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EXPLORING STUDENT TEACHERS' ATTITUDES TOWARDS CONTINUOUS INTERNAL ASSESSMENT: DEVELOPMENT OF A COMPREHENSIVE QUESTIONNAIRE

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Abstract

This study focuses on the development and validation of the Attitude towards Continuous Internal Assessment Questionnaire (ACIAQ), designed to measure student teachers' attitudes towards continuous internal assessment (CIA) in teacher education. CIA involves regular assessments to support ongoing professional development. Data were collected from 560 student teachers across various institutes affiliated with Manipur University between March and May 2023. The ACIAQ was refined from 80 to 40 items through expert evaluation and pilot testing, resulting in a four-factor structure: context of CIA, benefits for student teachers, benefits for teacher educators, and strengthening of CIA. Psychometric analysis confirmed the four-factor structure, with the ACIAQ demonstrating high reliability (Cronbach's alpha = 0.849). The validated ACIAQ addresses the need for a comprehensive tool to measure attitudes towards CIA, aiding in the assessment of policy impacts and educational effectiveness. Further research is recommended to test the ACIAQ's applicability across different cultural contexts.

Keywords: Continuous Internal Assessment (CIA), Attitude Measurement, Teacher Education, Psychometric Validation, Student Teachers, Educational Assessment

1. Introduction

This paper makes an attempt to report on the development of a theoretically grounded and empirically validated scale to measure attitude towards continuous internal assessment. Teacher education, for at least the last 50 years, has been challenged to engage with a range of student teachers' assessment issues. As a response, assessment initiatives have been launched as a means of coping with assessment among different stakeholders in teacher education, such as NCTE, NCERT, SCERT, and teacher education institutions. However, empirical studies are a missing link when it comes to evaluating student teachers' responses to stakeholder engagement and assessment policies. Instead, decisions and implementation strategies are heavily based on policy recommendations and the gut feelings of practitioners. First, the theoretical foundation of the concept of continuous internal assessment (CIA) is described, as is how it builds upon frameworks of continuous and comprehensive assessment (CCA). Thereafter, the structure of the concept and how the questionnaire was created are outlined. Based on data collection in the Indian state of Manipur, the validation of the questionnaire instrument is then described. Finally, the results of the empirical development of a Manipuri version of the questionnaire for more accessible use are presented. In assessment studies, no

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existing scale that comprehensively covers and has the capacity to measure the holistic and integrative concept of continuous internal assessment has been identified. By providing this instrument, an important gap has been filled, and researchers and practitioners in the field of assessment studies now have an instrument they can use to investigate and evaluate student teachers' perceptions of various kinds of efforts regarding the promotion and evaluation of continuous internal assessment through policy, communication, or teacher education.

In this paper, the concept of attitude towards continuous internal assessment (CIA) is defined and operationalized.

2. The theoretical background

Before starting, it is necessary to clarify several concepts, such as attitudes, assessment, internal assessment, continuous assessment, etc., that are involved in the concept of attitude towards continuous internal assessment (CIA).

2.1 Attitude: Since the attitude construct is among the most well-established and researched in social psychology, it has had a significant influence on the social sciences over the past 100 years. Despite its lengthy history, a historical assessment of the literature on attitudes reveals a construct whose popularity has fluctuated over time and sparked a number of fervent discussions.The psychologist Herbert Spencer is credited with first using the term "attitude" in 1862 (Fishman, Lushin, & Mandell, 2020). Attitudes are defined as a cognitive preference and behavioural predisposition towards an object, thus resulting in a favourable or unfavourable evaluation regarding a specific stimulus (Eagly & Chaiken, 1993). Louis Thurstone and his colleagues argued that the distinctive feature of attitude was an evaluative or affective predisposition towards an object, idea, or issue (Peterson & Thurstone, 1932). Thurstone is credited with developing a formal technique for examining attitudes, and to indicate one's attitude towards an issue, he paired statements with numerically scaled response options so he could calculate the degree to which one judged that issue favourably or unfavourably (Fishman, Yang, & Mandell, 2021). In line with Thurstone, major mid-century social psychologists like Martin Fishbein and Icek Ajzen conceptualised an attitude towards a behaviour as an evaluative response that predisposed one favourably or unfavourably towards performing that behaviour (Ajzen & Fishbein, 1977). One way of looking at the meaning of attitude is the ABC model of attitudes. The ABC Model of Attitudes, also known as the tri-component model, is a framework in psychology that describes three components of attitudes (Eagly & Chaiken, 1998): a) Affective component: this involves a person's feelings or emotions about the attitude object; b) Behavioural (or conative) component: the way the attitude we have influenced how we act or behave; and b) Cognitive component: this involves a person's belief or knowledge about an attitude object. These three components collectively form an individual's attitude towards an object, person, issue, or situation (Mcleod, 2023).

2.2 Continuous Internal Assessment (CIA): The phrase "continuous internal assessment" is a composite term consisting of assessment, continuous, and internal assessment. The term *"assessment"* came into use in an educational context after the Second World War (Nelson & Dawson, 2014).Generally speaking, all of the activities teachers employ to support students' learning and determine their progress are referred to as assessments (Black & William, 1998).According to Allen (2004),assessment refers to the systematic process of documenting and using empirical data on the knowledge, skill, attitudes, aptitude and beliefs to refine programs and improve students' learning (Allen, 2004). Similarly, Khan (2019) defines the term assessment as a systematic process of collecting, understanding, and acting upon the data related to a student (Khan, 2019).Assessment acts as a lever for both formative

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improvement of teaching and learning and summative accountability evaluation of teachers, schools, and administration (Brown, 2022).Assessment is a continuous process that sets clear, measurable learning objectives for students, gives them enough opportunities to learn, and employs a methodical approach to collecting, analysing, and interpreting data to assess how well students are meeting expectations (Suskie, 2004). The data is then used to inform future efforts to enhance students' learning.

Internal assessment is any form of assessment in which in which question papers, assignments and tasks are controlled by the institution where the student is studying (Vitello & Williamson, 2017). In the context of teacher education, Khan (2019) defines internal assessment as the process by which teacher educators and teacher education institutions judge the student teacher's performance on the basis of his or her performance (Khan, 2019). Hence, internal assessment refers to the technique of assessing student teachers' understanding of the course materials where no one outside the institute is needed to be involved. Teacher educators and institutions assess student teachers' achievement in this process by looking at how well they comprehend the material covered in the course. Also, this process does not involve any outsiders for assessment (Khan, 2019). One of the main arguments for internal control at task setting is that it could produce assessments that are more valid than ones that are centrally (that is, externally) set (Vitello & Williamson, 2017).The final assessment or semester end examination, however, is acknowledged by the internal assessment. It also lessens the stress associated with the final examination. For instance, a student teacher needs not feel too much pressure for the final examinations if they did well on the internal assessment tests. Furthermore, these periodic assessments serve as a conduit for information about student teachers' performance. It makes it possible for student teachers to learn continually.

The process of assessing a student's progress throughout a specified course is known as continuous assessment. According to Shukla(2019), continuous assessment is a continuous and frequent analysis of the learning performance (Shukla, 2019).Formative assessments are frequently a part of continuous assessment. Formative assessment refers to the variety of informal diagnostic examinations that teachers might administer to support their students' learning. In the context of teacher education, the term 'continuous' is meant to emphasize that assessment of identified aspects of student teachers 'continuing professional development' is a continuous process rather than an event, built into the total teaching-learning process and spread over the entire span of an academic session or their lifelong learning. It is often used as an alternative to the final examination system(De Sande, et al., 2008).Advocates of continuous assessment contend that the methodology permits monitoring of development and may provide students with additional assistance, direction, and chances for growth throughout the course(Muskin, 2017; De Sande, et al., 2008).

The phrase continuous internal assessment, thus, refers to a system of assessment regime in which assessments are done continuously and internally without any involvement of any external agencies or stakeholders. In the context of teacher education, continuous internal assessment (CIA) refers to a system of institution-based assessment of student teachers that covers all aspects of their continuing professional development. In continuous internal assessment, the performance of all the student teachers will be assessed internally on a continuous basis by the concerned faculty member. It means regularity of assessment, frequency of unit testing, diagnosis of learning gaps, use of corrective measures, retesting, and feedback of evidence to teacher educators and student teachers for their self-evaluation (Mola & Shaw, 2024a; Mola & Shaw, 2024b; Verma, 2012).

The point of departure is that various education commissions and committees in India have made recommendations regarding laying emphasis on internal assessment. The Hartog

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Committee (1929) expressed its concern about the dominance of external assessment over the entire system of education. For instance, the Secondary Education Commission (1952–53) has made recommendations regarding reducing the emphasis on external assessment and strongly encouraging internal assessment via continuous internal assessment. NCFTE (2009) observed that "a glaring weakness of existing teacher education practises is the restricted scope of assessment of student teachers and its excessively quantitative nature. Further, assessment is not as continuous as it should be." There are, however, very few psychometrically sound instruments available to measure this kind of literacy, and none that cover the holistic framework of continuous internal assessment.

Bachelor in Education (B.Ed.) or Pre-service Teacher Education (PTE) is the university training stage for future teachers (Soria et al., 2023). Researching the application of CIA systems in PTE is important for several reasons: (a) the transferability between living CIA systems in PTE and their application in future professional practice; (b) the advantages that the application of CIA systems often has on the learning and academic performance of PTE students; and (c) assessment is a core professional competence in PTE (Soria et al., 2023).

2.3 Research aim: This paper describes the validation and development of the attitude towards the continuous internal assessment questionnaire (ACIAQ), which aims to meet this need.

3. Methodology

3.1 The subjects

A group of randomly chosen 560 student-teachers from various teacher education institutes affiliated with Manipur University voluntarily participated in this study. This number amounts to 37.33% of the total of 1500 student-teachers. In the current study, all the subjects aged 22–40 voluntarily participated, which comprises 45% male and 55% female student-teachers.

3.2 Data collection and analysis

From the beginning of March to the end of May 2023, data were collected in 15 colleges of teacher education in different districts of Manipur as part of a larger evaluation study of attitudes towards continuous internal assessment. These colleges were selected to match these colleges in all aspects, for example, the number of student-teachers, geographic location, and socio-economic factors found in a database provided by colleges' authorities, colleges' homepages, and the National Council for Teacher Education (NCTE). It is important to note that the current study has no intention to delve into the socio-demographic aspects of the respondents. Rather, the main focus is on the development and psychometric properties of the ACIAQ. The data were collected at the colleges during normal college hours. The participating student teachers completed the questionnaire in the classroom. During the administration of the survey in the college setting, a researcher was always present. In this way, the reliability of the data collection process was ensured, and the same information was given to all the participants. A week before the visit, when the study took place, student teachers were provided with a passive consent form to complete prior to participating in the study.

All the data collected from the respondents was first entered into the Microsoft Excel spread sheet, including the socio-demographic information of each respondent, and then transferred to IBM SPSS Statistics Version 22 for the necessary analysis of the data, including factor analysis, mean and standard deviation, and Cronbach's alpha.

3.3 Developing the questionnaire

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Sarkar & Datta (2016) developed a scale for measuring attitude towards CCE called the continuous and comprehensive evaluation attitude scale. Singh & Roshni (2013) developed a scale measuring B.Ed. students' attitude towards continuous internal assessment called the Attitude Scale for Continuous Internal Assessment. Parikh (2014) developed a questionnaire investigating college students' attitudes towards internal evaluation. Also, Rathna & Daniel (2016) investigated college students' attitudes towards internal assessment using the scale developed by Parikh (2014). In addition to the prior scales mentioned above, there are many self-developed questionnaires for the purpose of their own studies dealing with various individuals' attitudes towards CCE, CIA, or IA (Chopra & Gupta, 2013; Manda & Mete, 2022; Mola & Shaw, 2024c; Cyril & Jeyasekaran, 2016; Singh, Ali, Ghaisas, Sridevi, & Priya, 2022). However, the most widely used scale was the one developed by Vishal Sood and Arti Anand (2011), which named teachers attitude towards a continuous and comprehensive evaluation scale (Rani, 2017; Phukan & Sultana, 2021; Khatiwora, 2020; Rana, 2015; Lalnunfeli, Malsawmtluanga, Ralte, & Lalduhawmi, 2018; Kumar, Kumari, & Gaurav, 2018). However, all of these instruments lean towards CCE and have a narrower scope than is the case with the concept of CIA.

Due to the scarcity of standardised tools to assess the attitude of student teachers towards continuous internal assessment, one questionnaire with 40 items was developed by the authors to collect data from the student teachers to answer a set of questions that deal with student teachers' attitudes towards continuous internal assessment (CIA). The researchers have delineated the domain of interest as continuous internal assessment (CIA), which is a priori.The steps followed in the development of the scale have been described as follows:

3.3.1 Item generation: The first and foremost step in the development of the scale is item generation. Through an extensive literature search and review of the domain (CIA), the item generation for the scale was done. While the items were being designed, great effort was taken in their creation to ensure that they included clear and plain comments about the issue and that they would convey desirable and unwanted circumstances rather than just basic facts; there were also negative items. Strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree were among the scores on the 5-point Likert scale. The initial pool consisted of 80 items that measured student teachers' attitudes towards the CIA. These were further reduced to 40 items on the basis of the evaluation of an expert committee.

3.3.2 Content validity: The second step is the establishment of the content validity of the item pool. Guion has proposed five conditions that must be satisfied in order for one to claim any form of content validity: (a) the behavioural content has a generally accepted meaning or definition; (b) the domain is unambiguously defined; (c) the content domain is relevant to the purposes of measurement; (d) qualified judges agree that the domain has been adequately sampled based on consensus; and (e) the response content must be reliably observed and evaluated (Guion, 1977). Expert judges consisting of one language expert, and 3 subject experts evaluated each of the items to determine whether they represented the domain of interest. These expert judges, who were independent of those who developed the item pool, reduced the improper grammar items, double-barrelled items, false premise items, and too-complex or long items to 40 based on consensus.

3.3.3 Pilot study: To further optimise the content validity and language of the items, the researcher conducted a preliminary study that consisted of a sample of subjects (N = 50) who were not included in the actual study but possessed similar characteristics to those of the main study. The questionnaire containing 40 items that can assess attitudes concerning CIA was administered to the subjects who were undergoing 1st semester B.Ed. course during the academic year 2023-24 at R K Sanatombi Devi College of Education, Imphal West District of

ISSN:1517-4492 | **E-ISSN**:2178-7727

Manipur, India. Further, to enhance the content validity and refine the language of the items, the participants were asked to mark the items that they had problems completing. In order to identify the problematic questions, a group discussion with 5 to 8 respondents was held, and suggestions from them were sought regarding how to improve the identified items. On the basis of their suggestions, language edits were made to enhance the respondents' understanding of the items. These modifications were made primarily to alter the content of questions relevant to the group subjects questioned in this study, and they were made while keeping in mind the original number of items and their relevance to the UGC and NCTE viewpoint on CIA.

Based on the theoretical foundations noted in previous sections, the holistic concept of CIA was constructed and operationalized in the form of a questionnaire instrument. The *"Attitudes towards Continuous Internal Assessment Questionnaire (ACIAQ)"* was, thus, created for student teachers in Manipur.

The items that ratified the construct are 1, 2, 3, 5, 6, 7, 11, 13, 15, 16, 20, 21, 23, 24, 25, 26, 31, 32, 33, 35, 36, 39, and 40, while the items that refuted the construct are 4, 8, 9, 10, 12, 14, 17, 18, 19, 22, 27, 28, 29, 30, 34, 37, and 38. The response format preferred for the items was a five-point Likert scale, ranging from Strongly Disagree (SD, coded 1), corresponding to the least favourable response, through Disagree (D, coded 2), Neither agree nor disagree (NAND, coded 3), and Agree (A, coded 4) to Strongly Agree (SA, coded 5), corresponding to the most favourable response. As for the items which disproved the construct, the scores were reversed.

The questionnaire was then applied to the student-teachers (N = 560) in Manipur to achieve the goals of this research.

3.4 Psychometric Property of the questionnaire

3.4.1 Questionnaire dimensionality: Due to the unique characteristics of the participants, the researchers decided to ascertain the instrument's factor structure (Devellis, 2012) and internal consistency of the items in the scale.

The KMO and Bartlett tests were the first statistical analyses done to verify whether the data were suitable for factor analysis. The results indicated the following: *KMO* = .874; Bartlett test: $\chi 2 = 5388.360$, DF = 780 (p =.000), which indicates that an additional factor analysis on the data can be conducted.

The next step was to conduct an exploratory factor analysis (principal component analysis) using the Varimax rotation method to discover the relationships between observable variables and underlying factors. The number of factors was determined using the Kaiser criterion (Kaiser, 1960) and only factors with eigenvalues equal to or greater than one were included.

A structure of four factors, with 10 items for the context of continuous internal assessment (CIA), 10 items for the benefits of continuous internal assessment (CIA) for students-teachers, 10 items for the benefits of continuous internal assessment (CIA) for teacher-educators, and 10 items for the strengthening of continuous internal assessment (CIA), was found. The name for each factor was given as: (1) F-1: the context of continuous internal assessment (CIA) (items 1 to 10); (2) F-2: benefits of continuous internal assessment (CIA) for students-teachers (items 11 to 20); (3) F-3: benefits of continuous internal assessment (CIA) for teacher-educators (items 21 to 30); and (4) F-4: strengthening of continuous internal assessment (CIA) (items 31 to 40).

Table 1: Rotated factor matrix (Varimax rotation method)

ISSN:1517-4492 | **E-ISSN**:2178-7727

Item Nos.	F-1	F-2	F-3	F-4	Item Nos.	F-1	F-2	F-3	F-4
1C	**0.414**		0.105		21C			**0.512**	
2C	**0.703**				22B		0.416	**0.560**	
3B	**0.526**	0.326			23C		0.339	**0.621**	
4B	**0.331**			0.239	24C			**0.737**	
5B	**0.478**		0.107		25C	0.127		**0.488**	0.27
6B	**0.598**		0.189		26B	0.217		**0.555**	0.122
7B	**0.410**		0.189	0.399	27C		0.352	**0.680**	
8B	**0.382**	0.149	0.293		28B		0.240	**0.510**	
9A	**0.474**		0.123		29A	0.442		**0.637**	
10B	**0.425**	0.166		0.269	30A		0.191	**0.229**	0.209
11C	0.124	**0.460**	0.100	0.228	31B	0.189		0.307	**0.425**
12A		**0.250**		0.159	32C				**0.581**
13A	0.176	**0.544**	0.375		33C				**0.672**
14B	0.177	**0.675**		0.332	34B	0.144			**0.569**
15C		**0.488**	0.549	0.104	35C				**0.610**
16A	0.100	**0.598**	0.336	0.168	36C	0.296	0.177		**0.655**
17B	0.258	**0.363**	0.105	0.359	37A	0.126		0.103	**0.142**
18C		**0.692**	0.191		38B	**0.638**			
19A	0.111	**0.486**			39C	0.262	0.217	0.317	**0.763**
20C		**0.541**	0.264		40B			0.107	**0.859**

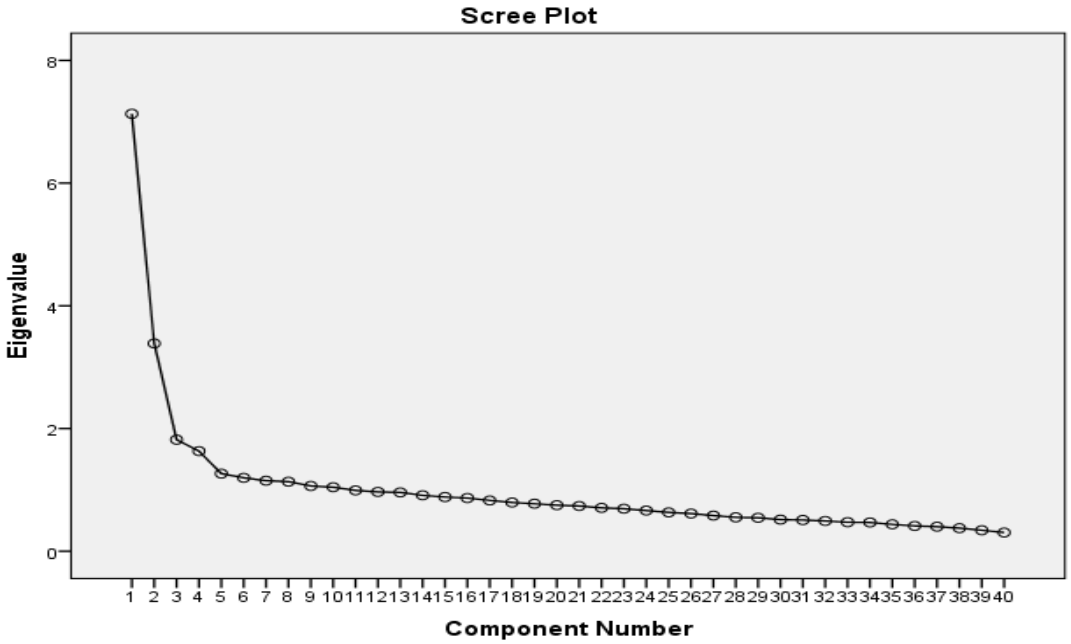
Eigenvalue and % of variance

Factors	F-1	F-2	F-3	F-4
Eigenvalue	***7.129***	***3.386***	***1.818***	***1.632***
% of variance	***12.248***	***11.118***	***6.028***	***5.521***

ISSN:1517-4492 | **E-ISSN**:2178-7727

Note: C = Cognitive Component; A = Affective Component; B = Behavioural Component

The rotated factor values stretched from 0.142 to 0.859. The rotation was unconstrained, and items with factor loadings lower than 0.100 are not reported (See table 1). When the items were loaded with other factors, the higher value was taken. The factors have been described by 34.915% of the total variance. The outcomes of the item loadings per factor, the eigenvalues, and the variance percentage that clarifies the percentages of the factors settle the four-factor structure.The eigenvalues relating four factors are shown in the Scree Plot Graphic below.



The eigenvalue is graphed against the component number in the scree plot. The first four columns of the table directly above show these values. The line becomes nearly flat after the fifth component, which indicates that the subsequent components are each explaining a decreasing percentage of the variance in total. Generally speaking, we only want to retain principal components with eigenvalues larger than 1. Less useful components are those whose eigenvalue is less than 1, since they explain less variance than the original variable (which had a variance of 1). Therefore, it is clear that the purpose of principle components analysis is to use the technique of to redistribute the variation in the correlation matrix. Getting details on the dimensional structure of the questionnaire was essential to ensure that collections of mixed items within a composite (dimension) could be worked with. The questionnaire kept its four-dimensional structure, as seen in Table 1. These factors together accounted for 34.915% of the total variation.

3.4.2 The reliability of the questionnaire: Using the Cronbach's alpha coefficient, the items related to each factor were evaluated for internal consistency and reliability (See Table 2).

Table 2
Descriptive statistics mean (M) and standard deviation (SD), Cronbach's alpha (reliability) and item total correlations

ISSN:1517-4492 | **E-ISSN**:2178-7727

Factor 1		*Factor 2*		*Factor 3*		*Factor 4*	
N	10	N	10	N	10	N	10
Alpha	.733	Alpha	.722	Alpha	.780	Alpha	.762
Scale Mean	35.446	Scale Mean	33.682	Scale Mean	34.966	Scale Mean	35.454
St dev.	3.749	St dev.	4.830	St dev.	4.601	St dev.	4.220
Item	***Item total correlation***	***Item***	***Item total correlation***	***Item***	***Item total correlation***	***Item***	***Item total correlation***
q1	0.34	q11	0.89	q21	0.66	q31	0.74
q2	0.45	q12	0.85	q22	0.31	q32	0.77
q3	0.41	q13	0.88	q23	0.70	q33	0.82
q4	0.39	q14	0.91	q24	0.77	q34	0.77
q5	0.31	q15	0.86	q25	0.75	q35	0.80
q6	0.30	q16	0.89	q26	0.75	q36	0.81
q7	0.50	q17	0.93	q27	0.81	q37	0.60
q8	0.36	q18	0.79	q28	0.68	q38	0.38
q9	0.33	q19	0.93	q29	0.77	q39	0.63
q10	0.34	q20	0.94	q30	0.30	q40	0.64

Table 3: Whole Scale Statistics

Mean	Variance	SD	N of Items	Alpha
139.55	198.12	14.08	40	.849

The Cronbach's Alpha value obtained based on internal consistency was also calculated as per general total scores. An internal consistency reliability coefficient (alpha) was also determined for each dimension and the whole scale. These alpha coefficients were 0.733 for the factor 1, 0.722 for the factor 2, 0.780 for the factor 3, 0.762 for the factor 4, and 0.849 for the whole scale (see table nos. 2 & 3). These values are acceptable as recommended by Tavakol & Dennick (2011).

3.5 Data analysis

The attitudes of the student-teachers towards CIA for the four factors were also analyze based on the argument that a Likert scale mean score of three indicates a neutral attitude, a mean score of less than three indicates a negative attitude, and a mean score of more than three indicates a positive attitude. The following was the range of interpretation for the mean score on the Likert scale: 1.0–2.4 (negative attitude), 2.5–3.4 (neutral attitude), and 3.5–5.0 (positive attitude) (Wanjohi & Syokau, 2021).

Table 4: Item Statistics (Factor 1)

No.	Item	M	SD	N	Attitude
1	Continuous internal assessment (CIA) enhances meaningful learning.	3.94	0.76	560	Positive

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2	CIA assesses the performance of the student-teachers in accordance with the course objectives.	3.47	1.03	560	Positive
3	CIA lets the student-teachers get more involved and vigilant in their learning activities.	3.64	0.97	560	Positive
4	CIA doesn't help in forming healthy study habits.	2.56	1.15	560	Neutral
5	CIA enhances the higher order thinking skills (HOTS).	4.25	0.76	560	Positive
6	CIA reduces the load on student-teachers' learning.	3.27	1.08	560	Neutral
7	CIA facilitates cooperation and collaboration among peers.	3.83	0.92	560	Positive
8	CIA leads to last-minute anxiety of examination.	2.84	1.14	560	Neutral
9	Conducting tests, assignments, and seminars frequently is a sheer waste of time.	3.72	0.79	560	Positive
10	CIA leaves no time for co-curricular activities.	3.92	0.79	560	Positive

An examination of table 4 shows that in the majority of the items in factor 1, such as item numbers 1, 2, 3, 5, 7, 9, and 10, the respondents have positive attitudes towards CIA, which is consistent with the mean scale value of 35.446 ± 3.749. This degree of approval is consistent with the item component of factor 1, where respondents also indicated a high recognition of the role of CIA in teacher education, e.g., item number 5, which states CIA enhances higher order thinking skills (HOTS), which is central to the concept of CIA, has the highest mean score of 4.25±0.76. Whereas, only in items 4, 6, and 8 have the respondents decided to remain neutral, indicating neutrality about their place in the subject matter; e.g., item number 4 has the lowest mean score of 2.56±1.15.

Table 5: Item Statistics (Factor 2)

No.	Item	M	SD	N	Attitude
11	Results are announced more quickly and regularly in CIA.	3.25	1.06	560	Neutral
12	An internal teacher-educator's evaluation is less accurate than an external examiner's.	3.44	1.02	560	Neutral
13	The teaching-learning process is enhanced by CIA.	4.33	0.64	560	Positive
14	In CIA, student-teachers attempt to win the favour of teacher Educator.	3.23	1.02	560	Neutral
15	CIA employs suitable measures for enhancing the student-teacher's learning.	3.82	0.78	560	Positive
16	Student-teachers are unhappy because CIA requires more and better work.	2.46	1.04	560	Neutral
17	CIA creates unhealthy competition among student-teachers.	3.36	1.07	560	Neutral
18	The only merit of CIA is that there will be less failure.	3.15	1.07	560	Neutral
19	In the CIA, a student-teacher's performance is taken for granted.	2.81	1.02	560	Neutral

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20	In the CIA, the student-teacher may appeal for reviewing the grades or marks awarded by the teacher-educator.	3.83	0.72	560	Positive

Table 5 demonstrates for factor 2 that the respondents had overall positive attitudes towards CIA, with agreement in item numbers 13, 15, and 20, indicating a highly positive assessment of their attitudes regarding CIA, though they had shown neutrality regarding item numbers 11, 12, 14, 16, 17, 18, and 19 with a mean scale score of 33.682±4.830. With a mean score of 4.33±0.64, item number13, which states the teaching-learning process is enhanced by CIA, had a higher level of agreement. This degree of approval is consistent with the factor 2 component (Table 5), where respondents also indicated a high recognition of the role of CIA in teacher education. The items' texts in factor 2 highlight the benefits of continuous internal assessment (CIA) for students and teachers. At a mean score of 2.46±1.04, item number 16 gets the highest number for the lower degree of neutrality, and item number 12, with a mean score value of 3.44±1.02, had the largest mean score of neutrality responses.

Table 6: Item Statistics (Factor 3)

No.		M	SD	N	Attitude
21	CIA procedures are simple to use.	2.65	0.91	560	Neutral
22	In the CIA, teacher-educators rarely diagnose the strengths and weaknesses of their student-teachers.	3.30	1.04	560	Neutral
23	Interaction between teacher-educators and student-teachers is augmented by CIA.	3.84	0.91	560	Positive
24	CIA allows teacher-educators to use various assessment tools and techniques.	4.14	0.61	560	Positive
25	CIA allows teacher-educators to adapt their lesson plans better to meet the needs of their student-teachers.	2.80	0.93	560	Neutral
26	Teacher-educators' workloads should be reduced for smooth assessment by CIA methods.	3.91	0.81	560	Positive
27	CIA is a teacher-centred examination system.	3.61	1.17	560	Positive
28	Teacher-educators often inflate marks in CIA.	3.95	0.67	560	Positive
29	In the CIA, teacher-educators encourage surface-level learning since student-teachers have little time for in-depth study.	3.98	0.97	560	Positive
30	In the CIA, teacher-educators encourage rote memorization by dictating notes.	2.79	0.92	560	Neutral

Table 6 showed that with a mean scale value of 34.966±4.601, the respondents had an overall highly positive attitude towards CIA for factor 3, which states the benefits of continuous internal assessment, with respondents expressing positivity in item numbers 23, 24, 26, 27, 28, and 29, whereas respondents expressed neutrality in item numbers 21, 22, 25, and 30 only. Item number 24, which states CIA allows teacher-educators to use various assessment tools and techniques, has the highest positive rating with a mean score of 4.14±0.61, while item number 22, which states teacher-educators rarely diagnose the strengths and weaknesses of their student-teachers, has the highest neutrality with a mean score value of 3.30±1.04, and item number 21, which states CIA procedures are simple to use, has the lowest neutrality mean score

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value of 2.65±0.91. This degree of approval is consistent with the factor 3 component (Table 6), where respondents also indicated a high recognition of the role of CIA in teacher education.

Table 7: Item Statistics (Factor 4)

No.	Item	M	SD	N	Attitude
31	It is best to retain the present form of the CIA system.	3.44	0.96	560	Neutral
32	A low teacher-student ratio is necessary for implementing CIA.	3.73	0.92	560	Positive
33	An effective monitoring system is necessary to strengthen CIA.	3.33	0.84	560	Neutral
34	In the present scenario, providing a quality evaluation by CIA is impossible.	3.46	1.01	560	Positive
35	CIA requires modification from time to time.	3.68	0.79	560	Positive
36	Successfully implementing CIA requires adequate training of the teacher-educators.	2.83	1.07	560	Neutral
37	CIA is highly irrelevant and not beneficial in the teaching-learning process.	3.63	0.93	560	Positive
38	Teacher education institutions do not favour CIA.	4.16	0.70	560	Positive
39	CIA does away with the shortcomings of the traditional one-shot examination system.	3.25	1.10	560	Neutral
40	Due to the pressure of submission and deadlines, student-teachers often copy assignments from one another.	3.93	0.81	560	Positive

Table 7 shows that with a 35.454±4.220, respondents had positive attitudes towards CIA for factor 4, highlighting the strengthening of continuous internal assessment (CIA). The respondents had positive attitudes in item numbers 32, 34, 35, 37, 38, and 40, whereas the respondents had neutrality only in item numbers 31, 33, 36, and 39. With a mean score of 4.16±0.70, item number 38 had the highest degree of agreement; with a mean score of 3.44±0.96, item number 31 had the highest neutrality; and item number 36, with a mean score of 2.83±1.07, had the lowest neutrality in agreement. This degree of approval is consistent with the factor 4 component, where respondents also indicated a high recognition of the role of CIA in teacher education.

4 Conclusions and Implications

The present study was conducted on a total of 560 student teachers comprising of 45% male and 56% female who are undergoing B.Ed. course organised by Manipur University. The preliminary scale had 80 items whereas the finalized version contained a total of 40 items and half of them were excluded on the basis of the evaluation of the expert judges. Furthermore, it was discovered that “The Attitudes towards Continuous Internal Questionnaire” had four factors. The Cronbach’s alpha coefficient for the scale was 0.849, which suggests that it is highly reliable. The purpose of the scale is to determine attitudes towards continuous internal assessment of student teachers.

Based on the described development and validation processes of the ACIAQ, the authors argued that a set of one valid and reliable instruments (ACIAQ) has been provided according to both theoretical and psychometric requirements. Consequently, these instruments will be of use for the research community at large, and specifically for the teacher education

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research community. As previously discussed, the questionnaires fill a significant void since there has been no comprehensive, holistic and validated instrument existing prior to now. The authors believed that the ACIAQ can be used in many different contexts, such as studying educational effectiveness, the implementation of assessment efforts in teacher education institutions, and the effect of policies on the awareness of people. ACIAQ can also be used in the assessment of the results of policy, communication, and teacher education initiatives at the individual level for a student teacher. This would necessitate measuring the constructions multiple times over the course of time, or at various times over the course of such initiatives. The results of initiatives in terms of changes in the CIA of groups of people as a whole or, depending on the dimensions of the questionnaire/subscales employed, their attitudes, will then be evaluated based on differences in the aggregated scores. It should also be taken into consideration that the ACIAQ has been developed and validated in the context of teacher education in Manipur, that is, a North-Eastern state of India. Therefore, caution should be exercised in terms of using the instruments in other contexts. In a future phase of research, it would be interesting to test the validity and reliability of the ACIAQ in different cultural contexts.As a result, the authors believe that the ACIAQ is a useful tool for gauging whether or not a student teacher's acceptance of lifelong learning and continuous professional growth is the norm for them, their peers, or their institution. It is feasible to provide a method for utilising scale scores. The difficulties brought up and the level of skill possessed by the instrument user will determine the most appropriate method to employ. One option is to compute the basic mean values (as well as standard deviations) for every item on each scale. The findings demonstrate the validity of this approach (since all Cronbach's alpha values support internal consistency) for the context of continuous internal assessment (CIA) as well as for the sub-constructs of CIA, including the benefits of CIA for teacher-educators, students-teachers, and teacher-educators, as well as for strengthening of CIA itself. In this scenario, for instance, users would create and aggregate scores for respondents' attitudes using the mean values of all the context of the Continuous Internal Assessment (CIA) items. Using the scale in this manner would probably be the easiest. But, there is also the option to consider the varying weights of each component within the construct, much like with all instruments based on items (s). In a similar vein, the authors urge other researchers to explore and operationalize attitudes towards continuous assessment by utilizing the ACIAQ. There is not yet a complete tool for gauging attitudes on continuous internal assessment. There are only incomplete questionnaire items that gauge attitudes regarding CCE. As a result, ACIAQ also present the chance to close a gap in the literature on teacher education.

References

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: a theoretical analysis and review of empirical research. *Psychol Bull*, 84, 888–918.

Allen, M. J. (2004). *Assessing Academic Programs in Higher Education.* San Francisco: Jossey-Bass.

Allport, G. (1935). Attitudes. In C. Murchison, *Handbook of social psychology* (pp. 798–844). Worcester: Clark University Press .

Black, P., & William, D. (1998, October 1). *Inside the Black Box: Raising Standards Through Classroom Assessment*. Retrieved from https://kappanonline.org/inside-the-black-box-raising-standards-through-classroom-assessment/.

ISSN:1517-4492 | **E-ISSN**:2178-7727

Brown, G. T. (2022). The past, present and future of educational assessment: A transdisciplinary perspective. *Front. Educ.*, 7, 1060633. doi: 10.3389/feduc.2022.1060633.

Chopra, V., & Gupta, D. (2013). *Learners' Attitude towards Continuous and Comprehensive Evaluation*. Retrieved from https://www.researchgate.net/publication/283052082.

Cyril, A. V., & Jeyasekaran , D. (2016). Attitude towards Continuous And Comprehensive Evaluation Of High School Students. *i-manager's Journal on Educational Psychology*, 9(4), 21-26.

De Sande, J. C., Arriero, L. E., Benavente, C. C., Fraile, R. M., Godino, J. I., Gutierrez, J., . . . Osma Ruiz, V. J. (2008). A case study: Final exam versus continuous assessment marks for electrical and electronic engineering students. *International Conference on Education, Research and Innovation, ICERI 2008.* Madrid, España.

Devellis, R. (2012). *Scale Development Theory and Applications.* New York: Sage Publications.

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes.* Harcourt Brace Jovanovich College Publishers.

Fishman, J., Lushin, V., & Mandell, D. (2020). Predicting implementation: comparing validated measures of intention and assessing the role of motivation when designing behavioral interventions. *Implement Sci Commun*, 1, 81.

Fishman, J., Yang, C., & Mandell, D. (2021). Attitude theory and measurement in implementation science: a secondary review of empirical studies and opportunities for advancement. *Implementation Sci*, 16, 87 https://doi.org/10.1186/s13012-021-01153-9.

Francis, J., Johnston, M., Eccles, M., Walker , A., Grimshaw , J. M., & Foy, R. (2004). Constructing questionnaires based on the theory of planned behaviour: a manual for health services researchers. In *Quality of life and management of living resources.* Centre for: Health Serivices Research.

Guion, R. (1977). Content validity - the source of my discontent. *Appl Psychol Meas*, 1, 1–10.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement* , 20, 141–151.

Khan, A. (2019, August 25). *Internal Assessment and External Assessment.* Retrieved from https://www.toppr.com/bytes/internal-assessment-and-external-assessment/.

Khatiwora, D. (2020). An Analysis of Attitude of Secondary School Teachers towards Continuous and Comprehensive Evaluation . *International Journal of Management (IJM)*, 11(10), 449-453.

Kumar, S., Kumari, R., & Gaurav, K. (2018). Attitude of Teachers towards Continuous and Comprehensive Evaluation. *International Journal For Innovative Research In Multidisciplinary Field*, 4(10), 312–316 .

ISSN:1517-4492 | **E-ISSN**:2178-7727

Lalnunfeli, D., Malsawmtluanga, H. T., Ralte, L., & Lalduhawmi, T. (2018). Attitude Towards Continuous And Comprehensive Evaluation (Cce): A Study Among Secondary School Teachers In Mizoram. *Open Access Inernational Journal of Science and Engineering*, 3(2), 14-20.

Manda, B., & Mete, J. (2022). A Study Of Attitude Towards Continuous And Comprehensive Evaluation Of Secondary Students In Relation To Their Socio-Economic Status. *International Journal of Creative Research Thoughts (IJCRT)*, 10(7), d710-d718.

Mcleod, S. (2023, June 23). *Components Of Attitude: ABC Model*. Retrieved from https://www.simplypsychology.org/attitudes.

Mola, D. W., & Shaw, D. (2024a). Analyzing The Reliability And Validity Of Talent Identification PracticesFor Athletes: An Adaptation Study. Educational Administration: Theory and Practice, 30(5), 12277-12284. https://doi.org/10.53555/kuey.v30i5.4248

Mola, D. W., & Shaw, D. (2024b). Assessing the reliability of the talent development environmental questionnaire: A pilot study. *International Journal of Research-Granthaalayah*, *12*(3), 117-122.

Mola, D. W., & Shaw, D. (2024c). Significance of Managerial Skills for Talent Development in EthiopianAthletes. International Journal of Kinesiology and Sports Science, 12(2), 21-29. http://doi.org/10.7575/aiac.ijkss.v.12n.2p.2

Muskin, J. A. (2017). *Continuous assessment for improved teaching and learning: a critical review to inform policy and practice". Current and Critical Issues in Curriculum, Learning and Assessment (13).* UNESCO International Bureau of Education.

NCTE. (2009). *National Curriculum Framework for Teacher Education: Towards Preparing Professional and Humane Teacher.* New Delhi: National Council for Teacher Education.

Nelson, R., & Dawson, P. (2014). A contribution to the history of assessment: how a conversation simulator redeems Socratic method. *Assessment & Evaluation in Higher Education*, 39(2), 195–204.

Parikh, B. A. (2014). Scale for measurment of attitude towards internal evaluation. In NCERT, *National Library of educational and psychological test: catalogue of test* (pp. 36, NTL-317). New Delhi: Deparment of educational psychology and foundation of education, NCERT.

Peterson, R., & Thurstone, L. (1932). *The effect of motion pictures on the social attitudes of high school children.* London: MacMillan.

Phukan, S., & Sultana, Y. (2021). Attitude Of Primary School Teachers Towards Continuous And Comprehensive Evaluation (Cce) With Special Reference To Dhemaji District, Assam. *PJAEE*, 18(5), 118-129.

Rana, S. S. (2015). Teachers' Attitude Towards Continuous and Comprehensive Evaluation. *Indian Journal of Applied Research*, 5(7), 412-414 .

ISSN:1517-4492 | **E-ISSN**:2178-7727

Rani, S. (2017). Attitude of Teachers towards Continuous Comprehensive Evaluation (CCE). *Int.J.Curr.Res.Aca.Rev.* , 5(9), 22-29.

Rathna, S. S., & Daniel, Y. (2016). Attitude of College Students towards Internal Assessment. *Research and Reflections on Education*, 14(4), https://www.sxcejournal.com/oct-dec-2016/attitude.pdf.

Sarkar, S., & Datta, R. (2016). *Manual for continuous and comprehensive evaluation attitude scale.* Agra: National Psychological Corporation.

Secondary Education Commission. (1952). *Report of the Secondary Education Commission.* New Delhi: Ministry of Education, Government of India.

Shukla, A. (2019, June 19). *Continuous Assessment – Features and Purpose*. Retrieved from https://www.toppr.com/bytes/continuous-assessment-features-and-purpose/.

Singh, A., & Roshni, D. (2013). Attitude scale for continous internal assessement. In A. Singh, & R. Desai, *Attitude of B.Ed. Students of the Maharaja Sayajirao University of Barode towards continuous internal assessment* (p. 102). Baroda: GRIN.

Singh, R., Ali, B., Ghaisas, S. W., Sridevi, B., & Priya, B. D. (2022). Attitude of Teachers, Students and Parents towards continuous and comprehensive evaluation. *International Journal of Early Childhood Special Education (INT-JECSE)*, 14(2), 4413-4417.

Soria, M. M., López-Pastor, V. M., Hortigüela-Alcalá, D., Pascual-Arias, C., & Fernández-Garcimartín, C. (2023). Formative and Shared Assessment and Feedback: an example of good practice in Physical Education in Pre-service Teacher Education. *Cultura, Ciencia y Deporte*, 18(55), 157-169.

Suskie, L. (2004). *Assessing Student Learning.* Bolton, MA: Anker.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.

Verma, G. (2012, April 28). *Continuous and Comprehensive Evaluation.* Retrieved from https://www.scribd.com/doc/91649539/Continuous-and-Comprehensive-Evaluation: https://www.scribd.com

Vitello, S., & Williamson, J. (2017). Internal versus external assessment in vocational qualifications: A commentary on the government's reforms in England. *London Review of Education*, 15(3), 536-548.

Wanjohi, A. M., & Syokau, P. (2021, November 8). *How to Conduct Likert Scale Analysis*. Retrieved from https://www.kenpro.org/how-to-conduct-likert-scale-analysis/.

ISSN:1517-4492 | **E-ISSN**:2178-7727