International Journal of Studies in Advanced Education
Volume 02, Issue 06, June, 2023
ISSN (E): 2949-8945
Scholarsdigest.org

CHALLENGES OF IMPLEMENTING EXPERIENTIAL LEARNING ACCORDING TO KOLB'S MODEL FROM THE PERSPECTIVE OF BIOLOGY TEACHERS

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Abstract
The research aimed to identify Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers. To achieve the aim of the research, the researchers adopted the descriptive research method. The scale of "Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers" was built from (40) items in Likert formula. The results showed that the domain of Challenges of implementing experiential learning related to the school and classroom environment was resolved in the first place and (high) level. While the domain of Challenges of implementing experiential learning related to the curriculum ranked second and (medium) level, then followed by the domain of Challenges of implementing experiential learning relevant to the teacher ranked third and (medium) level. Finally, the domain of Challenges of implementing experiential learning related to students was solved at the fourth rank and (medium) level. The level of challenges in general was (medium). Based on the results of the research, the researchers suggested "building a training program for biology teachers to overcome challenges of implementing experimental learning and measuring its impact on their teaching skills."

Keywords: Challenges, experiential learning, Kolb's model, Biology teachers.

Introduction

First: Research problem:

Recent trends in education seek to make the classroom a field of cooperation and interaction, and to make the role of the teacher centered on facilitating the learning process, not just

leading it. The student assumes a central role, in which he is active and effective and not content with passive receiving of information. The prevailing learning method is not limited to receiving knowledge, but is based on the participation of learners in direct experiences related to real-world problems and situations.

Challenges and difficulties that Iraqi society suffered from have accumulated since the economic blockade before 2003, and the subsequent security instability, which has led to negative repercussions on the infrastructure of instructional institutions. As well as its negative impact on the preparation of human resources, and the material requirements for education. All of these challenges can constitute real problems that hinder the paths of implementing modern trends in education.

In order to confirm the feeling of the research problem, the researchers presented an exploratory questionnaire for a sample of (4) biology supervisors and (30) biology teachers. The questionnaire included categories of challenges. Respondents were allowed to suggest other challenges that might hinder the implementation of experiential learning. The results concluded that the challenges were classified into four categories. Thus, the researchers formulated the problem of their research with the following question:

What are the challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers?

Second: Importance of research:

Experiential learning has been widely accepted as a useful framework for learner-centered educational innovation, including instructional design, curriculum development, and lifelong learning (Kolb & Kolb, 2005a, p. 8). The theory of experiential learning has helped the development of instructional programs and curricula on a large scale in various institutions, as it provided a general framework for designing the field of work in many disciplines. In addition, these programs include elements using a variety of methods, such as group work, simulation, application of theories and reasoning. These methods develop students through a cycle of experiential learning, which improves learning outcomes related to both academic knowledge and overall competence (Chan, 2022, p. 20).

Characteristics of the experimental method in education are characterized by the fact that it contains a balanced mixture of activity and theory, an environment in which the learner learns without being strongly influenced by external judgment, a space for him to be personally associated with learning activities, encouraging dialogues between the learner and his surroundings, gaining a new vision through self-reflection during learning, and emotional investment. To spark critical thoughts in the learner, and an opportunity for re-evaluation through self-exploration, and the establishment of relationships with the learning environment, as well as the experience outside of school (Leong et al., 2019, p. 1150).

Strengths of applying experiential learning according to Kolb's model lie in providing indicators ready for application, directing to ensure the use of a range of teaching methods, providing a theoretical rationale for what many teachers do, and then providing suggestions on improving their practices by effectively linking theory and practice. In addition, experiential learning demonstrates the importance of encouraging students to think and providing them with feedback to enhance their learning, develop a diverse classroom, and

make the learner aware of how different learning styles must be combined for effective learning (Healey & Jenkins, 2000, p. 186).

Experiential learning can require a great deal of time and effort, and hence it is characterized by breadth and depth, where depth (time invested) is important for higher levels of thinking, while breadth (variety of experiences) is necessary to enhance soft skills such as social competence (Morris, 2020, p.1073). Collaborative dialogue with the teacher and peers allows for more deep critical thinking, and this requires that learners think critically about their abstract perceptions that were previously represented non-critically, as the learner's self-awareness and interpretation of the new understanding develops, and therefore, experiential learning is often an emotionally enriching experience (Larsen, 2017, p. 279).

Some of the appeal of "experiential learning theory" is that it provides a rationale for a variety of learning styles, including independent learning, action learning, project-based learning, and problem-based learning, which have recently received a lot of attention in education (Healey & Jenkins , 2000, p.186).

(McCarthy, 2010) confirms that experiential learning enhances students' interest in the topic of the lesson, satisfaction with learning, increases understanding and retention of the subject matter, develops the ability to continue learning, improves interpersonal and interpersonal communication, as well as developing the ability to solve problems, analytical thinking and critical thinking. (McCarthy, 2010, p. 136).

The advantages of applying experiential learning theory can be summarized by:

1- Availability of directives ready for application.

2- It gives directions for the necessary set of teaching methods.

3- It provides an effective connection between theory and practice. It provides a theoretical argument for what many advertisers do and need advice on how to improve their practices.

4- Clearly articulate the importance of thinking for students and the importance of providing feedback in order to stimulate their studies.

5- It helps to rationalize the method of combining learning methods so that learning becomes more effective.

6- It can be used in all fields and by any individual or institution, and in different periods of time. (Sharlanova, 2004, pp. 36-37)

As a result of the importance of experiential learning according to Kolb's model in teaching, many studies have addressed it:

Internationally, a study (Arakawa & Anme, 2020) aimed to examine the effectiveness of an experiential learning program based on Kolb's theory in increasing the motivation of people with dementia and their participation in activity within the community. The experimental design was adopted with two experimental and control groups, and the sample size was 37 individuals for the experimental group and 44 for the control group. The experimental group underwent training and participated in the experiential learning program two weeks after the initial training session. The control group underwent training. The results revealed a significant increase in motivation among the participants in the experimental group, compared to the participants in the control group. As well as a higher activity rate among the participants in the experimental group (Arakawa & Anme, 2020, p. 1).

locally, the study (Al-Afoun, 2022) aimed to identify the impact of instructional design according to experimental learning strategies among first-grade students in the processing of information for science, and to achieve the goal of the research, the researcher adopted the experimental design with partial control. The sample consisted of (36) students from the first intermediate class, (18) students in the experimental group, and (18) students in the control group. The researcher prepared an information processing scale for science, and the results showed that the students of the experimental group excelled over the students of the control group (Al-Afoun, 2022, p. 3920).

The importance of the study can be summarized:

1- Progress scale for the challenges of implementing experiential learning.

2- It provides a theoretical framework for researchers in experiential learning.

3- Reveal the variance in the challenges of implementing experiential learning.

Third: Research objective:

The research aims to identify the challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers.

Fourth: Research limitations:

1- The spatial limit: secondary schools in the General Directorate of Education of Al-Qadisiyah.

2- The human limit: Biology teachers in secondary schools.

3- Time limit: the second course of the academic year 2022-2023.

Fifth: Defining Terms:

1- Experiential learning:

(Kolb, 1984, p. 41) as "the process by which knowledge is created from the transformation of experience, as knowledge results from a combination of assimilation and transformation of experience."

2- Challenges of implementing experiential learning:

The researchers define it procedurally as "a set of difficulties and obstacles, whether related to the teacher, the learner, or the classroom and school environment, that biology teachers encounter in the implementation of experiential learning according to Kolb's model, which is measured by the scale prepared by the re searchers for this purpose."

Theoretical framework:

Experiential Learning Philosophy:

Experiential learning theory builds on the work of prominent twentieth-century scholars who placed experience central to their theories of human learning and development—notably John Dewey, Kurt Levine, Jean Piaget, William James, Carl Jung, Paul Freire, Carl Rogers, and others—to develop a comprehensive dynamical model in Learning from experience and a multilinear model of adult development (Kolb & Kolb, 2009a, p. 43).

The designation "experiential learning theory" emphasizes the central role of experience in the learning process, an assertion that distinguishes the theory from other learning theories. The term empiricism is used to distinguish the theory from cognitive theories that tend to emphasize perception over influence, and behavioral theories that deny any role for subjective experience in the learning process (Kolb et al., 2014, p. 2).

Experiential learning has several essential features:

1- Action: The student is not passive, but active, participating in a physical movement and not just sitting.

2- Reflex: Learning occurs after a reaction to the action only.

3- Phenomenological: objects or situations are described without values or explanations. The student should know himself about what is happening, and the teacher's point of view should not be automatically imposed.

4- The subjective human experience: the scientist is viewed as a student, not as a teacher.

5- Human experience is a source of learning: Experiential learning is an attempt to use human experience in the instructional process. (Dernova, 2015, p. 54)

Experiential Learning Model:

The experiential learning model shows that learning styles are the results of an interactive combination of genetic influences, past life experiences, and the requirements of the current environment. The factors integrate to differentiate in two dimensions that define learning styles, namely: reception, which is related to how the individual receives information or perceptual stimuli, and is done in two interrelated ways to receive experience, namely, sensory experience and abstract concepts. The other dimension, processing, relates to how an individual processes and processes information, and is done in two related ways to process experience: reflective observation and active experimentation (Kolb et al., 2014, pp. 2-3)

The learning cycle in the experiential learning model is characterized by four stages:

1- Concrete Experience (CE): Perceiving and processing information is based on sensory experience and self-discovery. They process what they see, hear, or feel, and learn better by integrating them into examples and role-playing. They see the ineffectiveness of theoretical methods.

2- Reflective Observation (RO): the perception and processing of information depends on reflection, objectivity, and careful observation in analyzing the learning situation, and they prefer instructional situations that give them the opportunity to play the role of an objective, unbiased observer, and they adopt discussion, and they are introverted, and they need to evaluate their performance according to external standards.

(Healey & Jenkins, 2000, p. 188)

3- Abstract conceptualization (AC): they adopt the analysis of the learning situation, abstract thinking, and logical evaluation, and focus on theories, systematic analysis, and orientation towards things.

4- Active Experimentation (AE): Perceiving and processing information by adopting active experimentation of the learning situation through the scientific application of ideas. Its owners do not tend to theoretical lectures, but they are characterized by orientation towards

action and extroversion. They take the experience from the external environment and treat it by testing it in an active way. They are classified as practical.

(Konak et al., 2014, p. 14)

Learning styles according to Kolb's experiential learning model:

1- Convergent Style: It includes two dimensions: Abstract conceptualization and Active Experimentation. Those with this style are distinguished by their ability to solve problems and situations that require one simple correct answer, and they are called convergents because they find one correct and familiar solution to the problem (Kolb & Kolb, 2009a, p. 46).

2- Divergent Style: It includes two dimensions Concrete Experience and Reflective Observation. They are called divergent because they are good at generating a lot of ideas and solutions (Kolb & Kolb, 2005b, p. 197).

3- The representative assimilator style: This method includes planning, the use of logic, and information analysis, as well as reflective observation. They are called assimilationists because they like to absorb the separate elements in an integrated whole (Kayes et al., 2005, p. 6).

4- The adaptive style: (Accommodator Style) This style includes Concrete Experience and Active Experimentation, and they are called adaptive because they have the skill and ingenuity to adapt to new conditions (Chan, 2022, p. 23).

Experiential learning theory provides a comprehensive model of the learning process and a multi-directional model of adult development, both of which are consistent with what we know about individual learning, growth, and development (Kolb et al., 2014, p. 2).

The developmental model of experiential learning identifies three stages of an individual's development: acquisition, from birth to adolescence, which is the stage of development of basic abilities and cognitive structures. Specialization, from the beginning of school enrollment until the beginning of early work and the personal experiences of adulthood, in which the forces of social, instructional and patriotic upbringing are shaped, as well as the development of a special and specialized learning style. Integration, continuing into mid-career and late life; Secondary learning styles are expressed in work performance and during personal life (Kolb & Kolb, 2005a, p. 4).

implementing experiential learning methods in teaching:

1- Learning is more effective, easy and sustainable if the presentation of information is compatible with the student's learning style.

2- Students distinguish between reliance on direct concrete experience and indirect abstract conceptualization in their reception of information.

3- The learning of direct experience individuals is better through emotional awareness of what arises from these direct experiences based on direct contact with others and represents their experiences.

4- Abstract conceptualization individuals learn better through logical thinking and analysis of the ideas, knowledge, and information they receive.

5- Reflective Observation individuals' learning is better through follow-up learning based on searching for meanings, indications, and multiplicity of visions and dimensions.

6- The learning of Active Experimentation members is better through learning by doing, activating ideas, making them work, and drawing conclusions about their credibility in reality.

7- Any curriculum can be adapted to meet the different students' learning style requirements, through the method of presenting information and processing strategies.

8- Teachers or parents taking into account the main learning styles of their students or children during their presentation of information makes learning more effective.

(Al-Afoun, 2022, p. 3929)

The role of the teacher and the learner in experiential learning:

First: The role of the teacher: The experiential teacher plays the role of a guide, as he provides opportunities for his students to make mistakes, to learn from them and remember them throughout their lives. This procedure gives students the freedom to conduct tests and experiment, for the purpose of discovering solutions to the problems they encounter. In addition, this will lead to the teacher providing his students with resources and information when they are unable to do so, which makes him able to maintain their motivation and maintain their advanced levels in education.

Second: The role of the learner: Experiential learning gives students sufficient freedom in the classroom as long as it shows clear progress in education, and it is also likely that students will need to engage in so-called trial and error groups when completing their homework. At the same time, students should realize that problem-solving becomes very important when they have learned well about the subject matter. (Al-Afoun, 2022, pp. 3929-3930)

Research Methodology and Procedures:

First: Research Methodology:

The researchers adopted the descriptive approach because it is the most suitable and appropriate research methodology to answer the questions of the current research to identify the challenges of applying experiential learning according to Kolb's theory from the point of view of biology teachers.

Second: Research Population and Sample:

The research community consisted of all the biology teachers in the General Directorate of Education of Al-Qadisiyah, who numbered (530) male and female teachers. The research samples were chosen randomly, and they include:

A-Sample Clarity of Scale Items Instructions:

A random sample of (20) teachers was selected to conduct the first exploratory application of the Experiential Learning Application Challenges Scale.

b- Sample Statistical Analysis:

To perform the analysis and extract the psychometric characteristics of the scale. A random sample of (200) teachers was selected.

3. Final application sample:

A simple random sample of (200) biology teachers was selected for the final application of the research.

Third: Research tool:

In order to measure the research variable, the researchers intended to build a scale of the challenges of applying experimental learning from the viewpoint of biology teachers, as the scale was built by following the steps:

1- Determine the aim of the scale:

The aim of the scale is determined by identifying the challenges of applying experiential learning from the viewpoint of biology teachers.

Preparing and writing scale items:

After reviewing the previous studies and literature related to the subject of the research, and after presenting an exploratory questionnaire for a sample of biology supervisors and biology teachers, the researchers prepared the scale items in its initial form according to the categories that were identified. The scale consisted of (40) items with a gradual response, distributed into four domains (the domain of Challenges of implementing experiential learning relevant to the teacher (10) items, the domain of Challenges of implementing experiential learning related to students (10) items, the domain of Challenges of implementing experiential learning related to the school and classroom environment (10) items and the domain of Challenges of implementing experiential learning related to the curriculum (10) items.

3- Instructions for answering the scale items:

The researchers explained the instructions for answering the scale items, determining the time required to answer the scale items, and not leaving any of the scale items unanswered.

4- Answer alternatives and method of correction:

The correction of the scale relied on the five-fold gradient for the appropriate answer (very high-high-medium-low-very low), as the alternatives take the values (5-4-3-2-1) respectively for the positive items, and the values (1-2-3-4 -5) respectively for negative items.

5- Validity of the scale:

To verify the apparent validity index of the items of the scale, the two researchers presented the scale in its initial form to a group of arbitrators in the disciplines of teaching methods of biology, educational psychology, and measurement and evaluation. All items of the scale obtained an agreement rate of more than 80%, thus achieving face validity.

Construct Validity:

The Construct Validity of the scale was verified by the discriminatory power and internal consistency of the scale items.

A- The discriminatory power:

To verify the discriminatory power of the items of the scale, the two researchers applied the t-test for two independent, equal samples, depending on the results of the exploratory application, as the highest 27% of individuals were selected in the statistical analysis sample, which amounted to (54) and the lowest 27% of the highest in the statistical analysis sample, which amounted to (54). ; To check the discriminatory power of each item of the scale. The calculated t-values for the items ranged from (4.1-59.7), which is greater than the tabular

value (1.984), meaning that it is statistically significant at the level of significance (0.05) and with a degree of freedom (106), and thus all items are distinct.

B- The relationship of the item score with the total score of the scale (internal consistency):

Depending on the results of the statistical analysis, the researchers used the Pearson correlation coefficient equation to calculate the correlation of the degree of each item and the total score of the scale. It is greater than the tabular one (1.084), that is, it is statistically significant at the level of significance (0.05) and with a degree of freedom (106).

The researchers also used the Pearson correlation coefficient equation to calculate the correlation of the degree of each domain with the total score of the scale, and the results showed that the values of the correlation coefficients ranged between (0.96 - 0.98), and the calculated t-values for the significance of the correlation coefficient ranged from (35.3 - 56.9), which is greater than the tabular (1.084), that is, it is statistically significant at the level of significance (0.05) and with a degree of freedom (106). Thus, the internal consistency of the scale is achieved.

Thus, the scale is characterized by the Construct Validity.

6- Reliability:

To calculate the Reliability of the scale, the researchers used the alpha-Cronbach equation, and the value of the reliability coefficient was (0.87), which indicates that Reliability is good if it reaches (0.70) or more.

7- The final form of the scale: after the procedures of statistical analysis of the scale items. In its final form, it consisted of (40) items, graded in Likert form, distributed into four domains (the domain of Challenges of implementing experiential learning relevant to the teacher (10) items, the domain of Challenges of implementing experiential learning related to students (10) items, the domain of Challenges of implementing experiential learning related to the school and classroom environment (10) items, and the domain of Challenges of implementing experiential learning the domain of Challenges of implementing experiential learning to the curriculum (10) items.

Fourth: Final Application:

The two researchers started applying the scale in its final form on Sunday 4/12/2022.

For the purpose of determining the level of challenges, the researchers adopted the criterion shown in Table (1).

Table (1) Criterion for determining the level of Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers

Categories	level
2.33 – 1	low
3.67 – 2.34	Medium
5 - 3.68	High

The standard is calculated by:
[The upper limit of the scale gradient (5) - the minimum scale gradient (1)] / Number of categories required (3) = 1.33 and then add the result to the end of each category.
Presentation of results, interpretations, conclusions and proposals:

First: Presentation and interpretation of the results:
To verify the results related to the answer to the research question, the means and standard deviations were calculated for the Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers, Table (2) shows that.

Table (2) The means and standard deviations of the domains of the Challenges of implementing experiential learning according to Kolb's model from the perspective of Biology teachers are arranged in descending order

Rank	number	domains	Means	standard deviation	level
1	3	Challenges of implementing experiential learning related to the school and classroom environment	3.92	1.38	High
2	4	Challenges of implementing experiential learning related to the curriculum.	3.57	1.45	Medium
3	1	Challenges of implementing experiential learning relevant to the teacher	3.522	1.523	Medium
4	2	Challenges of implementing experiential learning related to students	3.14	1.44	Medium
Total score for the domains of the Challenges of implementing experiential learning according to Kolb's model.			3.54	1.45	Medium

Table (2) shows that the mean for the Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers ranged between (3.92 - 3.14). The domain of Challenges of implementing experiential learning related to the school and classroom environment. It ranked first with a mean (3.92), standard deviation (1.38) with a (high) level. While the domain of Challenges of implementing experiential learning related to the curriculum. It ranked second with a mean (3.57), standard deviation of (1.45), and (medium) level. And the domain of Challenges of implementing experiential learning relevant to the teacher. In the third place, mean (3.522), standard deviation (1.523), and (medium) level. The domain of Challenges of implementing experiential learning related to students ranked last with mean (3.14), standard deviation (1.44), and (medium) level.
The researchers believe that the results may be due to the need for experiential learning, according to Kolb's model, to material requirements and special arrangements in the classroom and school environment, such as laboratories, adjustable seats, and large classrooms. The nature of experiential learning in biology lessons requires that strategies, instructional activities, and evaluation be consistent with the nature of the content related to the student's life. In addition, it requires more time, which the teacher does not possess, and more effort in designing activities, planning, controlling and managing a classroom, and evaluating results.

The means and standard deviations of the sample's estimates were calculated for each domain of the Challenges of implementing experiential learning according to Kolb's model from the perspective of biology teachers. It was:

First: domain of Challenges of implementing experiential learning relevant to the teacher

The means and standard deviations were calculated for items in the domain of Challenges of implementing experiential learning relevant to the teacher. Table (3) shows this.

Table (3) The means and standard deviations of the items in the domain of Challenges of implementing experiential learning relevant to the teacher are arranged in descending order

Rank	number	items	Means	standard deviation	level
1	1	The teacher used to use the methods of questioning and lecture to provide the largest amount of information in the least time.	4.50	1.15	High
2	5	The focus of the biology teacher is on theoretical training and not on the student's performance of the tasks.	3.84	1.01	High
3	9	The teacher's low knowledge of the principles on which experiential learning strategies are based.	3.83	1.23	High
4	8	The teacher fears that the student will acquire misconceptions through interaction with his classmates within the groups.	3.69	1.71	High
5	7	The low skills of the biology teacher in preparing learning activities that link the learning subject to the student's life.	3.53	1.68	Medium
6	4	The teacher treats the lesson plan as a fixed document that cannot be modified.	3.52	1.53	Medium
7	2	The small number of biology teachers benefiting from skills development courses in experimental learning.	3.30	1.68	Medium
8	3	The large number of teaching loads accomplished by the biology teacher when experiential learning strategies are implemented.	3.28	1.73	Medium
9	10	The teacher adhered to the traditional authority in class management.	3.01	1.77	Medium
10	6	The biology teacher fears failure to implement experimental learning because the results of experimentation and experiences are completely unpredictable.	2.72	1.73	Medium
the domain of teacher-related experiential learning application challenges			3.5	1.5	Medium

Table (3) shows that the mean for the domain of Challenges of implementing experiential learning relevant to the teacher items ranged (2.72-4.50), as item (1) was resolved, which states “The teacher used to use the methods of questioning and lecturing to provide the largest amount of information in the least time." Ranked first with a mean (4.5) and a standard deviation (1.15) and a level (high), while solving item (6) which states "The biology teacher fears failure to implement experimental learning because the results of experimentation and

experiences are completely unpredictable." It ranked last with a mean (2.72), a standard deviation (1.73), and a level (medium).

The researchers believe that this result could be due to the observance of regulations and instructions for the biology teacher to complete the curriculum in the scheduled time and focus on providing the student with the information contained in the textbook. In addition, the teacher's low knowledge of experiential learning strategies has a negative impact on the implementation of this type of education.

Second: the domain of Challenges of implementing experiential learning related to students: The means and standard deviations were calculated for items in the domain of Challenges of implementing experiential learning related to students. Table (4) shows this.

Table (4) The means and standard deviations for items in the domain of Challenges of implementing experiential learning related to students are arranged in descending order.

Rank	number	items	Means	standard deviation	level
1	5	Low student skills in conducting experiments and exploring new experiences.	4.08	1.228	High
2	9	The superior students' control over the basic roles within the groups.	3.71	1.742	High
3	6	Low level of students' motivation when providing information in a way that does not take into account their learning patterns.	3.52	1.049	Medium
4	4	Difficulty discipline students when working in large groups in class.	3.42	1.492	Medium
5	3	Tendency to conform (group thinking).	3.17	0.975	Medium
6	1	The student's endeavor to achieve higher levels of achievement without caring about the skills and practical applications of the subjects.	3.12	1.816	Medium
7	10	Weak students' feelings of difference and lowness due to the heterogeneity of students' levels within the same group.	3.00	1.341	Medium
8	7	The student's avoidance of adventure, submitting to the teacher's traditional authority to control the class.	2.62	1.455	Medium
9	2	Excessive reliance on the idea of the teacher's reliability as a source of knowledge.	2.38	1.692	Medium
10	8	Lack of confidence and psychological security for fear of evaluating the wrong answer to the teacher's questions.	2.38	1.644	Medium
Student-related experiential learning application challenges			3.14	1.44	Medium

Table (4) shows that the means of items in the domain of Challenges of implementing experiential learning related to students ranged (2.38-4.08), as item (5), which stipulates “low student skills in conducting experiments and exploring new experiences,” ranked first with a mean. (4.08) and a standard deviation of (1.228) and a (high) level, while item (8), which states “Lack of confidence and psychological security for fear of evaluating the wrong answer

to the teacher's questions," ranked last with a mean of (2.38) and a standard deviation (1.644) and (medium) level.

The researchers believe that these results can be attributed to the fact that education in the primary stage does not focus on the practical application of experiments, which negatively affects the student's skills required by experimental learning in the secondary stage. The traditional nature of education gives the outstanding students a greater role, which leads to their domination of the activity within the classroom, which negatively affects students with lower levels. In addition, providing information to students in a manner that does not take into account their learning patterns can cause student frustration and a decrease in their motivation to learn. Students' lack of awareness of the importance of group learning can affect their discipline and cause chaos during experiential learning lessons.

Third: the domain of Challenges of implementing experiential learning related to the school and classroom environment:

The means and standard deviations were calculated for the domain of Challenges of implementing experiential learning related to the school and classroom environment, and Table (5) shows this.

Table (5) The means and standard deviations of the items in the domain of Challenges of implementing experiential learning related to the school and classroom environment are arranged in descending order.

Rank	number	items	Means	standard deviation	level
1	2	Lesson time is not enough to implement experiential learning lessons.	4.92	0.31	High
2	5	Lack of laboratories in school buildings, and many of them are used as classrooms.	4.38	1.32	High
3	1	Confirming school instructions and regulations on paper and pen tests for student evaluation.	4.03	1.51	High
4	7	General achievement tests do not include experimental learning outcomes.	3.97	1.29	High
5	3	Classrooms crowded with students.	3.93	1.47	High
6	8	Scarcity of modern scientific sources in school libraries.	3.77	1.42	High
7	9	The school administration does not have tests to classify students based on their learning styles.	3.64	1.71	Medium
8	6	Poor equipping of schools with laboratory equipment, media and materials.	3.62	1.58	Medium
9	4	Study seats inside the classroom do not allow students to change the seating arrangement during the lesson.	3.54	1.61	Medium
10	10	Non-cooperation of students' parents with the school in following up on homework.	3.36	1.63	Medium
challenges of applying experiential learning related to the school and classroom environment			3.92	1.38	Medium

Table (5) shows that the mean of the items in the domain of Challenges of implementing experiential learning related to the school and classroom environment ranged (3.36-4.92), as item (2) was resolved, which states “Lesson time is not enough to implement "experiential learning lessons" ranked first with a mean of (4.92), a standard deviation of (0.31), and (High) level, while item (10) which states "Non-cooperation of students' parents with the school in following up on homework" ranked last and with a mean. (3.36), standard deviation (1.63), and (Medium) level.

The researchers believe that these results are due to the fact that the time specified for the lessons does not allow the teacher to apply experimental learning that requires activity and effectiveness from the student and the application of experiments and activities during the biology lesson. The lack of laboratories in some school buildings hinders the application of experiential learning, which requires practical experimentation and the practice of laboratory skills in biology lessons. In addition, the regulations and instructions restrict the teacher's application of experiential learning because they focus on pen and paper tests and do not include the alternative evaluation of what students produce and the motor and mental skills that develop in them. In addition, experimental learning requires the availability of scientific resources that support its activity in biology lessons, and these are rarely available in most secondary schools.

Fourth: the domain of Challenges of implementing experiential learning related to the curriculum:

The means and standard deviations were calculated for items in the domain of Challenges of implementing experiential learning related to the curriculum. Table (6) shows this.

Table (6) The means and standard deviations were calculated for items in the domain of Challenges of implementing experiential learning related to the curriculum are arranged in descending order

Rank	number	items	Means	standard deviation	level
1	5	The teacher encounters an obstacle Systems and instructions that emphasize adherence to what is contained in the curriculum and hinder the enrichment of its content.	4.57	1.08	High
2	2	The Biology Teacher's Guide focuses on 5Es strategy and neglects the other strategies.	4.21	0.41	High
3	4	Biology curriculum content is organized to suit students' developmental levels.	3.84	1.72	High
4	7	Formative evaluation focuses on the information the student remembers after the lesson.	3.76	1.25	High
5	8	Objectives in the psychomotor and affective domains are obscure for students and teachers.	3.53	1.45	Medium
6	6	It is difficult to apply experiential learning strategies in teaching some biology topics.	3.28	1.70	Medium

7	10	General achievement tests do not take into account students' learning styles when formulating test items.	3.28	1.53	Medium
8	1	The focus of evaluation is on the final output of the group of students, not on the individual output within the group.	3.18	1.76	Medium
9	9	Weakness of keeping pace with biology curricula with scientific and technical innovations.	3.10	1.88	Medium
10	3	Biology curricula are mainly adopted to provide students with information.	2.91	1.71	Medium
challenges of applying experiential learning related to the curriculum			3.57	1.45	Medium

Table (6) shows that the mean for items in the domain of Challenges of implementing experiential learning related to the curriculum ranged (2.91-4.57), as item (2) was resolved, which states “The teacher encounters an obstacle Systems and instructions that emphasize adherence to what is contained in the curriculum and hinder the enrichment of its content.” It ranked first with a mean of (4.57), a standard deviation of (1.08), and a (High) level, while item (3) which states: "Biology curricula are mainly adopted to provide students with information." It ranked last with a mean (2.91), a standard deviation (1.71), and a (Medium) level.

The researchers believe that these results may be due to the fact that the biology curriculum is presented to the teacher in a fixed format and is required to teach it and evaluate the students in what is stated in it without dealing with the modern experiences and knowledge that may arise. And the evaluation is for the information in the curriculum only. In addition, few biology teachers have a biology study guide, and if available, it focuses mainly on the 5Es strategy and no other experiential learning strategies, although the literature mentions many of these strategies. Basically, the formative assessment represented by the questions of biology textbooks focuses on measuring the information the student has memorized. The objectives in the Psychomotor and Affective Domains are unknown to the teacher and the student, which hinders their achievement.

Second: Conclusions:

Based on the results of the research, the researchers reached a conclusion:

1- Biology teachers are unable to resist the challenges of implementing experiential learning.

2- The school and classroom environment greatly affects the implementation of experiential learning in biology lessons.

Third: Recommendations:

Based on the research results, the researchers recommend:

1- Providing secondary schools with the necessary laboratory devices and equipment for teaching biology.

2- Involving biology teachers in training programs to facilitate overcoming the challenges of implementing experimental learning.
3- Training teachers on effective classroom management strategies and employing students' experiences in education.

Fourth: Proposals:

As a complement to this research, the researchers suggest:
1- Building a training program for biology teachers to overcome the challenges of implementing experimental learning and measuring its impact on their teaching skills.

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