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Exploring the Effect of Teacher-student and Student-student Rapport on Classroom Sense of Community and Students' Classroom Engagement

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Abstract

The aim of the current study was to explore the effect of teacher-student rapport and student-student rapport on classroom sense of community and students' classroom engagement among Iranian secondary high school EFL learners. For this to be done, 300 teenage students from different high schools in Golestan province, Iran were recruited through random sampling to partake in the study. For the data to be collected, three questionnaires (teacher-student rapport and student-student rapport scale, classroom sense of community scale, and students' classroom engagement scale) were distributed among the participants. A total of 57 6-Likert items were answered by the students. Using Exploratory factor analysis (EFA), Pearson correlation, and Mediation analysis, it was revealed that there was a significant correlation between teacher-student rapport and student-student rapport and classroom engagement and classroom sense of community. In addition to that, it was revealed that a classroom sense of community had a direct and significant effect on students' engagement. The implications of this study are mainly for the teachers to provide a friendly relationship with their students and with the students themselves so that they can feel relaxed and safe to be engaged in the learning process.

Keywords: Classroom Sense of Community, Rapport, Teacher-Student Rapport, Students' Classroom Engagement, Student-Student Rapport,

1. Introduction

1.1. Rapport, Teacher-Student Rapport, and Student-Student Rapport

The term rapport refers to the general connection between two individuals that involves a shared, dependable, and cooperative

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relationship (Catt et al., 2007; Faranda & Clarke, 2004; Gremler & Gwinner, 2000). According to reports from students, rapport is a vital quality of an effective educator (Catt et al., 2007; Faranda & Clarke, 2004; McLaughlin & Erickson, 1981; Perkins et al., 1995). While rapport is considered crucial by students, there is relatively less understanding of rapport compared to other relational aspects within the classroom (such as the sense of community or engagement of students).

In the scholarly realm, the establishment of a constructive association between educators and learners, commonly referred to as teacher-student rapport (TSR), is crucial (Wilson et al., 2010). This bond is formed when there is a favorable alignment and efficient emotional interaction in human engagements, such as between instructors and their pupils. Dyrenforth (2014) emphasizes the importance of this connection by stating that the capacity to elicit affirmative sentiments in students differentiates a proficient college teacher from an exceptional one.

Student-student rapport (SSR), also known as peer rapport, refers to the positive relationship that exists among students in a classroom setting. In an English as a Foreign Language (EFL) context, the importance of SSR cannot be overemphasized, as it has been shown to have a significant impact on language learning outcomes. This relationship between students can facilitate collaboration, improve motivation, and enhance language proficiency (Hadfield & Dörnyei, 2013).

According to Jiang and Dewaele (2019), SSR can be measured by examining the quality and frequency of interactions between students in the classroom. Positive interactions among students can lead to greater engagement, better understanding, and improved language production. Conversely, a lack of rapport can lead to negative outcomes such as reduced motivation and decreased language proficiency.

Research has shown that fostering SSR can be achieved through a variety of methods, such as cooperative learning activities, peer teaching, and group projects (Dornyei & Csizer, 2012). In addition, the use of technology, such as online discussion forums and social media platforms, has been found to enhance SSR (Ouyang et al., 2020).

In conclusion, TSR and SSR are important aspects of the EFL classroom, as they can facilitate collaboration, improve motivation, and enhance language proficiency (Sull, 2014). Teachers can foster this rapport by incorporating cooperative learning activities, peer teaching, group projects, and the use of technology (Foster, 2022).

1.2. Classroom Sense of Community

Classroom sense of community (CSC) refers to the degree to which students in a classroom feel a sense of belonging, trust, and mutual support with their peers and teacher. In an EFL context, where students are learning a new language and cultural norms, building a sense of community can have positive effects on language learning outcomes, social integration, and academic achievement (Yılmaz & Yılmaz, 2023).

One key factor that contributes to the development of CSC is positive TSR. When teachers establish caring, supportive, and respectful relationships with their students, it can foster a sense of trust and belonging in the classroom (Flanigan et al., 2021). Another important factor is peer interaction and collaboration. When students work together and support each other in their language learning journey, it can lead to a sense of shared purpose and community (MacVicar et al., 2015).

Research has shown that a CSC is positively associated with a range of outcomes, including academic motivation, academic achievement, and overall well-being (Wang et al., 2021). Therefore, fostering a sense of community in EFL classrooms can be beneficial for both students' language learning and social-emotional development.

Developing a CSC in EFL classrooms is important for a few reasons. Firstly, it can help students to feel more comfortable and secure in their learning environment, which can lead to increased motivation and engagement (Wang et al., 2021). Secondly, it can facilitate social integration and help students to build positive relationships with their peers, which can be especially important for students who are new to a culture or language (MacVicar et al., 2015). Finally, it can have a positive impact on language learning outcomes, as students who feel a sense of community may be more willing to take risks and participate actively in class (Dawson, 2006).

Overall, developing a CSC in EFL classrooms can be beneficial for both language learning and social-emotional development. Teachers can foster CSC by creating a positive and supportive learning environment, promoting peer collaboration and interaction, and building positive relationships with their students.

1.3. Students' Classroom Engagement

Students' classroom engagement (SCE) is a critical concept in education as it is strongly linked to academic success and achievement (Fredricks et al., 2004). In an EFL context, SCE refers to the extent to which students actively participate in the learning process, which includes

their motivation, interest, and involvement in learning English (Rahimi & Zhang, 2022).

In an EFL context, SCE involves multiple aspects such as active participation, attention, motivation, interest, and involvement in the learning process. Active participation refers to the extent to which students are involved in classroom activities, such as answering questions, participating in discussions, and asking questions. Attention refers to the degree to which students focus on the learning task and avoid distraction. Motivation refers to the students' desire or willingness to learn English, which can be intrinsic or extrinsic. Interest refers to the degree to which students find the learning material engaging and appealing. Involvement refers to the extent to which students take ownership of their learning and actively pursue their goals (Martin & Furr, 2010).

Research has shown that high levels of SCE are associated with a range of positive outcomes, including increased academic achievement, improved academic performance, and better student satisfaction with the learning experience (Fredricks et al., 2004; Wang et al., 2021; Rahimi & Zhang, 2022). In contrast, low levels of SCE are linked to negative outcomes, such as lower academic achievement, increased dropout rates, and decreased motivation to learn (Fredricks et al., 2004).

To enhance student engagement in the EFL classroom, educators can use various teaching strategies. For instance, technology can be used to create interactive and engaging learning environments, such as using online games, videos, and digital resources to supplement traditional classroom materials (Song et al., 2020). Active learning strategies, such as group discussions, peer teaching, and project-based learning, can also foster SCE by promoting collaboration, interaction, and critical thinking (Liu, 2023). Additionally, student-centered approaches, such as personalized learning, can help to create a more supportive and inclusive learning environment that caters to the needs and interests of individual students (Dolan et al., 2017).

Since this study aims to find out whether or not there is any relationship among TSR, SSR, CSC, and their interrelationship with the SCE in an EFL classroom, it can shed more light on the previous literature helping to understand the relationship among different dependent and independent variables. Practically it might promise some implications for the teachers, students, teacher training organizations, etc.

To fulfill the objectives of the study, the following research questions are set:

Q1: Is there any statistically significant relationship between TSR and SCE among high school EFL learners?

Q2: Is there any statistically significant relationship between SSR and SCE among high school EFL learners?
Q3: Does CSC mediate the effect of TSR on SCE among high school EFL learners?
Q4: Does CSC mediate the effect of SSR on SCE among high school EFL learners?
The schematic representation of the inter-connections among the study variables is provided below:

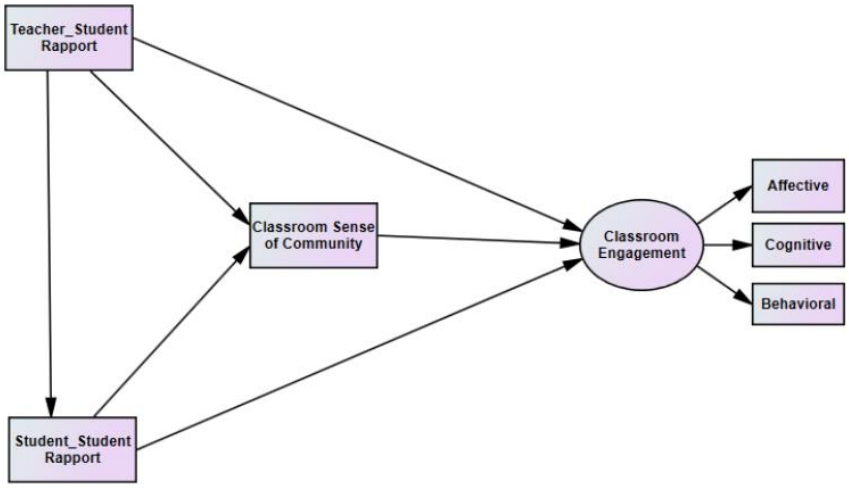

Figure 1. The schematic representation of the interconnections among TSR, SSR, CSC, and SCE.

2. Literature Review

2.1. Recent Studies on Rapport

Rapport refers to the idea that how much students feel supported, cherished, and appreciated in the classroom setting (Shakki, 2022). Consequently, it can be argued that if teachers want to create a positive rapport, they must constantly respect, appreciate, and value their students' thoughts and deeds (Wilson et al., 2012). Regarding this fact, Roshanbin et al. (2022) proposed that teachers can achieve a respectful mutual understanding relationship by considering their students' needs and requirements through connectedness and immediacy in higher education. Similarly, Mallik (2023) disclosed that favorable attitudes of university students towards TSR significantly enhance their active participation, emotional involvement, and intellectual involvement in the lecture hall, along with their academic performance. Conversely, their unfavorable

outlooks on TSR considerably impede all forms of SCE and academic success. In the past couple of years, it has been proved repeatedly that with a close affective bond between the teacher and the students, some of the students will be motivated to pursue their academic objectives even more seriously along with the emotionally intimate bond with their teachers (Virat, 2022; Quin, 2017; Roorda et al., 2017). To put it simply, when there is a close relationship between the teacher and his/her students, the road to academic success and achievement will be even more paved.

Due to its attraction for the researchers, the area of TSR and SSR has been touched many times by many scholars (e.g., Derakhshan et al., 2022; Engels et al., 2021; Ibarra, 2014; Wanders et al., 2020). Among others, Ibarra (2014) found that a positive TSR can boost learning outcomes. In another study by Wanders et al. (2020), 4128 students were employed to respond to two valid surveys in search of finding the relationship between TSR and its effect on SCE. The results revealed that TSR can massively influence pupils' participation in teaching space sets. Another still hot research by Engels et al. (2021), explored the effects of teachers' emotional bonding with the students and its consequences in the engagement of the students. To do so, the investigators distributed questionnaires of TSR and SCE to a large number of students. The findings showed that positive emotional engagement between teachers and students can lead to constructive school engagement. As well, quite recently in another survey by Derakhshan et al. (2022), employing structural equation modeling (SEM), 431 Polish and Iranian university students concluded that a constructive TSR can lead them to perusing their academic expectations more engagingly.

2.2. Recent Studies on CSC

CSC in the EFL context refers to the extent to which students and teachers feel a sense of belonging, mutual respect, and shared goals in the language learning environment (Rovai, 2002). According to McMillan and Chavis (1986), a sense of community has four dimensions: membership, influence, integration, and fulfillment of needs. Membership refers to the feeling of being a part of the group, influence refers to the ability to have an impact on the group, integration refers to the degree of connectedness and mutual support among group members, and fulfillment of needs refers to the satisfaction of individual and collective needs within the group. In an EFL context, these dimensions can be manifested through various activities, such as collaborative learning, peer feedback, cultural exchange, and social events.

Several factors can influence the development of a CSC in an EFL context. One of the key factors is TSR. Studies have shown that positive and supportive TSR can foster a sense of belonging and trust among students, which in turn enhances their motivation and engagement in language learning (e.g., Ratliff, 2019). Another factor is peer interaction. Peer collaboration and peer feedback have been found to promote a sense of community and mutual support among students, as they learn from each other and share their experiences and perspectives (e.g., Kavrayici, 2021). Student-centered activities also play a crucial role in building a sense of community in an EFL classroom, as they provide opportunities for students to learn from different cultures and perspectives and appreciate their differences (Bryant, 1999).

Research has shown that CSC in an EFL context can have positive outcomes on both academic and social-emotional dimensions. On the academic side, a strong sense of community can enhance language proficiency, as students feel more motivated and engaged in learning and have more opportunities to practice and receive feedback (e.g., Baturay & Bay 2010; Innab et al., 2022). It can also improve academic performance, as students benefit from peer support and collaborative learning. On the social-emotional side, a sense of community can promote students' well-being, as they feel more connected and supported by their peers and teachers (Wang et al., 2022). It can also enhance their intercultural competence, as they learn to appreciate and respect cultural differences and develop a sense of global citizenship (Parra, 2013).

2.3. Recent Studies on SCE

Considering the area of engagement in language learning, it can be said that the degree to which a learner is in the trial to acquire a language is to be known as engagement (Mystkowska-Wiertelak, 2022). Likewise, as Zhou et al. (2021) believed, the engagement of a student in language learning is the amount of time and effort he/she puts into the process of language learning. Worth mentioning that student engagement consists of three multidimensional components: “behavioral aspect, emotional aspect, and cognitive aspect” (Sang & Hiver, 2021). Each of these three dimensions has its own specific meaning in the following statement will be negotiated:

- Behavioral: It relates to the endeavors, determination, and involvement of the students in a classroom setting (Carver et al., 2021).
- Cognitive: It refers to the conceptual and rational efforts of the learners (Zhou et al., 2021, p. 77).

- Emotional: According to Phung et al. (2021), interest, passion, excitement, and satisfaction an L2 student reveals whilst developing a second language.

Studies have shown that there is a fine line between students' engagement and how much their needs are satisfied in the educational environment (Reeve, 2012; Ryan & Deci, 2000).

2.4. The relationship between TSR, SSR, and CSC

In addition to positive relationships between teachers and students, SSR has been shown to have a significant impact on the CSC. According to Rovai (2002), when students have positive relationships with their peers, it can lead to increased cooperation and collaboration, which can create a more supportive and inclusive classroom environment.

Studies have also demonstrated that a feeling of affiliation with classmates can trigger enhanced involvement and drive among students in the classroom (Estepp & Roberts, 2015). Based on the study conducted by Wang and Eccles (2012), peer support was found to have a positive correlation with students' sense of belonging in school, which in turn was associated with better academic performance.

The sense of community within the classroom is an important factor in promoting academic achievement and engagement. According to Rovai (2002), a sense of community within the classroom can be created through the development of shared goals and experiences, as well as through the establishment of a positive and inclusive learning environment. Furthermore, research suggests that a strong sense of community within the classroom can help to promote positive social relationships and a greater sense of belonging among students (Rovai, 2002).

Recent studies suggest that STR is a key factor in promoting a positive classroom community. A study by Pan et al. (2022) found that positive TSR was associated with higher levels of student engagement and academic achievement. The study also found that the relationship between teacher support and academic achievement was partially mediated by student engagement.

Another recent study by Zhang (2022) found that TSR had a significant impact on students' sense of community within the classroom. The study found that when teachers used positive reinforcement, provided timely feedback, and showed interest in their students' lives, it helped to foster a sense of community among students. Likewise, a study by Hornby and Greaves (2022) found that positive peer relationships were associated with greater classroom belongingness and engagement. The study also found

that the relationship between peer support and engagement was partially mediated by classroom belongingness.

To conclude, recent research emphasizes the significance of optimistic associations among students and their instructors and companions in cultivating a feeling of unity inside the classroom. This, in turn, can result in enhanced academic performance and involvement.

2.5. The relationship between TSR, SSR, and SCE

In a recent study conducted by Frisby et al. (2014), the impact of TSR on SCE was explored among 189 students from a large university in the southeastern part of the United States. The researchers evaluated student participation, rapport, anxiety, and face support levels and found that students' perceptions of TSR and face support and threat were influenced by their anxiety levels. Frisby et al. (2014) speculated that instructors' actions could strengthen rapport and increase student participation, highlighting the teacher's role in creating a supportive classroom environment that fosters student participation. Similarly, Madaio et al. (2018) conducted a mixed-methods study of 20 student pairs engaged in peer tutoring and found that rapport levels predicted engagement in student-student tutoring relationships. Tutors in pairs with high rapport levels provided more assistance to their tutees and encouraged them to articulate their problem-solving strategies more frequently. The authors suggested that improved rapport enhanced students' procedural performance in math problems, while conceptual performance was influenced by students' self-confidence and prior knowledge.

According to the research conducted by Ma and Li (2022), a favorable TSR plays a vital role in enhancing the academic performance of students. The reason behind this is that when students establish a positive connection with their instructor, they tend to be more enthusiastic about learning and strive harder to attain their educational objectives. Hence, building a robust bond with students is imperative for teachers to augment their involvement in the classroom.

A fresh investigation conducted by Tao et al. (2022) explored the influence of TSR on the academic involvement and accomplishment of students. The investigation concluded that a favorable TSR had a positive correlation with the academic engagement, drive, and accomplishment of students. The study further established that the quality of TSR was of greater importance to students' academic engagement than the frequency of interaction between students and teachers.

A recent study carried out by Martin and Collie (2019) examined the connection between TSR and SCE in scientific disciplines. The

investigation revealed that a positive correlation between pupils and educators was associated with cognitive, behavioral, and emotional engagement in science lessons. Moreover, the research indicated that students who developed a favorable rapport with their teacher were more likely to participate in class discussions and ask questions. Similarly, Estepp and Roberts (2015) contended that students are drawn to instructors who strive to reduce emotional and mental distance through verbal and nonverbal signals.

A positive SSR has been found to enhance SCE (Pekrun et al., 2009; Wentzel, 2009). According to Wentzel (2009), when students feel a sense of rapport with their peers, they are more likely to feel connected to the classroom community, engage in class discussions, and participate in group activities. This is because a positive relationship with peers creates a sense of belongingness and acceptance, which encourages students to feel comfortable in the classroom.

Similarly, Pekrun et al. (2009) found that positive SSR is positively related to students' engagement in the classroom. This is because when students feel a sense of rapport with their peers, they are more likely to collaborate with their peers, share their ideas, and learn from each other. Therefore, creating a positive classroom environment that promotes positive SSR is crucial for enhancing students' engagement in the classroom.

Havik and Westergård (2020) investigated the correlations between how students perceived their classroom interactions and their emotional and behavioral engagement. A total of 1769 Norwegian students from fifth to tenth grade, who were divided into 100 classes and 10 schools, participated in an online survey. The study revealed that students who perceived their classroom interactions as high-quality were more engaged in their studies, and the emotional support provided by teachers had the greatest impact on engagement at both levels. Additionally, the results showed that primary school students were more emotionally engaged than students in lower secondary school, and female students were more behaviorally engaged than male students.

To summarize, the analysis of the literature suggests that the bond between pupils and educators, as well as among pupils themselves, has a noteworthy impact on their involvement in the class. If learners share a good relationship with their teacher and peers, they tend to be more active in classroom exercises, participate in class debates, and finish their assignments within the given time frame. Thus, it is imperative to create a favorable learning environment that nurtures positive associations

between students and teachers as this is crucial to enhancing pupil involvement in the class.

3. Methodology

3.1. Participants

The participants of this study (n: 300) were recruited through random sampling from five different secondary high schools in Golestan province, Iran. They varied in age from 16 to 18. All these students voluntarily agreed to partake in the study and provide answers to the data collection tools of the study. They were also made sure that their identities would remain confidential and that the finding would only be used for scientific purposes.

3.2. Instrument

3.2.1. CSC scale (Appendix 1)

The CSC Scale developed by Rovai (2002) was used in the study. This questionnaire, which was a 6 Likert one, consisted of two parts. The first one was related to the connectedness of the students to the classroom (10 items related to feelings of connectedness) and the second part was related to the learning (10 items related to feelings regarding the use of interaction within the community to construct understanding and the extent to which learning goals are being satisfied within the classroom setting). The Cronbach reliability of the scale was .93 for Classroom Community Scale, .92 for the connectedness subscale, and .87 the for learning subscale.

3.2.2. CSE scale (Appendix 2)

The questionnaire was first developed by Reeve and Tseng (2011). It has three parts that assess the three aspects of engagement (behavioral, cognitive, and affective). The internal reliability of the three items was quite high (alpha = .94).

3.2.3. TSR and SSR scale (Appendix 3)

This study used Frisby and Martin's (2010) TSR and SSR scales both of which consist of 11 items assessing the relationship of the students with their teachers and their other classmates. The internal reliability of the scale was reported to be around .94 which is very high (Gremler & Gwinner, 2000). SSR was measured using the same 11-item scale developed by Gremler and Gwinner (2000). Internal reliability for these items was .96 which was quite high.

3.3. Data Collection

All the questionnaires that had an overall of 57 6-Likert items (from Strongly agree (6) to Strongly disagree (1)) were distributed to the learners in one day (The researchers distributed the questionnaires to almost 50 students per day and it took about seven days for all the 300 participants). They were first informed about the objectives of the study and provided with any clarification if they needed it. It took around one hour for the participants to finish answering the items. It is important to mention that the method of backward translation was employed. The initial translation was retranslated in a separate manner (that is, translated from the target language back into the original language) in order to guarantee the precision of the translation. Two independent translators carried out the back-translation and to prevent any bias, they were not informed about the specific concepts that the questionnaire measures.

3.4. Data Analysis

After the data was fully collected the following steps were taken for the analysis:

1. The normality of sense of community, engagement, teacher-student rapport, and student-student rapport was tested using skewness and kurtosis indices; and their comparison with the criteria of ±2 (Bachman, 2005; Bae & Bachman, 2010; George & Mallery, 2020).
2. Cronbach's alpha reliability indices were computed for the sense of community, engagement, teacher-student rapport, and student-student rapport.
3. Exploratory factor analysis (EFA) was run to explore the underlying constructs of sense of community, engagement, teacher-student rapport, and student-student rapport.
4. Pearson correlation was run to probe any significant correlation between teacher-student rapport and classroom management in order to probe the first two questions of the study.
5. Mediation analysis, using A. F. Hayes (2022) Process Software, was run to explore to what extent classroom sense of community mediates the effect of teacher-student rapport on classroom engagement among high school EFL learners in order to probe the third research question.
6. Finally, Mediation analysis, using A. F. Hayes (2022) Process Software, was run to explore to what extent classroom sense of community mediates the effect of student-student rapport on

classroom engagement among high school EFL learners in order to probe the fourth research question.

4. Results

4.1. Testing Assumption of Normality

Table 1 shows the skewness and kurtosis indices of normality. Since these indices were within the ranges of ±2, it was concluded that the present data did not show any significant deviation from normality. It should be noted the criteria of ±2 were suggested by Bachman (2005), Bae & Bachman (2010), and George and Mallery (2020). It is worth mentioning that Zhu et al. (2019) suggested the criteria of ±3.

Table 1. *Skewness and Kurtosis Indices of Normality*

	N	Skewness		Kurtosis	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Sense of Community	300	-.307	.141	-.735	.281
Engagement	300	-.649	.141	-.486	.281
Teacher-Student Rapport	300	-.528	.141	-.461	.281
Student-Student Rapport	300	-.591	.141	-.560	.281

4.2. Cronbach's Alpha Reliability Indices

Table 2 shows Cronbach's alpha reliability indices for the instruments employed in this study. The reliability indices were as follows; Classroom Sense of Community (α = .966), Students' Engagement (α = .960), Teacher-Student Rapport (α = .934), and Student-Student Rapport (α = .924).

Since all of the above-mentioned reliability indices were higher than .70, it can be concluded that the instruments administered in this study enjoyed "appropriate" reliability indices. As noted by Tseng, et al. (2006), Dörnyei & Taguchi (2009), Fryer et al. (2018), and Harrison et al. (2021), a Cronbach's alpha value of .70 is the adequate reliability index for an instrument. However; George and Mallery (2020, page 244) believe that "there is no set interpretation as to what is an acceptable alpha value. A rule of thumb that applies to most situations is; >.9 excellent, >.8 good, > .7 acceptable, >.6 questionable, >.5 poor and < .5 unacceptable". Based on these criteria, it can be concluded Classroom Sense of Community (α = .966), Students' Engagement (α = .960), Teacher-Student Rapport (α = .934), and Student-Student Rapport (α = .924) enjoyed "excellent"; i.e. >= .90 reliability indices.

Table 2. *Cronbach's Alpha Reliability Indices*

	Cronbach's Alpha	N of Items
Classroom Sense of Community	.966	20
Students' Engagement	.960	15
Teacher-Student Rapport	.934	11
Student-Student Rapport	.924	11

4.3. Construct Validity

An Exploratory Factor Analysis (EFA), using Principal Axis Factoring method and Promax rotation, was run to probe the construct validity of Classroom Sense of Community, Students' Engagement, Teacher-Student Rapport, and Student-Student Rapport. Before discussing the results, the number of factors extracted, and the method of rotation should be justified.

Table 3. *Watkins' Parallel Analysis*

Items	Eigenvalues		Decision	Items	Eigenvalues		Decision	Items	Eigenvalues		Decision
	Simulated	SPSS			Simulated	SPSS			Simulated	SPSS	
1	1.972	24.809	Keep	21	1.139	0.504	Drop	41	0.680	0.291	Drop
2	1.886	4.471	Keep	22	1.112	0.498	Drop	42	0.660	0.277	Drop
3	1.814	3.469	Keep	23	1.085	0.469	Drop	43	0.641	0.268	Drop
4	1.758	2.716	Keep	24	1.061	0.467	Drop	44	0.622	0.257	Drop
5	1.699	0.805	Drop	25	1.035	0.459	Drop	45	0.600	0.250	Drop
6	1.653	0.752	Drop	26	1.008	0.451	Drop	46	0.581	0.240	Drop
7	1.607	0.727	Drop	27	0.984	0.427	Drop	47	0.563	0.237	Drop
8	1.565	0.709	Drop	28	0.960	0.418	Drop	48	0.543	0.217	Drop
9	1.524	0.703	Drop	29	0.935	0.408	Drop	49	0.523	0.216	Drop
10	1.486	0.669	Drop	30	0.915	0.400	Drop	50	0.502	0.209	Drop
11	1.449	0.644	Drop	31	0.890	0.376	Drop	51	0.481	0.186	Drop
12	1.414	0.635	Drop	32	0.869	0.363	Drop	52	0.463	0.182	Drop
13	1.382	0.617	Drop	33	0.847	0.362	Drop	53	0.441	0.167	Drop
14	1.348	0.600	Drop	34	0.825	0.356	Drop	54	0.419	0.162	Drop
15	1.317	0.577	Drop	35	0.802	0.338	Drop	55	0.399	0.145	Drop
16	1.285	0.560	Drop	36	0.783	0.328	Drop	56	0.373	0.132	Drop
17	1.255	0.556	Drop	37	0.761	0.323	Drop	57	0.343	0.098	Drop
18	1.226	0.536	Drop	38	0.740	0.315	Drop				
19	1.195	0.527	Drop	39	0.718	0.311	Drop				
20	1.168	0.510	Drop	40	0.699	0.304	Drop				

Although the SPSS software produces scree plots to determine the number of factors to be extracted, their interpretation is subjective and ambiguous (Watkins, 2005; Phakiti et al., 2018; Denis, 2021). Parallel Analysis (Watkins, 2005), and Revelle (2020) was developed to overcome

the shortcomings of scree plots. Parallel Analysis compares the initial eigenvalues computed by the SPSS software with simulated ones. If the SPSS eigenvalues are higher than the simulated ones, the related factors are retained; otherwise, they are dropped out. As shown in Table 3, the SPSS eigenvalues for the first four factors were higher than the eigenvalues simulated through Parallel Analysis. That was why the EFA with four factors was extracted and reported in Table 7. It should be noted that eigenvalues are variances explained by each factor which, "tell us about the substantive importance of the factors, and, based on them, a decision is made about how many factors to retain" (Field 2018, p. 1004).

Revelle (2020) has developed the R Package "Psych" which produces a graphic from Parallel Analysis. As shown in Figure 1, the simulation process also suggested four factors to be extracted as the underlying constructs of CSC, SCE, TSR, and SSR.

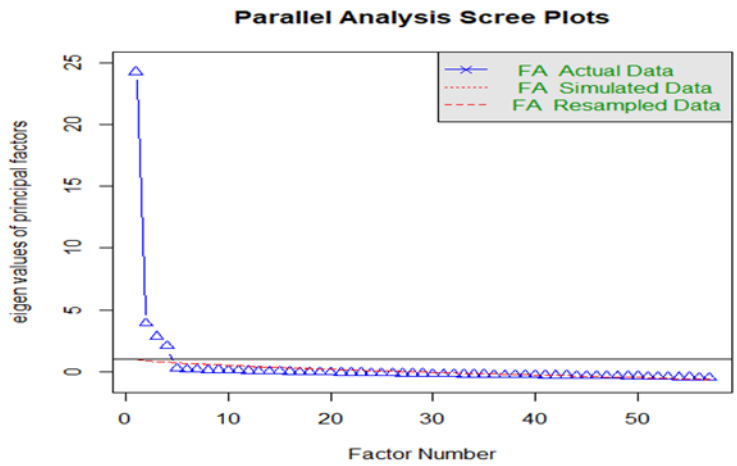

Figure 1. Revelle's Graphical Parallel Analysis

The second decision concerning the rotation method requires a brief introduction. Factors can be extracted through two rotation methods; orthogonal and oblique. Orthogonal rotation methods assume that the factors being extracted are uncorrelated; while oblique rotation methods presuppose that the factors are correlated. The decision can be made by consulting the Component Correlation Matrix (Table 4). Ignoring the ones on the diagonal, if the correlation coefficients among the factors are higher than ±.32 (Grande, 2016), Dagdag et al. (2020), oblique rotation should be employed; otherwise, orthogonal rotation methods should be selected.

Since the coefficients shown in Table 4 were all higher than ±.32, oblique rotation was employed to extract the factors (Table 7).

Table 4. *Component Correlation Matrix*

Component	1	2	3	4
1	---			
2	.572	---		
3	.542	.538	---	
4	-.572	-.563	-.567	---

Table 5 shows the KMO index of sampling adequacy and Bartlett's Test of Sphericity. The KMO index of .965 indicated that the present sample size of 300 was "marvelous" (Field, 2018) for running EFA. The significant results of the Sphericity Test (χ^2 (1596) = 13055.64, $p < .05$) indicated that the correlation matrix was factorable. In order to have meaningful factors, there should be reasonable correlations among items. As noted by Field (2018, p. 1015), "*Bartlett's test* tells us whether our correlation matrix is significantly different from an identity matrix. If it is significant then it means that the correlations between variables are (overall) significantly different from zero".

Table 5. *KMO and Bartlett's Test*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.965
Bartlett's Test of Sphericity	Approx. Chi-Square	13055.643
	df	1596
	Sig.	.000

Table 6 shows the Total Variance Explained by the EFA. The SPSS Software extracted four factors that accounted for 59.36 percent of the total variance. That is to say; the four-factor model could explain 49.36 percent of the variance.

Table 6. *Total Variance Explained*

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	24.809	43.525	43.525	24.405	42.816	42.816	19.907
2	4.471	7.844	51.369	4.073	7.145	49.961	18.352
3	3.469	6.086	57.456	3.065	5.378	55.339	16.114
4	2.716	4.764	62.220	2.296	4.028	59.368	16.873
5	.805	1.412	63.632				
6	.752	1.319	64.951				
7	.727	1.275	66.226				
8	.709	1.244	67.470				
9	.703	1.233	68.704				
10	.669	1.174	69.877				
11	.644	1.129	71.006				
12	.635	1.114	72.121				
13	.617	1.082	73.203				
14	.600	1.053	74.256				
15	.577	1.013	75.269				
16	.560	.982	76.251				
17	.556	.975	77.226				
18	.536	.941	78.167				
19	.527	.924	79.091				
20	.510	.895	79.986				
21	.504	.884	80.870				
22	.498	.874	81.744				
23	.469	.822	82.566				
24	.467	.820	83.386				
25	.459	.805	84.192				
26	.451	.791	84.982				
27	.427	.749	85.732				
28	.418	.733	86.464				
29	.408	.716	87.180				
30	.400	.702	87.882				
31	.376	.659	88.542				
32	.363	.638	89.179				
33	.362	.634	89.813				
34	.356	.625	90.438				
35	.338	.594	91.032				
36	.328	.575	91.607				
37	.323	.566	92.173				
38	.315	.552	92.725				
39	.311	.545	93.270				
40	.304	.533	93.803				
41	.291	.510	94.313				
42	.277	.487	94.799				

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
43	.268	.470	95.269				
44	.257	.451	95.720				
45	.250	.439	96.159				
46	.240	.421	96.581				
47	.237	.415	96.996				
48	.217	.381	97.377				
49	.216	.378	97.755				
50	.209	.366	98.122				
51	.186	.325	98.447				
52	.182	.319	98.766				
53	.167	.292	99.058				
54	.162	.284	99.342				
55	.145	.255	99.597				
56	.132	.232	99.829				
57	.098	.171	100.000				

And finally; Table 7 shows the factor loadings of the 57 items under the four extracted factors. Before discussing the results, it should be noted that oblique rotation methods produce two sets of factor loadings; structure and pattern matrices. As noted by Harrison et al. (2021), pattern matrices, which are analogous to unstandardized regression coefficients (b-values) are easier to interpret due to the fact that they show the unique contribution of a variable to a factor; however, structure matrices show the shared variances; consequently, their interpretation is much more complicated. Table 7 also shows the Composite Reliability (reliability of constructs), and Average Variance Extracted (AVE) which are convergent validity indices.

The results showed that items five[†] to 24 had their loadings on the first factor which can be labeled as "Classroom Sense of Community". The composite reliability (CR) for the first construct was .964. Its AVE was .756; i.e. there was 76.6 percent chance that the first factor measured "Classroom Sense of Community". It should also be noted that the minimum acceptable CR and AVE indices are .70 (Hair et al., 2017), and .50 (Garson, 2016) respectively.

Items 25 to 39 had their loadings on the second factor which can be labeled as "Students' Engagement". The second factor enjoyed CR and

[†] It should be noted that the first four items of the questionnaire asked for demographic information.

AVE indices of .956 and .769 respectively. Items 40 to 50 loaded under the third factor; i.e. "Teacher-Student Rapport" whose CR and AVE were .929, and .737. And finally; items 51 to 51 had their loadings under the fourth factor. This factor can be labeled as "Student-Student Rapport". It enjoyed CR and AVE indices of .931, and .742 respectively.

Table 7. *Pattern Matrix*

	Factor			
	1	**2**	**3**	**4**
First Factor = Classroom Sense of Community, CR = .964, AVE = .756.				
q14	.805	.010	.001	-.022
q16	.803	-.029	-.003	-.008
q15	.786	.026	-.021	-.014
q19	.782	-.034	.010	.017
q11	.774	.015	.048	-.020
q12	.772	.048	.013	-.029
q13	.771	-.009	.035	-.020
q5	.770	-.013	.009	.006
q6	.769	-.032	-.005	.017
q24	.760	-.003	.036	-.011
q10	.759	.023	.013	-.008
q7	.749	.020	-.013	.003
q22	.738	.018	-.022	.049
q17	.736	-.024	-.038	.060
q23	.736	.007	-.012	.051
q20	.733	.014	.058	-.008
q8	.728	.103	.001	-.049
q18	.718	.006	-.007	.042
q9	.716	.061	-.018	.027
q21	.712	-.057	.030	.083
Second Factor = Students' Engagement, CR = .956, AVE = .769.				
q26	.046	.855	-.064	-.087
q25	.032	.829	-.064	-.029
q29	.105	.829	-.045	-.102
q36	-.042	.814	.082	-.039
q27	.008	.814	-.016	-.012
q28	.092	.780	-.087	-.025
q32	-.049	.767	.042	.032
q33	.019	.767	.017	-.016
q38	-.059	.754	-.002	.111
q31	.022	.747	.000	.031
q30	.024	.733	.042	.023
q35	-.083	.726	.034	.092
q34	.006	.714	-.039	.108
q37	-.007	.710	.125	.006
q39	-.002	.702	.083	.067
Third Factor = Teacher-Student Rapport, CR = .929, AVE = .737.				
q45	-.054	-.065	.821	.083

	Factor			
	1	**2**	**3**	**4**
q48	.022	-.051	.801	-.037
q40	.006	.039	.744	-.013
q47	.001	.076	.742	-.025
q50	.060	.012	.732	-.062
q41	.071	.022	.730	-.057
q49	-.044	.016	.715	.049
q42	.047	-.021	.713	.013
q44	-.022	.041	.705	.036
q43	-.012	.005	.703	.034
q46	.058	-.015	.699	.031
Fourth Factor = Student-Student Rapport, CR = .931, AVE = .742.				
q51	.003	-.008	-.023	.806
q57	.019	-.028	-.052	.791
q54	-.001	-.024	.037	.770
q58	.010	-.010	-.001	.753
q56	.080	-.025	-.022	.746
q53	.027	.011	.008	.738
q60	-.014	.044	.022	.734
q61	.004	.023	.013	.731
q59	-.027	.053	.055	.728
q55	.059	.067	-.012	.700
q52	.041	.021	.058	.665

4.4. Exploring First Null-Hypothesis

There was not any statistically significant relationship between teacher-student rapport and classroom engagement among high school EFL learners.

Pearson Correlation was run to explore any significant relationship between teacher-student rapport and classroom engagement among high school EFL learners in order to probe the first null-hypothesis. The results shown in Table 8 ($r (298^{‡}) = .576$, representing a large effect size[§], $p < .05$) indicated that there was a significant correlation between teacher-student rapport and classroom engagement. Thus; the first null-hypothesis was rejected.

‡ The degree of freedom for Pearson Correlation is computed as N-2. Since the present sample size was 300, the degree of freedom was 298.

§ Pearson correlation itself is an index of effect size, and can be reported using the following criteria; .10 = Weak, .30 = Moderate, and .50 = Large (Gray and Kinnear (2012, p 407) Pallant (2016, p 159), and Field (2018, p 179).

Table 8. *Pearson Correlation between Teacher-Student Rapport and Students' Engagement*

		Teacher-Student Rapport
Students' Engagement	Pearson Correlation	.576**
	Sig. (2-tailed)	.000
	N	300

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

Besides the assumption of normality which was reported in Table 1, Pearson correlation has two more assumptions; i.e. linearity and homoscedasticity. As shown in Figure 2, the spread of dots did not form any curve shape. Thus; it can be concluded that the relationship between teacher-student rapport and classroom engagement was linear.

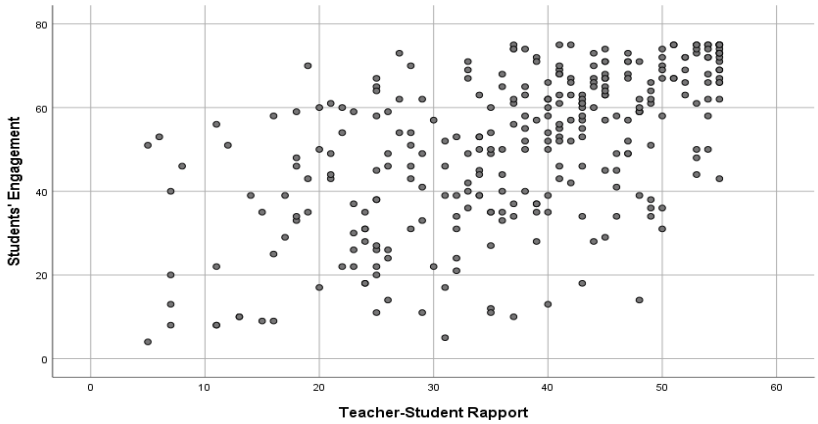

Figure 2. Testing Assumptions of Linearity and Homoscedasticity of Relationship between Teacher-Student Rapport and Students' Engagement

As shown in Figure 2, the spread of dots did not show any funnel shape. That is to say; they were not wide at one end, and narrow at the other end. Thus; it was concluded that the assumption of homoscedasticity was also retained.

4.5. Exploring Second Null-Hypothesis

There was not any statistically significant relationship between student-student rapport and classroom engagement among high school EFL learners.

Pearson Correlation was run to explore any significant relationship between student-student rapport and classroom engagement among high

school EFL learners in order to probe the second null-hypothesis. The results shown in Table 9 (r (298) = .606, representing a large effect size, p < .05) indicated that there was a significant correlation between student-student rapport and classroom engagement. Thus; the first null-hypothesis was rejected.

Table 9. *Pearson Correlation between Student-Student Rapport and Students' Engagement*

		Student-Student Rapport
Students' Engagement	Pearson Correlation	.606**
	Sig. (2-tailed)	.000
	N	300

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

As shown in Figure 3, the spread of dots did not form any curve shape. Thus; it can be concluded that the relationship between student-student rapport and classroom engagement was linear. The spread of dots also did not show any funnel shape. That is to say; they were not wide at one end, and narrow at the other end. Thus; it was concluded that the assumption of homoscedasticity was also retained.

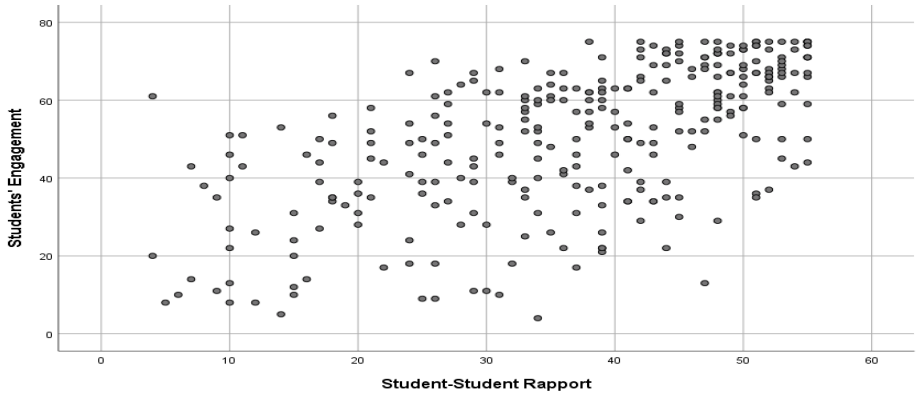

Figure 3. Testing Assumptions of Linearity and Homoscedasticity of Relationship between Student-Student Rapport and Students' Engagement

4.6. Exploring Third Null-Hypothesis

Classroom sense of community did not significantly mediate the effect of teacher-student rapport on classroom engagement among high school EFL learners.

Mediation Analysis using Process Extension for the SPSS (Hayes, 2022) was run to probe to what extent Classroom sense of community mediated the effect of teacher-student rapport on classroom engagement

among high school EFL learners. An introduction to Mediation Analysis is warranted. Figure 4 shows the mediation model of Teacher-Student Rapport, Students' Engagement and Classroom Sense of Community. Teacher-Student Rapport had a direct effect on Students' Engagement. It also has an indirect effect on Students' Engagement after being mediated by Classroom Sense of Community. The Process Extension for SPSS computes the three direct effects shown in Figure 4. It also computes the mediated effect (thick curve arrow) of Teacher-Student Rapport on Students' Engagement through the mediation of Classroom Sense of Community.

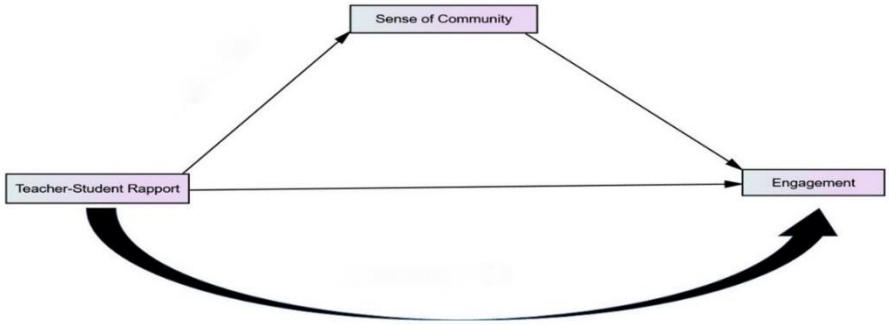

Figure 4. Mediation Model of Teacher-Student Rapport, Classroom Sense of Community and Students' Engagement (Conceptual Model)

The results (Figure 5) indicated that;

a) Teacher-Student Rapport had a direct and significant effect on Classroom Sense of Community (b = 1.066, SE = .0891, t = 11.96, p = .000).
b) Teacher-Student Rapport had a direct and significant effect on Students' Engagement (b = .512, SE = .0779, t = 6.58, p = .000).
c) Classroom Sense of Community had a direct and significant effect on Students' Engagement (b = .314, SE = .0416, t = 7.56, p = .000).

The results of the Sobel Test (Sobel Test = 6.383, p = .000) indicated that Teacher-Student Rapport – after being mediated by Classroom Sense of Community – had a direct and significant effect on Students' Engagement. In other words; after being mediated by Classroom Sense of Community, Teacher-Student Rapport did not lose its significant effect on Students' Engagement. Thus the third null-hypothesis was supported. Teacher-Student Rapport had a direct and significant on Students'

Engagement before and after the mediation of Classroom Sense of Community.

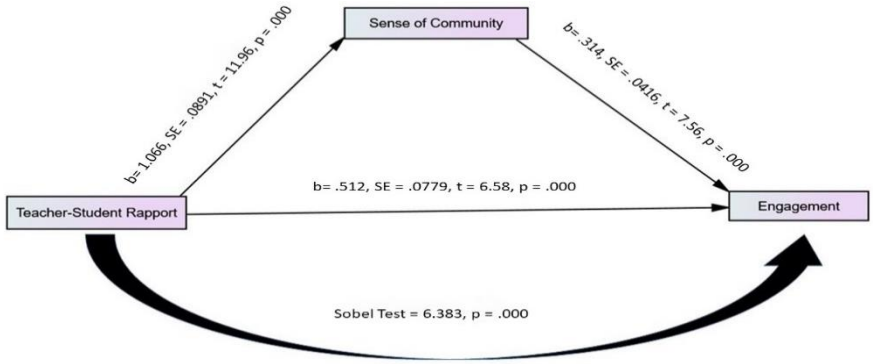

Figure 5. Mediation Model of Teacher-Student Rapport, Classroom Sense of Community, and Students' Engagement (Main Model)

4.7. Exploring Fourth Null-Hypothesis

Classroom sense of community did not significantly mediate the effect of student-student rapport on classroom engagement among high school EFL learners.

Mediation Analysis using Process Extension for the SPSS (Hayes, 2022) was run to probe to what extent Classroom sense of community mediated the effect of student-student rapport on classroom engagement among high school EFL learners. The results (Figure 4.6) indicated that;

d) Student -Student Rapport had a direct and significant effect on Classroom Sense of Community (b = 1.069, SE = .0818, t = 13.07, p = .000).
e) Student-Student Rapport had a direct and significant effect on Students' Engagement (b = .537, SE = .0751, t = 7.15, p = .000).
f) Classroom Sense of Community had a direct and significant effect on Students' Engagement (b = .287, SE = .0424, t = 6.78, p = .000).

The results of the Sobel Test (Sobel Test = 6.01, p = .000) indicated that Student-Student Rapport – after being mediated by Classroom Sense of Community – had a direct and significant effect on Students' Engagement. In other words; after being mediated by Classroom Sense of Community, Student-Student Rapport did not lose its significant effect on Students' Engagement. Thus the fourth null-hypothesis was supported. Students-Student Rapport had a direct and significant on Students'

Engagement before and after the mediation of Classroom Sense of Community.

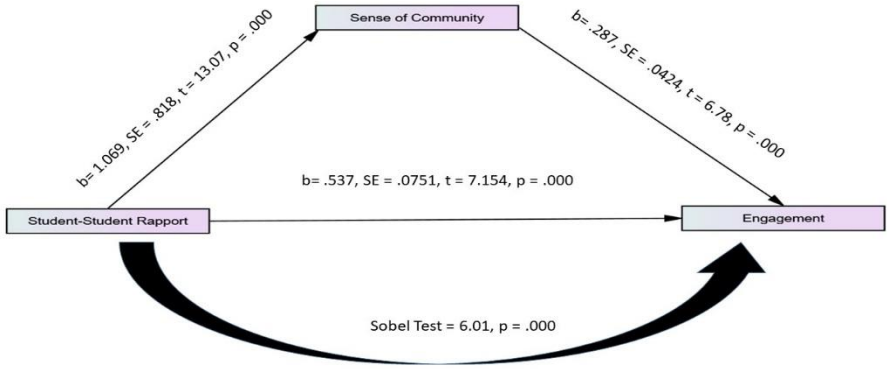

Figure 6. Mediation Model of Student-Student Rapport, Classroom Sense of Community and Students' Engagement (Main Model)

5. Discussion

This investigation analyzed the impact of TSR and SSR on the CSC and SCE of the pupils. Consistent with the findings of prior research, the outcomes of the initial two research inquiries demonstrated that there is a direct and favorable correlation between TSR, SSR, and CSC. Wang and Eccles (2012) discovered that peer assistance was positively linked with learners' sense of affiliation with the school, which, in turn, was linked with superior academic achievements. Additionally, in line with the recent studies by González and Pan (2022) and Zhang (2022), this research also endorses the notion that pupils can attain their best outcomes and feel like they belong to a family in a course when they have a close bond with their educators and classmates. Similarly, a study by Hornby and Greaves (2022) revealed that positive peer connections were linked with a greater sense of classroom belongingness and engagement. Likewise, Ibrahim and El Zaatari (2020) found that if teachers try to build a friendly relationship with their students, they will feel mere belonged to the classroom community and hence some principal problems like skipping classes or disobeying the teachers would never happen.

Furthermore, the outcomes of the investigation indicated that there exists a direct correlation between TSR and SSR, as well as SCE, which is consistent with the discoveries of Shakki's (2022) inquiry into the influence of teacher support and teacher-student connection on Iranian EFL students' L2 involvement. Corresponding with the results of the present study, this academician also determined that there is a sturdy and direct association among the factors. Additionally, recent research

conducted by Li (2021) endeavored to accentuate the significance of teachers' discomfort in relation to students' engagement, as it is the latter that results in academic achievement. The investigation disclosed that teachers' pessimistic emotions, such as pressure, nervousness, and uneasiness, have a negative effect on students' engagement, as they are psychological matters that influence both the mind and body, resulting in issues such as depression and unease. Therefore, as reinforced by the discovery of the current research, it can be inferred that if teachers establish comfortable and secure relationships with their students, the latter will feel more at ease and involved in the learning process.

6. Conclusion

The objective of the investigation was to identify any notable correlation between TSR, SSR, CSC, and SCE. The findings indicated that both TSR and SSR had a constructive and explicit association with the CSC of the pupils. Additionally, it was discovered that TRS and SSR had a beneficial connection with SCE.

The outcomes of the inquiry have implications, particularly for educators, to establish a welcoming, relaxed, and secure environment in the classroom to facilitate students' engagement in the learning process. Moreover, when teachers and pupils share a positive relationship, they feel like they belong to a family.

Nevertheless, the research had some restrictions that can be improved in forthcoming studies. In this examination, we only employed quantitative methodologies, which could be enhanced if future research incorporates a qualitative or mixed-method approach by utilizing tools like interviews to elicit students' opinions on the variables. Additionally, it would be useful to compare the same variables between male and female students to observe if either group could yield different outcomes. Lastly, the number of participants could be increased, and the same topic could be applied to various disciplines and compared with one another.

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Appendices

APPENDIX 1. CLASSROOM SENSE OF COMMUNITY SCALE CONNECTEDNESS ITEMS (n = 10)

1. I feel that students in this course care about each other.
2. I feel connected to others in this course.
3. I do not feel a spirit of community.
4. I feel that this course is like a family.
5. I feel isolated in this course.
6. I trust others in this course.
7. I feel that I can rely on others in this course.
8. I feel that members of this course depend on me.
9. I feel uncertain about others in this course.
10. I feel confident that others will support me.

LEARNING ITEMS (n = 10)

1. I feel that I am encouraged to ask questions.
2. I feel that it is hard to get help when I have a question.
3. I feel that I receive timely feedback.
4. I feel uneasy exposing gaps in my understanding.
5. I feel reluctant to speak openly.
6. I feel that this course results in only modest learning.
7. I feel that other students do not help me learn.
8. I feel that I am given ample opportunities to learn.
9. I feel that my educational needs are not being met.
10. I feel that this course does not promote a desire to learn.

APPENDIX 2. STUDENTS' CLASSROOM ENGAGEMENT SCALE ITEMS TO ASSESS BEHAVIORAL ENGAGEMENT (n: 5)

1. I listen carefully in my English class.
2. I try very hard in my English class.
3. I attend my English class regularly.
4. I work hard when we start something new in my English class.
5. I pay attention in my English class.

ITEMS TO ASSESS EMOTIONAL ENGAGEMENT (n: 4)

1. I enjoy learning new lessons in my English class.
2. I am glad that I go to this English class.
3. I am interested in my English class activities.
4. My English class is fun.

ITEMS TO ASSESS COGNITIVE ENGAGEMENT (n: 6)

1. When I study English, I try to connect what I am learning with my own experiences.
2. I want to get good grades in my English class.
3. Doing well in English course is important for my future education/career goals.
4. Before I begin to study English, I think about what I want to get done
5. It is important for me to do well in my English class.
6. I want to do my best in my English class.

APPENDIX 3. TEACHER-STUDENT AND STUDENT-STUDENT RAPPORT SCALE (n: 22)

1. In thinking about my relationship with my instructor/classmates, I enjoy interacting with them.
2. My instructor/classmates create(s) a feeling of ''warmth'' in our relationship.
3. My instructor/classmates relates well to me.
4. In thinking about this relationship, I have a harmonious relationship with my instructor/classmates.
5. My instructor/classmates has/have a good sense of humor.
6. I am comfortable interacting with my instructor/classmates.
7. I feel like there is a ''bond'' between my instructor/classmates and myself.
8. I look forward to seeing my instructor/classmates in class.
9. I strongly care about my instructor/classmates.
10. My instructor/classmates has/have taken a personal interest in me.
11. I have a close relationship with my instructor/classmates.
12. When I think about my relationship with my classmates, I enjoy interacting with them.
13. My classmates and I create a feeling of intimacy and closeness in our relationships.
14. My classmates have a good relationship with me.
15. When I think about this relationship, I think I have a successful relationship with my classmates.
16. My classmates have a good sense of humor.
17. I am comfortable interacting with my classmates.
18. I feel that there is a good connection between me and my classmates.
19. I look forward to seeing my classmates in class.

20. I care a lot about my classmates.
21. My classmates have a personal interest in me.
22. I have a close relationship with my classmates.