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### THE EXTENT TO WHICH MIDDLE SCHOOL STUDENT POSSESS SELF- LEARNING SKILLS

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#### **ABSTRACT:**

The current research aims to reveal the extent to which students possess self-learning skills included in the content of physics books in the middle school stage and to reveal the significance of statistical differences in the extent to which middle school students possess self-learning skills in the content of physics books according to the gender variable (male and female students). To achieve these goals, the researcher adopted the descriptive approach and followed, to measure the extent to which middle school students possess self-learning skills; the researcher built a self-learning skills scale and then presented it to a group of experts and arbitrators to verify the apparent validity of the scale. The researcher applied primary research samples (100 samples) for confirming the cytometric properties of the scale, which were chosen from the original research community (3787), which consisted of (346) male and female students within the middle schools affiliated with the Directorate of Education of Dhi Qar-Al-Rifai Education Department, after the students' answers were collected and corrected, the researcher processed the data statistically. In light of the research results, the following conclusions were reached:

- 1- Middle school students possess self-learning skills for self-learning skills at a hypothetical mean (110) and a sufficiency limit of less than (80%).
- 2- The results indicated statistically significant differences in the sample responses due to the gender variable (males - females) and favor of males.

#### **FIRST: THE PROBLEM OF THE RESEARCH**

As a result of the increasing scientific development that the world is witnessing in all fields of life, it was necessary to develop human skills and capabilities to keep pace with this development of the educational system and

by relying on the development of curricula, which is the important basis at the center of the educational process. The educational process suffered from some problems in teaching methods and educational curricula, such as routine and methods such as memorization and indoctrination; without opening up to renewable methods of teaching, it is urgent to reconsider defining the objectives, contents and curricula of the educational system and work to develop them to meet the nowadays challenges. One of the problems that the educational process suffers from is considering the textbook as the main focus, although it does not take into account the individual differences of students. The textbook cannot meet these scientific developments and security through the development of self-learning among students, therefore, the researcher decided to identify self-learning skills by analyzing the content of physics books within modern teaching strategies.

Through the researcher's review of the opinions of a group of male and female teachers specialized in physics in the middle school stage in the governorate of Dhi Qar / Al-Rifai and Al-Nasr districts, through the open questionnaire, the results of the questionnaire appeared as follows:

70% of male and female teachers have no prior knowledge of self-learning skills. 82% of male and female teachers do not evaluate learners' self-learning skills. 75% of teachers are not keen on developing students' self-learning skills during their teaching. Based on the preceding, the researcher identifies the problem of the current study; the following question can be answered:

- To what extent do students possess self-learning skills?

### ***Second: The Importance of the Research:***

Self-learning skills occupy a prominent place in modern trends and physics. The attention to self-learning skills is due to the important roles that these skills in teaching physics, such as helping learners to understand concepts and applications of physical laws, interpretation of many natural phenomena, problem-solving skills, decision-making, assessment and self-evaluation skills, as well as developing Self-confidence and an increase in self-motivation among learners (Tulba, 248: 2013). In light of the growing interest in self-learning skills, many educational models appeared to overcome the difficulties of the subject and develop their skills within the framework of the course content. (Goldberg, Christine, 2004, Ertug, Evrekli & Gunay, Ali, 2009).

The learning that students undertake requires diverse and successful teaching methods that encourage them to ask in-depth questions about the topic of discussion and how to identify assumptions, put forward and build ideas and defend them, and understand the relationships between different phenomena. Acquisition and use of knowledge is no longer the only goal of learning, but rather to help the learner learn different skills such as thinking skills and other skills that enable them to manage their lives on their own (Al-Ayasra, 136: 2011), and in light of the developments of technology, means of communication, and the rapid cognitive growth in society, the need for learning to be a continuous process appears. A person can develop his

abilities, skills, and personality to keep pace with developments in all fields, and that is the role of self-learning comes. (Al-Azergawi, 201: 2018).

Self-learning is one of the most important means of continuous education, as it is how it is possible to confront the knowledge explosion and rapid successive changes. Therefore, self-learning is important in the self-evaluation of the teacher's knowledge and teaching skills to keep pace with scientific, technical, and cognitive development in information to achieve positive learning commensurate with the teacher's abilities. Self-learning is developing and keeping pace with everything that is developed and contemporary and applying it in the fields of teaching work, and strengthening the principle of continuous work (Sayed and Abbas, 155: 2012).

Teachers are interested in self-learning, as its method is characterized by a set of characteristics that distinguish it from other learning methods, which is the interaction of students with every educational situation in a positive manner. They are not only recipients of information but also participants in gathering learning resources and creating educational situations in a way that provokes their motives for learning and guarantees them the freedom to choose between alternatives relying on themselves and allowing them to self-assess so that they can identify weaknesses and work on self-treatment with the support of their teachers and the ability of self-learning to reduce the severity of The social differences between them (Al-Tayyib, 2012: 26-27).

This method is considered one of the methods that contribute to taking into account the individual differences between the students. Those responsible for their learning and the decisions they make are also responsible for the results they achieve. (Al-Sherbiny and Effat, 2011:32).

The researcher believes that self-learning is important by focusing on students as the center of the educational process. It increases their self-confidence and gives them opportunities to learn according to their abilities, capabilities, interests, and self-speed and keep pace with the tremendous scientific development in the world. It is a solution to many problems facing education. That self-learning focuses on several skills, which is the basis of the importance of these great skills in self-learning that enhance the learner's self-confidence and move forward towards learning in a manner that suits their self-paced and mental and cognitive abilities. The researcher knows that this study is the first in Iraq.

### ***Third: Aims of the Research:***

The current research aims at the following:

- 1- To reveal the extent to which the middle school students possess the included self-learning skills.
- 2- Revealing the significance of statistical differences in how middle school students possess self-learning skills according to the gender variable (male and female students).

***Fourth: Limitation of the Research:******Human borders:***

middle school students (fourth scientific, fifth biology, sixth biology) in Dhi Qar governorate / Al-Rifai and Al-Nasr district.

***Spatial boundaries:***

middle schools affiliated to the Directorate of Education of Dhi Qar / Al-Rifai Education Department

***Time boundaries:***

the academic year 2021-2022.

***Fifth: Definition of the terms:******Self-Learning:***

(Zaytoon, 2005) define it as “A personal effort undertaken by the individual to learn, search for and discover knowledge independently, motivated by his desire to develop his aptitudes, capabilities, and abilities in response to his inclinations and interests in order to achieve the development and integration of his personality.” (Zaytoun, 78:2005)

***Self-Learning Skills:***

defined by (Al-Zabali, 2014): A set of skills from which the learner must possess personal energy and self-strength to guide him and motivate his activities towards achieving his goals in development.

**CHAPTER TWO: THEATRICAL ASPECTS AND PREVIOUS STUDIES:*****Self-Education:***

Self-learning is one of the learning methods, the most important of which allows the optimal practice of several skills. It has contributed to the development and progress of the human being cognitively, behaviorally, and emotionally. It is an important model of learning models through which the student learns what he wants to learn and how to learn by himself. The acquisition and proficiency of self-learning skills enable the student to learn for life and at all times, whether inside or outside the school, known as continuous education (Barakat, 1992: 30). This requires the teacher to train and entice students to acquire knowledge from various sources, whether those with scientific expertise, books and scientific references, networks, the Internet, the media, or otherwise (Amer, 33:2005).

### ***The Importance of Self-Learning:***

- 1- Training the students in the necessary skills for learning
- 2- Teach them to solve their problems and create a fertile environment for creativity, as well as help them take responsibility and build an ever-learning society
- 3- Formation of students' positive interests and backgrounds towards learning. (Badir, 2008: 120)
- 4- Keeping up with openness in terms of knowledge, which is continuous?
- 5- Acquiring knowledge and learning many skills with minimal effort. (Al-Adwani, 9:2018).

### ***Goals Self Learning:***

Its success in achieving the following can summarize the goals of self-learning:

- 1- Develop self-awareness, confidence, and positive acceptance.
- 2- Acquisition of continuous learning skills and habits to continue his self-learning independently.
- 3- The individual bears the responsibility for his learning.
- 4- Building an ever-learning society.
- 5- Achieving continuous education (Al-Adwani, 10: 2018).

### ***Self-learning Skills:***

Self-learning skills are not limited to achievement and study only and are not limited to cognitive learning only, but they expand more than that to include personal interests. When self-learning is a way of life for self-development self-learning skills are the means of growth and pillars upon which the student's personality is based in sustainable development for himself and for the sake of quality of life (Mansour et al., 2006: 25).

### ***Self-learning skills Classification:***

The self-learning skills are varied according to the number of well-known fields and the continuous development and prosperity taking place in them. In light of the various human characteristics, their sorting and classification differed according to the type of study and its requirements.

By planning and organizing this learning and independent study, and skills related to solving problems and making decisions through the process of

collecting and organizing information, in addition to the mental operations that students practice during that, such as interpretation, conclusion, prediction, measurement, classification, generalization and other skills that the student uses in practical and scientific life and other various and multiple skills. Self-learning skills were classified according to the following:

- 1- Planning and organizing skills.
- 2- Self-assessment skills.
- 3- Skills of willingness to learn (Karim, 33:2018)
- 4- Sustainable development skills.
- 5- Life applications skills.
- 6- Physical Concepts Skills (Al-Harbi, 86: 2018)
- 7- Skills related to activities and experiences.
- 8- Problem-solving and decision-making skills.
- 9- Opinion-sharing skills (Al Saifi, 2009).
- 10- Skills of using learning resources (Mohammed et al., 2019).

#### ***Previous studies dealing with self-learning skills:***

Al Hosani 2010 study in the Sultanate of Oman entitled (Self-learning skills in the activities of the Arabic language book for the tenth grade in the Sultanate of Oman), aimed at identifying the self-learning skills necessary for tenth-grade students, it is followed the descriptive approach and the sample was Arabic language book for the tenth grade. The first tool was a list of self-learning skills; the second tool was an activity analysis card. The statistical methods used are frequencies, percentages, Cooper's equation, average frequencies, and standard deviation.

The results of the study showed that most of the self-learning skills included in the study tool; it was available in varying proportions in the activities of the Arabic language book for the tenth grade, according to different topics, chapters, and units; this may be due to the focus of activities in this class on helping the learner to self-learn.

#### ***Indicators and indications:***

The curriculum used in the previous study is descriptive, and thus, it is similar to the curriculum of the current study. The study material (Al Hosani, 2010) dealt with physics and theirs similar to the current study. As for the current study, the preparatory study will be in the preparatory stage to be similar to the current study. The statistical manners are used (Al Hosani, 2010) for middle school students.

The current study will be in the middle school stage, so the study will be similar to the current study. The statistical means in the study (Al Hosani, 2010) were frequencies, percentages, Cooper's equation, average frequencies, and standard deviations. The statistical means in the study (Karim, 2021) was the percentage frequencies, Cooper's equation; the statistical means of the study are similar to the statistical means in the current study.

**Aspects of the benefit:**

- 1- Previous studies benefited the researcher in preparing his procedural research steps.
- 2- Preparing a questionnaire for self-learning skills.
- 3- Previous studies gave the researcher an affirmation of the importance of the research and the need for it.
- 4- The researcher helped in choosing the statistical methods that fit the research objectives and procedures.
- 5- The researcher helped in finding the sources, identifying them and benefiting from them, and searching for other sources that dealt with her study of the current topic.

**CHAPTER THREE: RESEARCH METHODOLOGY:*****Research Procedures:***

This chapter includes a list of the research procedures adopted by the researcher with regard to the research methodology, its society, its sample, its tools, and the statistical methods used.

***First, the research method:***

The researcher has adopted the descriptive analytical method.

***Second: The research community:***

middle school students

***Third: The research sample:***

The researcher resorted to selecting a random sample of middle school students (fourth scientific grade, fifth biological grade, sixth biological grade), which includes (346) male and female students.

***Fourth: The research tool:***

The researcher prepared a scale for self-learning skills.

***Self- Learning Skills Scale:***

After the researcher reviewed what was available to her from previous studies and literature related to the subject of self-learning and its skills, there is no scale that leads to what is required in her research procedures. Thus, the researcher found a wealth of information, which she used in building a scale of self-learning skills.

### ***Scale Planning:***

Planning for the scale includes defining the phenomenon to be measured. The researcher identified the areas of the scale based on the analysis of the definition of self-learning skills. Based on that, the researcher identified ten areas comprising (55) items.

### ***A- Paragraph of Scale Preparation:***

To collect the paragraphs of the self-learning skills scale, the researcher distributed an open survey questionnaire. The researcher obtained a set of paragraphs by analyzing the content of the students' answers. The researcher relied on what was facilitated from literature and previous studies and a number of psychological scales related to the variable Self-learning skills in formulating the paragraphs of the scale. Among these studies: the study of (Mohammed et al., 2019), (Al Hosani, 2010) and (Asiri, 2021).

The researcher prepared (55) paragraphs to represent the paragraphs of the self-learning skills scale in its initial form. In its formulation, linguistic integrity and the speaker's form were taken into consideration, and the researcher was keen that the paragraphs should not be subject to more than one interpretation, and to stay away from the negation formula in its formulation (Abu Allam and Sharif 1989:135) and the scale items were distributed (55) items.

### ***B- Scale Correction:***

The researcher developed a three-way gradient of the answer alternatives corresponding to each paragraph, starting with the gradation (1) and ending with the gradient (3). The researcher suggested answering the type of alternatives with (agree, to some extent, disagree). The scale is corrected as follows: the scores are given for the response to the items in light of the respondent's choices for one of the alternatives.

### ***C- Paragraph Validity:***

After the researcher has finished preparing the scale's (55) items, the researcher checks the validity of the scale's paragraphs by presenting the scale's paragraphs to a number of arbitrators and specialists in educational and psychological sciences and teaching methods Appendix to estimate the validity of the scale's items. The paragraphs constituting the fields and their suitability of the scale for the purpose for which they were set, and an agreement percentage of (80%) or more was adopted to determine the validity of the paragraph or not. In light of this, the necessary amendment was made to some paragraphs, according to the opinions of experts.



### ***Setting Scale for Self-Learning Skills Scale:***

The scale's instructions represent the evidence that guides the respondent to answer the scale's items, as clear language was taken into consideration in their preparation and it was easy for the respondent to choose the appropriate alternative to the response by placing a mark (√) below it. The researcher placed in the scale form An illustrative example and instructions that show how to answer the scale items without explicitly indicating the goal of the scale.

### ***The exploratory application of the self-learning skills tool:***

The researcher applied the scale to a random sample of middle school students (fourth scientific, fifth biological, and sixth biological grades) and their number reached (30) students on the day corresponding to // 2022, and asked the members of the sample to look On the scale instructions and read them carefully and accurately, as well as reading the scale's items and then answering them and asking about any ambiguity or lack of understanding of any item they face. The results showed the clarity of the scale's instructions, paragraphs and the method of answering, as well as the time taken to answer the scale, as the average time taken to answer was approximately (40) minutes, and with this procedure it became clear that the instructions are clear and understandable to students.

### ***B- Statistical Analysis of the Self-Learning Skills Scale:***

For this reason, the researcher applied the scale to an exploratory sample other than the final research sample, and this sample was chosen by the stratified random method, and the sample consisted of (275) male and female students (grade Fourth Scientific, Fifth Biological Grade, and Sixth Biological Grade) on corresponding to / / 2022 in order to extract the psychometric characteristics of the scale, statistical analysis and ensure the stability of the scale paragraphs.

The researcher chose the highest (75%) of the students' answers to represent the upper group and the least (75%) of the students' answers to represent the lower group, as it represents the best percentage that can be adopted for the purpose of analyzing the scale's paragraphs, through which we can be sure of the scale's efficiency, as it indicates the scale's ability to Detecting individual differences between individuals. (Eble,1972, 399).

The researcher followed the following steps:-

- 1- Determine the total score for each form .
- 2- The researcher chose the highest (50%) of the scores to represent the upper group and the lowest (50%) of the scores to represent the lower group. Thus, the number of forms that were subject to analysis reached (150) forms, with (75) forms representing the upper group and (75) forms representing the lower group .

The researcher used the two extreme samples method and extracted the discriminatory power of the paragraph, the relationship of the paragraph's degree to the total score of the scale, the relationship of the paragraph's link to the domain, and the degree of each field to the total degree.

***1-The discriminatory power of the paragraph:***

The researcher calculated the discriminatory power for each of the paragraphs using the independent sample t-test, and found that the arithmetic mean of the upper group ranged between (0.013 to 0.050), while the standard deviation ranged from (0.115 to 0.15) 0.484) As for the lower group, its value ranges between (0.083 to 0.989) and its standard deviation ranges between (0.622 to 0.972), and thus the paragraphs of the scale appeared distinct and acceptable in terms of their discriminatory ability, and thus none of them was deleted and with statistical significance at the level (0.05) because the calculated T value is greater from the tabular T value (0.118) and the degree of freedom (273).

***Finding the relationship of the paragraph's degree with the total degree of the scale:***

To verify the sincerity of the paragraphs according to the correlation between the degree of each paragraph of the self-learning skills scale and the total degree of the scale, all the paragraphs' correlation coefficients were statistically significant at the level (0.05), the degree of freedom (273) and the tabular value (0.118). The correlation coefficient values range from (.440 to .707).

***The relationship of the degree of the paragraph with the degree of the field and the degree of each field in the total degree:***

To verify that the paragraphs of each field of the scale express it, the researcher calculated the correlation coefficient between the degree of each paragraph and the total degree of the field to which it belongs, and its values ranged between (0.559 - 0.797) as well as calculating The correlation coefficient between the degree of each field and the total score of the scale, and its values ranged between (0.566 - 0.775) and the significance of the correlation coefficients was tested by comparing them with the tabular value of the significance of the correlation coefficient, and all of them were greater than the tabular value of (0,118) at the level of significance (0.05). ) and the degree of freedom (273). Thus, the paragraphs of the scale are statistically significant and valid for application, and the criterion ((Nuannally) indicates that the acceptance of the paragraph is determined if its correlation coefficient with the total degree is higher than (0, 20) (Al-Kubaisi, 2010: 48).

***Veracity of Scale:***

Two types of validity were extracted :

### ***1-Face Validity:***

The researcher presented the scale in its initial form to ascertain the apparent validity to a group of experts and specialists in the field of methods of teaching science, measurement and evaluation to find out their opinions about the validity of the paragraphs and their suitability for self-learning skills and their validity scientifically and linguistically, as the percentage was used And (Q2) to know the nature of the differences between the experts' opinions, where it was confirmed or rejected, and after using the percentage and (Q2) calculated and comparison with the tabular .

### ***2-Construction Sincerity:***

Construction sincerity was extracted by several methods: the relationship of the item's correlation with the total score, and the relationship of the paragraph's degree with the field to which it belongs.

### ***Stability:***

The researcher used the following methods to calculate stability, as follows :

#### ***Alpha-Cronbach method:***

The researcher followed the Alpha-Cronbach method to calculate the reliability coefficient, and the scale stability coefficient as a whole was (0.8882), which is a good value and indicates the homogeneity of the scale. 248).

#### ***Method of re-application of the scale:***

After ensuring the clarity of the paragraphs and for the purpose of ensuring the stability of the paragraphs of the scale and its discriminatory strength and the amount of internal consistency, the researcher re-applied the scale on a sample of (100) students from the preparatory stage (fourth scientific grade, fifth biological grade And the sixth grade biological) on the day of // 2022, and the scale stability coefficient reached (0.867), which is a good value and indicates the homogeneity of the scale. The tests are considered good when their stability coefficient reaches (0.67) or more (Al Nabhan, 2004: 204-248).

### ***C- The final application of the scale:***

The researcher used the statistical package program (Spss) version 26, as well as using the program (Microsoft Excl) to carry out the procedures, analyze and extract the results.

#### ***The fourth chapter: the results:***

Results of the first aim with explain: determine about extent of students possess for self-learning skills that included in physics books contain of the middle school stage. To verify the third goal, the researcher prepared a scale

for self-learning skills and applied it to the sample of (346) male and female students after the researcher collected the scale sheets and processed them statistically using the t-test for one sample, where the arithmetic mean (121.93) and the standard deviation (32.29), as shown in the table (1).

**Table (1):** Weighted mean and percentile for the ten domains of the Self-Learning Skills Scale

Significance level	T value		Freedom degree	hypothetical mean	S.D	Arithmetic mean	No.	sample
	Tabular	Calculated						
Significant	1.97	6.87	345	110	32.29	121.93	346	Students

From the above table, it was found that the calculated T-value was (6.87), which is greater than the tabular value which was (1.97) and the degree of freedom (345) and the level of significance (0.05), which indicates the possession of learning skills by students (fourth scientific grade, fifth biological grade, and sixth biological grade) Subjective at a hypothetical mean (110) and at a sufficiency limit of less than (80%).

The researcher believes that the reason why students possess self-learning skills is due to the interest of curricula authors to include such skills within the content of physics books, which is what led to their development in students in a correct and positive manner. The results and explanation of the second goal: To reveal the significance of statistical differences in the extent to which middle school stage students possess self-learning skills in the content of physics books according to the gender variable (male-female students).

In order to find out the statistically significant differences in the responses of the sample members for each domain of the self-learning skills tool according to the gender variable (male - female): the arithmetic mean and the standard deviation of the sample were calculated, where the arithmetic mean of the students was (127.67) and the standard deviation was (29.26), while The arithmetic mean was (115.85) and the standard deviation was (34.26), and the individual differences between the arithmetic averages were calculated by using the t-test for two independent samples at ( $p \leq 0.05$ ) and the degree of freedom (344). It was found that the calculated t-value was (3.45) less than the value The tabular value is (1.97), and this indicates that there are statistically significant differences in the sample responses due to the gender variable (male - female) and in favor of males, as shown in the table below:

The researcher attributes this result to the fact that males have more opportunities to learn, train and qualify than females, so most of them have greater qualifications than females, and therefore they have more self-learning skills than females, as table (2).

**Table (2):** The arithmetic mean, standard deviation, and the calculated and tabular T-value of the scores of the sample members according to the gender variable (males – females' student).

Significance level	T value		Freedom degree	S.D	Arithmetic mean	NO.	Gender
	Tabulated	Calculated					
Significant	1.97	3.45	344	29.26	127.67	178	Male student
				34.26	115.85	168	Female student

### CONCLUSIONS:

1- Students (fourth scientific class, fifth biological class, and sixth biological class) possess self-learning skills at a hypothetical mean (110) and at a sufficiency limit of less than (80%).

2- There are statistically significant differences in favor of males, and the arithmetic mean of the students was (127.67) and the standard deviation was (29.26) at the level of significance (0.05) and the degree of freedom (344).

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