

PROVIDING A MODEL FOR MEASURING EDUCATIONAL QUALITY IN ELEMENTARY SCHOOLS

*FORNECENDO UM MODELO PARA A MEDIÇÃO DA QUALIDADE EDUCACIONAL EM
ESCOLAS PRIMÁRIAS*

*PROPORCIONAR UN MODELO PARA MEDIR LA CALIDAD EDUCATIVA EN LAS
ESCUELAS PRIMARIAS*

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Abstract. Education and quality of it have the greatest impact on the development of societies. The necessity to reform the education structure and environment to developed educational spaces and high-quality education are undeniable in education system. Education environments that have suitable and desirable conditions for the activities progress of children, which is possible through the detailed design of spaces according to children's behavioral patterns. The present study was conducted with the aim of providing an appropriate model of factors affecting the quality of education in elementary schools in Uzbekistan. The research method was exploratory mixed research in terms of applied purpose and data analysis, and was descriptive and survey-type in terms of method. The statistical population in the quantitative part included principals and teachers of elementary schools in Uzbekistan, including 820 people, of which 220 people were selected using cluster and stratified and simple random methods. The research tool included a researcher-made questionnaire consisting of 15 items, the validity and reliability of which were confirmed. The collected data was analyzed using SPSS software and the impact of each factor on the quality of education was examined. First, based on the experts' opinions, structural equation models were identified based on 11 main components of education policy, educational content, infrastructure, educational space, teaching tools, education process, teacher teaching method, culture and society, family and student, management and educational goals. The results showed that teacher teaching method, educational content and management have the greatest impact on educational quality. Finally, solutions were presented to improve the conditions and quality of education according to the experts' opinions and field studies.

Keywords: Education, educational quality, elementary schools, teaching methods, teacher, student and family.

Resumo. A educação e sua qualidade têm o maior impacto no desenvolvimento das sociedades. A necessidade de reformar a estrutura e o ambiente educacional para criar espaços educacionais desenvolvidos e de alta qualidade é inegável no sistema educacional. Ambientes educacionais com condições adequadas e desejáveis para o progresso das atividades das crianças são possíveis por meio do design detalhado dos espaços, considerando os padrões comportamentais das crianças. O presente estudo foi



conduzido com o objetivo de fornecer um modelo adequado dos fatores que afetam a qualidade da educação em escolas primárias no Uzbequistão. O método de pesquisa foi exploratório e misto, com propósito aplicado e análise de dados, e foi descritivo e do tipo levantamento quanto ao método. A população estatística na parte quantitativa incluiu diretores e professores de escolas primárias no Uzbequistão, totalizando 820 pessoas, das quais 220 foram selecionadas utilizando métodos de amostragem em cluster, estratificada e aleatória simples. O instrumento de pesquisa consistiu em um questionário elaborado pelo pesquisador, com 15 itens, cuja validade e confiabilidade foram confirmadas. Os dados coletados foram analisados com o uso do software SPSS, e o impacto de cada fator na qualidade da educação foi examinado. Primeiramente, com base nas opiniões de especialistas, modelos de equações estruturais foram identificados com base em 11 componentes principais: política educacional, conteúdo educacional, infraestrutura, espaço educacional, ferramentas de ensino, processo educacional, método de ensino dos professores, cultura e sociedade, família e aluno, gestão e objetivos educacionais. Os resultados mostraram que o método de ensino dos professores, o conteúdo educacional e a gestão têm o maior impacto na qualidade educacional. Por fim, foram apresentadas soluções para melhorar as condições e a qualidade da educação com base nas opiniões de especialistas e estudos de campo.

Palavras-chave: Educação, qualidade educacional, escolas primárias, métodos de ensino, professor, aluno e família.

Resumen. La educación y la calidad de la misma tienen el mayor impacto en el desarrollo de las sociedades. La necesidad de reformar la estructura y el entorno educativos para desarrollar espacios educativos y una educación de alta calidad es innegable en el sistema educativo. Los entornos educativos que tienen condiciones adecuadas y deseables para el progreso de las actividades de los niños, lo cual es posible mediante el diseño detallado de los espacios de acuerdo con los patrones de comportamiento de los niños. El presente estudio se realizó con el objetivo de proporcionar un modelo apropiado de los factores que afectan la calidad de la educación en las escuelas primarias de Uzbekistán. El método de investigación fue una investigación exploratoria mixta en términos de propósito aplicado y análisis de datos, y fue descriptiva y de tipo encuesta en términos de método. La población estadística en la parte cuantitativa incluyó directores y maestros de escuelas primarias en Uzbekistán, incluidas 820 personas, de las cuales 220 personas fueron seleccionadas mediante métodos de conglomerados, estratificados y aleatorios simples. La herramienta de investigación incluyó un cuestionario elaborado por el investigador que constaba de 15 ítems, cuya validez y confiabilidad fueron confirmadas. Los datos recopilados se analizaron utilizando el software SPSS y se examinó el impacto de cada factor en la calidad de la educación. En primer lugar, a partir de las opiniones de los expertos, se identificaron modelos de ecuaciones estructurales basados en 11 componentes principales de la política educativa, contenido educativo, infraestructura, espacio educativo, herramientas de enseñanza, proceso educativo, método de enseñanza del docente, cultura y sociedad, familia y estudiante, gestión y metas educativas. Los resultados mostraron que el método de enseñanza del docente, el contenido educativo y la gestión tienen el mayor impacto en la calidad educativa. Finalmente, se presentaron soluciones para mejorar las condiciones y la calidad de la educación según las opiniones de los expertos y los estudios de campo.

Palabras-clave: Educación, calidad educativa, escuelas primarias, métodos de enseñanza, docente, estudiante y familia.

1. INTRODUCTION

In today's societies, the process of raising children begins with families, but a specialized organization, namely the school, is officially responsible for fulfilling this task, meaning that the growth and development of students in physical, cognitive, emotional, and social dimensions is the main task of the school. (Hanushek & Raymond, 2002) Paying attention to quality in education and schools is considered one of the fundamental and vital issues that has a significant impact on the fate of the country. Therefore, evaluating educational quality is a serious discussion in many countries (Stuhlman, & Pianta, 2009).



Because quality can be expressed as a combination of efficiency, productivity, effectiveness, accountability, innovation capacity, and educational conditions. The quality of schools and education is of interest to parents, teachers, the media, the government, and society. One of the factors that has contributed to these developments is the great pressure on the education system from society to be accountable for its performance.

Educational services, especially those provided through schools and educational institutions, are among the most important service areas in any society that play an unparalleled role in the development of societies. Therefore, paying attention to improving the quality of educational services continuously seems essential (Creemers & Kyriakides, 2018). Quality is the most important criterion for educational development. The issue of quality in most educational systems has become one of the basic concepts in macro-educational policies and is currently one of the main axes of all educational discussions, and its improvement is the most important task of educational institutions.

Quality in the educational system is of particular importance and its goal is the optimal use of resources and facilities. Currently, efforts related to quality assessment and improvement of education are expanding in most countries of the world. Some of these efforts have led to the establishment of national, regional and international organizations in assessment and accreditation (Vanderlinde & Van Braak, 2010). Regarding the importance of quality in education, David Kemp1 says: Education should strive for excellence; if we do not pay attention to quality, all our efforts and expenses are in vain, because we have not only ruined the lives of our students, but we have also lost our ability to compete and survive in a world that does not consider itself responsible for our lives (Creemers & Kyriakides, 2018).

Quality is a challenge and an important issue. In low- and middle-income countries, quality is generally low, and in many places, while enrollment rates have increased, quality has declined (Cho & Hong, 2021). Research by leading scholars in this field, such as Kamaludin (2023), McCoy et al., (2013), Zakiyah & Hidayat, (2023), have clearly indicated the need to consider reengineering education, based on the models in which schools are run. This research also supports a more flexible approach to curriculum and methodology. Fortunately, change is afoot, and a new direction for educational activities is clearly emerging in education in many parts of the world.

Fatimah & Mahmudah, (2017) has studied the necessity of performance evaluation in educational systems in a research. In this research, it is stated that in today's complex world, where the progress and development of countries, organizations and educational institutions depend on the development of human science and knowledge. van der Scheer et al., (2019) has studied the necessity of performance evaluation in educational systems in a research. In this research, it is stated that in today's complex world, where the progress and development of countries, organizations and educational institutions depend on the development of human science and knowledge.

In another research, Gansle et al., (2006), has discussed the perspectives related to performance evaluation and stated that "there are two perspectives regarding the school evaluation system. Traditionally, the evaluation system is designed to control and improve schools. This evaluation system relies on the supervision of inspectors and the administrative control of teachers. While the new perspective targets education, growth and development of the or-

ganization's capacities, improvement and improvement of the organization and its performance, public participation of stakeholders, creation of motivation and responsibility for improving quality and optimizing activities and operations, and its basis is the identification of weaknesses and strengths and organizational excellence.

Along with the quantitative growth of education, it is also necessary to pay attention to qualitative indicators. Considering the necessity of qualitative growth in the education system and the importance of measuring it, conducting the present study seems more necessary. Paying attention to the continuous improvement of the quality of educational services is essential, and the failure to use appropriate methods in evaluating and improving the quality of educational services will result in inappropriate use of the intellectual capital of society and poor policy-making in education.

Measuring the quality of educational services plays an important role in reducing the gap between individuals' expectations and the services received. Therefore, in this study, variables for measuring the quality of education in primary schools are presented and the impact of each in the educational model is estimated.

2. METHOD

The research method is applied in terms of purpose and in terms of data analysis, it is an exploratory mixed-method research. The statistical population of the study in the quantitative part includes all primary school principals of Uzbekistan, including 820 people, of whom 220 were selected by cluster, stratified, and simple random methods.

The data collection tool in the qualitative part is a researcher-made questionnaire, which was in an interview format that reached a theoretical saturation point through a continuous adaptation process. After defining the main research questions (interviews) for which a quantitative scale has been defined, the coding of the collected interviews began with the definition of its features and dimensions and diagrams describing these features.

Educational Service Quality Assessment Questionnaire: This questionnaire was researcher-made. The items of this tool are scored based on a five-point Likert scale (=1, I completely disagree), =2, I disagree, =3, I have no opinion, =4, I agree, and =5, I completely agree), and no item is scored in reverse. The tool score is calculated by the sum of the total score of the items, and the score of each dimension is calculated by the sum of the scores of the items that make up that dimension.

The content validity of this tool was confirmed by experts and its construct validity was confirmed by exploratory factor analysis, and its overall reliability was calculated by Cronbach's alpha method at 0.760. Exploratory factor analysis and structural equation modeling methods were used in LISREL software to analyze the data.

3. RESULTS

Considering the main factors of the research model in measuring the educational quality of elementary schools (education policy, educational content, infrastructure, educational space, teaching tools, educational process, teacher teaching method, culture and society, family and student, management and educational goals), the evaluation criteria were obtained from document analysis, they were counted and their frequency rate was considered.



According to the results of Table 1, measuring the quality of educational services in education had 11 internal and external factors. The factor loading of all of them was higher than 0.9, the validity of all of them was higher than 0.8, and the reliability of all of them and the entire tool with the Cronbach's alpha method was higher than 0.7, which indicated that the factor loading, validity and reliability were appropriate, and these 5 factors together were able to explain 96% of the changes in measuring the quality of educational services in education.

Table 1. Results of exploratory factor analysis to identify factors for measuring educational quality

Variable	Questions	Loading factor	AVE	Cronbach
Education policy	7	0.895	0.831	0.726
Educational content	6	0.901	0.877	0.731
Infrastructure	5	0.921	0.891	0.729
Educational space	6	0.924	0.876	0.731
Teaching tools	4	0.933	0.901	0.703
Educational process	5	0.903	0.881	0.718
Teacher teaching methods	6	0.981	0.876	0.791
Culture and society	6	0.934	0.882	0.783
Family and student	5	0.945	0.901	0.775
Management	5	0.950	0.878	0.781
Educational goals	5	0.891	0.819	0.755

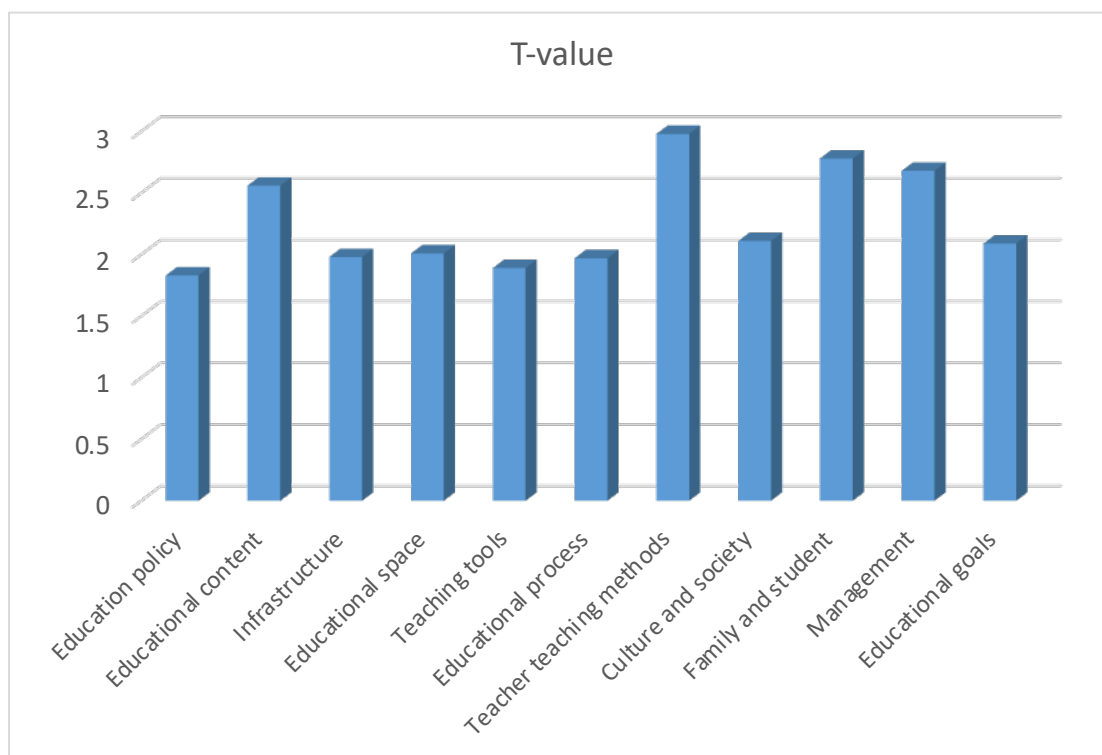
The mean, standard deviation, and Kolmogorov-Smirnov test for measuring the quality of educational services in education are presented in Table 3.

Table 2. Results of mean standard deviation and Kolmogorov-Smirnov test for educational quality measurement variables

Variable	Mean	SD	Kolmogorov-Smirnov	Sig
Education policy	3.126	0.23	1.02	0.05
Educational content	3.190	0.25	1.11	0.08
Infrastructure	2.987	0.44	1.05	0.07
Educational space	3.217	0.33	1.12	0.06
Teaching tools	2.678	0.48	1.12	0.06
Educational process	2.768	0.41	1.02	0.03
Teacher teaching methods	3.671	0.21	1.42	0.11
Culture and society	3.210	0.28	1.19	0.10
Family and student	3.511	0.22	1.39	0.11
Management	3.565	0.26	1.35	0.12
Educational goals	3.027	0.27	1.22	0.09

In Figure 1, t-values in the range of greater than 1.96 and less than -1.96 are presented for educational quality variables. Also, the intensity of the effect of variables on each other is determined using t-coefficients (path coefficients). The path coefficient indicates the intensity and type of relationship between two latent variables and is numerical between -1 and +1.

The results show that in the presented model, all relationships except the relationship between the process and educational tools with educational quality are confirmed and the total research variables (Figure 1) were able to predict 0.85 of the variance of the educational qual-



ity variable and it can be concluded that the overall fit of the model is acceptable.

Figure 1. T-test analysis for research variables in measuring educational quality

According to the results, the assumption of normality of all variables was confirmed. Also, the results of the model fit indices indicated a proper fit of the model for measuring the quality of educational services in education. According to the results of Figure 1, all 11 organizational management factors had a direct and significant effect on measuring the quality of educational services in education. ($P < 0.001$)

In response to the research question of examining the factors affecting educational quality in order to provide an appropriate model, the results of the analysis of the interview questions with experts showed that among the existing components, 11 variables can be identified, including education policy, educational content, infrastructure, educational space, teaching tools, education process, teacher teaching method, culture and society, family and student, management and educational goals.

In line with the component of paying attention to extracurricular activities, is consistent with the findings of Fauzia & Kelana, (2020) research. Accordingly, it can be said that the expansion of extracurricular activities in religious, cultural, scientific and sports fields should be considered in order to enrich leisure time, develop talents and strengthen students in a comprehensive and balanced way. In line with the component of attention to the way teachers teach, this finding is consistent with the results of the research of Heilbrunn, (2010); Kyriakides et al., (2006).

In explaining this finding, it can be said that teaching is an activity that requires creativity, thinking, and action. Interaction between teachers and students is essential in the teaching process. The teacher must strengthen the love of learning in students. The findings related to the component of attention to continuous evaluation are consistent with the findings of the original research and Kamaludin (2023).

In explaining this finding, it can be said that attention to continuous evaluation is one of the important factors in improving educational quality. The process of properly evaluating the performance of teachers, principals, and other school personnel can be considered a fundamental step towards educational progress. And by considering specific standards and criteria in the field of evaluation, fundamental steps can be taken in the field of educational quality.

4. CONCLUSION

School is a place that has the most valuable and effective assets of the country. Children are the most important assets of families. The way of working and being effective in education centers requires understanding the goals, principles of education, characteristics of students, teachers, curricula, methods of education and policies governing each of the academic courses, which are different in each country.

Looking at the quantitative and qualitative trends of education throughout the world, and especially in the third world in recent decades, we clearly understand that improving the quality of education has been an extremely sensitive issue, the emergence of a global education crisis being one of its signs. Considering the role and importance of the quality of educational services in the growth and progress of education and the improvement of the status of society and the need to design indigenous models for it, the present study was conducted with the aim of designing a model for measuring the quality of educational services in education in Uzbekistan.

The results of factor analysis showed that the quality of educational services in education had 11 factors education policy, educational content, infrastructure, educational space, teaching tools, education process, teacher teaching method, culture and society, family and student, management and educational goals, all of which had a direct and significant effect on measuring the quality of educational services in education.

According to the findings, managers, officials and experts in primary education, educational evaluators, authors and curriculum planners of primary schools, and principals and teachers of primary schools will be among the most important audiences of this study, and these results will help them in carrying out their duties and responsibilities and improving their work efficiency.

Since it was found in this study that the component of attention to management factors is effective on the educational quality of primary schools, it is recommended to school principals to develop a documented and written program in line with students' extracurricular activities in the field of curricula, recreation and various occasions according to their age conditions, in which they provide social and spiritual issues and are in line with the culture of the society and in accordance with the facilities and facilities of the schools.

It is recommended that continuous needs assessment of students and teachers in various educational and research fields, especially in the field of curriculum reform, preparation of

written reports of evaluation results and what should be presented in order to improve quality, be considered by educational evaluators. Considering the results and the impact of the component of teachers' teaching methods and educational content, which are among the organizational factors affecting the educational quality of elementary schools, it is recommended that teachers and those involved in elementary education review the syllabi at short intervals and update them according to the degree of relevance of the course content to the needs of students and technology.

Accordingly, the following suggestions are made:

1. As a suggestion for future researchers, a meta-analysis of educational quality studies should be conducted to obtain an overall view of it. Also, educational quality models with a gender approach should be included in the researchers' agenda.
2. The research results showed that the teacher factor is one of the most influential elements in educational quality, and more attention should be paid to the professional and organizational empowerment of teachers.
3. In accordance with the significant impact of the family on educational quality, parent-teacher interaction should be increased in elementary schools, and teachers should put parents' knowledge enhancement on the agenda.
4. The research results showed that the hardware factor, such as educational equipment and equipping the physical environment, is very important, which should be the mutual attention of parents and the school.
5. The research results showed that one of the important factors in measuring educational quality is school management and leadership, and it is necessary for parents to be present in this process with training. For example, parents should participate in quality assurance meetings and express their opinions and solutions to the school.

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