

USING PROBLEM-SOLVING STRATEGIES IN THE INTERPRETATION AND EVALUATION OF SKILLS DEVELOPMENT IN VOCATIONAL EDUCATION IN JORDAN

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Abstract

This study will identify the impact of using problem-solving strategies in developing interpretation and evaluation skills among tenth graders in vocational education in Ajloun governorate, Hashemite Kingdom of Jordan. In this experimental study, the researchers prepared an achievement test that was applied before and after the second semester of the academic year (2021-2022), after confirming its validity and reliability. This study shows that there is no statistically significant difference at the level of significance ($\alpha = 0.1$) between the mean scores of the experimental group students and the control group students for interpretation skills, which is associated with the application of problem-solving methods. In addition, there is a statistically significant difference at the level of significance ($\alpha = 0.1$) between the average score of the assessment skills of the experimental group students and the control group students, which is associated with the application of problem-solving methods.

Keywords: problem-solving strategy, skill development, vocational education.

Abstrak

Studi ini akan mengidentifikasi dampak penggunaan strategi pemecahan masalah dalam mengembangkan keterampilan interpretasi dan evaluasi di kalangan siswa kelas sepuluh dalam pendidikan kejuruan di provinsi Ajloun, Kerajaan Hashemite Yordania. Dalam penelitian eksperimental ini, peneliti menyiapkan tes prestasi yang diterapkan sebelum dan sesudah semester kedua tahun ajaran (2021-2022), setelah dipastikan validitas dan reliabilitasnya. Penelitian ini menunjukkan bahwa tidak terdapat perbedaan yang signifikan secara statistik pada tingkat signifikansi ($\alpha = 0,1$) antara nilai rata-rata siswa kelompok eksperimen dan siswa kelompok kontrol untuk keterampilan interpretasi, yang dikaitkan dengan penerapan pemecahan masalah. Selain itu, terdapat perbedaan yang signifikan secara statistik pada tingkat signifikansi ($\alpha = 0,1$) antara skor rata-rata keterampilan penilaian siswa kelompok eksperimen dan siswa kelompok kontrol, yang dikaitkan dengan penerapan metode pemecahan masalah.

Kata kunci: strategi pemecahan masalah, pengembangan keterampilan, pendidikan kejuruan

Introduction:

The era we live in today is considered as one where the flux of information runs very fast. It is characterized by changes accelerated by technical development in all fields of information management.¹ Knowledge is no longer an end in itself; the emphasis has been directed towards the

applied and functional aspect of knowledge. Thus, there has been an urgent need to move from the stage of indoctrination, which depends on memorizing and retrieving information, to the stage of training and developing thinking skills to produce individuals capable of keeping pace with the current developments and anticipating the unpredictable future and situations that require understanding, interpretation, analysis, and evaluation.

Since we live in a time of development and progress and a huge explosion of knowledge in all

¹ Yogesh K Dwivedi and others, 'Artificial Intelligence (AI): Multidisciplinary Perspectives on Emerging Challenges, Opportunities, and Agenda for Research, Practice and Policy', *International Journal of Information Management*, 57 (2021), 101994.

educational, technological, and other fields, we must align our lives in the appropriate way to rise to the challenge. This development includes all levels and fields, including the field of education, where many voices have been calling for the use of modern teaching and learning strategies and aids that develop the student's thinking, including the problem-solving strategies and others, which play an important role in developing the student's intelligence and mental perceptions².

The ability to solve problems is a requirement in the life of the individual, since many situations we face in life requires problem-solving. Problem-solving is the most complex and important form of human behavior. Through it students learn to make the right decisions in their lives³.

The problem-solving strategy is one of the effective strategies in teaching and training because it helps students to find solutions on their own through research, exploration, questioning, and experimentation.^{4 5} It also helps them analyze and organize their ideas in non-traditional situations and accustoms them to face problems in similar situations with confidence and competence.⁶

Considered problem solving is an important and appropriate activator, as it is the final product of the teaching and learning process. Knowledge,

skills, concepts, and generalizations are not goals in themselves, but rather they are means and tools that help the individual to solve problems. In addition, problem-solving is the natural way to practice thinking in general. There is no new science without thinking, and there is no thinking without problems.^{7 8}

Training students to use the problem-solving strategy and to adopt sound ways of thinking lead to the integration of information use and arouse curiosity for discovery. It also develops the students' ability to think scientifically and interpret data logically and soundly⁹.

The best way to solve problems is to start from sound foundations of critical thinking. In the early eighties California State University issued an advertisement calling for the development and teaching of critical thinking. It introduced critical thinking in education in order to understand the relationship between language and logic. This in turn leads to the improvement of the ability to analyze, criticize, defend ideas, perform inductive and deductive reasoning, and obtain real or critical results based on valid conclusions. This idea, as to know and what we believe and from agreed information can become obsolete, and thinking skills are always new, which allows the acquisition of always fresh information. Thus, thinking is considered the tool by which human beings face the changes of the times. This is how the individual's beliefs, tendencies, and views of his surroundings are formed. Therefore, the interest of should be to focus on developing the thinking

² Mohammad Omar Al-Momani and Randa Saleh Jawarneh, 'The Degree of Availability of Professional Teaching Competencies for Physical Education Teachers in Jordan', *Jurnal Pendidikan Kesehatan Rekreasi*, 8.2 (2022), 272–83.

³ Mohammad Omar AL-Momani and Purnawan Purnawan, 'Level of Professional Culture University Students in Jordan', *Journal of Vocational Education Studies*, 5.1 (2022), 170–84.

⁴ Nimet Akben, 'Effects of the Problem-Posing Approach on Students' Problem Solving Skills and Metacognitive Awareness in Science Education', *Research in Science Education*, 50.3 (2020), 1143–65.

⁵ Andreas Janson, Matthias Söllner, and Jan Marco Leimeister, 'Ladders for Learning: Is Scaffolding the Key to Teaching Problem-Solving in Technology-Mediated Learning Contexts?', *Academy of Management Learning & Education*, 19.4 (2020), 439–68.

⁶ Ayesha Zaitoun, 'Methods of Teaching Science', *1st Floor, Dar Al-Shorouk for Publishing and Distribution, Amman-Jordan*, 2004.

⁷ Mohammad Omar AL-Momani and Elham Mahmoud Rababa, 'The Effect of Using the Learning Cycle Strategy on the Academic Achievement of Tenth Grade Students in Vocational Education in Jordan', *INVOTEC*, 18.2, 105–25.

⁸ Giovana Chimentão Punhagui, 'Using Problem-Solving as a Method for the Development of Self-Regulation of Learning with Adolescents: An Experience Report', in *Metacognition in Learning* (IntechOpen, 2019).

⁹ Shabeer, 'Effect Problem Solving Strategy in Treating Mathematics Learning Difficulties for Eighth Grade Students' (Al-Azhar University, 2011).

skills of their members in order to benefit them optimally.^{11 12}

Learning to think in our time is a general goal and a right of all individuals. This could lead to the emergence of the so-called revolution of minds, which is a movement calling for the development of the human mind and its application in various fields. The great role falls on educators in various fields to draw attention to the role of the school in developing minds and nurturing thought. This is the first building block of human education. It promotes the development of human abilities and the faculty of thinking, given that it is the first goal of schools.¹³

^{14 15}

There is a conviction among educators and psychologists that the personality is the unique style of the individual, and that the only way to study personality is by identifying the pattern of thinking in different educational and life situations. University education mainly aims to develop the pattern of a mature personality, critical of events surrounding the student, a deep and careful consideration of concepts and things, and a distance from the subjective inner feelings.¹⁶

¹¹ Hardi Tambunan, 'The Effectiveness of the Problem Solving Strategy and the Scientific Approach to Students' Mathematical Capabilities in High Order Thinking Skills.', *International Electronic Journal of Mathematics Education*, 14.2 (2019), 293–302.

¹² Hassan Al-Sotary, 'The Impact of the Use of Problem-Solving Strategy in Teaching Some Basic Skills in Volleyball on the Life Skills of Students in the Tenth Grade', *An-Najah University Journal for Research-B (Humanities)*, 34.8 (2020), 7.

¹³ Muhammad Abd al-Rahim Adas, 'School and Teaching Thinking', *Amman, Dar Al Fikir for Printing and Publishing*, 1996.

¹⁴ Maria Uchechukwu Obochi, 'Effects of Problem-Solving Strategy on Academic Performance of Senior Secondary Students in Biology in Kaduna State Nigeria', *ATBU Journal of Science, Technology and Education*, 9.1 (2021), 178–88.

¹⁵ Areej Isam Barham, 'Investigating the Development of Pre-Service Teachers' Problem-Solving Strategies via Problem-Solving Mathematics Classes.', *European Journal of Educational Research*, 9.1 (2020), 129–41.

¹⁶ Ziad Barakat, 'The Relationship between Reflective Thinking and Achievement among a Sample of University Students and High School Students in the Light

Critical thinking is one of the important and vital topics that have preoccupied the field of education in the past and in the present, because of its great importance in empowering learners with basic skills in the learning and teaching process. The main objective of teaching and learning critical thinking is to improve students' thinking skills, which would enable them to succeed in various aspects of their lives. Encouraging the spirit of inquiry, research and questioning, and the promise of acknowledgment of facts without investigation or exploration leads to the broadening of students' horizons of knowledge, and pushes them towards broader scientific fields, which works to enrich their knowledge structures and increase their qualitative learning.^{17 18}

Critical thinking is one of the thinking patterns that contribute to the formation of an individual more open to receiving anything new in the future, accepting his ideas and adapting to it, and facing the challenges it poses and the problems it raises. It liberates the student from appropriation and self-centeredness, makes educational experiences meaningful, enhances the learner's pursuit of applying and practicing them, leads to an improvement in academic achievement, makes the learner more positive, interactive and willing to participate in the learning process. It enhances the learner's ability to solve problems and make decisions. It also increases the learner's self-confidence and raises his self-esteem.^{19 20 21}

of Some Demographic Variables', *Journal of Educational and Psychological Sciences-Bahrain*, 6.4 (2005), 97–126.

¹⁷ Mohammad Omar AL-Momani, 'Competências Pedagógicas Dos Professores Do Ensino Profissional Na Jordânia', *Revista Multidisciplinar*, 4.1 (2022), 151–169 <<https://revistamultidisciplinar.com/index.php/oj/article/view/99>>.

¹⁸ Gürsu Aşık and Emine Erktin, 'Metacognitive Experiences: Mediating the Relationship between Metacognitive Knowledge and Problem Solving', *Eğitim ve Bilim*, 44.197 (2019).

¹⁹ Raad Mahdi Razoqi, Abdul Karim, and Suha Ibrahim, 'Thinking and Its Types', *College Library for Printing and Publishing, Baghdad*, 2013.

Longer critical thinking is one of the forms of complex thinking that attracts the attention of researchers and educational thinkers. In the real world, it is used to denote many tasks, including detecting defects and errors, doubting everything, improving analytic thinking and reflective thinking. It includes all higher thinking skills in Bloom's classification.

The problem-solving strategy is one of the strategies that develop critical thinking in learning different academic subjects, including vocational education, especially since we live in an era of knowledge explosion.²² The students can reach knowledge of facts, analyze and interpret them, and issue judgments on them by scientific methods based on evidence and proofs away from indoctrination of knowledge. They achieve this by critical thinking skills and the researcher's review of previous studies. The ability to think critically and solve the problems will lead the students to having higher order thinking skills.²³ It is like the complex of thinking process in transfer information, critical thinking, creative thinking, problem solving, and making decision that involve student's reasoning.

Problem solving is one of the teaching procedures that are based on presenting a specific problem and solving it by specifying the data, defining a plan for the solution, implementing the solution, reviewing, and verifying it.²⁴ It is a set of

moves made by the teacher in terms of planning, organizing, and implementing the subject, based on presenting the topic in the form of problems, which are dealt with according to specific steps, represented in defining and understanding the problem, developing a solution plan, implementing the solution, reviewing the solution and expanding its scope.²⁵ The role of the teacher during teaching is to guide and advise, and to provide feedback to the learner.

It is noticed that there is a failure among students in the use of modern teaching strategies by teachers, especially in the subject of vocational education, because most teachers rely on indoctrination of students for knowledge. The teacher does not direct students to use problem solving strategies in developing students' critical thinking skills in vocational education subjects.

This study seeks to achieve the following objectives: 1) Recognizing the impact of the problem-solving method in developing critical thinking skills (interpretation-evaluation) for tenth grade students in vocational education. Interpretation is defined as one of the critical thinking skills, which is represented by the ability of an individual to derive certain conclusions from facts to a reasonable degree of certainty²⁶. It is also defined as the ability to identify a problem, identify logical explanations, and decide whether generalizations and conclusions based on certain information are acceptable or not²⁷. Meanwhile,

²⁰ Hao Wu and Gyöngyvér Molnár, 'Analysing Complex Problem-Solving Strategies from a Cognitive Perspective: The Role of Thinking Skills', *Journal of Intelligence*, 10.3 (2022), 46.

²¹ Rustam E Simamora, Dewi Rotua Sidabutar, and Edy Surya, 'Improving Learning Activity and Students' Problem Solving Skill through Problem Based Learning (PBL) in Junior High School', *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 33.2 (2017), 321-31.

²² Çiğdem Kılıç, 'A New Problem-Posing Approach Based on Problem-Solving Strategy: Analyzing Pre-Service Primary School Teachers' Performance', *Educational Sciences: Theory & Practice*, 17.3 (2017).

²³ Jalmi Harti, Febria Sri Artika, and Irwandi Irwandi, "Students'ability In Answering Higher Order Thinking Skills Test On English Subject," *English Language and Pedagogy* 4, no. 2 (2019): 19-26.

²⁴ Ali Alzoubi, 'The Effect of a Teaching Strategy Based on Problem Solving on Developing the

Mathematical Creative Thinking Skills for the Class Teacher Students', *Jordan Journal of Science in Education*, 10.3 (2014), 305-20.

²⁵ Mohammed Al-Khatib and Abdullah Al-Bbnah, 'The Impact of Using a Problem-Solving Teaching Strategy on Math Thinking and Attitudes towards Math in Jordan's Seventh Grade', *Journal of Educational Sciences*, 38.1 (2011), 189-205.

²⁶ Al-Otaibi. K. N, 'The Effect of Using Some Parts of the CoRT Program on Developing Critical Thinking Skills and Improving Academic Achievement among a Sample of Secondary School Students in Riyadh' (Umm Al-Qura University, 2017).

²⁷ A Fisher, *Critical Thinking: An Introduction*, Cambridge International Examinations (Cambridge University Press, 2011) <<https://books.google.co.id/books?id=wMhBQ0WdjF4C>>.

evaluation is known as one of the critical thinking skills, which is represented by the individual's ability to perceive important aspects related to an issue, and the ability to distinguish strengths and weaknesses in it.^{28 29 30}

In addition, evaluation is also stated as the individual's ability to evaluate the idea, accept or reject it, distinguish between primary and secondary sources, strong and weak arguments, and make a judgment on the adequacy of the information³¹. (2) Identifying the differences between the experimental group and the control group in critical thinking skills (interpretation and evaluation).

The importance of the study appears as follows: (1) The problem-solving strategy plays a role in developing critical thinking skills because the use of modern methods of teaching gives positive results on students' achievement. (2) It deals with the development of critical thinking skills among students at an important stage in their life, as the upper basic stage is one of the important stages in a learner's life in that it is a basic stage in shaping his mind and personality. As a result, it is necessary to search for the best methods that achieve the development of his thinking abilities.

Method

The study uses an experimental method, which aims to gain knowledge of the effect of the independent variable on the dependent variable. The experiment design in this study is based on the presence of two groups, one experimental and the other control, with the use of pre and post measurement with the two groups. Individuals were randomly selected to the groups, then both

groups were pre-tested. It was ensured that the two groups were equal by adjusting the variables that may affect the results of the study. The experimental group was subjected to the independent variable and withheld from the control group. After the end of the experiment, the two groups were post-tested to measure the effect of applying the independent variable on the experimental group.

Table 1. Experimental Design to Study

Measurement Dimensional	Variable Demo	Measurement Tribal	The Group
Apply telemetry	Application the program	Apply Tribal measurement	The group Experimental
Apply Telemetry	----- --	Apply Tribal Measurement	The group control

The study population consists of tenth grade students in the schools of Ibbin Iblin area of Ajloun Governorate, which is Ibbin Iblin Secondary School for Boys. The number of its students is 100 students. It has four classes for the tenth grade.

The sample of the study consists of 50 students from Ibbin Iblin Secondary School for Boys, divided into four for the tenth grade.

The experimental group consists of 25 students who were taught using the problem-solving strategy. While the control group is consisting of 25 students who were taught in the traditional way.

This study was completed by using the T-test for independent samples in order to discern the statistical significance. The differences between the experimental and control group are in the skills of interpretation and evaluation, before and after applying the test. The t-test for non-independent samples was performed with the aim of discerning the statistical significance of the differences between the pre- and post-measurement of the experimental group in the skills of interpretation and evaluation.

²⁸ Muhamad Yasin and others, 'The Effect of SSCS Learning Model on Reflective Thinking Skills and Problem Solving Ability.', *European Journal of Educational Research*, 9.2 (2020), 743–52.

²⁹ Erna Yayuk and Abdur Rahman As' ari, 'Primary School Students' Creative Thinking Skills in Mathematics Problem Solving', *European Journal of Educational Research*, 9.3 (2020), 1281–95.

³⁰ Al-Otaibi. K. N.

³¹ Fisher.

The study tools consist of a test of 20 multiple-choice paragraphs of critical thinking skills, namely: interpretation and evaluation. This is used to know the effect of the problem-solving strategy in developing students' interpretation and evaluation skills and its reflection on achievement.

The validity of the study tool was confirmed by presenting it to a group of (8) refereed professors from the disciplines of curricula, teaching, measurement, and evaluation in the Department of Educational Sciences at Ajloun University College of Al-Balqa Applied University. This is appropriate to the study tool for the purposes of carrying out the current study, and thus the opinion of the arbitrators was adopted as evidence for the validity of the study tool.

The stability of the study tool was confirmed by applying it to an exploratory sample from a class division that did not enter the study, but which came from the same school and studied the same curriculum. This was two weeks before the study was conducted, and it was then applied to the study sample as a pre-test for the two divisions in Ibbin Iblin Secondary School for Boys. It was then applied two weeks later to the experimental group, which had 25 students and were taught using the problem-solving strategy to see its impact on developing the skills of interpretation and evaluation. Meanwhile, the control group, which numbered 25 students, were taught in the traditional way. Table 2 shows the results of the pretest of the scale:

Table 2. The Pre-application of the Inference and Reasoning Skills Scale for the Experimental and Control Groups

Indication Level	T value	Standard deviation	Standard Deviation	The Group	Skill
0.01	0.91	3.45	32.26	Experimental	Interpretation
		3.27	29.31	Control	
0.01	0.72	3.42	29.92	Experimental	Evaluation

3.53	27.47	Control
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It is evident from the results of Table 2 that there are no statistically significant differences at the level (0.01) between the students of the experimental and control groups in the pre-application of the scale of developing the skills of interpretation and evaluation. This confirms the equivalence of the two study groups in their thinking abilities before using the problem-solving method. The coefficient was calculated Stability by Cronbach alpha method, on a sample of 15 tenth graders, and the results can be seen in Table 3.

Table 3.

Labs Stability by Alpha Cronbach Method	Stability by Alpha Cronbach Method Skill
0.72	Interpretation
0,69	Evaluation

It is clear from the previous table that the value of the stability coefficients is acceptable, and thus it is possible to be assured regarding the stability of the test used.

Findings and Discussions

Findings

After applying the study procedures and analyzing the statistical data, the following results were reached:

First, the results related to the first research question: “Are there statistically significant differences at the level (0.1) between the average scores of the experimental group students and the control group students regarding their skill of interpretation, differences that are attributed to the application of the problem-solving method?”

The researcher has conducted a t-test for the differences between the average scores for the skill of interpretation, and Table 4 shows the results.

Table 4. The Results Post-application of the Scale of the Development of Interpretation Skills for the Experimental and Control Groups

Indication Level	T Value	Control Group		Experimental Group	
		Standard Deviation	Average	Standard Deviation	Average
Statistically significant at level (0.01).	6.48	3.58	68.51	3.63	72.18

It is clear from the Table 4 that there are statistically significant differences at the level (0.01) in the skill of interpretation and in favor of the students of the experimental group who studied according to the problem-solving method. This result agreed with the results of the study of which emphasized the importance of the problem-solving method in the educational process.^{32 33} Second, the results of the second question, namely: Are there statistically significant differences at the level (0.1) between the average scores of the experimental group students and the control group students in terms of assessment skill, differences that are attributed to the application of the problem-solving method?

The researcher conducted a t-test for the differences between the average scores for assessment skill. Table 5 shows these results.

Table 5. The Results of the Post-application of the Assessment Skill Development Scale for the Two Experimental and Control Groups

Indication level	T value	Control Group		Experimental Group	
		Standard Deviation	Average	Standard Deviation	Average

nonfunction	1.51	0.69	9.13	0.72	9.24
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Table 5 shows that there are no statistically significant differences at the level (0.01) of assessment skill between the experimental and control groups. This result agrees with the results of other studies³⁴.

Discussions

The effectiveness of the problem-solving method in developing the interpretation and evaluation skills of the experimental group can be explained by comparing the tribal and remote measurements. Students of the experimental group in the remote measurement used mental skills, namely, the skills of interpretation and evaluation, which are considered one of the critical thinking skills, which helped them to store new information. Its retrieval in new educational situations has led to an increase in their ability to think critically, and this can be extrapolated from the results of the dimensional measurement to test the skills of interpretation and evaluation.

This result can also be attributed to the fact that the students learned using a problem-solving strategy that is well-suited for tenth grade students. The strategy was presented by the questions raised by the teacher inside the classroom. This stimulated some students to contribute to the discussion. The events and attitudes that occur inside the classroom allowed them to find solutions to the problem. The problem-solving strategy applies the principles of learning and education. It meets the needs of the tenth class students, which are to have a sense of belonging to the group, to engage in teamwork that gives them room to think loudly, to express their views and discuss them in a respectful environment.

This finding is also supported by previous studies on similar topics. The study by Khawaldeh

³² Saleh Salem Al-khawaldeh and Soud Fahd Alkhrsha, 'Problems of Jordanian Public Universities' Students: A Survey Study', *International Journal of Education*, 7.4 (2015), 120–37.

³³ M H Khawaldeh and Md R Ali, 'The Effect of SCAMPER Program on Creative Thinking among Gifted and Talented Students', *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 30.2 (2016), 48–58.

³⁴ Zeinab-Sadat Athari and others, 'Assessing Critical Thinking in Medical Sciences Students in Two Sequential Semesters: Does It Improve?', *Journal of Education and Health Promotion*, 2 (2013).

was aimed to examine the effect of teaching using the multimedia strategy on the achievement and development of critical thinking skills among the tenth-grade students in the subject of Islamic education in the second class of Amman in the Hashemite Kingdom of Jordan. This studied demonstrated the superiority of the experimental group that used the multimedia strategy in critical thinking over the control group. Al-Khatib and Ababneh has investigated the effect of using a problem-based teaching strategy in the learning of mathematics among seventh grade students in Jordan.³⁵ They have shown that the students of the experimental group outperformed the students of the control group, and there were no statistically significant differences in mathematical thinking due to the interaction between the teaching strategy and the achievement level.

In addition, Athari, et al³⁶ assessed the critical thinking skills of students of the faculties of medical sciences (Nursing and Pharmacy) during two consecutive semesters. They asked, is it possible to develop critical thinking skills? A group of students at the University of Isfahan were subjected to the California Critical Thinking Test and their critical thinking ability were then measured after the first and second semesters to observe the change (in any) in critical thinking. The results showed that the students' grades in critical thinking skills in the second test were less than their scores in the first test. It was concluded that the process of improving the curricula taught is necessary to develop critical thinking skills. Finally, investigated the effect of an educational-learning program based on the creative problem-solving method on higher levels of thinking in the educational unit of Islamic jurisprudence³⁷. This was conducted among students of the upper basic stage in Jordan. The results indicate that there

were statistically significant differences in favor of the creative problem-solving method of teaching in developing higher-order thinking skills among the students of the experimental group.

Conclusions

Through the finding and discussion, the following points may serve as concluding remarks:

1. The existence of statistically significant differences at the level (0.01) in the skill of interpretation in favor of students of the experimental group who studied according to the solving-problem method.
2. There are no statistically significant differences at the level (0.01) of the evaluation skill between the experimental and control groups.
3. There is a need on the part of tenth-grade students for modern teaching strategies, including the problem-solving method.
4. Teaching vocational education for the tenth grade using the problem-solving strategy is better than teaching them in the traditional way.

Further research on similar topics are needed. We also offer the following suggestions and recommendations:

1. To train teachers on the problem-solving method so that they can contribute to the development of students' interpretation and evaluation skills in particular, and critical thinking skills in general.
2. To include in the curriculum content situations and problems that challenge the students' mental structures and abilities.
3. To give attention to the development of critical thinking skills of students through Strategies and methods that have been proven by educational studies to be effective and feasible.

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³⁶ Athari et al., (2013)

³⁷ Al-Omari, "The Effectiveness of an Educational Program Based on the Creative Problem-Solving Method in Developing Higher Levels of Thinking among Students of the Upper Basic Stage in the Subject of Jurisprudence" (Amman Arab University, 2005).

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