



RESEARCH ARTICLE

Upper Primary Education Students' Self-Directed Learning Impact on Creative Thinking in Geography from Jerash Education Directorate Geography Teachers' Viewpoint

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ABSTRACT

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This study aimed to illustrate the level to which students in upper primary education practiced self-directed learning and creative thinking related to geography at schools throughout Jerash Education Directorate, and what impact self-directed learning had on developing creative thinking. The study population comprised 86 teachers, 37 female and 49 males, in schools throughout Jerash Education Directorate. The complete census method was used to obtain the most accurate results. Sixty-four questionnaires were completed registering a 74% rate of return. From the teachers' viewpoint, the study arrived at several conclusions, primarily the following: the learning strategy that teachers adopted indicated a medium level of practice, students' level of information gained was weak, organization and time management levels of practice were high, the level to which students practiced self-evaluation and monitoring was medium and students practiced creative thinking at a medium level regarding teachers' efforts towards students. No impact was found for learning strategy on creative thinking, however, a positive impact on creative thinking was shown for obtaining information, organization, time management, self-evaluation and monitoring on creative thinking.

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INTRODUCTION

Considering modern developments affecting all aspects of our lives whether in the fields of technology, culture or economics, information has become the icon of our time. The many changes in curricula and methodology currently seen in the contemporary field of education and instruction confirm the adoption of the new concepts in this field of knowledge. Acquiring the information itself is not as important as accessing original information sources and employing it in daily life (Husamo, Suha, Abdullah, Fawwaz, 2012). Self-directed learning where students apply themselves to learning with minimal guidance from a teacher (Silen, Charlotte & Uhlin, Lars, 2008) is a result of needs that have arisen in the modern day characterized by cultural development, technological advances and the information explosion. Traditional learning can no longer fulfill student knowledge requirements in the modern educational process. As a result, it has become necessary to use and employ elements of new advances to achieve appropriate levels of progress. This is in line with modern educational processes which aim to reinforce the concept of self-directed learning which can, characterized by its great flexibility, adapt to wide-ranging individual needs and enrich student knowledge where the student becomes self-reliant in breaking down the learning process through continuing the process with minimal guidance from a teacher (AlOtoum, Ibtisam, 1999).

The role of education and educators therefore becomes that of preparing students who can learn through thinking, searching for knowledge and solving the problems they face. Traditional teaching methods

revolving around understanding, memorizing and retention skills are no longer adequate. Students can no longer rely solely on a book or a teacher, rather they are forced to rely on their own efforts and self-directed learning to obtain information and knowledge they need. Self-directed learning in its varied forms has become a practical method alongside modern education trends (AlRashidi, Huda, AlKhalidi, Mariam, 2015).

Self-directed learning is a modern educational method aiming for student development through self-motivated research. It is a method that incorporates students' individual differences and their needs and aims for self-accomplishment and attainment. Since it is the student who will determine the desired learning process it is essential that students acquire skills necessary for self-directed learning: how to learn, how to continue learning through self-directed learning, and essential skills including sharing opinions, reading, independent thought and work, and relating knowledge to life. These skills need to help students decide when to begin and end, which teaching media to choose, responsibility for decisions and results of these decisions, to interact with each learning situation they face and complete it with minimal teacher guidance (AlShiyyab, Hanan, 2007). Self-directed learning challenges students, removes the boredom of receiving directions from teachers and motivates them, ensuring a high level of concentration and cognitive search (Silen, Charlotte & Uhlin, Lars, 2008). This shapes student experience in searching for information building a knowledge base that facilitates accessing correct information. Continued self-directed learning improves, with student experience, student ability to search for correct information aiding his/ her objectives (Kop, Rita & Fournier, Helene, 2010).

This is consistent with constantly thinking of knowledge and how to develop it. It is tied to creative thinking to the point where traditional thinking to solve cognitive problems has become unproductive because circumstances and abilities have changed. Problems are different now because life has changed resulting in a necessity to change learning curricula through self-directed learning, student thought development through their creative thinking. Creative thinking provides the thoughts needed to transition to modernized and updated skills and information compatible with contemporary society. Possessing these skills has a positive effect on students that is reflected in their classroom performance (AlHadabi, Dawoud, AlFilfily, Hana'a, AlOleibi, Taghreed, 2011).

The current study research self-directed learning and its impact on creative thinking applied to Geography students. Social studies are of great importance in creating a generation that has a deep sense of belonging and allegiance through instilling in them concepts that in the future will translate into behavior. These concepts are taught according to modern educational models. In view of the above, the current study was entitled:

Upper Primary Education Students' Self-Directed Learning Impact on Creative Thinking in Geography from Jerash Education Directorate Geography Teachers' Viewpoint

Study Problem and Questions:

The Ministry of Education in Jordan is striving to adopt the concept of self-directed learning so students may be able to depart from traditional learning which is fully prompted towards their ability to research sources, become independent of teachers, and solve knowledge challenges.

Through research it is evident that self-directed learning is not the targeted aim but a means that could produce high quality students when associated with research concepts that reflect upon students through analysis of its scientific subject, as well as impacting student thinking to arrive at new and creative levels of scientific content analysis. In view of this, the current study was conducted to discover self-directed learning on creative thinking in Geography for upper primary level education students, from the teachers' viewpoints. This category of students was chosen because their problem-solving thinking has stabilized, and this impacts scientific subjects. Geography is no less important than scientific subjects whereby in fact it builds loyalty and influences student capacity to love their country and the greater Arab World. This is important to these students in their young years so that they may shield their country from currents aiming to destroy the basis of a country, such as existing terrorist organizations, that in their hand's younger

generations, once older and carry weapons, have become daggers that stab their countries in the back becoming a negative force working against home and country rather than defending it. In view of the above, the current study attempts to answer the following study problem:

Q1: What impact does self-directed learning have on developing Upper Primary Education Students' Creative Thinking in Geography from Jerash Education Directorate Geography Teachers' Viewpoint?

Study objectives:

The current study aims to show the most prominent self-directed learning measurement indicators and creative thinking measurement items identified by previous studies and found suitable for the current study.

To what extent do upper primary education students practice self-directed learning in Geography, throughout Jerash Education Directorate schools?

To what extent do upper primary education students practice creative thinking on Geography throughout Jerash Education Directorate schools?

The study also aims to find out to what level a learning strategy impacts students' creative thinking development in upper primary education throughout Jerash Education Directorate schools while studying Geography, from Geography teachers' viewpoint.

This study aimed to discover what impact obtaining information had on students 'creative thinking development in upper primary education throughout Jerash Education Directorate schools while studying Geography, from Geography teachers' viewpoint?

What impact did time management and organization have on students learning Geography in upper primary education throughout Jerash Education Directorate schools from Geography teachers' viewpoint?

What impact did self-evaluation and monitoring have on students learning Geography in upper primary education throughout Jerash Education Directorate schools from Geography teachers' viewpoint?

Finally, a further purpose of the study was to arrive at scientific and practical results and recommendations that would serve the researched community itself and interested researchers who may wish to conduct specialized research in the current study subject.

Study importance:

The significance of this study stems from its address of a highly beneficial subject to students, helping stimulate their motivation to learn, which is in line with modern approaches that reduce student dependence on teachers and their prompting of learning. Students become actively seeking out sources of knowledge and overcoming scientific and knowledge challenges, abilities which will accompany students through their academic life.

Students are also the treasured future workforce of any country, and they need to be sufficiently capable and efficient to ensure sustainable development. To acquire these goals requires adoption of high-quality learning and thinking processes concurring with modern day demands and challenges, which may not be possible to obtain by traditional methods and thinking. To achieve sustainability in many areas, creative thinking may ensure a future in competitive markets, financial institutions and corporation mergers that are currently threatening national decisions in any country. It is necessary that future generations be equipped to tackle modern challenges with the necessary quality of thinking. Today's students are tomorrow's managers, financiers, lawyers, consultants, and workers. It is a matter of survival rather than an addition to education. The current study serves to identify levels of self-directed learning and its impact on primary education level student creative thinking.

Finally, the significance of this study is in addressing Geography and how self-directed learning impacts student creative thinking, creating positive partnership attitudes so that a general feeling of belonging is

created to shield the country from current threats including terrorist organizations that are looking to recruit young men and women to turn against their countries. This study addresses these issues looking to overcome them in the Hashemite Kingdom of Jordan and other countries.

Study definitions:

Self-directed learning: preparation of learning situation for the student in the form of modules with specific behavioral objectives whereby the student is directed towards achieving these objectives, at his or her own pace, according to each student's capacity with students relying on themselves to achieve goals and evaluate their learning (Husam, AlAbdullah, 2012, p.17). Procedurally, self-directed learning is defined as learning that allows upper primary education students through the use of a learning strategy, time management, organization, self-evaluation and monitoring to utilize their energy, personal effort and abilities to acquire information, knowledge, facts and skills required for studying Geography, with minimal guidance from teachers.

Creative thinking: thinking that describes creative operations or mental skills. Individuals use these to produce the largest number of ideas possible about a problem or situation that they face. These ideas are characterized as being different, varied, unusual and novel (AlRashidi, AlKhalidi, 2015, p.574). Procedurally, it may be defined as thinking that is based on originality, flexibility and freedom for upper primary education students studying Geography from the viewpoint of teachers throughout Jerash Education Directorate schools.

Upper primary education students: these are seventh, eighth, ninth and tenth grade students at schools within Jerash Education Directorate area in the Hashemite Kingdom of Jordan.

Jerash Education Directorate: this is the education directorate representative of the Ministry of Education in Jerash and is one of the northern education directorates.

Study limitations:

Time limitations: represented in the Academic year of 2024/2023.

Spatial limits: Jerash Education Directorate schools.

Subjective limits: study of self-directed learning and creative thinking.

Human limitations: represented in Geography teachers.

PREVIOUS LITERATURE:

A study conducted by Shanah. (2023) aimed to identify the role of Palestine Technical University- Khadoorie on developing creative thinking among its students from their viewpoint. A descriptive Analytical approach was used, the study sample consisted of 354 male and female students who were randomly selected based on variable of gender and college specialization, while the variables of academic level and place residence were not taken on to the account on class distribution. As the total degree of obstacles on facing students at Palestine Technical University- Khadoorie in developing their creativity were average degree. The results showed that there were statistically significant differences in the educational variable level by comparing the first, second, third and fourth, and more levels. The results Also showed that there were differences the between the first academic level and the rest of academic levels, while the results showed that there were not statistically significant dereferences on that the overall impact of the University role on developing creativity of thinking among its students due to the variables of gender, collage, and place of the residence. They treat the students regardless of their background.

A study conducted by Sawafta (2022) aimed to explore at studying the educational strategies to motivate the creativity in Palestinian public-school students in Tuba's governorate. The study sample consisted of 45 teachers randomly selected, and a descriptive approach was used to achieve the study objectives. The results showed that the educational strategies were not create creativity enough as it should be, due to the obstacles that faced by students, schools, and teachers. These related to shortage of devices, services, and

tools. Because of many students, limited time required for educational devices was not enough. The results also showed out that there are no statistical differences due to study fields variables such as teachers work experience, age, and social background, while there are statistical indication differences due to study fields variables teachers work experience years on school matching.

Mahfouth and Aqqad, (2015) conducted a study investigating how effective a program based on self-directed learning was and what impact on achievement motivation and self- evaluation it had. It was conducted on a sample of 30 blind students whose ages varied between eighteen and twenty-four at King Abdul Aziz university. Scales for self – evaluation and achievement motivation measurement were used in addition to a self-directed learning guidance program. The study found that the effectiveness of the self-learning program in developing achievement motivation and self-esteem among the study sample of blind students.

A study by Rashidi, & Khalidi (2015) aimed to determine the level of creative thinking secondary education level gifted students in Tabouk, Kingdom of Saudi Arabia, with respect to some variables. To achieve study goals a correlative descriptive method was used, and a creative thinking scale was applied to a sample of 176 students of whom 82 were males and 94 females. Results showed that the overall performance of female students in creative thinking skills was higher in comparison with male students. It also showed that the overall level of creative thinking skills amongst gifted male and female students was highest for third secondary level female students.

AlEibi, (2012) conducted a study to identify what role advanced technology represented in computers and the internet had in developing student skills towards acquiring scientific knowledge especially in the field of applied engineering sciences. The researcher applied to an educational AutoCAD program to teach fourth level engineering drawing in mechanical engineering in the Department of Electro- mechanics for the academic year 2008/ 2009. The study found that computers had an important and effective role in developing abilities of students to complete and execute engineering drawing exercises in comparison with traditional methods of teaching AutoCAD.

Husamu and Alabdullah, (2012) conducted research to measure self- directed learning's impact on utilization of synchronized and non-synchronized electronic audio dialogue. The study sample was made up from 22 male and female third year students at the Education College of Tishreen University. Study instruments included a pre- and post- cognitive test and a performance test. The performance test was monitored using a comments card while a training program was built in the form of educational modules for self-directed learning. The study concluded that differences of statistical significance were found for student grading averages in both the pre- and post-tests for the cognitive part of synchronized and non-synchronized electronic audio dialogue.

As for a study by Lee, Therriault & Linderholm (2012) this aimed to identify the relationship between students who study abroad and creative thinking. The study population comprised 135 students of diverse nationalities: 31 males and 104 females from Southeastern University, USA. It found that a positive relationship existed between those who plan to study abroad and those who don't and that those who do not study locally have a positive relationship with creative thinking.

A study by Robson & Rowe (2012) monitored creative thinking in children through participation. Fifty-two children between the ages of three and four from a creative center in Great Britain participated in the study which found that teaching methods adopted at this creative thinking center, alongside the curriculum, influenced children's creative thinking and that focusing on children learning to think creatively at an earlier age was better than them learning at a later stage.

A study by Wang (2012) aimed to discover the relationship between creative thinking in reading and writing whereby the study population was composed of 196 students a Taiwan University. The study concluded that a relationship existed between the amount of reading and creative thinking and vice versa.

Greater readers had more interest in reading, writing and educational works and they were oriented more towards reading newspapers and periodicals.

AlHudabi, et al. (2011) conducted research to identify the creative thinking skill level of students training to become teachers at the Education and Applied Sciences College in Hijlah city. The study sample comprised of 111 male and female teaching trainees in science departments, namely: chemistry, physics, and biology, at the Hijlah Education College. The study concluded that the creative thinking skill level of students in scientific departments was weak. Differences of statistical significance between average ratings of students in the creative thinking skill level were found to be attributable to gender in favor of females, while no differences of statistical significance were found in creative and critical thinking skills were found for the specialization variable.

Alaqeil, (2011) conducted a study that aimed to discover what impact the use of suggested enriching scientific activities had on developing integrated knowledge operations and creative thinking in sixth grade gifted students. A truly empirical method was used, based on designing a control group with pre- and post-tests and quantitative research. The study also aimed to determine what gifted students' opinions were regarding the impact of using enriching scientific activities had on developing integrated science knowledge method (how) in educational research. The study sample included 50 sixth grade students enrolled in an evening care program for gifted students at a center for gifted students in Riyadh. The study found that use of the suggested enriching scientific activities had a great impact on creative thinking skills, with students affirming the effective role these activities had on gaining knowledge operations skills, thinking skills and mental and performance skills through direct practical application.

Ayasra, & Hamadneh, (2010) conducted a study to discover the level of creative thinking in secondary level students in Irbid city according to variables of: school, gender and specialization. To achieve the study goal, Torrance Creative Thinking Test / verbal tasks using non- verbal stimuli was applied to a total of 250 students where 112 were males and 138 females. They were selected using random stratified sampling. The study found that the level of creative thinking in the study community was medium and acceptable educationally. Results showed differences of statistical significance in the overall grade on the test attributable to specialization and in favor of scientific track and school variable in favor of private schools. No differences attributable to gender were found.

AlHazaymeh, (2010) conducted a study that aimed to discover to what extent higher education students at Jordanian government universities practice self- directed learning principles and scientific research methodology during their studies. The study sample consisted of 683 male and female students randomly selected from students at Masters and Doctorate degree students at government universities. The study found that self-directed learning and scientific research methodology principles were practiced to a medium degree by students at Masters and Doctorate degree students at government universities.

In a study by Kop & Fournier (2010) the aim was to identify new attitudes and dimensions in the process of self-directed learning existing in educational environments on the internet and whether the huge quantity of information available on the internet hinders self-directed learning or encourages it. A sample numbering 169 divided into three categories of people including: those in charge of the survey and business owners who have had artistic or literary work on the internet for over 20 years. The sample included participants worldwide. Participants with literary work on the internet included 1641 globally and a relationship between participation and interaction was found. The study found that: the most important element was the existence of a teaching program that served those in search of knowledge and information, that interaction should be based on the educational material that aims to achieve student goals and that the internet was not influential on learning as an instrument if the teaching program was executed correctly.

A study by Dynan, Cate & Rhee (2008) aimed to identify what impact learning structure had on student readiness for self-directed learning. The study sample included 250 international students studying at Columbia University Business School. It concluded that programmed learning and its structure directly impact student readiness for self-directed learning and is based on an intellectual and organizational

structure that stimulates students towards self-directed learning, subsequently, it is important to set up a good organizational structure for educational programs so that they may be feasible for self-directed learning and therefore may contribute to high levels of knowledge and high-quality students.

A study by Silen & Uhlin, (2008) addressed self-directed learning as an important subject for teaching colleges whereby self-directed learning is used as a teaching process in an effort by teachers to enhance the ability for self-directed learning. Study researchers developed two models for self-directed learning: the first investigated the teaching semester and researched self-directed learning content while the second model researched the relationship between teaching method and self-directed study aiming to arrive at what roles teaching methods and teachers had in knowing student self-directed learning. The study collected data through classroom observation of females nursing students in Sweden and their scientific activities in stimulating teaching self-directed learning. It was found that the existing teaching program had taken upon itself to play a significant role in stimulating self-directed learning. Additionally, a relationship was found between the study curriculum and teaching method.

In a study by AlShiyyab, (2007) the researcher aimed to evaluate the revised tenth grade Islamic Education textbook considering self-directed learning principles in Jordan. The study community and sample were made up of revised tenth grade Islamic Education textbook that was in two parts with the study sample the same as its community. The study found that the evaluation principle was the highest-ranking principle, followed by objectives, activities, and skills.

Hoban, et al., (2007) conducted a study to assess a scale of self-directed learning readiness for a study population of 972 medicine students in Virginia University over six years to discover and summarize overlap in readiness for self-directed learning scale. The study found that subjective factors related to self-directed learning existed with some complications occurring regarding student readiness for self-directed learning.

The study by Song & Hill (2007). aimed to test self-directed learning through the internet and researchers addressed: planning, monitoring and correction. The study was a theoretical one with researchers relying on other researchers interested in the same subject and on their results, which found that personal characteristics and interests played a great role in learning through the internet. Organizations also had a great role and that attitudes towards self-directed learning adapted according to changing contexts.

Shihab (2003) conducted a study to identify teachers' role in developing creative thinking of students at government schools from viewpoints of teachers and supervisors in the Sultanate of Oman. With a study sample of 501 male and female teachers and 42 supervisors the study found that the extent to which teachers and advisors practiced developing student creative thinking was medium from the advisors' viewpoint while from teachers' viewpoint it was at a high level.

The objective of a study by Abu Rayya, Saeed (2003) was to discover the teachers' role in developing elementary level students' creative thinking. One hundred and forty male and female teachers from the Galilee area participated in the study which concluded that teachers evaluated their role in developing elementary student creative thinking as medium.

In a study by (Patterson, et al., (2002) it aimed to research what self-directed learning methods were used by nursing students in both Bachelor and master's programs at Hamilton University, Ontario, Canada on one hand, while also discovering how self-directed learning impacted nurses' work and their patients in the health sector. Nurses' self-directed learning was approached through six indicators which were divided into: self-assessment of knowledge gaps, evaluation of others, reflection on internal and external environment, information management, critical thinking and critical assessment. It was shown that categories were used simultaneously by students and needed development to arrive at a methodology that would impact patients. During application of methods and categories many challenges were found including lack of knowledge, experience and self-confidence all which impact self-directed learning indicators directly.

In a study by Taylor (2001) to discover teacher and student viewpoint regarding self-directed learning, the study relied on quantitative and qualitative information to achieve research objectives. Information was from teacher and student viewpoint on teaching material in the nursing specialization. Initial data was gathered from interviews with eight teachers and twenty-eight students from 12 teaching sites in Great Britain, which were characterized as semi-structured. The study found that both students and teachers showed difficulty dealing with self-directed learning but with students more amiable towards it, which was attributed to the students being in a learning and searching for truth phase in their lives. It was also found that teachers and students relied on observation to learn and identify study subjects rather than cognitive processes included in school curricula.

COMMENTARY ON REVIEWED LITERATURE

Despite the great contributions these studies have made in the structure and writing of the current study, in addition to the design of its study instrument, they did not combine the variables which the current study intends to address. They dealt with self-directed learning and creative thinking separately, whereas the current study connects them with the reasoning that if self-directed learning does not impact creative thinking positively, what purpose does it then serve? Is creative thinking connected to the application of teaching concepts which cannot be measured in practical reality?

The current study combines previous educational variables and applies the study within schools of a particular Education Directorate area in the North of Jordan which is a smaller than others and doesn't attract much research interest, namely: the Jerash Education Directorate that is part of the Ministry of Education in Jordan.

STUDY METHODOLOGY

The study follows a descriptive analytical methodology in describing both the following study variables: self-directed learning and creative thinking. It analyzes the study sample's attitude towards practice of study variables.

Study information resources.

Secondary information: through reviewing past literature including books, published research and master's Thesis regarding the current study variables of self-directed learning and creative thinking.

Primary information: through data derived from a questionnaire upon SPSS analysis to arrive at results that serve study goals and questions.

Study instrument (questionnaire) tests:

Study instrument consistency test:

To determine internal consistency of the study instrument Cronbach's Alpha was calculated as shown in the following table:

Table (1): Internal consistency coefficient Cronbach's Alpha for fields and overall instrument

Dimension	Internal consistency
Learning strategy	0.74
Obtaining information	0.76
Organization and time management	0.73
Self-monitoring and evaluation	0.73
Overall self-directed learning	0.83
Creative thinking	0.84

Study instrument validity:

Upon review of past related literature, a questionnaire was developed to serve objectives of the current study. In its initial stage it was reviewed by a panel of judges who are professors from different universities before subsequently finalizing it. Items that were not found to serve study objectives were removed while their comments and indications were considered as ostensible validity of the questionnaire.

Study population and sample:

The study population comprised 86 teachers (49 male and 37 female) in schools throughout Jerash Education Directorate schools, whereby the complete census method was used to obtain the most accurate results for this population. Sixty-four completed questionnaires (74%) were returned.

Statistical methods used:

Means and standard deviations: these were used to discover to what extent study sample participants practiced the current study's variables and to determine how spread-out numbers are relative to the mean. Based on this, levels of practice were categorized into low, medium and high based on the following scale:

1-2.33 low

2.33- 3.66 moderate

>3.66 high

A simple regression analysis was used to determine to determine what impact each self-directed learning variable had on creative thinking.

RESULTS AND DISCUSSION

The current study aimed to investigate the level to which students in upper primary education practiced self-directed learning and creative thinking related to geography at schools throughout Jerash Education Directorate, and what impact self-directed learning had on developing creative thinking. Statistical analysis was conducted to determine the levels of practice of self-directed learning; its practice was categorized according to its subsidiary variables.

The following is a presentation of the results obtained and their discussion.

Regarding the results of the first research question by Answering the main study question:

To identify levels of practice of self-directed learning, its practice was categorized according to its subsidiary variables as shown below:

Table 2: Means and standard deviations for "Learning strategy" items in descending order according to mean values

Rank	No.	Item	M	SD	DEG
1	1	Student repeats reading of information to understand it	2.61	0.79	moderate
2	3	Student adjusts and adds information to try to understand an obscure subject	2.47	0.81	moderate
3	2	When having trouble understanding, student tries to change their study method	2.35	0.72	moderate
4	5	Student writes down detailed notes to help them understand	2.28	1.15	low
5	4	Student writes lists of main ideas mentioned in designated material and tries to recall before studying	2.21	0.79	low

		Learning strategy	2.36		moderate
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The table shows that the highest mean was 2.61 with item 1 " Student repeats reading of information to understand it "ranked first while item 4 " Student writes lists of main ideas mentioned in designated material and tries to recall before studying" ranked last with a mean of 2.12, while the overall learning strategy scored 2.62.

Table 3: Means and standard deviations for "Acquiring information" items in descending order according to mean values.

Rank	No.	Item	M	SD	DEG
1	2	Student allocates time to go to the library to develop scientific and research efficiency	2.42	0.77	moderate
2	4	Student cooperates with colleagues to execute a specific study effort to cover all angles of the subject	2.36	0.93	moderate
3	1	Student asks for information to clarify areas he/she doesn't understand	2.22	0.84	low
4	5	Student discusses different study subjects with colleagues	2.17	0.92	low
5	3	Student asks about references that may help him/ her better understand the curriculum and look them up	2.04	0.88	low
		Acquiring information	2.24		low

Table 3 showed that the highest mean was 2.42 with item 2 " Student allocates time to go to the library to develop scientific and research efficiency " ranked first while item 3 " Student asks about references that may help him/ her better understand the curriculum and look them up " ranked last with a mean of 2.04, while overall "Acquiring information" scored 2.24.

Table 4: Means and standard deviations for "Organization and time management" items in descending order according to mean values

Rank	No.	Item	M	SD	DEG
1	3	Student sets specific goals that help organize the study process	4.24	0.87	high
2	1	Student prepares study location in a way that helps to study	4.12	0.92	high
3	5	Student performs required tasks on time and does not postpone them	3.92	1.02	high
4	2	Student connects information in the geography curriculum with similar information in other subjects	3.8	0.94	high
5	4	Student sets out steps to follow while reading specific material within a designated time	3.74	0.86	high
		Organization and time management	3.96		high

Table 4 showed that the highest mean was 4.24 with item 3 " Student sets specific goals that helps organize the study process " ranked first while item 4 " Student sets out steps to follow while reading specific material within a designated time " ranked last with a mean of 3.74, while overall "Organization and time management" scored 3.96.

Table 5: Means and standard deviations for " Monitoring and self-assessment" items in descending order according to mean values

Rank	No.	Item	M	SD	DEG
1	1	Student records difficulties he/ she is facing, and mistakes made to avoid repeating them	3.02	0.85	moderate
2	5	Student encourages himself/ herself to learn to the best of his/ her ability	2.88	0.74	moderate
3	2	Student lists question and attempts to answer them	2.74	0.82	moderate
4	4	Student identifies weak points and tries to remedy them	2.5	1.04	moderate

5	3	Student continuously revises new information	2.32	0.94	low
		Monitoring and self-assessment	2.96		moderate

Table 5 showed that the highest mean was 3.02 with item 1 " Student records difficulties he/ she is facing and mistakes made to avoid repeating them" ranked first while item 3 " Student continuously revises new information " ranked last with a mean of 2.32, while overall "Monitoring and self- assessment" scored 2.96.

Table 6: Means and standard deviations for "Creative thinking" items in descending order according to mean values

Rank	No.	Item	M	SD	DEG
1	4	Students are encouraged to be curious, discover and be reasonably adventurous	4.05	0.88	high
2	10	Call upon students to distinguish between main and secondary sources	4.02	0.92	high
3	1	Ask students to derive the greatest number possible of reasons, factors and results for situations, events and issues	3.92	1.04	high
4	7	Geography related ideas, problems and issues that challenge students and their creative capacity, are given to them	3.82	0.94	high
5	12	Students are encouraged to present new hypotheses concerning certain events or	3.82	0.94	high
6	5	Introductions to lessons stimulates student creative thinking	3.74	0.78	high
7	2	Focus exists on deriving conclusions regarding various issues, events and situations.	3.68	0.90	high
8	13	Students are directed to obtain geographic related information from multiple and varied sources	3.62	1.06	moderate
9	18	Students are encouraged to restructure and arrive at novel and creative frameworks on geographic issues	3.58	0.76	moderate
10	6	Students are asked to make a list of general and specific characteristics related to geographic issues	3.44	0.96	moderate
11	3	Creation of the opportunity for students to retrieve stored information to use in creative situations	3.38	0.84	moderate
12	15	Ask students to utilize different geographic knowledge and information in new and distinctive creative situations	3.32	1.14	moderate
13	8	Encourage students to offer alternatives and different solutions to problems	3.24	0.82	moderate

14	9	Encourage students to constructively criticize knowledge, information, skills, values and attitudes in different ways	3.18	0.72	moderate
15	16	Students are asked to present explanations for different geographic phenomena	3.12	1.08	moderate
16	19	Lesson includes dialogue activities and classroom discussions that respect different opinions	3.04	0.96	moderate
17	20	Students are asked to derive factors, reasons and direct and indirect results for geographic issues	2.92	0.88	moderate
18	11	Geography curriculum includes teacher and student guidance to offer an environment appropriate for and stimulating of creative thinking	2.84	0.84	moderate
19	14	Students are given skeptical geographic situations and issues that require them to research, think and predict results	2.68	1.08	Moderate
20	17	Students are asked to independently arrive at geographic facts, concepts and generalizations	2.52	0.72	moderate
		Creative thinking	3.93		moderate

Table 6 showed that the highest mean was 4.05 with item 4 " Students are encouraged to be curious, discover and be reasonably adventurous " ranked first while item 17 " Students are asked to independently arrive at geographic facts, concepts and generalizations " ranked last with a mean of 2.352, while overall "Creative thinking" scored 3.39.

What impact did a learning strategy have on developing upper primary education students' creative thinking in Geography from Jerash Education Directorate school geography teachers' viewpoint?

To answer the current study's first subsidiary question above and to discover what relationship exists between learning and creative thinking, the simple regression analysis was used as shown in table 7 below:

Table 7: Regression analysis for impact of learning strategy on creative thinking

Independent Variable	R Correlation	R ² Explained variance	F Value	F Statistical significance	Beta	T Value	Level of significance
Learning strategy	0.041	0.002	0.190	0.663	0.041	0.436	0.621

At level ($\alpha < 0.05$)

Table 7 shows that explained variance was 0.002 which means learning strategy explained 0.2% of creative thinking with T at 0.436 and a statistical significance of 0.621 and was of no statistical significance at 0.00042 indicating that no impact was found for learning strategy on creative thinking.

What impact did acquiring information have on developing upper primary education students' creative thinking in Geography from Jerash Education Directorate school geography teachers' viewpoint?

To answer the current study's second subsidiary question above and to discover what relationship exists between acquiring information and creative thinking, the simple regression analysis was used as shown in table 8 below:

Table 8: Regression analysis for impact of acquiring information on creative thinking

Independent Variable	R Correlation	R ² Explained variance	F Value	F Statistical significance	Beta	T Value	Level of significance
Acquiring information	0.379	0.144	18.660	0.000	0.379	4.320	0.0012

Table 8 shows that explained variance was 144.0 which means acquiring information explained 14.4% of creative thinking with T at 4.320 and a statistical significance of 0.0012 and of statistical significance at 0.05 indicating that acquiring information had a positive impact on creative thinking.

What impact did organization and time management have on developing upper primary education students' creative thinking in Geography from Jerash Education Directorate school geography teachers' viewpoint?

To answer the current study's third subsidiary question above and to discover what relationship exists between organization and time management and creative thinking, the simple regression analysis was used as shown in table 9 below:

Table 9: Regression analysis for impact of organization and time management on creative thinking

Independent Variable	R Correlation	R ² Explained variance	F Value	F Statistical significance	Beta	T Value	Level of significance
Organization and time management	0.195	0.038	4.373	0.039	0.195	2.091	0.0012

At level ($\alpha < 0.05$)

Table 9 shows that explained variance was 0.038 which means organization and time management explained 3.8 % of creative thinking with T at 2.091 and a statistical significance of 0.0012 and of statistical significance at 0.05 indicating that organization and time management had a positive impact on creative thinking. What impact did self- monitoring and evaluation have on developing upper primary education students' creative thinking in Geography from Jerash Education Directorate school geography teachers' viewpoint? To answer the current study's third subsidiary question above and to discover what relationship exists between self- monitoring and evaluation and creative thinking, the simple regression analysis was used as shown in table 10 below:

Table 10: Regression analysis for impact of self- monitoring and evaluation on creative thinking

Independent Variable	R Correlation	R ² Explained variance	F Val	F Statistical significance	Beta	T Value	Level of significance
Self-monitoring and evaluation	0.715	0.511	115.864	0.000	0.715	10.764	0.0008

At level ($\alpha < 0.05$)

Table 10 shows that explained variance was 0.511 which means self- monitoring and evaluation explained 51.1 % of creative behavior with T at 10.764 and a statistical significance of 0.0008 and of statistical

significance at 0.05 indicating that self- monitoring and evaluation had a positive impact on creative thinking.

To answer the main study question: What Impact did self-directed learning have on creative thinking in upper primary education students in geography throughout Jerash Education Directorate schools from geography teachers' Viewpoint?

It was evident from study data analysis that self-directed learning variables differed in levels of practice by the population sample. The learning strategy followed by the teacher was of a moderate level from geography teachers' viewpoint. Students acquiring information were of low practice level while organization and time management were of a high level of practice. Self- monitoring and evaluation by students were of moderate level of practice.

CONCLUSION

The study showed that students had a clear vision about the learning process, organized their time and were aware that it was up to the teacher to provide information and implement a teaching strategy to serve the educational process. Creative thinking was practiced at a moderate level by students in view of teachers' roles. Students were oriented towards creative thinking however they required greater interest from teachers to develop it further to become at a higher level of practice subsequently producing a higher caliber future student. No impact was found for learning strategy on creative thinking; however, a positive impact was found for: acquiring information, organization and time management in addition to self- monitoring and evaluation.

Results showing no relationship linking learning strategy in self- directed learning and creative thinking is not strange because in questionnaire items, the focus was on repetition in learning and didn't stimulate interest creative thinking as was the case regarding questionnaire items related to acquiring information, organization, time management and self- monitoring and evaluation.

The Ministry of Education doesn't concentrate on creating high levels of practice of learning strategies and doesn't monitor these and as a result, levels are either moderate or low. There is a gap between what is seen in ministerial meetings and practical application. In fact, this gap is indicative of the gap between teachers, who are the source of application, and the Ministry. The Ministry should work to reduce this gap so that teachers have a greater sense of loyalty and ownership that is built on loving their country. Education is achieved when a general culture is formed amongst teachers who are the core executive tool in implementation. Teacher concerns and anxieties should be addressed, and a teacher should not have to appease the school principal to the detriment of the teaching process. In view of recent hiring laws and continuous teacher evaluation, a teacher may be fired, meaning a teacher's primary concern is maintaining his/ her job and not developing himself or herself or student understanding. If the current educational system continues, in the near future teacher education processes will only impact students at the lowest level and the teacher will have become far- removed from an educator of new generations serving the country's best interest. Teachers' opinions are only listened to regarding practical application; however, he/ she has no authority to guide students which has further constricted teachers' roles as educators.

Student self- monitoring and evaluation was practiced at a moderate level, from geography teachers' viewpoint. This pointed to students being aware and knowledgeable about self-monitoring to better themselves and could guide their choices within their cognitive limits to overcome challenges they were facing.

Recommendations:

Teachers must review their teaching strategies and their roles in guiding students to information to make students more interested in the curriculum and more importantly to encourage them to become useful citizens with a high level of awareness.

Review material and immaterial teacher incentives so that teachers are better motivated to teach.

Teachers need to guide students to self- monitor and evaluate methodically to serve their education.

More focus is recommended to elevate practice levels of acquiring information, organization, time management, self- monitoring, and evaluation because of the impact they have on creative thinking.

Student learning strategy of repetition in self- directed learning should be changed so that they may focus on creative thinking. There should be various levels of launching student creative thinking, finding alternative solutions and discovering creative levels which will impact student creative thinking narrowing the gap between self-directed learning indicators and creative thinking.

Teacher concerns and anxieties should be considered by the Ministry of Education with a review of the employment process which threatens teachers' livelihoods and occupies a great part of their minds. Alternatively, a teacher should be pre- occupied with cementing his/ her academic presence and developing knowledge to become a role model students can emulate.

A monitoring unit should be established at the Ministry of Education, or at a different ministry, to supervise teaching practices and their modern concepts.

An organizational, structural culture should be established at the Ministry of Education that harmonizes between ministry employees and teaching in the field.

Other research may be conducted in other geographical areas to enable possible generalization throughout the Hashemite Kingdom of Jordan.

A similar study may be conducted in teaching History curriculums due to its importance as applicable knowledge, although this is overlooked educationally.

Learning strategies should be reinforced and practiced at a high level to become useful.

Students acquiring information should be revisited so that students have tools to aid this, deepen their knowledge and enrich it while not relying solely on what teachers are providing. Libraries and lists of useful references should be available to students so that they may independently further their knowledge.

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