

Reviewing students' evaluation standards for "practical education" in Arab Open University/Jordan

Harith Abood, Bahjat Altakhayneh
Department of Education, Arab Open University, Jordan

Article Info

Article history:

Received Mar 24, 2021
Revised Jul 16, 2021
Accepted Jul 28, 2021

Keywords:

Evaluation
Practical education
Undergraduate education

ABSTRACT

This study was an assessment of the evaluation standards of "Practical Education" module of the Elementary Education Undergraduate Program in Arab Open University/Jordan. Its main focus was to investigate problems and views raised by the students in order to develop more accurate standards to evaluate their performance. The curriculum characteristics of the module as well as the students' portfolios and field reports had been reviewed. A questionnaire and a detailed face-to-face interactive meeting had been conducted with 55 male and female students in the academic year 2018/2019. The results show that the students stress the need to adopt practical applications standards to evaluate the skill goals sought by the curriculum instead of focusing on their knowledge. The students express their need to develop their skills in planning, implementation of teaching tasks and evaluation, while the evaluation standards measure their ability to recall theoretical information. They stress their need to extend their training period in field in order to acquire enough practical experience to be more efficient to carry out their tasks properly. The findings of the study can be applicable for other countries, especially the developing countries, in the sense of developing modern evaluation standards for practical field training of their student teachers, as well as improving curricula that respond to the schools' requirements in a changing world.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Harith Abood
Department of Education
Arab Open University
Jordan-Amman
Email: h_abbas@aou.edu.jo

1. INTRODUCTION

To provide new teachers with various teaching skills, many educational institutes tend to design practical modules for field training where students can practice teaching at real environment of schools. These modules are normally called "Practical Education". An increasing attention to Practical Education in different universities and faculties, and education programs in particular, has been observed, whether in terms of objectives, curricula or methods of trainees' evaluation. Francis, *et al.* [1] argued that there is "a gap between what is learned at university and what is being practiced at school". Before that, Kenneth [2] recommended that this point should be taken into account when designing curriculum and training courses.

So many calls in developing as well as developed countries have stressed the need for educational modernisation through encouraging transferable knowledge and practical skills instead of merely acquiring theoretical knowledge. Thus, education can develop expertise in dealing with practical demands of life since knowledge and experience are interrelated, interactive and not independent on each other [3].

Traditional trends in education, which are limited to academic knowledge objectives and focus on abstract information as well as absorbing related concepts and rules, are different from contemporary trends which emphasize on practical skills, in addition to knowledge, in order to possess the ability to deal with changing realities of life, and respond to changing labor market requirements [4]. Contemporary trends in teachers education supports a sort of training that stresses on acquiring practical skills, self-confidence and refueling of efficiencies to communicate with others in the labor market [5].

Talking in details, the difference between the two trends extends to include designing curricula, teaching methods, strategies as well as learning materials and evaluation methods. In this case, Al-Said and Abbas [6] argue that training teachers to achieve theoretical and practical goals in university programs through Practical Education courses requires combining stated objectives in a complementary and interactive manner. Thus, training can be fruitful, and the output of educational process can respond to the requirements of the labor market.

Practical Education's focus on practical applications of the acquired knowledge has become an important element of the overall quality assurance for this course. Thus, it contributes to stimulating creativity, developing personal skills, and encouraging problem solving attitude to help facing problems by workers in the field [7]. The field application, on the other hand, shows the feasibility of acquiring skills in planning of lessons, classroom management and evaluation process and tools [8].

Other researchers argue that Practical Education encourages integration of scientific knowledge with practical application through the adoption of new methods in using advanced technology. This helps developing students' competencies to solve problems and employ up-to-date technology applications in the production of innovative ideas align with the requirements of the labor market [9].

Educators' interest in Practical Education helps in detecting the efficiency of an instructional curricula in providing students with the exact knowledge, skills and attitudes needed in each field of specialization, as well as students' ability to link what they learn with the very needs of labor market. It deepens trainees' self-confidence, and provides crucial clues as to what extent a university has positively responded to modern changes in the field, as well as its proficiency in providing the market with well-equipped manpower needed always in all sectors [10].

Evaluating achieved objectives in Practical Education is influenced by many factors such as skills already acquired by trainees' teachers, how far school teachers co-operate with them during field application, as well as the nature of training program and the school management. As Al-Tarawneh and Al-Hawari [11] recommended, a specialized committee should be formed to follow up appropriate standards and procedures to facilitate teachers' students' training in schools, and guarantee the schools' headmasters' cooperation, as well as the staff, with the trainees. Evaluation should take all these factors into account. There must be given evaluation models which are tailored to the objectives of the evaluation process, regarding both cognitive and field application skills, as well as factors influencing field performance as a part of the overall evaluation of the educational process, not only the trainees' [5], [12], [13] argues that evaluation should use different approaches to achieve accurate results, not limited to the trainees' teacher's angle.

One may also notice other factors affecting the evaluation accuracy of Practical Education such as traditional styles of education that is still dominating most of our schools life. Some modern schools which have experienced new technology in teaching and learning seek to disseminate their applications among teachers and students. This puts students face to face with a continuing challenge that reflects the conflict between culture and reality on the ground on one hand, and theoretical knowledge acquired in their study, on the other hand [14]. Mitreva and Filiposki [15] argue that evaluation of trainees' performance in field has been concerned with the kind of work and procedures done by the trainees, while it should be also concerned with the type of technology they use, and the methods adopted, along with the outputs of the work itself. It is necessary, therefore, to develop new fieldwork evaluation approaches for traditional mechanisms in order to include new technology in action. In other words, the curricula of "Practical Education" as a module at teachers training institutes should be related to the practical teaching needs at schools. Thus, teacher students should apply their skills, and therefore their performance be evaluated, at the field level.

Some researchers argue that students usually acquire a lot of theoretical conclusions and attitudes through the earlier stages of their study about teaching. These conclusions and attitudes have no chances to be tested until students practically experience teaching in a real environment. Sahin and Abalı [16] management, self-discipline and possessing the right means to address various situations to help pupils, especially those with special needs. Theoretical curriculum alone is not enough to equip trainees with the appropriate skills and manner to achieve success in the field.

Karakus and Turkkan [17] indicates that evaluating students in real teaching situations shows a number of deficiencies in students' performance in stating objectives, applying new technology, designing lessons and evaluating pupils as a result of paying very little concern to new educational trends and technology. This has negatively affected the nature of models used in evaluating trainees' performance.

Researchers evaluating male and female students' performance in terms of their ability to link theoretical knowledge with practice in school provide us with differing conclusions. While some found that females are more committed to applying theory to practice than male students [11], [18], others found that males are more successful in solving field problems [19]. Other results showed that there are no differences as far as gender is concerned [20].

Researchers also studied other factors affecting the application of Practical Education in schools such as headmasters, supervisors, and teachers, as well as the nature of training program designs adopted. They stressed the need to modernize the educational process, especially those technical and administrative aspects associated with the application of related theories, as well as cooperation between the University and the collaborating schools. They argue that the technical and administrative aspects at the school level greatly affect the nature of school environment and training of student teachers, therefore, they should be included in the evaluation process [20], [21].

Al-Tarawneh and Al-Hawari [11] studied another indicator that depends not only on the specific objectives sought by the curriculum, but also on each student's character as an individual with unique characteristics. They found that every student develops new experience and skills through his daily confrontation with problems in real situations, and therefore learns to be more creative in solving them. They argue that researchers should observe and study these kinds of developments and transitions by monitoring students' performance through modified evaluation models that can evaluate their ability to make right decisions in different real situations, whether it was previously defined as an academic outcome of the curriculum or not.

According to the studies the researchers have reviewed above, it is necessary to always review and upgrade the evaluation standards in the light of student teachers' viewpoint in any university or institution dealing with teachers' education and training. Student teachers can provide designers of the evaluation standards with more accurate indications as how evaluation of their practice at the field level should be. Reviewing these standards in Arab Open University as a case study, will provide researchers with implications that can be applicable to other countries, especially when they know that this University has branches in 9 Arab countries, and the standards used in Jordan is the same used in the other countries.

Despite the importance of Practical Education as a fundamental module in the undergraduate Elementary Education Programme in Arabic Open University, the standards of its evaluation model still need to be reviewed to determine the accuracy of these standards in evaluating the trainee students' acquisition of the teaching skills needed. Since there are doubts about the accuracy of the evaluating model used for this purpose, studying this issue can help raise interest in this module, and upgrade an accurate and up-to-date evaluation model of the learning outcomes for this programme.

Identifying the study problem, the following questions can be derived:

1. What are the current standards used in evaluating students in Practical Education in the undergraduate programme of Elementary Education in Arab Open University?
2. What are the students' perspectives of the standards of evaluation already applied?
3. How do the students judge the importance of the standards used in the evaluation forms in Practical Education?
4. What problems the students face in the programme evaluation?
5. What are the proposed standards the students suggest for evaluating their performance?

2. RESEARCH METHOD

This was a case study depending upon a previous literature review, documents available and focus group discussion with Practical Education students and professionals at the Arab Open University to achieve the objectives of the study.

Arab Open University is one of the universities that follow new trends in teaching and learning, and is keen to always upgrade Practical Education courses, especially in undergraduate programs, so as to upgrade their accuracy in acquiring knowledge, skills and attitudes needed in the labor market.

The university allocates 12 hours for Practical Education module 1 & 2 during the last two terms of the undergraduate Programme of Education. Efforts are always paid to update this module's hand-books, focusing on practical aspects and teaching skills instead of theoretical content which is already covered by other modules. This is considered crucial to help fit the open education students as well qualified teachers, and to be consistent with the evaluation standards of Practical Education [22].

In order to answer the study's questions, the following procedures were taken: 1) Surveying all the students enrolled in module 2 in the Education Faculty in the academic year 2018/2019 (55 male & female students); 2) Reviewing the curriculum characteristics of Practical Education 1 & 2 in Elementary Education Programme in Arab Open University from the students' view point to identify its objectives and the standards

used to evaluate the outputs that should respond to their needs. Surveying the Education Faculty students' views about the evaluation standards used. The survey was conducted in class by distributing a paper containing these standards, (Table 3 & Table 4), asking each student to tick the importance level he chooses according to the scale; 3) Evaluating the students' portfolios of the module and their final reports about their practical application in the field. Each student is supposed to submit a detailed report stating all his assignments, activities and applications done in the field school during the term. Evaluating these portfolios is essential in assessing their achievement and views at the end of the term; and 4) Identify problems faced by the students in this module and their proposals to address them through detailed direct interviews. An open-ended group interview with all the students (55 male and female) was conducted and recoded by the two researchers to get additional details concerning their experience at the schools and the problems they had faced as well as the evaluation standards they are subject to. Both researchers together reviewed and summarized the students' notes and comments in order to finally state their conclusions. The overall themes and ideas of the students' were considered in their analysis.

3. RESULTS AND DISCUSSION

The first question of the study asks about the current standards used in evaluating students in Practical Education Module at Arab Open University. The researchers found that the standards depend upon achieving the stated objectives of the module. The module is divided into 2 stages; 1 and 2, which are taken in the last two terms of the Primary Education Programme that consists of 132 credit hours. Module 1 and module 2 are formed of 12-credit-hours evenly distributed. Table 1 summarizes the modules' objectives [23].

Table 1. Objectives of practical education module 1 & 2

Trends	Skills
Accepting teaching profession	Identifying student's abilities in teaching
Developing a positive attitude towards teaching profession	Developing student's interaction skills
Expressing loyalty to teaching profession	Employing educational theories in teaching situations
Developing teaching profession ethics	Developing student's creativity
Increasing confidence in his abilities and capacities	Developing leadership attributes and the ability to make decision
	Improving ability to solve problems
	Improving self-evaluation capacity
	Developing critical thinking ability
	Employing student's abilities in improving his career

Referring to Blooms' classification of objectives as stated by Allam [24], Table 1 shows that there are 14 objectives stated for module 1 & 2; 9 psychomotor objectives related to developing teaching skills (64%), and 5 affective objectives (35%) related to developing positive attitudes towards the teaching profession.

The two modules are:

Practical Education 1: Textbook units include theoretical information about teacher education programs, various teaching strategies, evaluation strategies, and tests analysis. The tutor allocates two classes a week for a face to face session. This module is evaluated through four areas as in Table 2.

Table 2. Students' evaluation items in practical education module 1

Items	Marks
Presenting a class lesson using Microteaching approach	20%
Attending a cooperating teacher's lesson, and a test application at class	20%
Preparation of 2 theoretical exams	15% Midterm exam 15% Final exam
Preparation of student's portfolio	10% Syllabus content analysis 10% Describing a class management problem 10% Selected activity

Practical Education 2: A practical module in which a student's evaluation is done by the tutor supervisor to his portfolio as in Table 3.

Table 3. Students' evaluation items in practical education module 2

Items	Marks
Preparing a daily and quarterly teaching plans	10%
Addressing a class management problem with solutions	10%
Preparing, applying and analyzing a test	10%
Preparing an instructional software for a given class lesson	10%
Preparing a teaching aid with explaining how to use it in class	10%
Evaluation of the cooperating school	10% Cooperating teacher 10% Cooperating Principle
Evaluation of the supervising tutor through a field visit in class	30%

Table 3 shows that 50% of the evaluation items in Practical Education Module 2 allocated 50% for 5 items depending on the curriculum, while 20% on evaluation of the cooperating school, whether teachers or principles. 30% is allocated for the supervising tutor who provides his evaluation through his visits to the schools. This obviously shows that students' experience and practical skills acquired at the field schools are not considered the most important part of their evaluation.

To answer the second question of the study about the students' perspectives of the standards of evaluation already applied, the researchers developed a checklist based on the module objectives as stated in Tables 1 & Table 2 to explore the students' views about the appropriateness of the items used in evaluating their performance. The results of the interview are displayed in Table 4.

Table 4. Importance of the evaluation items in practical education

Module	None	Medium	High	Percentage	
Module 1	1 Attending a class lesson	0	6	49	%51
	2 Observing a test	1	12	42	%1
	3 Preparing 2 theoretical tests	22	22	11	%03
	4 Conducting a Microteaching session	4	7	44	%03
	5 Instructional unit design	1	12	42	%53
	6 Solving a class management problem (presentation)	0	14	41	%53
	7 Participating in class	7	10	38	%53
Module 2	8 Lesson and quarterly Planning	0	10	45	%53
	9 Solving a class management problem (presentation)	0	18	37	%53
	10 Developing, applying& analyzing a test	5	13	37	%53
	11 Designing& using an instructional material	4	18	33	%53
	12 Designing an instructional session	3	29	23	%53
	13 Co-operating principle's report	11	29	15	%53
	14 Report of the co-operating (counterpart) teacher at school	3	28	24	%53
	15 Applying class lessons	0	12	43	%03

The results in Table 4. give the answer of the third question of the study. They show that the students stressed the need to consider their practical applications in the field as being appropriate standards to evaluate the achievement of the skill goals sought by the curriculum. Students have chosen (highly important) to 11 items out of 15 to confirm this conclusion. The others chose 3 other options either (highly important/moderately important). The students' answers to option 3 (two theoretical exams) confirm this result. Their answers were distributed between (moderately important/unimportant), reflecting their preference to measure their field performance instead of knowledge.

The students' preference to item 1 and 2 (Attending a class lesson/Observing a test) are important, especially when compared with their answers to items 12, 13, and 14, because they do not match with the results discussed in the previous paragraph. The students argue, as stated later on, that they should not be evaluated by only attending a lesson or observing a test. The researchers conducted face-to-face interactive meeting with all the students to achieve a justification for this mismatching, and to identify the problems faced by the students during the evaluation process. The student teachers explained that attending a lesson given by a teacher at a school, or observing a test given to a class in that school cannot help in evaluating them as trainees. They argue that these activities can improve their knowledge and experience but cannot be evaluation standards for their performance.

To answer the fourth question of the study about the problems faced by the students, the researchers conducted a focus group discussion with the 55 Practical Education students to identify the problems they faced with the evaluation model applied in the University. Each researcher wrote down all the comments of the students, then they matched the responses considering the similar ones only for analysis. The results of the focus group discussion shows that there is a big difference between the knowledge, advanced technology skills and attitudes acquired by AOU students and what they find of these educational components in most

local schools. In less privileged areas and remote schools, there is still a lack of basic modern technical tools and practices, which constitutes an obstacle to their ability to utilize their acquired competences. The students pointed out several problems related to practical skills such as stating objectives, teaching methods and using appropriate strategies among a high percentage of school teachers. There is also a lack of planning skills, usage of modern technology in teaching. This problem had been clearly identified by Al-Tawalbeh [23] who studied the Practical Education curriculum and found that there should be more emphasis on practical skills, modern technology applications. As Martijak [14] argues, it is a widely observed problem that needs to be addressed to keep pace with modern technological and educational developments.

Another point the students stressed in the focus group discussion was that the aim of the Practical Education Module is to develop students' skills in planning, implementation of teaching tasks and evaluation, while the evaluation standards measure students' ability to recall theoretical information of modules other than practical experiences. Students objected to having these tests within the parameters of evaluation. This explains the low number of supporters to item 3 in Table 4. In this, the researchers argue that the evaluation does not fit with the objectives stated for the module, and does not measure what it should measure. This goes along with what authors like Radhy [7] and Al-fawair [8] had previously, called for universities in Palestine and Oman to start a fundamental movement in training teachers students from theoretical knowledge, such as how to draw a lesson plan, or how to manage a class, to practical application of teaching skills using modern approaches.

In the same context which may give answers to the fifth question of the study about the proposed standards the students suggest for evaluating their performance the students argue that item 6 (Solving a class management problem) does not reflect other educational problems that also require solving. They see that this standard should not be limited to classroom management, but other problems related to learning as well. The researchers believe that this is an interesting viewpoint; because problems related to strategies, teaching methods and techniques used, as well as evaluation methods, should also be addressed. Such standards can certainly evaluate a student's ability to innovative thinking in developing treatments through numerous activities such as Action Research, or manage a joint workshop with students, to solve a learning problem [6]. Students also stressed that item 1 (Attending a classroom lesson) and 2 (Watching a test application) are not applicable as evaluation standards, because they experience negative observation with no action to be evaluated. However, they chose (High and Medium) because they feel they are important and necessary experiences to them but they do not fit as evaluation standards. The student teachers stressed the need for practical training and for their practical performance to be evaluated at the field schools. They considered this requirement as being urgent in order to positively contribute to the development of education in their country. In Vietnam, Nhi, Thanh, Huong, and Giang [25] argued that teachers there still have limitations in their practical skills, soft skills, and foreign languages which are needed for working in a modern environment. Training student teachers acquire practical experiences, especially before starting their carrier, is essential even in countries like the USA as Komolote, Ogunniran, Zhang, and Qian [26] concluded after their wide survey on teaching training centers in the country.

Students did not accept school headmasters' and teachers' reports as parts of the evaluation standards (items: 13 and 14), as these reports were not based on a real experience with them, and did not really represent their performance, as they believe. In reviewing reports of the headmasters training of students, one finds they were mostly irrelevant and contained no information about students' carried out activities. Some students complained that some school headmasters refused their participation in teaching classes or any activity due to lack of confidence in students or "disturbing impact of such activities on school programs" as they said. This comes completely against the objectives of the programme of AOU, which seeks for acquiring practical field experience. This problem had been also pointed out by a number of researchers like Ja'afra and Al-Qatawneh [20] and Algeshan and Al-Abady [21].

Students found that the practical training period in the field, which equals 30 classes, is too short to acquire enough practical experience in order to be well equipped teachers with confidence as to carry out their tasks properly. This is a good indicator that reflects the growing motivation of the trainees. To compare this conclusion with China and Nigirea, Komolote, Ogunniran, Zhang, and Qian [26] recommend to use micro-teaching practises to inspire the acquisition of teaching skills by student teachers in order to meet the need for enough and adiquit practical training for them.

4. CONCLUSION

The evaluation standards used in Practical Education Module 1 & 2 at AOU Jordan should be revised according to the findings of this study. This is in order to give more concern about practical experiences acquired by the student teachers in the University. This is a conclusion that was also observed in other developed and under developed countries such as USA, China, Nigeria, and Vietnam. Evaluating

standards for student teachers should always be reviewed and improved in order to meet the changing needs of education and teaching in field in each society and environment. Students teachers can provide evaluation designers with realistic feedback from school field about what standards of evaluation to be developed, what knowledge, skills, and attitudes to be stressed and how.

The study showed an increasing need for evaluation standards that are tailored to the behavior and performance sought in school field, therefore, emphasizing practical not merely theoretical objectives is urgently needed. In order to achieve this goal, student teachers, whether in Jordan or any other country, are to be equipped with the appropriate skills and experiences to teach, evaluate their students, and solve problems they face in the field environment with adequate strategies, methods, and behavior. As the study showed that the co-operative headmasters and counter teachers in schools may provide inadequate evaluating reports on the trained student teachers, supervisors should always keep an eye on these reports for more checkup if they look for perfect evaluation.

REFERENCES

- [1] C. Francis, *et al.*, "Adding values through practical education in Agroecology: Review of Canadian student experiences," *International Journal of Agricultural and Food Research*, vol. 2, no. 2, pp. 7-17, 2013.
- [2] W. Kenneth, *School Psychology for the 21st Century, Second Edition: Foundations and Practices*. The Guilford Press, 2011.
- [3] A. Medeshova, G. Amanturlina, and E. Sumyanova, "Development of training skills in students as the precondition for educational competencies," *International Journal of Environmental & Science Education*, vol. 11, no. 17, pp. 9649-9656, 2016.
- [4] T. Baskonus and F. Soyer, "Developing the Measurement and Evaluation Attitude Scale for Physical Education and Sportsteachers," *international journal of psychology and education studies*, vol.7, no. 4, pp. 96-113, 2020.
- [5] B. Al-Maori, "Practical education at the Faculty Of Education in Al-Baidha University and its upgrading approaches," *Andalucia University Journal Of Humanities and Social Sciences*, vol. 17, no. 6, pp. 45-79, 2017.
- [6] S. Al- Said and Sh. Ibn Abbas, "Methods of quality management application in Algerian Universities to improve their performance," *The Seventh International Arab Conference to Ensure Higher Education Quality, IACQA*, 20-22, Assiut University, 2017.
- [7] M. Radhy, "Level of Palestinian quality standards application from students viewpoint," *Arabic Journal of University Education Quality Assurance*, vol. 11, no. 4, pp. 125-160, 2018.
- [8] A. Al-Fawa'ir and A. Al-Tobi, "Evaluating the field training programmes in practical education at the Faculty of Arts and Sciences at Nizwa University," *Journal of Educational and Psychological Studies (JEPS)*, vol. 11, no. 2, pp. 242-257, 2017.
- [9] H. Kim, H., and D. Chae, "The development and application of a STEAM program based on traditional Korean culture," *Eurasia Journal of Mathematics, Science & Technology Education*, vol. 12, no. 7, pp. 1925-1936, 2016.
- [10] K. Nováková and G. Giertlová, "New models of theoretical and practical education in urban environment (On example of experience-based pedagogy in Slovak Towns)," *2nd International Conference on Higher Education Advances procedia - Social and Behavioral Sciences*, vol. 228, 2016, pp. 305-310.
- [11] M. Al-Tarawneh and F. Al-Hawari, "Student teachers' estimates in co-operating schools to problems facing them during the practical education programme," *Al-Quds University Journal for Educational and Psychological Research*, vol. 3, no. 9, pp. 45-74, 2015.
- [12] N. Hoover and L. Abrams, "Teachers' instructional use of summative student assessment data". *Applied Measurement in Education*, vol. 26, no. 3, pp. 219-231, 2013.
- [13] M. Muslih, "Problems facing practical education students in field application at the Southern West Bank, Al-Quds Open University from the perspective of the module supervisors," *Al-Quds University Journal for Research And Studies*, vol. 37, no. 2, pp. 11-46, 2015.
- [14] M. Martinjak, "Influence of habitus and practical education on the teachers' pedagogical praxis," *Croatian Journal of Education*, vol. 17, no. 2, pp. 191-204, 2015.
- [15] E. Mitrev and O. Filiposki, "Proposed methodology for implementing quality methods and techniques in Macedonian companies," *Journal of Engineering & Processing Management*, vol. 4, no. 1, pp. 33-46, 2012.
- [16] C. Sahin and O. Abalı, "Opinions of prospective teachers on alternative assessment-evaluation methods," *Kastamonu Egitim Dergisi*, vol. 22, no. 1, pp. 123-142, 2014.
- [17] M. Karakus and B. Turkkan, "Investigating the Needs for Measurement and Evaluation Course: A Case Study on English Language Teaching Program," *Journal of Education and Training Studies*, vol. 5, no. 4, pp. 227-239, 2017.
- [18] H. Belhamidi, A. Mazouzi, and M. Boulenuar, "Using Bloom's Taxonomy and gender differences to enhance theory and practice in global education," *Proceeding of the 3rd International Conference on Education*, vol. 3, 2017, no. 1, pp. 1-9.
- [19] Sh. Haqi and Gh. Alsaydaei, "The extent to which student teachers practice basic science skills in the Practical Education course," vol. 91, no. 21, pp. 1053-1084, 2015.
- [20] Kh. Ja'afra and S. Al-Qatawneh, "Practical education in Mu'ta University from the expected graduates' viewpoint in the Department of Class Teacher," *Damascus University Journal*, vol. 27, no. 3, pp. 475-512, 2011.

- [21] R. Al-Ghishan and M. Al-Abady, "Evaluating the ractical Education programme in the Department of Educational Sciences at the Faculty of Arts at Zaytoonah University from female students," *Derasat Journal for Educational Sciences*, vol. 40, no. 2, pp. 519-532, 2013.
- [22] AOU, *The study plan of the Primary Education Programme*. Arab Open University, 2019. [Online]. Available: <https://www.aou.edu.jo>.
- [23] M. Al-Tawalbeh, *Practical Education guide for Elementary Education of BA and Higher Diploma students in education*. Arab Open University, 2018.
- [24] S. Allam, *Educational measurement and evaluation in teaching*. Amman: Dar Almaseerah for Publishing and Distribution, 0352.
- [25] Th. Nhi, V. Thanh, P. Huong, and Ch. Giang, "CDIO approach in developing teacher training program to meet requirement of the Industrial Revolution 4.0 in Vietnam," *International Journal of Emerging Technologies in Learning*, vol. 15, no. 18, pp. 108-123, 2020.
- [26] B. Komolate, M. Ogunniran, F. Zhang, and X. Qian, "A comparative perspective of teaching skill acquisition in pre-service Physics Teacher (PSPT) Training Program in China and Nigeria," *Journal of Baltic Science Education*, vol. 19, no. 3, pp. 356-373, 2020.

BIOGRAPHIES OF AUTHORS



Professor Harith Abood, full Professor in educational technonlogy, Arab Open University-Jordan branch.
Email: h_abbas@aou.edu.jo



Dr Bahjat Altakhayneh, Associate professor in teaching mathematics, Arab Open University-Jordan branch.
Email: b_takahyneh@aou.edu.jo