

Research Paper

Development and Standardization of the Socio-Emotional Competence Scale for Pre-Service Teachers

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ABSTRACT

The escalating need for socio-emotional competencies in the teaching profession highlighted the urgent need to develop a valid and reliable scale to measure these competencies. Moreover, pre-service teachers face demands: mastering classroom management, building positive student relationships, and modelling emotional skills, all while navigating the pressures of learning to teach. These demands necessitate a profession-specific assessment tool. Moreover, assessment of SEC in pre-service teachers will help guide teacher education curricula and professional development by highlighting specific training needs. This investigation presents a detailed SEC-Scale to measure various aspects of five core socio-emotional competencies, such as 1. Self-Awareness 2. Self-Management 3. Social Awareness 4. Relationship Management and 5. Responsible Decision-Making (CASEL, 2022). The scale development process includes a comprehensive procedure for item development based on existing literature and subject matter experts' opinions, followed by a pilot test on 45 pre-service teachers for refining the items. The scale employed a detailed item analysis and construct validity through factor analysis. The scale is highly reliable, which is evidenced by Cronbach's alpha of .958. Factor Analysis supported CASEL's SEL Framework competencies and identified five principal factors of socio-emotional competencies. This scale helps in the assessment of the SEC of pre-service teachers, which is very important to identify strengths and areas for growth early in their training, enabling targeted interventions before negative patterns become ingrained. Development of this scale offers a standardized method to assess socio-emotional competencies of pre-service teachers.

Keywords: *Socio-Emotional Competence, Factor Analysis, Pre-Service Teachers, CASEL's SEL Framework*

Social and emotional learning (SEL) is a developmental process through which children, adolescents, and adults gradually build essential skills, attitudes, behaviours, and values. This approach strengthens protective abilities while simultaneously reducing the likelihood of engaging in risky behaviours. Its primary outcomes include enhanced motivation for learning, improved academic achievement, lower rates of school dropout, and greater interest and involvement in school activities. In addition to these direct effects, secondary outcomes are observed, such as improved cooperation with others,

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stronger social and problem-solving skills, healthier lifestyles, increased social responsibility, reduced tendencies toward violence and substance misuse, and better family relationships (Gökel and Dağlı, 2017). Through emotional learning, learners become more able to build positive relationships, take greater responsibility within their families, and function as well-adjusted members of society. For this reason, incorporating social and emotional learning into teaching–learning programmes is considered essential. SEL can be understood as a structured process that integrates emotions, thoughts, and behaviours, enabling children and adolescents to fulfil life responsibilities successfully, meet their personal and social needs, and grow into productive members of society (Kabakçı and Korkut, 2008).

Wanless and Domitrovich (2015) defined the social and emotional learning process as the development of social and emotional abilities in children through several strategies such as direct teaching and student-centred applications that improve the analytical, communicative and cooperative competencies of students and create interesting learning environments.

Social and emotional learning consists of teaching children how they can manage their relationships, studies and behaviours and focuses on the development and application of competencies that form the foundations of life (Norman & Jamieson, 2015). It is hypothesized that in a social process of learning, the academic performance of students can be ensured by meeting the social, emotional and physical needs of students. Social and emotional learning is an approach that attempts to establish a connection between adaptation to school, academic success and the students' social lives (Totan, 2014; McCormick et al., 2015). Children with strong social and emotional learning competencies can calm themselves when they are angry, establish and sustain friendships, resolve conflicts respectfully and constructively and can make safe and ethical choices (Norman & Jamieson, 2015). CASEL (Collaborative for Academic, Social and Emotional Learning), which was founded at Illinois University in 1993 by Eileen & Daniel Goleman, conducted the first studies on social and emotional learning to examine the programmes implemented in the academic, social and emotional learning fields in the United States in an evidence-based manner and to create a new approach (Totan, 2014). CASEL is explained as a process that examines social learning under five sub-dimensions, namely self-awareness, self-management, social awareness, relationship competencies and effective decision-making and includes the development of children's social and emotional abilities (Esen-Aygun & Sahin-Taskin, 2017).

Several scale studies have been conducted on social-emotional learning competencies in recent years on elementary school students (Coryn et al., 2009; Kabakçı & Owen, 2010; Ji, Dubois & Flay, 2021), on secondary school level students (Totan & Kabasakal, 2013), and on adolescent students (Zhou & Ee, 2012). But a major gap was found in the field of teachers, and in the case of pre-service teachers, where socio-emotional competencies play a vital role in handling diverse learners, no suitable scale study was found to measure their competencies. Therefore, this scale development is an attempt to fill this gap and develop a 'Socio-Emotional Competence Scale' for pre-service teachers. Further, an overview of the scale is presented in Table 1.

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Table 1: Overview of the ‘Socio-Emotional Competence Scale’

Content	Description
Purpose	Relevance to measuring the Socio-Emotional Competencies of pre-service teachers
Theoretical Framework used	CASEL’s SEL Framework (Collaborative for Academic, Social and Emotional Learning), 2020
Dimensions	Based on the five CASEL’s SEL competencies
Validation steps	Item development and expert review, pilot testing, first try-out, reliability testing through Cronbach's Alpha method, construct validity through factor analysis, final try-out, and norm construction through percentile norms method

Rationale

Socio-Emotional Competence plays a crucial role in overall classroom management and student engagement, and it directly influences the mental health of teachers. Teachers with high socio-emotional competencies are better at dealing with stressful situations. Assessment of the socio-emotional competencies of pre-service teachers is very important to identify strengths and areas for growth early in their training, enabling targeted interventions before negative patterns become ingrained (Aldrup et al., 2020; Fitzgerald et al., 2022; Gebre et al., 2025).

Furthermore, there is a recognized lack of reliable, valid, and profession-specific measures for pre-service teacher’s socio-emotional competencies. Moreover, pre-service teachers face demands: mastering classroom management, building positive student relationships, and modelling emotional skills, all while navigating the pressures of learning to teach. These demands necessitate a profession-specific assessment tool. Henceforth, assessing socio-emotional competencies among pre-service teachers will help guide teacher education curricula and professional development by highlighting specific training needs.

Therefore, the study centers on the research questions below and systematically addresses them.

- **RQ1.** How can the Socio-Emotional Competence Scale for Pre-Service Teachers be designed to ensure content validity and adequately represent the construct?
- **RQ2.** What is the internal consistency reliability of the socio-emotional competence scale for pre-service teachers?
- **RQ3.** What are the fundamental factors or components that frame the structure of the socio-emotional competence scale for pre-service teachers?

Theoretical Framework Used

The investigator extensively reviewed the available literature on Social and Emotional Competencies. After an extensive review of the literature, the Socio-Emotional Competence Scale has been developed for pre-service teachers or students pursuing a B.Ed., D.El.Ed., M.Ed., or any other teacher-training program. The tool is based on CASEL’s SEL (2020) Framework of social and emotional competencies. This framework provides five core socio-emotional competencies, such as 1. Self-Awareness 2. Self-Management 3. Social Awareness, 4. Relationship Management and 5. Responsible Decision-Making (CASEL’s SEL, 2020). Based on these five competencies, dimensions were decided for the tool, and

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items were developed in alignment with these dimensions. A brief description of each dimension is as follows: -

1. **Self-Awareness (Recognizing Self-Emotions):** when an individual can recognize or have awareness of his/her own emotions, like his or her actions, mood patterns and confidence about his or her own strengths and weaknesses, etc.
2. **Social Awareness (Recognizing Others' Emotions):** when an individual can recognize or identify others' feelings and emotions just by observing their facial expressions, mood swings, positive or negative emotions, happy, sad, upset, angry and when someone needs emotional or social support, etc.
3. **Self-Management (Self-Emotion Regulation):** When an individual can manage or regulate his emotions in diverse conditions of hard or challenging environments and can focus on the goal, whether his or her actions are emotion-directed or thought-directed.
4. **Relationship Management:** Encompasses understanding and giving due respect to maintain healthy relationships with students, teachers, friends, family members, colleagues, bosses/mentors/supervisors, etc.
5. **Responsible Decision-Making:** Decision by considering all relevant factors, long-term effects, seeking advice or making a decision based on emotions.

METHOD

A comprehensive quantitative research approach was used for the development and standardisation of the scale. The investigator systematically followed the steps of scale development, standardization and norms construction. The process included a comprehensive procedure for item development based on the reviewed existing literature and subject matter experts' opinions, followed by a pilot test on a small group, a first try-out, item analysis for refining the items and a final try-out on a large sample for standardization. The scale employed a detailed item analysis and construct validity through factor analysis.

RESULTS

In this section, the investigators meticulously presented the development and standardization process of the scale. Concurrently, this section delves into the methods employed to assess reliability and validity, including factor analysis for establishing construct validity. The scale development involves the following steps as follows:

Research Question 1: Content Validity and Adequate Representation of the Construct

- *Preparation of Draft Scale:* To develop a socio-emotional competencies scale for pre-service teachers, initially, 70 items/statements were constructed in alignment with the above five dimensions, considering the Indian teacher training context. Care was taken that items were simple and free from ambiguity. The preliminary pool of items was sent to a panel of experts in education and psychology to confirm item relevance and to ensure content validity. Based on expert suggestions, 09 items were eliminated and 61 retained with some modifications. Each item was framed on a 5-Point Likert Scale ranging from 'Strongly Disagree (1) to Strongly Agree (5).
- *Pilot Testing:* The revised tool with 61 items was administered on a small target group of 45 participants for pilot testing, and the feedback data were used for detailed item analysis and revision to enhance accuracy and clarity. This step is very important for the assessment of the scale's comprehensibility and relevance, which leads to further refinement.

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- *First Try Out:* To establish the validity & reliability of the tool, a draft tool containing a total of 61 items was administered to 90 pre-service teachers who were pursuing B.Ed. from various teacher training institutions affiliated with various teacher training institutions of Gujarat through Google Forms. All the data was entered into an Excel sheet and exported to SPSS software.

Research Question 2: Reliability and Validity Assessment

The internal consistency reliability of the tool was established by computing Cronbach's Alpha test. It was computed twice: first, before item analysis, and then after item analysis. Construct validity was assessed through exploratory factor analysis, which verified the clustering of items under the five dimensions.

- *Reliability Assessment Before Item Analysis:* In constructing the "SEC Scale for Pre-service Teachers," the investigator conducted a meticulous item analysis process. The instrument's reliability was evaluated using Cronbach's alpha, ultimately refining the tool to better measure the construct of interest (Adams & McGuire, 2022). Table 2 shows that Cronbach's alpha value before the item analysis process is .955, which indicates a high level of internal consistency of the tool.

Table 2: Cronbach's Alpha Value of the SECS before the Item Analysis

Cronbach's Alpha	N of Items
.955	61

Table 2 shows the reliability of the tool. The tool's Cronbach's alpha value is .955, indicating that the tool is reliable. All 61 items were shown to have internal consistency and, therefore, considered for the final draft of the tool.

Table 3. Showing the Correlation between Socio-Emotional Competence and its Different Dimensions

		Inter-Item Correlation Matrix					
Correlations		SA (RSE)	SA (ROE)	SM (SER)	RM	RDM	SEC Total
SA (RSE)	Pearson Correlation	1	.882**	.781**	.836**	.794**	.927**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	90	90	90	90	90	90
SA (ROE)	Pearson Correlation	.882**	1	.849**	.852**	.818**	.956**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	90	90	90	90	90	90
SM (SER)	Pearson Correlation	.781**	.849**	1	.804**	.726**	.899**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	90	90	90	90	90	90
RM	Pearson Correlation	.836**	.852**	.804**	1	.796**	.931**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	90	90	90	90	90	90

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Correlations		SA (RSE)	SA (ROE)	SM (SER)	RM	RDM	SEC Total
RDM	Pearson Correlation	.794**	.818**	.726**	.796**	1	.898**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	90	90	90	90	90	90
SEC Total	Pearson Correlation	.927**	.956**	.899**	.931**	.898**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	90	90	90	90	90	90

** . 'Correlation is significant at the 0.01 level (2-tailed)'.

Table 3 shows the inter-item correlation values of each socio-emotional competence. The table shows a perfect correlation between each component item. The table shows a strong positive inter-item correlation between the domains and total socio-emotional competence, which indicates a strong internal consistency, explaining that all the items are contributing to measuring the same underlying construct while also having unique information.

Research Question 3: Construct Validity via Factor Analysis

To establish the psychometric properties of the SEC-Scale, pre-service teachers from Gujarat State were selected. The total sample size consisted of 250 respondents. Initially, a list of 61 items was prepared. A 61-item list was given to a language expert for language correction, 3-subject experts for content validation and only those items were retained on which the experts were unanimous on their retention. The final scale consists of five dimensions and 54 statements, viz. Self-Awareness (Recognizing Self-Emotions-10 statements), Social- Awareness (Recognizing Others' Emotions-12 statements), Self-Management (Self-Emotion Regulation-07 statements), Relationship Management (11 statements) and Responsible Decision Making (11 statements). All statements loaded significantly with a factor loading of 0.5.

- *Item Analysis and Scale Refinement:* The parameters of item retention and validity of SECS were checked by carrying out Principal Component Analysis (PCA) through the prior examination of the communality value, which confirms which items should be retained for the scale; the Kaiser–Meyer–Olkin measure of sampling adequacy (KMO); and Bartlett's test of sphericity. In addition, internal consistency was explored using Cronbach's alpha (Adams & McGuire, 2022). PCA was used to calculate the number of variables using the Varimax-Kaiser Normalisation, and a five-factor solution was proposed.

To validate the SEC scale, the investigator followed the construct validity method of the exploratory factor analysis technique. The data collected were analyzed with statistical techniques in SPSS (Statistical Package for Social Sciences) version 27.0. First of all, KMO measures of sampling adequacy and Bartlett's test of sphericity were applied to ensure the suitability of factor analysis and sample adequacy. After this, the communalities' values are determined (Table 4). The items having communalities values above 0.5 were selected for the scale, and the rest were discarded. The five factors were extracted from the variables with factor loads greater than 0.5, which together explain an eigenvalue greater than 1.0 and a cumulative variance of 67.884 per cent.

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This seems to be a good bargain, because, of the total variables, five factors are extracted in an economized fashion. A total of 67.884 per cent of information is retained by the above-mentioned five factors extracted, and only 32 per cent of information is lost out of the total variables. All the factors had been given appropriate names according to the nature of the variables incorporated in them.

Table 4. Extraction Method: Principal Axis Factoring–Communalities Table

Items	Initial	Extraction
I am aware of my thoughts and actions.	1.000	.728
I can recognize my emotions and their effect on students.	1.000	.901
I can recognize my feelings in different situations.	1.000	.850
I can identify my strengths for improvement as a future educator	1.000	.833
I am confident in handling diverse student behaviours.	1.000	.849
It is easy for me to understand why I feel different.	1.000	.793
I can reflect on my emotions and how they influence my teaching style	1.000	.861
I have faith in my abilities to face challenges.	1.000	.910
It is difficult to recognize that motivates me to become a teacher.	1.000	.864
I often blame others for my mistakes instead of reflecting on them.	1.000	.813
I can identify students' feelings with their facial expressions.	1.000	.879
I can sense students' thinking when they are happy, sad, or angry.	1.000	.893
I can understand the reasons behind students' reactions.	1.000	.804
I usually sense why a student is upset.	1.000	.892
I try to understand my students' perspectives before responding to their concerns	1.000	.865
I can recognize when students need emotional support.	1.000	.793
I listen carefully to students to understand their feelings.	1.000	.911
It is easy for me to understand why students react differently in similar situations.	1.000	.853
I can recognize that a student needs academic help.	1.000	.863
I always consider how my words affect others.	1.000	.806
I can connect with learners on an emotional level.	1.000	.911
I often misunderstand students' feelings.	1.000	.953
I can adjust well to new or unfamiliar situations.	1.000	.877
I can regulate my emotions even when dealing with challenging student behavior.	1.000	.883
I can work towards my goals even when faced with obstacles.	1.000	.840
My actions are often dictated by my emotions.	1.000	.865
When upset, I cannot focus.	1.000	.868
I can maintain patience when students do not understand a concept.	1.000	.888
I find it difficult to stay motivated when facing teaching-related challenges.	1.000	.829
I apologize when I unintentionally hurt a student or a friend.	1.000	.889
I usually offer comfort to students when they are feeling down.	1.000	.691
I avoid criticizing my students and friends during disagreements.	1.000	.890
I foster positive relationships with students and colleagues.	1.000	.897
I listen actively to students and colleagues during discussions.	1.000	.813
I often criticize others during arguments.	1.000	.828
I can resolve conflicts with students or colleagues constructively.	1.000	.814
I tend to ignore others' feelings when I am frustrated.	1.000	.859

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Items	Initial	Extraction
I avoid discussing problems, even when they affect my relationships.	1.000	.906
I work well with students and teachers in group activities.	1.000	.851
I can maintain long-term friendships.	1.000	.702
I often act impulsively without considering how it affects my relationships.	1.000	.885
I consider the impact of my decisions before acting.	1.000	.793
I review relevant factors before making recommendations.	1.000	.922
I evaluate both the pros and cons of a strategy before using it.	1.000	.930
I make decisions that align with my educational philosophy and professional ethics.	1.000	.847
I seek advice from others when making difficult decisions.	1.000	.799
I ignore the long-term effects of my choices.	1.000	.910
I find it easy to judge whether a decision is right or wrong.	1.000	.832
I always think about alternative solutions before making a decision.	1.000	.768
I sometimes make classroom decisions based on emotions rather than logic.	1.000	.771
I learn from past mistakes and make better choices in the future.	1.000	.859

Communalities values are used to decide whether the specific item is supposed to be retained or dropped based on how well it loads on the factor structure. Table 4 displays the initial communalities before rotation, which represent the extent to which each variable shares variance with all other variables in the analysis, and this suggests that each variable contributes meaningfully to the underlying factor structure and appropriateness of the factor analysis.

Table 5. KMO and Bartlett's Test of SECS

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.671
Bartlett's Test of Sphericity	Approx. Chi-Square
	7582.298
	Df.
	1891
	Sig.
	.000

Table 5 shows that the computed KMO was .671, higher than the suggested limit of 0.6 (Field, 2005), it is considered perfectly suitable for this dataset. Bartlett's test of sphericity produced a significant result ($0.000 < 0.1$). It shows that the data is multivariate normal and acceptable for data analysis.

Table 6. Total Initial Eigenvalues for SECS showing its total Variance

Factors	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.002	31.151	31.151	19.002	31.151	31.151
2	15.115	24.779	55.931	15.115	24.779	55.931
3	2.821	4.625	60.556	2.821	4.625	60.556
4	2.419	3.966	64.521	2.419	3.966	64.521
5	1.151	3.363	67.884	1.151	3.363	67.884

Total Variance Explained

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Table 6 indicates that the total variance explained in the data for the first five factors accounts for approximately 67.88% (Factor 1=31.151%, Factor 2= 24.779%, Factor 3=4.625%, Factor 4=3.966%, and Factor 5=3.363). Factors beyond the 5th factor explain only small proportions of variance, which indicates that retaining the five factors gives a good explanatory percentage with an initial eigenvalue greater than 1.

Table 7. Rotated component matrix - five criteria and features

No.	Statement	Component with Loading				
		1	2	3	4	5
Dimension 1: Recognizing Self-Emotions						
SEC1	I am aware of my thoughts and actions.	.604				
SEC6	I can recognize my emotions and their effects on student interactions	.522				
SEC11	I can recognize my feelings in different situations.	.686				
SEC15	I can identify my strengths for improvement as a future educator	.763				
SEC20	I am confident in handling diverse student behaviour.	.529				
SEC26	It is easy for me to understand why I feel different.	.653				
SEC31	I can reflect on my emotions and how they influence my teaching style.	.611				
SEC36	I have faith in my abilities to face challenges.	.619				
SEC41	It is difficult to recognize that motivates me to become a teacher.	.716				
SEC45	I often blame others for my mistakes instead of reflecting on them.	.508				
Dimension 2: Recognizing others' Emotions						
SEC2	I can identify students' feelings with their facial expressions.		.707			
SEC7	I can sense students' thinking when they are happy, sad, or angry.		.721			
SEC12	I can understand the reasons behind students' reactions.		.624			
SEC16	I usually sense why a student is upset.		.623			
SEC21	I try to understand my students' perspectives before responding to their concerns		.759			
SEC27	I can recognize when students need emotional support.		.722			
SEC32	I listen carefully to students to understand their feelings.		.725			
SEC34	It is easy for me to understand why students react differently in similar situations.		.704			
SEC37	I can recognize that a student needs academic help.		.655			
SEC42	I always consider how my words affect		.681			

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	others.	
SEC46	I can connect with learners on an emotional level.	.705
SEC49	I often misunderstand students' feelings.	.701
<i>Dimension 3: Regulation of Self-Emotions</i>		
SEC3	I can adjust well to new or unfamiliar situations.	.597
SEC8	I can regulate my emotions when dealing with challenging students.	.519
SEC17	I can work towards my goals even when faced with obstacles.	.669
SEC22	My actions are often dictated by my emotions.	.595
SEC28	When upset, I cannot focus.	.727
SEC33	I can maintain patience when students do not understand a concept.	.726
SEC38	I stay motivated when facing teaching-related challenges.	.734
<i>Dimension 4: Managing Relationship</i>		
SEC4	I apologize when I unintentionally hurt a student or a friend.	.704
SEC9	I usually offer comfort to students when they are feeling down.	.642
SEC13	I avoid criticizing my students and friends during disagreements.	.606
SEC18	I foster positive relationships with students and colleagues.	.808
SEC23	I listen actively to students and colleagues during discussions.	.729
SEC25	I often criticize others during arguments.	.659
SEC29	I can resolve conflicts with students or colleagues constructively.	.590
SEC39	I tend to ignore others' feelings when I am frustrated.	.532
SEC43	I avoid discussing problems, even when they affect my relationships.	.774
SEC47	I work well with students and teachers in group activities.	.546
SEC50	I can maintain long-term friendships easily.	.568
<i>Dimension 5: Responsible Decision Making</i>		
SEC5	I often act impulsively without considering how it affects my relationships.	.785
SEC10	I consider the impact of my decisions before acting.	.705
SEC14	I review relevant factors before making recommendations.	.771
SEC19	I evaluate both the pros and cons of a strategy before using it.	.791
SEC24	I make decisions that align with my	.766

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	educational philosophy and professional ethics.	
SEC30	I seek advice from others when making difficult decisions.	.575
SEC35	I ignore the long-term effects of my choices.	.749
SEC40	I find it easy to judge whether a decision is right or wrong.	.585
SEC44	I always think about alternative solutions before making a decision.	.650
SEC48	I sometimes make classroom decisions based on emotions rather than logic.	.737
SEC51	I learn from past mistakes and make better choices in the future.	.650

Table 7 shows dimension-wise factor loadings ranging from 0.508 to 0.808, which are considered moderate to high or good to excellent for item retention as per standard guidelines, indicating that loadings above 0.5 are good for retention of items.

- *Reliability Assessment after Item Analysis:* Initially, the scale consisted of 61 items. However, item analysis through PCA communalities values against each item suggested that item numbers 2, 12, 18, 26, 29,31,36,37,54, and 55 were deleted because the communalities values of these items were found to be less than 0.05. These items were dropped from the final scale, and the serial numbers of the retained 51 items were changed after deleting the 10 items mentioned.

Table 8: Cronbach's Alpha Value of the SECS After the Item Analysis

Cronbach's Alpha	N of items
.958	51

Table 8 indicates a higher Cronbach's alpha, indicating improved internal consistency after deleting the items having poor factor loading (Vijila & Thiyagu, 2019). Following these adjustments, the scale was reduced to 51 items. This decision was based on the statistical recommendation that the removal of these items would enhance the overall reliability of the scale (Cohen et al., 2002). Table 8 displays the results, indicating that Cronbach's alpha value was .958 for the 51 items retained after removing ten items during the item analysis process. This high Cronbach's alpha value suggests that the tool exhibits a strong level of internal consistency, affirming its reliability in measuring the intended constructs following the refinement of the item pool (Adams and McGuire, 2022). This measure was employed to assess the scale's internal consistency with 51 items of the final draft. Consequently, this confirms the reliability of the instrument (Thiyagu, 2021). In this way, the final draft had 51 items, whose distribution in the Five Dimensions is given in Table 7.

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Table 9. Reliability Statistics: The Cronbach's Alpha Value of the Components of SECS

Components	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Self-Awareness (Recognizing Self-Emotions)	189.64	1093.49	0.891	0.943
Social Awareness (Recognizing Others' Emotions)	184.89	954.684	0.925	0.936
Self-Management (Self-Emotion Regulation)	195.29	1083.871	0.848	0.949
Relationship Management	189.44	1000.856	0.888	0.942
Responsible Decision Making	186.07	1041.636	0.839	0.95

Table 9 shows the Cronbach's Alpha value of each factor included in the SECS. The table reveals that all five factors included in the SECS are highly reliable, as Cronbach's alpha value lies between 0 and 1.

Table 10: Item Distribution as per Domains of Final SECS

S. No.	Dimension Name	S. No. of Items	Total
I.	Self-Awareness (Recognizing Self-Emotions)	1,6,11,15,20,26,31,36,41,45	10
II.	Social Awareness (Recognizing Others' Emotions)	2,7,12,16,21,27,32,34,37,42,46,49	12
III.	Self-Management (Self-Emotion Regulation)	3,8,17, 22,28,33,38	07
IV.	Managing Relationship	4,9,13,18,23,25,29,39,43,47, 50	11
V.	Responsible Decision Making	5,10,14,19,24,30,35,40,44,48,51	11
Total			51

Table 11: Nature-Wise Distribution of Items in Final SECS

S R.	Item Type	Sr. No. of Items in Final Scale	Total
1.	Positive Items	1,2,3,4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,23,24,26,27,29,30,31,32,33,36,37,38,40,43, 44, 46, 47, 49, 51	39
2.	Negative Items	5, 22,25,28,34,35,39,41,42,45,48,50	12

Table 10 indicates the item numbers and total items dimension-wise, whereas Table 11 shows the nature of items (positive and negative).

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Administration and Scoring System

This tool is supposed to be administered to the pre-service teachers in their natural environment. The researcher will explain the purpose and importance of their participation in the study. In addition, the participants will be assured that their responses will be kept confidential and used only for research purposes. The scale will be distributed, and participants will be asked to provide the required information. Though the time limit stipulated was 20 minutes, it was not strictly adhered to. After establishing validity and reliability, the final draft of the tool is ready for data collection. It contains 51 items in total in different subscales. The response to each item was decided on a Likert-type five-point alternative response, viz., Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, and Strongly Disagree pattern of Scoring of items was followed. The scoring system was as in Table No. 12.

Table 12: Scoring System

Nature of Item	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
Positive	5	4	3	2	1
Negative	1	2	3	4	5

FINAL TRY OUT

A sample of 250 participants is selected by using a random sampling technique, as this method is suitable for more generalized and robust findings by ensuring proper representation of the population in an unbiased way (Vasileiou et al. 2018; Cormier et al. 2020). To establish the tool's norms, the final draft, containing a total of 51 items, was administered for a final try-out to 250 pre-service teachers pursuing B.Ed. from various teacher training institutions in Gujarat via Google Forms. All the data are entered into an Excel sheet and exported to SPSS software. Further statistics were performed as shown in Tables 13 and 14.

Table 13: Descriptive Statistics of the Socio-Emotional Competences Scale (Total SEC's and Dimension-wise)

	N	Mean	Std. Error of Mean	Median	Range	Std. Deviation	Skewness	Kurtosis
SEC Total	250	197.42	2.352	206.00	105	37.192	-.018	-1.648
SA(RSE)_Total	250	38.87	.468	40	25	7.396	-.200	-1.185
SA(ROE)_Total	250	47.43	.599	49	27	9.472	.081	-1.551
SER_Total	250	25.94	.384	25	20	6.071	-.147	-1.477
MR_Total	250	42.50	.545	44	32	8.620	-.209	-1.134
DM_Total	250	42.68	.532	44	25	8.416	-.094	-1.521
Valid N (listwise)	250							

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Descriptive statistics for Socio-Emotional Competence and its various dimensions 1. Self-Awareness (Recognizing Self-Emotions), Social Awareness (Recognizing Others' Emotions), Self- Management (Self-Emotional Regulation), Managing Relationships, and Responsible Decision Making are shown in Table 13, whereas Table 14 points towards the number of items per dimension along with the range of scores.

Table 14. Range of Scores of Each Dimension of Socio-Economic Competence

S.No.	Dimension	Total No. of Items	Range of Scores
I.	Self-Awareness (Recognizing Self-Emotions)	10	10-50
II.	Social Awareness (Recognizing Others' Emotions)	13	13-65
III.	Self- Management (Self-Emotion Regulation)	07	07-35
IV.	Managing Relationship	10	10-50
V.	Decision Making	11	11-55
	TOTAL SEC	51	51-255

ESTABLISHMENT OF NORMS

To establish norms for interpreting the level of the Socio-Emotional Competence Scale (SECS), the study applied the percentile norms following Crawford et al. (2009) using SPSS tutorial guidelines (Baumgartner, 2009). Percentile norms were derived using SPSS Percentile commands for the 25th, 50th and 75th percentiles, respectively. Furthermore, the three categories of **Low, Moderate and High** were framed, which indicate below average, average and above average levels of socio-emotional competencies of the SECS scale for the pre-service teachers.

Table 15: Showing Classification of the total Scores of SEC and its Dimensions in Terms of Percentile Norms

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average (Definition)	SEC Total	147.55	151.00	156.00	206.00	234.00	243.00	245.00
	SA (RSE)_ Total	26.55	29.00	31.75	40.00	46.00	48.00	50.00
	SA (ROE) Total	33.00	35.00	39.00	49.00	57.00	60.00	60.00
	SER_ Total	19.00	19.00	20.75	25.00	31.00	34.00	35.00
	MR_ Total	31.00	31.00	34.00	44.00	50.00	54.00	54.00
	DM_ Total	30.00	32.00	35.00	44.00	50.25	53.00	54.00
		0						
Tukey's Hinges	SEC Total			156.00	206.00	234.00		
				0	0	0		
	RSE Total			32.00	40.00	46.00		
	ROE Total			39.00	49.00	57.00		
	SER Total			21.00	25.00	31.00		

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MR Total	34.00	44.00	50.00
DM Total	35.00	44.00	50.00

Percentile for perceived stress among pre-service teachers with respect to Total Socio-Emotional Competence (SEC Total) and its various dimensions, Self-Awareness (Recognizing Self-Emotions), Social Awareness (Recognizing Others' Emotions), Self-Management (Self-Emotional Regulation), Managing Relationship (MR) and Decision Making (DM) is shown in Table 15.

A high level of Socio-Emotional Competence for pre-service teachers is above the score 234 on percentile 75, a moderate level is from 156 to 234 on percentile 50, and a low level is below the score 156 on percentile 25.

Furthermore, the normative classification of scores of SEC total and dimension-wise based on percentile ranges with high, moderate and low levels is given in Table 16.

Table 16. Normative Classification of Scores Across Dimensions Based on the Percentile Ranges

Factor Names	Low	Moderate	High
	≤25 th Percentile	25 th –75 th Percentile	>75 th Percentile
Total Socio-Emotional Competence	Below 156	156-234	Above 234
Self-Awareness (Recognizing Self-Emotions)	Below 32	32-46	Above 46
Social Awareness (Recognizing Others' Emotions)	Below 39	39-57	Above 57
Self-Management (Self-Emotion Regulation)	Below 21	21-31	Above 31
Managing Relationship	Below 34	34-50	Above 50
Decision Making	Below 35	35-50	Above 50
Interpretation Levels: - Low=Below Average; Moderate=Average; High=Above Average			

Table 16 shows normative values related to pre-service teachers' level of Socio-Emotional Competencies.

1. **Low Socio-Emotional Competence (Below Average)** =According to this table, pre-service teachers who score '**156 or below**' have a below-average SEC level and come under the category of 'Low Socio-Emotional Competence'.
2. **Moderate Socio-Emotional Competence (Average)**=Whereas those who score '**from 156-234**' have an average level of SEC and come under the category of 'Moderate Socio-Emotional Competence'.
3. **High Socio-Emotional Competence (Above Average)** =An above-average level of SEC is achieved by those who score '**234 and above**', who can be considered as 'High Socio-Emotional Competence'.

Similarly, the range of scores is mentioned in the table for each dimension of Socio-Economic Competence, and interpretation levels are given for each dimension of scores.

CONCLUSION

The current study constructed and validated a comprehensive socio-emotional competencies scale for pre-service teachers, which is an important tool for assessment of socio-emotional competencies of future teachers during teaching training itself. The scale has good reliability and validity, reflecting a proven step of empirical research. The study followed factor analysis and the percentile method for norm establishment, whereas future research may apply z-scores for norm establishment. The study adds to the expanding body of knowledge, which reaffirms its importance as an educational tool. In conclusion, while this study aligns well with CASEL's framework of socio-emotional competencies, it also extends the discussions by offering a valid and reliable scale.

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Conflict of Interest

The author(s) declared no conflict of interest.

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