ISSN (print): 2588-5731 E-ISSN: 3060-6535

Validation of the model for evaluating academic progress in multi-grade classes in elementary schools

Mojtaba Sarchahani[1], Abbas Gholtash[2], Seyed Ahmad Hashemi[3], Aliasghar Mashinchi[4]

Received Date: *09/07/2023* *Accepted Date:* *09/11/2023*

Pp: 100-109

Abstract

Introduction: Multi-grade classes in elementary schools involve the simultaneous education of students from two or more grades in one classroom. The purpose of the study was to validate the model for evaluating academic achievement in multi-grade classes in elementary schools.

Methodology: The research method was descriptive survey type. The statistical population was experts in the field of education and evaluation of academic achievement at the national level, 20 people were selected using the available sampling method, and the list of these components was prepared in the form of a 46-question questionnaire. The questionnaire was provided to the experts in two stages, and after receiving their opinions, CVR and CVI were calculated and the validity of the model was confirmed.

Findings: Considering both CVR indices equal to or greater than 0.49 and CVI greater than 0.79, the model has the necessary and sufficient validity, and it can be said that the components obtained in the qualitative section are the components of the model for evaluating academic progress in multi-grade classes.

Conclusion: Using integrated evaluation along with using various tools to collect information, providing the necessary resources, paying attention to all factors affecting evaluation, removing obstacles and problems, and using appropriate strategies can lead to positive outcomes such as improving the teaching and learning process and strengthening learners' skills in various fields.

Key Words: Evaluation, evaluation of academic progress, multi-grade class, evaluation model in multi-grade class

[1]- PhD candidate in Curriculum Development, Lamerd Branch, Islamic Azad University, Lamerd, Iran

[2]- Associate Professor, Department of Educational Sciences, Marvdasht Branch, Islamic Azad University, Marvdasht, Iran.(Corresponding Author) gholtash578@yahoo.com

[3]- Professor, Department of Educational Sciences, Lamerd Branch, Islamic Azad University, Lamerd, Iran

[4]-Assistant Professor, Department of Educational Sciences, Lamerd Branch, Islamic Azad University, Lamerd, Iran

Introduction

Assessment of academic achievement in multi-grade schools is recognized as a critical factor for improving educational strategies and student performance. Various models and methods have emerged that provide a more comprehensive assessment of student performance using quantitative and qualitative approaches. Academic assessment models are essential for measuring student learning outcomes and predicting their future achievements. The multi-layered performance assessment model uses data mining to classify student performance and increase the accuracy of assessment. (Hegazy et al., 2023). Current assessment practices focus too much on cognitive aspects and neglect non-cognitive factors that are critical to student development, although the competence and training of teachers conducting assessments also significantly affect the effectiveness of these assessments. Despite the advances, some believe that traditional methods are still valuable in some areas and emphasize a hybrid approach that combines both old and new techniques.

Multi-grade classes in elementary schools involve teaching students from two or more grades simultaneously in the same classroom. Often adopted out of necessity in areas with declining student populations or limited resources, this educational model creates a unique learning environment that can meet diverse educational needs and promote social-emotional development among students. Teaching in multi-grade classes, as a challenging work environment, requires different curricula, learning resources, assessment methods, and learning processes than teaching in single-grade classes (Zahida et al., 2023).

One of the important issues in multi-grade classes is the evaluation of academic progress, which is an important aspect of educational activities and allows for the identification of strengths and weaknesses with the aim of increasing positive aspects and reducing negative aspects, and taking effective steps towards reforming the educational system (Heuvel-Panhuizen et al., 2021).

Evaluating academic achievement can provide important information to teachers, students, and parents about various aspects of education and pave the way for improving students' motivation and effort for further and deeper learning (Chu et al., 2017). While multi-grade classrooms can offer significant benefits, they require careful attention to instructional methods, teacher preparation, and rigorous assessment to ensure that all students receive quality instruction. Certainly, assessing academic achievement in multi-grade schools requires models and methods that can meet the diverse needs of students and provide a comprehensive understanding of their performance. Accordingly, the purpose of this study was to validate a model for assessing academic achievement in multi-grade classrooms.

Methodology

This research was applied in terms of purpose and descriptive in terms of data collection method, and was a survey. The statistical population was experts in the field of education and evaluation of academic achievement at the national level, who were selected by convenient sampling method, numbering 20 people.

The data collection tool was a researcher-made questionnaire that had 46 questions and was scored on a Likert scale. The items of this questionnaire were extracted based on the qualitative study in which the model for evaluating academic achievement of multi-grade classes was designed.

The validity of this questionnaire was estimated and approved by the content validity method. To validate the extracted components, the questionnaire was provided to experts in two stages. In the first stage, the following phrases were placed in front of each item: The item is essential, the item is useful but not essential, and the item is not essential. By collecting the opinions of the experts, the CVR value was calculated using the following formula:

$$CVR = \frac{n_e - N/2}{N/2}$$

In this formula, N is the total number of experts and Ne is the number of experts who selected the essential option. The CVR value depends on the number of experts participating in this section. Considering the number of experts in this study, which was ۲۰, the CVR value should be ۰/٤۲or more.

In the second stage of CVI, the validity of the model was examined. In this way, each item was preceded by the words irrelevant, needs major revision, relevant but needs revision, and completely relevant. The number of experts who chose options 3 and 4 was divided by the total number of experts. If the resulting value was less than 0.7, the item was rejected, if it was between 0.7 and 0.79, revision should be performed, and if it was greater than 0.79, it was acceptable

Research Findings

In order to answer the research question of whether the components of the designed model for evaluating academic achievement in multi-grade classes have the necessary validity from the experts' point of view? Using the experts' point of view, the two indices CVR and CVI were calculated. As the results of Table 1 show, according to both indices (CVR equal to or greater than 0.49 and CVI greater than 0.79), the model has the necessary and sufficient validity and it can be said that the components obtained in the qualitative section are the components of the model for evaluating academic achievement in multi-grade classes.

Table ۱ Validation of the components of the designed model for evaluating academic achievement in multi-grade classes

Questions	Components of the evaluation model in a multi-grade classroom	Items	CVR	CVI	Result
۱	Tools Plural Avery Information Direction Evaluation In Classes Multi-pedestal	.Oral exam is one of the tools of the plural Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification
۲		Research projects are one of the tools of gathering Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification
۳		Purposeful homework is one of the tools of the collective Avery Information For evaluation In Classes .It is multi-level	۱	۱	Component verification
۴		Compiling a work portfolio is one of the collective tools Avery Information For evaluation In Classes It is multi-level.	۰/۹	/۹۵.	Component verification
۵		Parenting is one of the tools of the collective Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification
۶		.Peer review is one of the tools of aggregation Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification
۷		Self-assessment is one of the tools of Avery Information For evaluation In Classes It is multi-level.	/۸.	/۹۵	Component verification
۸		.Functional testing is one of the tools of aggregation Avery Information For evaluation In Classes It is multi-level.	۰/۹	/۸.	Component verification
۹		.The paper-pencil test is one of the collection tools Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification
۱۰		Observational measurement is one of the collection tools Avery Information For evaluation In Classes It is multi-level.	۱	۱	Component verification

۱۱	Evaluation Implementation Strategies	Collaboration The student's family, teacher, and school are essential for implementing evaluation in a multi-grade classroom.	۰/۹	/۹۵	Component verification
۱۲		Providing feedback Continuous communication from the teacher to the student and parents is essential for implementing evaluation in a multi-grade classroom.	۱	۱	Component verification
۱۳		Attention To Differences Individual Knowledge Students are essential for implementing assessment in multi-grade classes.	۱	۱	Component verification
۱۴		Ready to do Infrastructure Case The need is essential for implementing evaluation in a multi-grade classroom.	۰/۹	/۸	Component verification
۱۵		Use From Tools Miscellaneous Plural Avery Information is essential for implementing evaluation in a multi-grade classroom.	۱	۱	Component verification
۱۶		Correction Structure Program A lesson is essential for implementing evaluation in a multi-grade classroom.	/۷	/۸۵	Component verification
۱۷		Empowerment Teachers are essential for implementing assessment in multi-grade classrooms.	۱	۱	Component verification
۱۸		Attention to All Area Learning opportunities and The six levels of education are essential in the evaluation process in a multi-grade classroom.	۰/۹	/۹۵	Component verification
۱۹	Resources needed to implement assessment in multi-grade classrooms	A skilled human resource is one of the resources needed to implement evaluation in a multi-grade classroom.	/۷	/۸	Component verification
۲۰		Financial resources are one of the resources required to implement evaluation in a multi-grade classroom.	/۷	/۸	Component verification
۲۱		Information sources are one of the resources needed to implement evaluation in a multi-grade classroom.	۱	۱	Component verification
۲۲		Time is one of the resources required to implement evaluation in a multi-grade classroom.	/۹	/۹۵	Component verification

۲۳		Material and physical resources are one of the resources needed to implement evaluation in a multi-grade classroom.	./۷	./۸۵	Component verification
۲۴	An integrated approach to assessment in multi-grade classrooms	Using a combined approach (quantitative-qualitative) is appropriate for evaluation in a multi-grade classroom.	۱	۱	Component verification
۲۵	Factors affecting the implementation of evaluation in multi-grade classrooms	Material and financial factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	./۷	./۸۵	Component verification
۲۶		Student-related factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	۱	۱	Component verification
۲۷		Teacher-induced factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	۰/۹	۰/۹	Component verification
۲۸		Family factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	./۸	./۸۵	Component verification
۲۹		Curriculum-related factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	۰/۹	/۹۵	Component verification
۳۰		Content-related factors are among the factors affecting the implementation of evaluation in multi-grade classrooms.	۰/۹	/۹۵	Component verification
۳۱		The time factor is one of the factors affecting the implementation of evaluation in a multi-grade classroom.	۰/۹	/۹۵	Component verification
۳۲	Consequences Execution Evaluation In Classes Multi-pedestal	Breeding Skills Researchership; one of the consequences Execution Integrated evaluation In Classes .It is multi-level	۰/۶	./۸	Component verification
۳۳		Breeding Features Personality Positive; from the consequences Execution Integrated evaluation In Classes .It is multi-level	۰/۶	./۸	Component verification

۳۴		Reinforcement Health Mental Knowledge Learn from the consequences Execution Integrated evaluation In Classes .It is multi-level	./۸	۰/۹	Component verification
۳۵		Breeding Skills Communication and Socialization of students; consequences Execution Integrated evaluation In Classes .It is multi-level	/۸	۰/۹	Component verification
۳۶		Improvement Process Teaching and Learning from the consequences Execution Integrated evaluation In Classes .It is multi-level	۱	۱	Component verification
۳۷		Decision Giri Participatory Direction Promotion Or Lack Promotion Knowledge Learn from the consequences Execution Integrated evaluation in Classes .It is multi-level	۱	۱	Component verification
۳۸		Growth Skills Learn about the consequences of overtraining Execution Integrated evaluation In Classes .It is multi-level	./۸	/۹۵	Component verification
۳۹		Process-oriented evaluation With Approach Constructivism: One of the consequences Execution Integrated evaluation In Classes .It is multi-level	۰/۶	./۸	Component verification
۴۰	Barriers to implementing assessment in multi-grade classrooms	Some obstacles to implementing assessment in multi-grade classrooms: Caused From He is a teacher.	۰/۹	/۹۵	Component verification
۴۱		Some of the obstacles to implementing assessment in multi-grade classrooms arise from the school and the educational system.	۰/۹	/۹۵	Component verification
۴۲		Some of the obstacles to implementing assessment in multi-grade classrooms arise from From The family is a student.	۰/۶	./۸	Component verification
۴۳		Some obstacles to implementing assessment in multi-grade classrooms: Caused From .It is time	۷/۰	./۸۵	Component verification
۴۴		Some obstacles to implementing assessment in multi-grade classrooms; obstacles Financial and They are physical.	۰/۶	۸/۰	Component verification
۴۵		Some of the obstacles to implementing assessment in multi-grade classrooms arise from From Knowledge .It is a lesson	۸/۰	۰/۹	Component verification

۴۶		Some of the obstacles to implementing assessment in multi-grade classrooms arise from From It is .content	۷/۰	./۸۵	Component verification

Discussion and conclusion

Evaluation is one of the most important components of education to check the quality and degree of achievement of educational goals in different fields. Evaluation has different definitions and types, but in terms of implementation method, it is divided into two descriptive quantitative and qualitative types. These two methods are different in terms of theoretical foundations, approaches, type of feedback, scale, etc. In the past, the quantitative evaluation method dominated the education system, since the quantitative evaluation emphasized the final result and the grade scale was used to measure it; It had caused problems such as degree orientation, score orientation, memory cultivation, and unhealthy competition. As a result, experts in this field replaced it with descriptive evaluation method. This project attracted the attention of researchers as a new syntax from the very beginning. Examining the effects of descriptive evaluation in the primary period of Iran showed that in some cases descriptive evaluation was successful and its positive effects are undeniable, but the results of some researches also showed that descriptive evaluation did not have much effect. From the results of some researches It is concluded that the implementation of this project has caused damages and problems. Considering the challenging results of the conducted researches and considering that each of the evaluations has advantages and disadvantages and on the other hand, each of them has acceptable theories that defend them; It is suggested to combine both methods in multi-grade schools; Obtained more comprehensive, valid and reliable findings. Considering that the existence of sufficient and in-depth information is necessary for accurate, fair and quality evaluation, the use of various tools in collecting information, providing the required resources and paying attention to all effective factors in evaluation, removing obstacles and problems and using strategies Appropriate can lead to positive outcomes such as improving the teaching and learning process and strengthening the various skills of learners.

Considering the special conditions of multi-grade schools from different perspectives (different age and gender composition of learners compared to single-grade schools, severe lack of facilities and favorable educational environment, inexperienced and untrained teachers, same curriculum and content as single-grade schools, low-educated parents or illiterate, poor educational background of most learners, low education per capita, limited time, etc.); These schools face many challenges in evaluating academic progress. Using different and diverse tools to collect information, especially more use of peer assessment and self-assessment, parental assessment and educational projects, minimizing the number of grades in each class (two grades in one class), providing educational equipment and facilities and help Education

with a special view of the government to these schools, allocation of education per capita according to the facilities and not just the student population, changes in the educational content and reduction of less necessary items, by compiling special books for multi-levels, increasing the teaching hours per day according to the conditions of these schools; or not closing on Thursdays by formulating special rules for multi-grade schools, using the role of assistant teacher (Khalifa) and applying student-centered teaching and learning methods, such as reverse learning, giving rewards, salaries, and considering special points and in general, paying attention to welfare and livelihood issues of multi-level teachers, holding in-service classes and other face-to-face and non-face-to-face training according to the special needs of the teachers of these schools, predicting a coherent curriculum based on the real needs of these schools in Farhangian University, as well as special training for quota students in nomadic areas, justifying and training parents to cooperate more with the school in various matters and evaluation by regularly holding family education classes and enhancing the role of educational leaders in the field of education and monitoring teachers' performance; It can minimize the challenges of these schools so that we can see the consequences of the implementation of evaluation in these schools.

Quality evaluation with changes in the reporting structure, more flexibility of descriptive evaluation in the field of practice, the process of assessing students, changes in the structure of report cards, the dynamics of descriptive evaluation and outcome-oriented and analyzing the findings of descriptive evaluation in multi-grade classes longitudinally; One of the features of qualitative evaluation is descriptive, which leads to process-oriented evaluation with a constructivist approach in multi-grade classes. Ostad Ali et al. (2015), Mortazavizade et al., (۲۰۱۸), Fadhilla, (۲۰۲۳), Gu & Warren, (۲۰۱۹), Ball, (۲۰۱۷), Pormand, (۲۰۱۸), Entehai Arani et al., (۲۰۲۱), Adibmanesh, (۲۰۱۹) and Hasani (۲۰۱۹) have also mentioned the above consequences in their research.

References

Adib Manesh, A. (۲۰۱۹). Phenomenology of elementary teachers' experiences from the full implementation of qualitative-descriptive evaluation plan. Spring and summer educational research. No. ۳۸, pp. ۶۰-۸۳

۱۰/۵۲۵۴۷/erj.۶/۳۸/۶۰ (In Persian).

Ball, S. (2017). Evaluating educational programs. In R. E. Bennett & M. von Davier (Eds.), *Advancing human assessment: The methodological, psychological and policy contributions of ETS* (pp. 341–362). Springer Science + Business Media. https://doi.org/10.1007/978-3-319-58689-2_11.

Chua H, Lee S, Fulmer GW. (2017). Action research on the effect of descriptive and evaluative feedback order on student learning in a specialized mathematics and science secondary school. Asia Pacific Science Education, 3(4): 1-22.

Fadhilla, N, T. (2023). EVALUATION OF LEARNING IN PRIMARY SCHOOLS TO IMPROVE THE QUALITY OF EDUCATION. Edunity, Volume 2

Number 4, April 2023 p- ISSN 2963-3648- e-ISSN 2964-8653. https://edunity.publikasikupublisher.com/index.php/Edunity/index.

Entehaei Arani, A., Vasifian, F., Hosni, M., and Gholtash, A. (2021). Primary school teachers' lived experiences of the functions of the descriptive evaluation model. Education in law enforcement sciences, 9(32), 99-124. (In Persian).

Gu, Y., & Warren, J. (2019). Descriptive evaluation: Challenges and solutions. In *Evaluation and Program Planning*, 73, 1-10. DOI: 10.1016/j.evalprogplan.2018.11.001.

Hegazi, M. O., Almaslukh, B., & Siddig, K. (2023). A Fuzzy Model for Reasoning and Predicting Student's Academic Performance. *Applied Sciences*, *13*(8), 5140. https://doi.org/10.3390/app13085140

Heuvel-Panhuizen MV., Sangari, A,A., Veldhuis M. (2021). Teachers' use of descriptive assessment in primary school mathematics education in Iran. Education Sciences, 11(3): 1-23.

Hosni, M. (2019). Qualitative-descriptive evaluation, care-oriented evaluation. Rosh Madrasa Farda, Volume 12, Number 7, pp. 12-15. (In Persian).

Mortazavizadeh, S. H., Nili, M., Nasrasafhani, A., and Hosni, M. (2018). Analyzing teachers' views regarding the implementation problems of descriptive qualitative evaluation plan in multi-level classes and providing solutions to solve them. Research in Curriculum Planning (Knowledge and Research in Educational Sciences - Curriculum Planning), 15, 30 (consecutive 57), 80-93. (In Persian).

Ostad-Ali, F., Behzadi, M, H., Shahvarani, A. (2015). Descriptive Qualitative Method of Evaluation from the Viewpoint of Math Teachers and Its Comparison with the Quantitative Evaluation (Giving scores) Method (A Case Study on the Primary Schools for Girls in Zone 1 of Tehran City). Mathematics Education Trends and Research, Volume 2015, Issue 1, Year 2015 Article ID metr-00078, 7 Pages doi:10.5899/2015/metr-00078.

Pourmand, R. (2019). Designing and validating the teaching model for multi-level classes and investigating its effect on the learning of students in these classes. Doctoral thesis in the field of educational technology, Faculty of Psychology and Educational Sciences, Allameh Tabatabai University. (In Persian).

Zahida, Parveen., Muhammad. Usman Khalid., Asifa, Rashid. (2023). Exploring the xperiences of Teachers Implementing Action Research in a Multi-Grade Classroom for Physically Challenged Students. Journal of Educational Research & Social Sciences Review, Vol. 3, Issue 2, 2023 .