

A Study on Determining the Dimensions and Components of Evaluation in the Educational System

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Abstract: This study aims at investigating and identifying the dimensions and components of evaluation in the educational system which is conducted on the basis of Survey method. Statistical population includes all the professors teaching educational science in all Azad University branches in District 12 who are 185 and the sample is selected using the same statistical population based on census method. The data collection method in this study is a questionnaire which is prepared by the researcher himself and its validity is confirmed by 35 experts and its reliability coefficient is measured based on Cronbach's alpha which is obtained 0.89. The results gained reveals that the dimensions and components of the educational evaluation consists of *the data within the education system* which includes 22 components, *the educational process* which contains 15 components, *interface output in the educational system* which comprises 2 components, *the final output in educational system* which contains 6 components and finally *the outcomes of the educational system* which includes 6 components.

Key words: Education Evaluation • Assessment • Evaluation Component • Educational System • Evaluation Dimensions

INTRODUCTION

Educational Evaluation is an important element of the educational system which is regarded as a part of the educational activities for assessing the achievements and outcomes and providing the necessary information for the process of decision making and *accountability*. Also, it has a fundamental and determinative role in improving the quality of the educational system.

The most important and desirable objective of evaluation in training and educational system is the awareness of the current status and its distance with the desired status of the phenomenon concerned or the subject of evaluation which thereby provides the opportunity for achieving the desired goals by relying on the data from the evaluation process and a comprehensive and strategic planning for improving the situation and applying the available facilities and resources at their most [1].

The necessity and importance of the evaluation in the educational system is also presented by the educational experts as follows:

- Having more accurate awareness and knowledge about the learning objectives and outcomes to be achieved from educational programs and activities and making decisions about them
- Supporting the initial and compensatory training activities for deficiencies in achieving the educational objectives and human resources development
- Strengthening the individuals' commitment and devotion to educational activities and finally, the realization of educational goals
- Providing the required background for creating the structure, organization, organizational atmosphere and the development of qualified human resources to achieve goals and ultimately, the development of social, economic and cultural in the country

- Accountability to the educational activities and ensuring the individual and the society towards these activities.
- Information transmission about training activities [2].

Nadrloo (2004) investigated the effects of continuous evaluation goals on the process of teaching, learning and demonstrated that the use of continuous evaluation and assessment enhances the students' learning stability [3].

Moreover, by inquiring their perceptions about their institutional evaluation, students have presented their views regarding the significance of evaluation in three parts. Firstly, most of the students consider evaluation as a 'legitimate exercise' and 'political decision' which can widely improve the quality of universities. Moreover, some others regard evaluation as a means for controlling, regulating, monitoring and standardization. However, there are a few ones who see evaluation as an 'impossibility' which is not able to present a clear-cut and comprehensive assessment of the educational institutions performance [4].

However, in the process of educational evaluation, determining the criteria and Indicators has notoriously an effective role in improving the evaluation in the educational system and in this regard, the following four Indicators are provided:

- Objective-based Indicators: Since the behavioral changes are only meaningful in terms of targeted programs, in applying these Indicators, firstly the educational objectives should be identified.
- Resource-based Indicators: This indicator is part of a systematic approach and focuses on inputs and it is actually based on the fact that the training program must be efficient in providing its required resources.
- Process-based Indicators: for this index, the effectiveness of the program depends on its internal health and efficiency. The main feature of an effective program is its integrated and coordinated process in a way that all its involved elements by supporting each other and by applying the existing facilities and conditions try to reach the highest possible efficiency of the program.
- Beneficiaries' satisfaction –based Indicators: in this part, the main aspect of the index is the principle which indicates that the satisfaction of managers, supervisors and employees about the program can continue its execution [5].

Providing the criteria for educational evaluation with respect to teachers' quality, Zerihun, Beishuizen and Van Os (2011) in their study also underline the integrated relationship between learning and evaluation and tried to develop a new teaching evaluation questionnaire by which students are able to evaluate teachers' quality in terms of their own learning progress. The results of the factor analysis in their research resulted in new evaluation questionnaire which comprises four main dimensions for evaluation as what follows:

- Students' self-evaluation which refers to students assessment of their own performance in doing tasks which will be seen as a kind of feedback for teachers to improve students learning experiences
- Students' level of engagement which points out that the students are the center of the attention in the class and the feedback will help teachers improve their teaching.
- The quality of teacher evaluation and feedback which emphasizes the students evaluation of the effectiveness of the assessments and feedbacks that may act as a catalyst in the process of learning
- The organization and presentation of the course content [6].

By taking into account these four dimensions in the process of educational evaluation, it was proved that students are not passive participants anymore and they can play an active role in the process of learning and also teachers can receive practical feedback for improving not only their teaching performance and presentations but also enhances students' learning progress [6].

The previously top-down evaluation approaches for performance-monitoring systems are also widely disregarded and new approaches are being sought. In a study conducted by Gary, Kent and Janet (1991), the role of the teachers in the process of educational evaluation was highly emphasized. In their research, the stakeholder approach was applied for developing the educational performance monitoring. The stakeholders were teachers, school superintendents, school board members and education group representatives. The results of the study demonstrated the positive impact of these stakeholders on the development of the system and teachers were seen as the most positive ones about their efficacy in the process and they were the most committed ones to the system [7].

In addition, the applied evaluation strategy can directly affect students' behavioral and educational performance. Mohammadi (2005) in his study analyzed the impact of descriptive evaluation on the elementary-school students' self-esteem and he found a significant difference between self-esteem of the students who were assessed by descriptive methods and students who were assessed by traditional method [8].

In this regard, it was analyzed that the assessment experience can directly affect the students' stress levels, individual learning styles and achievements. It was claimed that stress can significantly reduce students' abilities to develop academically and professionally. However, if students are allowed to choose among assessment options based on their learning approach, they can do better since by giving options to them to choose their favorite approach, their stress will be reduced and they can have higher achievements in their process of learning and therefore student-oriented assessment is crucially highlighted [9]. In fact, the educational institutions such as universities and schools must demonstrate their efforts and focus on evaluating the factors affecting students' success [10].

Brown (2004) also argues that assessment and evaluation should be considered as part of the learning process and she outlines some features for a reliable and valid assessment and evaluation. According to her, the assessment should be learner-centered and focus on 'evidence of achievements'. It needs to be 'practice-oriented' and so learners will be able to apply what they have learned in a live situation. The strategies also need to be efficient in terms of 'staff time' and 'cost-effective' for the organizations concerned. Regarding the learners, they are to be relevant and developmental. She also mentions that the assessing process should be 'transparent' which means that all the criteria and indicators are to be clear and explicit to all those who are concerned [11].

Lyons and Defranco (2010) in their study of different models of educational assessment, has shown that it is better to use different models in the educational evaluation. Because the use of quantitative and qualitative methods leads to the more control and it provides not only a better understanding of the real issues and challenges that regions and schools encounter but also provides a careful assessment of the quality of the schools and a comprehensive perspective [12].

McDowell, Smailes, Sambell, Sambell and Wakelin (2008) analyzed the common strategies through

performance-based assessment and showed that the evaluation formation in science education develops the education and learning, expands the qualitative information, improves the programming and provides disciplines in educational activities [13].

DeSilets (2010) in his study analyzed the different models of educational evaluation and showed that evaluation as a framework is suitable for professional development, improving teaching process and content learning [14].

In another study conducted by Memon *et al.*, (2010), they tried to provide a literature in order to clarify what measures are being taken in order to evaluate the quality of education in different institutions in Pakistan. As mentioned teaching activities and the overall experience of the students with the totality of the services their institutions offer may be regarded as determinants of evaluation education quality. They believe that if people are listened to and they can easily take part in decision-making process, there would be positive outcomes while assessing the education activities [15].

Militello and, Schweid, Sireci (2010) in their studies focused on the assessment systems and the coordination between the needs and features of evaluation system. The findings showed that, the more coordination there will be between training needs and evaluation systems, the more positive impacts it will have on teachers and students education [16].

According to the literature review, although many have tried to provide a framework for evaluation, it seems that the need for having a comprehensive framework and specific criteria is still felt. In this regard, our goal in this article is to itemize dimensions and evaluation components in the educational system which can be applied in any educational institution to assist decision makers in their task of evaluating the educational performance.

Research Methodology: This study by using the survey method endeavors to study and identify the dimensions and components of evaluation in the educational system. Statistical population includes all the professors teaching educational science in all Azad University branches in District 12 who are 185 and the sample is selected using the same statistical population based on census method. The data collection method in this study is a questionnaire which is prepared by the researcher himself and its validity is confirmed by 35 experts and its

reliability coefficient is measured based on Cronbach's alpha which is obtained 0.89. It was prepared based on five-degree Likert Scale with 51 five-choice questions. This questionnaire contains five dimensions as described below:

- Dimension relating to the data within the educational system (questions 1 to 22)
- Dimension relating to the educational process (questions 23 to 37)
- Dimension relating to the interface output of the educational system (questions 38 to 39)
- Dimension relating to the final output of the educational system (questions 40 to 45)
- Dimension relating to the outcomes of the educational system (questions 46 to 51)

To determine the validity of the evaluation components and dimensions, Confirmatory Factor Analysis (CFA) Test is used.

Research Analysis and Findings

The Main Research Question: What are the dimensions and components of educational evaluation?

KMO (Kaiser-Meyer-Olkin) test results about the questionnaire data regarding the dimensions and components of educational evaluation shows that the obtained value is 0.814 and because it is larger than 0.5, therefore factor analysis test on the test data is appropriate. Results of Factor Analysis showed that the dimensions and components of educational evaluation are considered as below:

Table (1) includes 22 components of the first factor, which encompasses the dimension of data within the educational system. The data presented in this table illustrates that the highest factor loading is 0.788 which belongs to *the levels of managers' education* and the lowest factor loading is 0.424 which is related to the component of *teacher self-evaluation program*.

Table (2) includes 15 components of the second factor, which encompasses the dimension of the educational process. The data presented in this table illustrates that the highest factor loading is 0.826 which belongs to *the time spent by teachers for teaching* and the lowest factor loading is 0.397 which is related to the component of *studying how supporting services are distributed*.

Table 1: Results of factor analysis test related to the *first factor*, the dimension of data within the educational system

Row	The Components related to the dimension of data within the educational system	Factor Loading
1	Studying and determining the input behavior of the learners	574.0
2	Evaluating and determining the academic progress of learners in the program	594.0
3	Evaluating the performance of learners at the end of the training course	535.0
4	Conducting job interviews	470.0
5	Conducting test for determining knowledge, attitudes and skills	540.0
6	Surveys of coworkers on the teacher	637.0
7	Feedbacks from learners about the teaching process	560.0
8	Teacher self-evaluation program	424.0
9	Studying to what extent the objectives of the curriculum meets the learners' needs	541.0
10	Studying to what extent the content of has utility to the educational objectives	515.0
11	Studying how teaching-learning strategies may facilitate achieving to the educational objectives	492.0
12	Studying to what extend developmental evaluation of the learner's performance provides the required feedback and paves the way for the realization of educational goals	572.0
13	Examining and determining the space needed for learners	529.0
14	Examining and setting the required facilities for learners	468.0
15	Examining and determining the financial sources needed for learners	523.0
16	Desirability of textbooks	735.0
17	Examining the status of offices in the educational system	777.0
18	Studying the organizational structure of the educational system	691.0
19	Evaluation of managers' education	788.0
20	Evaluation of managers' experience	532.0
21	Terms and conditions of the educational system	784.0

Table 2: Results of factor analysis test related to the second factor, the dimension of the educational process

Row	<i>The Components related to the dimension of Educational Process</i>	Factor Loading
1	Studying how to organize the educational system	698.0
2	Studying how to use resources in the establishment of the educational system	559.0
3	The utility of human resource management in the educational system	444.0
4	The desirability of learning and teaching strategies	479.0
5	Studying to what extent the learner's attention is used optimally	440.0
6	The desirability of working in the educational system	717.0
7	Examining how supporting services are distributed	397.0
8	Studying optimum conditions for learning	403.0
9	Studying how to monitor the educational activities	583.0
10	Investigating the educational units' interaction with parents and the society	508.0
11	Studying the time spent by learners in individual learning activities	680.0
12	Studying the time spent by learners in group educational activities	662.0
13	Studying the time spent by teachers for classroom management	677.0
14	Studying the time spent by teachers for teaching	826.0
15	Studying the time spent by teachers for monitoring and evaluating the educational activities	661.0

Table 4: Results of factor analysis Test related to the fourth factor, the dimension of the final output in the educational system

Row	<i>The Components related to the dimension of the final output in the educational system</i>	Factor Loading
1	Evaluation of the knowledge obtained at the end of the course	552.0
3	Evaluation of skills acquired at the end of the course	786.0
4	Evaluation of changes in learners' attitudes at the end of the course	690.0
5	Studying the amount of knowledge production at the end of the course	739.0
6	Evaluating the dissemination of knowledge at the end of the course	731.0
7	Studying the scientific and technical services offered	632.0

Table 5: Results of factor analysis test related to the fifth factor, the dimension of the outcomes of the educational system

Row	<i>The Components related to the dimension of the outcomes of the educational system</i>	Factor Loading
1	Investigating the desirability of employment of the graduates	791.0
2	Studying the graduates' income	858.0
3	Investigating the social and cultural status of the graduates	804.0
4	Investigating the graduates' impact on the local and national community	721.0
5	Investigating the graduates' promotion to the higher level of education	589.0
6	Investigating the changes in graduates' attitudes and behavior	516.0

Table (3) contains 2 components of the third factor, which encompasses the dimension of interface output in the educational system. The data presented in this table shows that the highest factor loading is 0.886 which belongs to *the final marks at the end of the semester or the school year* and the lowest factor loading is 0.741 which is related to the component of *the educational progress record for the higher terms or levels*.

Table (4) contains 6 components of the fourth factor, which encompasses the dimension of the final output in the educational system. The data presented in this table show that the highest factor loading is

0.786 which belongs to *Evaluation of skills acquired at the end of the course* and the lowest factor loading is 0.552 which is related to the component of *Evaluation of the knowledge obtained at the end of the course*.

Table (5) contains 6 components of the fifth factor, which encompasses the dimension of the outcomes of the educational system. The data presented in this table reveals that the highest factor loading is 0.858 which belongs to *studying the graduates' income* and the lowest factor loading is 0.516 which is related to the component of *investigating the changes in graduates' attitudes and behavior*.

CONCLUSION

The obtained results in this study revealed that the dimensions and components of educational evaluation are as what follows:

The Dimension of Data Within the Educational System:

- Learners (Studying and determining the input behavior of the learners, Evaluating and determining the academic progress of learners in the program, Evaluating the performance of learners at the end of the training course)
- Teachers /Instructors) Conducting job Interview, Conducting test for determining knowledge, attitudes and skills, Surveys of coworkers on the teacher, Feedbacks from learners about the teaching process, Teacher self-evaluation program)
- Curriculum (Studying to what extent the objectives of the curriculum meets the learners' needs, Studying to what extent the content of has utility to the educational objectives, Studying how teaching-learning strategies may facilitate achieving to the educational objectives, Studying to what extend developmental evaluation of the learner's performance provides the required feedback and paves the way for the realization of educational goals)
- The facilities and equipment in the educational structure and the budget (Examining and determining the space needed for learners, Examining and setting the required facilities for learners, Examining and determining the financial sources needed for learners, Desirability of textbooks, Examining the status of offices in the educational system, Studying the organizational structure of the educational system)
- Administrative capacities (Evaluation of managers `education, Evaluation of managers` experience, terms and conditions of the educational system)

The Dimension of Educational Process:

- The process of structural organizations (Studying how to organize the educational system, Studying how to use resources in the establishment of the educational system, The utility of human resource management in the educational system)
- The process of teaching and learning (The desirability of learning and teaching strategies, Studying to what extent the learner`s attention is used optimally)

- The process of Supporting (The desirability of working in the educational system, Examining how supporting services are distributed, Studying optimum conditions for learning)
- Organizational behavior (Studying how to monitor the educational activities, Investigating the educational units` interaction with parents and the society)
- Learners' behavior (Studying the time spent by learners in individual learning activities, Studying the time spent by learners in group educational activities)
- Teachers' behavior (Studying the time spent by teachers for classroom, management, Studying the time spent by teachers for teaching, Studying the time spent by teachers for monitoring and evaluating the educational activities)

The Dimension of Interface Output in the Educational System:

- Final marks of the semester or the school year (Analyzing the final marks at the end of the semester or the school year)
- Promoting to a higher academic term (Analyzing the educational progress record for the higher terms or levels)

The Dimension of the Final Output in the Educational System:

- Graduates (Evaluation of the knowledge obtained at the end of the course, Evaluation of skills acquired at the end of the course, Evaluation of changes in learners' attitudes at the end of the course)
- The Knowledge Production and Dissemination (Studying the amount of knowledge production at the end of the course, evaluating the dissemination of knowledge at the end of the course)
- The offered Technical and scientific services (Studying the scientific and technical services offered)

The dimension of the outcomes of the educational system which is investigating the desirability of employment of the graduates, Studying the graduates' income, Investigating the social and cultural status of the graduates, Investigating the graduates' impact on the local and national community, Investigating the graduates' promotion to the higher level of education, Investigating the changes in graduates' attitudes and behavior.

The obtained results of the present study goes on the same track with the studies conducted previously such as Nadrloo [3], Mohammadi [8] who have investigated the evaluation methods and their impacts on the students learning and academic progress.

Moreover, it echoes the results gained in the research by Frick *et al.* [10] who insisted that for increasing and improving the education centers performances, the educational evaluation of learners and the education process should be highlighted. It also confirms the results of the study ran by DeSilets [15] who regards the educational evaluation as a framework which should take into consideration the education process, content, learners and programming. In this study, both the teachers and learners behavior together are also seen as important components of the process of evaluation which have previously underlined in the study by Zerihun *et al.* [6]. Finally, it highlights the results obtained by Militello and *et al.* [16] who found that the more cooperation there will be between the educational needs and evaluation systems, the more positive impacts it will have on education teachers and students.

However, the gained results of the present study highlighted the role of structural organization, organizational behavior, administrative offices and supporting services in the process of evaluation. It also goes more beyond the context of the educational institution and considers the graduates conditions such as their employment, income and social and cultural statues as part of the process of evaluation.

Principally, the results of the present study can be seen as a more comprehensive outline of the dimensions and components that can be taken into account for evaluation of the educational organizations performance in a larger context.

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