

<sup>1\*</sup>Hossein Baghaei<sup>1</sup>Ruqiyeh Alizadeh Qaylo<sup>1</sup>Sima Akbari<sup>1</sup>Nasrin Hadilou

## Validation of a Questionnaire for Analyzing Teacher Training in Inclusive Education in the field of Teacher Training: Questionnaire (CEFI-R)



**Abstract: - Goal:** This research aims to investigate the validity, reliability, and factor structure of the teacher training analysis questionnaire in inclusive education in the field of teacher training.

**Method:** The research statistical population included all student-teachers of Farhangian University. The statistical sample of the research included 250 student-teachers who were selected by stratified sampling method. Saeedi's (2008) teachers' attitude towards inclusiveness questionnaire (2008) was used to calculate the convergent validity. Construct validity was investigated through confirmatory factor analysis. The reliability was done using Cronbach's alpha method and retesting and data analysis with S. software. P. S. S. Version 25 and Lisrel version 8.8.

**Findings:** The results of the confirmatory factor analysis confirmed the four factors of diversity, methodology, support, and community participation, as in the original form. In addition, Cronbach's alpha coefficient for the whole scale was 0.81 and was 0.86, 0.83, 0.84, and 0.81 for the diversity, methodology, support, and community participation subscales, respectively. In addition, the retest coefficient with an interval of four weeks was 0.76 for the whole scale and 0.79, 0.78, 0.80, and 0.74 for the diversity, methodology, support, and community participation subscales, respectively. In addition, the correlation coefficients indicated the convergent and diagnostic validity of the questionnaire ( $P < 0.001$ ).

**Keywords:** teacher training, inclusive education, normalization, questionnaire

### I. INTRODUCTION

Inclusive education is a humanitarian and child-centered approach that is used to universalize education and have all children in school regardless of gender, physical and mental abilities, social class, color, race, and ethnicity (Smith et al., 2023). This approach is in response to one of the major issues that the world is facing today. This issue is increasing the number of people who are unable to access education due to their special circumstances, including poverty, age, gender, religion, physical and mental disabilities, and are also deprived of acquiring the necessary skills to be respected, accepted in the society and active participation in individual and social life (Keshtegar, Afzali and Dastmoz, 2022). Among the above groups, children, especially girls, are more deprived and have more obstacles (Tahmasebzadeh et al., 2022). In addition to children and adolescents who are deprived of education for the reasons mentioned, several children also leave school due to academic weakness despite the possibility of attending school before completing an academic course (Khosravi et al., 2015). UNESCO categorizes other groups of children as deprived groups: children whose teaching and learning process in school do not match their needs and expectations, and as a result, school and education seem meaningless to them (Zhao and Zhang, 2023). The Scientific and cultural organization of UNESCO introduces inclusiveness as a process of responding to the diversity of all learners by integrating and absorbing them into normal educational systems and commits countries to establish a system that takes responsibility for providing education to all learners by making changes in content, educational methods, structures and strategies (Prendergast et al., 2022).

According to UNESCO, the educational system is responsible for the education of all children. Therefore, each of the age groups has the right to study together in a common environment without discrimination, regardless of any differences (Kao, 2022). It is possible to realize this goal if the educational system uses approaches that respond to the individual differences of learners in the class and ultimately benefit all (Dastyar and Mohammadi, 2018). The United Nations Committee on the Rights of the Child introduces inclusive education as a set of principles, methods, practices, and behaviors to provide meaningful and quality education for all students. In this regard, inclusive education is not a side issue and is separate from normal education. This training is related to the challenge of the quality of formal and informal education. In addition, it is based on the belief that the difference and variety of learners are challenging and enriching factors in the educational environment (Stephan et al., 2023).

Inclusive schools in educating all children of certain age groups in a school and a class are mainly searching for innovative ways and approaches to teaching in a way to respond to the individual differences of children and be useful

<sup>1</sup> <sup>1</sup>Department of Curriculum Planning, Marand Branch, Islamic Azad University, Marand, Iran.

\*Corresponding author: [hosseinbmd@gmail.com](mailto:hosseinbmd@gmail.com)

(Mehram et al., 2006). Inclusive education is also defined as responding to all learner's needs by attracting their participation in learning and trying to reduce any deprivation by revising and changing curriculum content, approaches, structure, and educational strategies. Investing in inclusive education includes teacher training, providing educational facilities according to needs, ICT, and providing more support for students with academic difficulties during their education for various reasons. The inclusive curriculum pays attention to the cognitive, emotional, and social development of the child at the same time. According to Delores, the former Secretary General of UNESCO, an inclusive curriculum is based on four pillars of learning for the 21st century, including how to know, how to do, how to be, and how to live together (Anderson, 2018).

Inclusive education occurs when all students are placed in regular classrooms, regardless of the disabilities they may have, relative to their age group. These classes should be close enough to where they live to receive the training, support, and interventions that will make them more successful in their core curriculum (Wang et al., 2019). Successful inclusive education occurs initially through accepting, understanding, and paying attention to students' differences and their diversity. These differences include physical, cognitive, academic, social, and emotional differences. This does not mean that students should never spend time outside of their regular classrooms because sometimes they do this for a special and important purpose. For example, for speech therapy or occupational therapy but the goal is to do this as an exception (Popham and Lanley, 2021). The main principle of inclusive education is making all students feel accepted, challenged appropriately, and supported for their efforts. Adults should be also supported. This support includes teachers of students with special needs, teachers of regular students, other employees and teachers as the key stakeholders, and parents (Pushneh and Malmir, 2017).

There is a lot of research evidence about the benefits of inclusive education and inclusive classes. Therefore, this educational method is daily becoming popular. On the other hand, both students with disabilities and non-disabled students learn more with this method. According to studies conducted in the last three decades, students with disabilities have made more progress and improved skills through inclusive education. Their peers who did not have these challenges have also benefited from these profits (Boui et al. et al., 2010; Dupuis, Barclay, Holmes, Pellett, Shaha, & Lewis, 2006; Newman, 2006; Al-Qarini & Gutt, 2012).

Researchers are often looking for issues and potential mistakes that may reduce the effectiveness of education in inclusive classes (Be Pajouh and Torabi, 2008). The findings have shown that this is not the main issue. Teaching time and working time are the same in inclusive and non-inclusive classes. Some regular students say that most of the time they don't even realize that students with disabilities are in their class when they are all in inclusive education. They show good manners and more patience when they know they are in the same class as students with disabilities (Gholami, 2021).

According to all descriptions of inclusive education, the teacher training university is responsible for training teacher-students so that they can educate students in an inclusive education manner. One of the most important goals of the education system is preparing students to live in society. The real society around us is never a one-handed society without differences. Therefore, we need a system that prepares children to live in a heterogeneous society. Inclusive education can be responsible in this field and teachers will have a significant impact on the realization and development of this approach because they are the central core of the educational system and the real executors of this matter. In this regard, this study examined the concept of inclusive education, the necessity and importance of inclusive education, and the role of teachers in its development. Therefore, teachers will have a more positive attitude towards this approach if they are aware of the characteristics of students with special needs and acquire the ability and skill to deal with and teach these students. As a result, they will play an effective role in implementing inclusive education and its development.

Some scales with empirical support measure different dimensions of inclusive education (for example, Saeedi's (2008) teachers' attitude towards inclusiveness questionnaire, 2015) but there is no comprehensive scale on the analysis of teacher education in inclusive education. Therefore, this research seeks to validate and examine the analysis of teacher training in inclusive education (CEFI-R). This scale is a 17-item tool that measures the analysis levels of teacher training in inclusive education on a 5-point scale from 1 (completely disagree), 2 (disagree), 3 (no opinion), 4 (agree), and 5 (completely agree) in 4 areas of diversity, methodology, support, and community participation. From the total score of the 4 subscales of the test, the total score for the analysis of teacher training in inclusive education (CEFI-R) is calculated. A higher score in each of the subscales and the whole scale indicates the amount of inclusive education in teacher training (CEFI-R). The test-retest reliability of the scale's psychometric properties, including internal consistency, has been confirmed in clinical and non-clinical samples in external research (Raju et al., 2023). In addition, a scale should be concise to have broad clinical and research applications. Due to the limited time and resources of clinical experts in the field of psychology, only scales that are brief and can be easily incorporated into assessments or during ongoing sessions are more likely to be used. In this regard, the 19-question version of this questionnaire,

especially in education, has not been examined in Iran so far. Therefore, the present study aimed to investigate the psychometric properties of the Inclusive Education Analysis Questionnaire in Teacher Training (CEFI-R).

## II. METHOD

This research is applied in terms of purpose and it is among descriptive research of the correlation type in terms of methodology. This study's statistical population included all student-teachers of Farhangian University. The research statistical sample also included 250 student-teachers who were selected by stratified sampling method. The following tools were used to collect data:

**Inclusive Education Scale in Teacher Education (CEFI-R):** This tool has 17 questions developed by Raju et al. (2023). For scoring, each item is assigned a score between 1 and 5 based on a 5-point Likert scale. This scale consists of 4 main factors diversity, methodology, support, and community participation. Questions 1 to 5 are related to diversity, questions 6 to 10 are related to methodology, questions 11 to 13 are related to support, and questions 14 to 17 are related to community participation. The internal consistency of this questionnaire in the research of Raju et al. (2023) was obtained with Cronbach's alpha method for the dimension of diversity 0.74, methodology 0.79, support 0.80, community participation 0.77, and for the whole scale 0.81. In addition, the reliability of this questionnaire was reported as 0.78 using the test-retest method. In addition, the concurrent validity of this scale has been obtained at 0.63 based on the correlation of this questionnaire with Saeedi's (2008) teachers' attitude towards inclusiveness questionnaire (2005). The validity and reliability of this questionnaire in Iran has been done for the first time in this research and its results are reported below.

**Saeedi's (2008) Teachers' attitude towards inclusiveness questionnaire (2015):** The questionnaire on teachers' attitudes towards inclusiveness was designed by Saeedi in 2015 by reviewing and studying the articles and research available in Iran and abroad. This questionnaire consists of 2 parts. The first part is dedicated to the background and demographic information of the teachers participating in the research, which consists of 9 questions (age, gender, level of education, marital status, the field of study, having a child with a disability in the family of friends and relatives, completing inclusive education in-service training courses, work experience, teaching background in school. The second part is related to the attitude and questions related to the attitude of teachers, which consists of 104 questions and 6 main areas of inclusiveness: attitude towards inclusiveness philosophy including questions 1-29; attitude towards the feeling of sufficiency including questions 30-59; attitude towards the relationship between normal children and children with disabilities including questions 60-69; attitude towards providing the necessary support for the implementation of inclusiveness including questions 70-104; attitude towards the learning atmosphere includes questions 7, 8, 10, 22, 25, 26, 27; and the attitude towards the results of inclusiveness includes questions 22, 24, 26, 27, 28, 29, 68, 69.

After the Persian translation of the 9-question version of the Happy School Questionnaire, the translated version was first reviewed and modified with the cooperation of one of the experts in psychology and educational sciences. Then, it was given to two English language experts to use the back translation method to return it to Persian to be more sure about the accuracy of the translation and the compatibility of the two English and Persian versions. Thus, the reliability and validity of the Persian version of the 9-question Happy School Questionnaire were started in the present study after several stages of examining, revising, and applying changes and corrections and final approval.

After completing the steps related to the translation of the questionnaire and its approval, obtaining a license, obtaining permission from Farhangian University, presenting the necessary explanations to the officials, and referring to the university, they accepted to participate in the research. Then, the questionnaires were presented to them to implement in the classes about student-teachers. About 20 participants were excluded from the statistical analysis due to incomplete answers to the scales, and thus the research sample was reduced to 230 people.

To analyze the data, the confirmatory factor analysis method (to check the common construct validity of the Iranian society with the main population of the questionnaire) was used using LISREL 8.8 software and Pearson correlation coefficients (to obtain convergent validity) were used using Spss22 software.

## III. FINDINGS

Table 1: Mean and standard deviation of inclusive education analysis scale in teacher training (CEFI-R) and its subscales

Variables	Mean	Standard deviation
Analysis of inclusive education in teacher education (CEFI-R)	2.9	5.83
Diversity	3.00	4.54
Methodology	2.8	5.56

Support	3.1	4.63
Community participation	3.2	6.44

As observed in Table 1, the mean and standard deviation of the inclusive education analysis scale in teacher training (CEFI-R) in the subscale of diversity, methodology, support, and community participation were obtained  $3.0 \pm 4.54$ ,  $2.8 \pm 5.56$ ,  $3.1 \pm 4.63$  and  $3.2 \pm 6.44$  respectively. In addition, the mean and standard deviation of the overall score of inclusive education analysis in teacher training (CEFI-R) was  $2.5 \pm 9.83$ .

Table 2: Correlation matrix of the total score of Inclusive Education Analysis in Teacher Education (CEFI-R) and its subscales

Variables	Analysis of Inclusive Education in Teacher Education (CEFI-R)	Diversity	Methodology	Support	Community participation
Analysis of Inclusive Education in Teacher Education (CEFI-R)	1				
Diversity	0.663	1			
Methodology	0.594	0.782	1		
Support	0.709	0.653	0.586	1	
Community participation	0.552	0.655	0.586	0.542	1

The correlation coefficients between the subscales and the total score were calculated to check the construct validity and internal consistency of the Inclusive Education Analysis Questionnaire in Teacher Training (CEFI-R) with its subscales. As observed in Table 2, all subscales have a significant relationship with the overall score of the happy school. In addition, the subscales also have a significant relationship with each other. Generally, the pattern of correlation coefficients between the subscales in Table 2 shows that there are good internal relationships between the subscales.

Table 3: Correlation of Inclusive Education Analysis in Teacher Training (CEFI-R) and its subscales with Saeedi's (2008) teachers' attitude towards inclusiveness questionnaire:

Variables	Teachers' attitudes towards inclusiveness	Philosophy of inclusiveness	Attitudes toward the relationships between normal children and children with disabilities	Attitudes toward providing the necessary support for the implementation of inclusiveness	Attitudes toward the learning atmosphere	Attitudes toward the results of inclusiveness
Analysis of Inclusive Education in Teacher Education (CEFI-R)	0.62	0.54	0.58	0.63	0.71	0.39
Diversity	0.58	0.64	0.55	0.48	0.52	0.60
Methodology	0.53	0.53	0.51	0.58	0.44	0.52
Support	0.67	0.49	0.47	0.53	0.56	0.51
Community participation	0.49	0.60	0.52	0.56	0.44	0.68

As observed in Table 3, the overall score of inclusive education analysis in teacher training (CEFI-R) has a positive and significant relationship with teachers' attitudes towards inclusiveness ( $r=0.58$ ,  $P<0.001$ ).

Table 4: Standardized values of lambda y and their significance in the measurement model of inclusive education analysis in teacher education (CEFI-R).

Row	Question	Diversity	Methodology	Support	Community participation
1	I prefer to have students with special educational needs in my classroom.	0.72 16.44			-
2	A child who needs special education support does not disrupt the classroom routine and does not disrupt the learning of his classmates.	0.58 11.32			-
3	Students with special educational needs should be placed in regular schools even if we are not prepared for this.	0.63 13.02			-
4	Students with special educational needs can follow the daily curriculum.	0.59 12.74			-
5	I am not worried that my workload will increase if I have students with special educational support needs in my class.	0.66 14.58			
6	I know how to teach each of my students differently according to their characteristics.	-	0.61 9.18		
7	I know how to design teaching units and courses with the diversity of students in mind.	-	0.57 11.96		
8	I know how to adapt the way I assess the individual needs of each of my students.	-	0.52 5.66		
9	I can adapt my communication techniques to ensure that all students can successfully participate in the mainstream classroom.	-	0.55 2.84		
10	I can adapt my communication techniques to ensure that all students can successfully participate in the mainstream classroom.		0.67 3.89		
11	I believe that the best way to support students is to have a support teacher in the classroom.			0.64 6.32	
12	The role of the support teacher is to work with the whole class.			0.57 5.25	
13	I know the place of the support teacher in the regular class with any of the teachers.			0.49 12.24	
14	Educational projects should be reviewed with the participation of various factors of the educational community (teachers, parents, students).				0.60 4.33
15	There should be a very close relationship between the teaching staff and other educational agents (AMPA, neighborhood associations, school council...).				0.53 2.53
16	The school should encourage parent and community involvement.				0.52 4.50
17	The school should cooperate with the local resources.				0.61 6.05

As observed in Table 4, all coefficients of lambda y have high values. The significance test of t shows that all path coefficients with the obtained factor loadings are significant.

Table 5: Cronbach's alpha and test-retest analysis of inclusive education in teacher training (CEFI-R) and its components

variable	Cronbach's alpha	test-retest coefficient
Analysis of Inclusive Education in Teacher Education (CEFI-R)(	0.81	0.76
Diversity	0.86	0.79
Methodology	0.83	0.78
Support	0.84	0.80
Community participation	0.81	0.74

The Cronbach's alpha was calculated to check the internal consistency of the questionnaire. Based on the results listed in Table 5, Cronbach's alpha coefficient of the inclusive education analysis questionnaire in teacher training (CEFI-R) for the whole scale was 0.81. In addition, Cronbach's alpha coefficient was 0.86, 0.83, 0.84, and 0.81 for subscales of diversity, methodology, support, and community participation, respectively. In addition, The test-retest coefficient of the inclusive education analysis questionnaire in teacher training (CEFI-R) with an interval of four weeks for the whole scale was 0.76, and for the subscales of diversity, methodology, support, and community participation was obtained 0.79, 0.78, 0.80, and 0.74, respectively. Generally, the results of the mentioned Table show that Cronbach's alpha and test-retest coefficients obtained for the whole scale of its subscales are favorable in terms of psychometrics.

#### IV. DISCUSSION AND CONCLUSION

The successful planning and implementation of inclusive education requires an evaluation system and a detailed review of its implementation in schools and monitoring the educational activities of this program in non-formal education. It is necessary to create a system to monitor and evaluate inclusive education at all national-regional, local, and private sector levels, and educational managers and guides need to receive the necessary training on how to do this evaluation. A part of this evaluation process is the early detection of students who are academically weak or at risk of dropping out and the analysis of the factors and conditions that have created such a situation. According to what was mentioned, creating inclusive educational environments requires a change in the perspective of the educational system from a system that finds the learning problem in the child to a system that considers the school as the source of the child's academic, social, and emotional problems. This trained system can be the teacher training university.

Therefore, determining the amount of inclusive education in teacher training provides important information to teachers and students in terms of having effective teaching skills. When the literature is reviewed, there are scales related to inclusive education that these scales can be used in general in studies conducted on students (Gholami, 2021). At this stage, the starting point of this research is the lack of a scale development study to determine the status of inclusive education in teacher education. Therefore, this research investigated the psychometric characteristics of the inclusive education questionnaire in teacher training. As a result, a scale including 17 questions and 4 dimensions was obtained to prepare a valid and reliable scale to determine the amount of inclusive education in teacher training. To check the construct validity, the results of confirmatory factor analysis showed that 17 questions have a high factor load with 4 components of diversity, methodology, support, and community participation. Based on the two-factor nature of this scale, this finding is consistent with the research results of Boyi et al. (2010), Dupuis, Barclay, Holmes, Pellet, Shaha, and Lewis (2006), Newman (2006) and Al-Qarini and Gut (2012). On the other hand, the findings of the confirmatory factor analysis showed that the data fit well with a two-factor model, which was consistent with the previous results. The internal homogeneity of the questions of the subscales of the questionnaire was calculated and confirmed by Cronbach's alpha coefficients. The test-retest reliability of the questionnaire was also calculated by calculating the correlation coefficients between the scores of the subjects with an interval of four weeks for the subscales at a significant level of  $P > 0.01$ . These coefficients indicate the satisfactory test-retest reliability of the questionnaire. These findings are consistent with the results of previous research on the inclusive education scale in teacher training (CEFI-R) by Raju et al. (2023).

Convergent and diagnostic (differential) validity was calculated through the simultaneous implementation of Saeedi's (2008) teachers' attitude towards inclusiveness questionnaire (2005) on subjects. The correlation coefficients of the subjects' scores in the four subscales of the questionnaire with the indicators of the teachers' attitude towards inclusiveness were significant.

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