express my thoughts through drawing	277	3.9892	.94594	3	High
Total	277	3.9949	.82170		High

The table above shows that the item that states "I try to read aloud and use my fingers to trace the words" got the first rank with a mean score of (4.0650) and a standard deviation of (.91847), and this indicates a high degree of agreement with this item. The item that states "I move a lot during the learning process and do not stick to the same place" ranked fifth and last with a mean score of (3.9458) and a standard deviation of (.97093), and this indicates a high degree of agreement with this item. The table also shows that there is a high degree of agreement from the research sample on the dimension of the "sensory style" in general, where the mean score was (3.9949). Students use movements during learning, and they are attracted to this style of learning because they resort to designing real and natural models to facilitate the learning process.

Table 6. Results of the mean scores and standard deviations of the dimension of the visual learning pattern among public school students

Item	NO.	Mean score	St. Dev	Rank	level
I prefer to look at the teacher when explaining the lesson	277	4.1588	0.88262	2	High
I need to draw to remember the information	277	4.2852	0.85225	1	Very High
I learn a new skill when I see someone show it to me	277	4.1516	0.84191	3	High
I can reach the places described in the drawing	277	4.0289	0.95509	5	High
Figures and graphics help me clarify concepts	277	4.1444	0.87274	4	High
Total	277	4.1538	0.75520		High

Table 6 shows that the item that states “I need to draw to remember information” ranked first with a mean score of (4.2852) and a standard deviation of (0.88262), and this indicates a very high degree of agreement with this item. The item that states “I can reach the places described in painting” ranked fifth and last with a mean score of (4.0289) and a standard deviation of (0.95509), and this indicates a high degree of agreement with this item. There is a high degree of agreement among the members of the research sample on the dimension of “visual pattern” in general, where the mean score was (4.1538). The visual pattern helps to improve students' visual memory to retrieve information, and students prefer to see educational materials such as figures, graphics, graphs, diagrams, visual representations, and projectors when they receive information to facilitate the learning process.

Table 7. Results of the mean scores and standard deviations of the auditory learning pattern

Item	NO.	Mean score	St. Dev	Rank	level
I prefer to talk to others about the things I have learned	277	3.9639	.95485	5	High
I prefer lessons that depend on the explanation	277	4.1300	.86251	1	High
I can remember audio information accurately	277	4.0289	.91637	3	High
I talk to myself during the learning process	277	4.0325	.95687	2	High
I like to talk more than write	277	3.9819	1.03369	4	High
Total	277	4.0274	.82487		High

Table 7 shows that the item that states “I prefer the lessons that depend on explanation” ranked first with a mean score of (4.1300) and a standard deviation of (.86251), and this indicates a very high degree of agreement with this item. The item that states “I prefer to talk to others about the things I have learned” ranked fifth and last with a mean score of (3.9639) and a standard deviation of (.95485), and this indicates a high degree of agreement with this item.

There is a high degree of agreement among the members of the research sample on the dimension of the “auditory pattern” in general, where the mean score was (4.0274). This result could be because the auditory pattern helps students with auditory perception and auditory memory, and listening to educational material such as lectures or recorded tapes, oral discussions or dialogues contribute to students' learning and receiving information easier than other methods.

Table 8. Results of the mean scores and standard deviations of the most preferred learning pattern among public school students

Learning patterns	NO.	Mean score	St. Dev	Rank	level
sensory (motor) pattern	277	3.9949	.82170	3	High
Visual pattern	277	4.1538	.75520	1	High
Auditory pattern	277	4.0274	.82487	2	High
Learning patterns	277	4.0587	.75154		High

The table shows that the most preferred learning pattern is the visual pattern, which ranked first with a mean score of (4.1538), then the auditory pattern, with a mean score of (4.0274), and finally the sensory (motor) pattern, with a mean score of (3.9949). The results also showed that students tend to use different learning patterns during the learning process, where the general mean score for the whole dimension was (4.0587). This result differs from Abu Zaid and Brizat (2022), and this result can be explained that audio-visual learning is very common among students and is frequently used in schools, due to the ease of applying these two patterns through the inclusion of graphics in books that help in understanding the lesson and the teacher's dependence on explanation and repetition in teaching students.

2. Determining the degree of achievement motivation among students of public schools in Erubia Governorate.

To achieve the objectives of the research, the data was analyzed and focused on the highest and lowest items of the questionnaire, and the results were interpreted and compared with previous studies.

Table 9. The results of the mean scores and standard deviations of the dimension of perseverance among public school students

Item	NO.	Mean score	St. Dev	Rank	level
I have a strong desire to solve the problems I encounter no matter how long it takes	277	4.0144	.92850	1	High
I have the determination to keep working until the end	277	3.9531	.95248	4	High
I work long hours without getting bored to complete my studies	277	3.9675	.93388	3	High
I do my best to get things done on time	277	4.0000	.93250	2	High
I refuse to give in easily to the hardships I face	277	3.8953	1.00355	5	High
Total	277	3.9661	.76849		High

The item that states, "I have a strong desire to solve the problems I encounter no matter how long it takes" ranked first with a mean score of (4.0144) and a standard deviation of (.92850), and this indicates a very high degree of agreement with this item. The item that states "I prefer to talk to others about the things I have learned" ranked fifth and last with a mean score of (3.8953) and a standard deviation of (1.00355), and this indicates a high degree of agreement with this item. There is a high degree of approval from the research sample members on the dimension of "perseverance" in general, where the mean score was (3.9661). This result could be because school students possess sufficient experience and skills that help them to continue and persevere in learning.

Table 10. Results of the mean scores and standard deviations of the competition dimension among public school students

Item	NO.	Mean score	St. Dev	Rank	level
I get excited when I feel competitive with others academically	277	3.9061	.95849	2	High
I get annoyed when my grades are lower than others	277	3.8412	1.00183	4	High
I increase my determination to succeed when faced with difficulties	277	3.9386	.94401	1	High
I compete with the students in my class	277	3.8159	1.03841	5	High
I continue to do the hard work even if I have failed before	277	3.8448	.99696	3	High
Total	277	3.8693	.81709		High

The table shows that the item that states "I increase my insistence on success when facing difficulties" got the first rank with a mean score of (4.9386) and a standard deviation of (.94401), and this indicates a very high degree of approval for this item. The item that states, "I Continue to perform difficult tasks even if you have failed in it before," got the fifth and last rank with a mean score of (3.8159) and a standard deviation of (1.03841), and this indicates a high degree of approval for this item. There is a high degree of approval from the members of the research sample on the dimension of "competition" in general, where the mean score was (3.8693). This result can be explained that students always strive for excellence and distinction compared to their colleagues, so their motivation to learn increases to reach the best levels and to achieve the best results.

Table 11. Results of the mean scores and standard deviations of the dimension of responsibility for students of public schools

Item	NO.	Mean score	St. Dev	Rank	level
I take the responsibility to complete my duties without the help of others	277	3.7834	1.00902	2	High
I depend on myself to get tough tasks done in times of crisis	277	3.7329	1.07378	4	High

Being responsible makes me skilled in doing complex tasks	277	3.7726	1.01559	3	High
I admit failure as well as success	277	3.7978	1.02977	1	High
I bear the consequences of what I say or do	277	3.6679	1.09585	5	High
Total	277	3.7509	.88082		High

The item that states "I admit failure as I admit success" ranked first with a mean score of (3.7978) and a standard deviation of (.029771), and this indicates a very high degree of approval for this item. The item that states "I bear the results of what I say or do" ranked fifth and last with a mean score of (3.6679) and a standard deviation of (1.09585), and this indicates a high degree of agreement with this item. There is a high degree of approval from the members of the research sample on the dimension of "taking responsibility" in general, where the mean score was (3.7509). This result can be explained that the students are trying to rely on themselves to perform homework and school tasks without resorting to helping others to reach the correct results and check errors to correct them.

Table 12. Results of mean scores and standard deviations of achievement motivation among public school students

Dimension	NO.	Mean score	St. Dev	Rank	level
Perseverance	277	3.9661	.76849	1	High
Competition	277	3.8693	.81709	2	High
Taking responsibility	277	3.7509	.88082	3	High
achievement motivation	277	3.8621	.76648		High

The table shows that all the average dimensions of achievement motivation were uneven, as perseverance ranked first with a mean score of (3.9661), then competition with a mean score of (3.8693), and finally taking responsibility with a mean score of (3.7509). The table also shows that the general mean score for the achievement motivation dimension was high, with a mean score of (3.8621). This result agreed with (Shana'a et al., 2022), and this result can be explained that students who are motivated to achieve have the ability to control their feelings and emotions during their interaction with others and desire to be distinguished from others and excel over them, and also can participate with others, effectiveness and taking responsibility, which leads to an increase in their motivation and academic achievement. Therefore, their motivation is to persevere and give in to their studies, and pay attention to their university duties.

3. Identifying the relationship between learning patterns and achievement motivation among public school students in Irbid Governorate.

Table 13. Results of the relationship between learning patterns and achievement motivation

achievement motivation learning patterns	Perseverance	Competition	Taking responsibility	achievement motivation
sensory (kinesthetic) learning	.437**	.473**	.397**	.466**
visual learning	.417**	.435**	.350**	.428**
auditory learning	.485**	.463**	.405**	.482**
Learning patterns	.476**	.487**	.410**	.489**

The table shows that there is a statistically significant relationship between the sensory (motor) pattern and achievement motivation among public school students in Irbid Governorate, where the correlation coefficients were (.437, .417, .485, .476), all of which are significant at the significance level (0.01). The table also shows the presence of a statistically significant relationship between the visual pattern and achievement motivation among public school students in Irbid governorate, where the correlation coefficients were (.473, .435, .463, and .487), all of which are at the significance level (0.01). There was also a statistically significant relationship between the auditory pattern and achievement motivation among public school students in Irbid governorate, where the correlation coefficients were (.397, .350, .405, .410) and all of them are indicative at the significance level (0.01). There was also a statistically significant correlation between learning patterns and achievement motivation among students in Irbid

governorate, where the correlation coefficients were (.466, .428, .482, .489) and all of them are indicative at the significance level (0.01), and this indicates that the more learning styles differ, the greater the achievement motivation.

4. Detecting the possibility of predicting achievement motivation through learning patterns among students of public schools in Irbid Governorate.

Table 14. Results of the simple linear regression analysis of the degrees of learning styles in achievement motivation

Variables	T value	Beta	B value	Sig.
Independent	8.294		.221	.000
Learning patterns	9.308	.489	.499	.000
correlation coefficient (R)			.489 ^a	
coefficient of determination (R ²)			.240	
Modified determination factor			.237	
F value			86.632	
Significance level			.000 ^b	

The table shows that the coefficient of determination was ($R^2 = .240$), and the modified coefficient of determination was (.237). This indicates that (23.7%) of the change in achievement motivation is explained by the linear relationship, and the remaining percentages are due to other factors. There is a direct correlation between learning patterns and achievement motivation among public school students in Irbid Governorate, where the value of the correlation coefficient was (.489). The f value was ($f = 86.632$) with a significant level of (.000), and this indicates that the regression is significant, that is, there is a statistically significant effect of learning patterns on achievement motivation. The t value was ($t = 9.308$) in learning patterns, and this indicates the possibility of predicting achievement motivation through learning patterns in public schools in Irbid Governorate.

Recommendations

The study recommends the need for teachers to pay attention to the use of different learning patterns, take into account the individual differences between students, and determine the most appropriate style for delivering information and giving lessons. It is also recommended to pay attention to displaying maps, pictures, graphs, and charts, as school students tend to learn visually. Holding training courses for labs to help teachers know students' preferred learning styles and methods of dealing with them is very important. It is necessary to enhance achievement motivation among public school students because it positively affects their scientific and practical life.

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