Measuring EFL teacher-student rapport using confirmatory factor analysis: Insights from Indonesia

Sirajul Munir[1+]
Rini Anita[2]
Sajidin[3]

[1,2]*Universitas Islam Negeri Mahmud Yunus Batusangkar, Indonesia.*
[1]*Email: sirajulmunir@uinmybatusangkar.ac.id*
[2]*Email: rinianita@uinmybatusangkar.ac.id*
[3]*Universitas Islam Negeri Sunan Gunung Djati Bandung, Indonesia.*
[3]*Email: sajidin@uinsgd.ac.id*

(+ Corresponding author)

ABSTRACT

Teacher-student rapport plays a pivotal role in fostering effective teaching and learning, particularly in English as a Foreign Language (EFL) contexts. Despite its recognized importance, few studies have developed and validated a psychometrically sound instrument to measure this construct using robust statistical methods. This study addresses this gap by developing and validating a measurement model of teacher-student rapport among EFL teachers in Indonesian Islamic higher education institutions. Using a quantitative design, data were collected from 111 EFL teachers through a structured questionnaire grounded in established rapport-building theories. The instrument comprised 24 items organized under four theoretically derived indicators: recognizing students, supporting and monitoring students, being personable and approachable, and interacting with students. Confirmatory factor analysis (CFA) was conducted using LISREL 8.80 to assess the model's fit and construct validity. Results indicated that all items loaded significantly ($\lambda > 0.4$), and the four-factor model demonstrated acceptable to good fit across key indices (RMSEA = 0.035–0.081; GFI = 0.83–0.99; p > 0.05). Composite reliability was high (Cronbach's $\alpha = 0.86$), confirming the scale's internal consistency. The study contributes a reliable and valid tool for assessing teacher-student rapport in EFL higher education settings, offering practical value for teacher self-evaluation, professional development, and classroom observation. Findings also underscore the centrality of behaviors such as celebrating students' personal milestones, relating course content to real-life contexts, maintaining eye contact, and providing support to absentees. This research supports efforts to enhance relational quality in EFL classrooms through evidence-based measurement.

Contribution/Originality: This study advances literature by validating a four-dimensional PTSR model for EFL higher education via rigorous CFA, providing a structured measurement framework, identifying key rapport-building behaviors, and offering one of the few empirically tested instruments in this context with demonstrated validity, reliability, and practical utility for research and practice.

1. INTRODUCTION

Building teacher-student rapport has emerged as an influential factor in teaching. Recently, researchers have shown increased interest in examining teacher-student rapport since it plays a pivotal role in teaching that influences learners' success. Most teachers, particularly in English as a Foreign Language (EFL) classrooms, strongly agree on this point. It is not unexpected that the quality of the teacher-student connection is crucial in the context of second language learning (Sabnani & Goh, 2020), as language learning is an intrinsically social process. Hanh and Nguyen

(2007) state that creating rapport with students in the target language might be an effective strategy to encourage them to learn. Establishing a positive rapport is also critical in creating a suitable learning environment in the classroom. Positive rapport in the classroom will drive students to collaborate with the teacher to achieve common goals, facilitating both the teaching and learning processes, and entails joy, mutual trust, respect, and connection (Kang & Wu, 2022; Milosevic, Kuldas, Sargioti, Laffan, & O'Higgins Norman, 2022; Zhou, 2021).

Sabnani and Goh (2020) assert that in language instruction, it is vitally important for both the teacher and the students to have a strong and healthy relationship. Students' relationships with their teachers and vice versa are commonly understood as rapport. A healthy teacher-student relationship, which includes fun, connection, respect, and mutual trust, is often called rapport (Delos Reyes & Torio, 2021; Frisby & Housley Gaffney, 2015). According to Lammers and Gillaspy Jr (2013), rapport is the level of a student's sense of personal connection to their teacher. Building rapport can be accomplished through actions, and if teachers are aware of and sensitive to these, they will find it easier to adopt these acts (Thakur, Shri, & Vij, 2019). At all educational levels, research unequivocally demonstrates the importance of the connection between students and teachers Lammers and Gillaspy Jr (2013). The success of the teaching-learning process is influenced by rapport (Chávez, Maldonado, Zamarrón, & Del Villar, 2017). A range of verbal and nonverbal behaviors, including facing the other person, leaning forward, maintaining eye contact, and imitating the other person through posture, facial expressions, tone of voice, and mannerisms, are effective ways to establish rapport (Gremler & Gwinner, 2008; Webb & Barrett, 2014). Additionally, it is said that the best way to accomplish this is by genuinely caring about our pupils and assisting them in feeling at ease while they pursue their learning objectives, as well as helping them succeed in acquiring the target language (Pianta, 2001).

Nonetheless, EFL teachers face challenges in strengthening their sense of classroom closeness with their pupils (Nguyen, 2007). The teacher feels as though they do not have enough time to talk to the students because they typically struggle with time management; the teacher encounters few students who speak English, which causes the interaction to go awry; and the teacher cannot remember the names of the students, which is a common issue faced by nearly all teachers who oversee large classrooms. Building rapport with students is essential despite the fact that it is an uncomfortable task (Santana, 2019). According to García Sánchez (2013), a good teacher-student relationship affects students' motivation to learn since it makes them feel more at ease and secure enough to approach teachers and exchange information. Several studies show that good and affable teachers have the capacity to establish a relationship with their students in the classroom (Zhou, 2021). To assist students in learning more, teachers should demonstrate their belief in each student's abilities and the students' belief in what the teacher is doing.

Since building rapport with students is crucial, teachers must exhibit specific behaviors (Webb & Barrett, 2014). These behaviors include being exceptionally attentive, connecting with students, sharing information with them, being personable and approachable, credible, knowledgeable, and courteous, demonstrating respect and sympathy, speaking on their level, and identifying common ground. This means that, in addition to exhibiting these behaviors, effective instructors must be able to relay positive experiences to their students in novel and creative ways. Strategies include remembering students' names, expressing interest in their pastimes, pointing out unique aspects of their appearance, and sharing firsthand knowledge and experiences with the class. Understanding the different backgrounds of pupils is another technique that can help establish rapport (Thakur et al., 2019). It is significant to remember that students from various backgrounds and states come to class. According to Burke-Smalley (2018), an alternative strategy is to establish a supportive bond. These include modest silliness, sympathetic worry, and facial displays of emotion.

A positive learning environment in the classroom largely depends on rapport. Zhou (2021) states that rapport can contribute to a supportive learning environment. Burke-Smalley (2018) emphasizes that rapport helps create a secure environment for EFL students in particular. Furthermore, Houser and Hosek (2018) state that a good relationship between teachers and students can foster a welcoming environment that is essential for students' social

and academic development (Li, 2022). This connection influences learning on physical, social, intellectual, and emotional levels. As a result, students feel more comfortable engaging with their peers and lecturers.

Positive interactions between teachers and students are a key strategy for maintaining the teacher-student relationship. According to (Nova, 2017), fostering a pleasant relationship is essential for building rapport. Delos Reyes and Torio (2021) emphasize that establishing rapport requires creating a positive and engaging environment. Over the past decade, research on teacher-student relationships has highlighted the significant impact of rapport on students' behavior. EFL teachers who develop a strong rapport with their students tend to observe more successful behavioral outcomes. A student's sense of achievement (Webb & Barrett, 2014), academic motivation (García Sánchez, 2013; Kang & Wu, 2022; Sabnani & Goh, 2020), mutual understanding between teacher and student (Zhang, 2023), and progress in learning (Gan, 2021) are all influenced by the quality of the teacher-student relationship. Additionally, factors such as interest (Frisby & Martin, 2010), passion, and enjoyment (Kang & Wu, 2022), learning engagement and involvement (Zhou, 2021), academic results (Delos Reyes & Torio, 2021), intellectual excitement, and class communication (Gan, 2021) are also affected. Pedler, Hudson, and Yeigh (2020) present empirical research indicating that teachers can enhance students' willingness to participate by building positive relationships. Delos Reyes and Torio (2021) further suggest that when teachers and students share positive interpersonal interactions, students are more likely to develop interest in the subject and experience increased motivation.

If not, poor rapport influences EFL learners' negative actions. Stress levels in students may be impacted (Wang, Derakhshan, & Zhang, 2021). Poor teacher-student rapport will hinder students' ability to absorb information from lectures, affecting both the students and the quality of education. Zhou (2021) also introduced a similar concept. Students with poor rapport with their teachers may become stressed, anxious, and aggressive. Relationship-hindering behaviors result from teachers who cannot learn their students' names, do not share common interests with them, and act inconsistently and unresponsively when students ask questions. Academic failure and impeded social and emotional development are consequences of disrupted student-teacher interactions (Yadav et al., 2022).

Accordingly, this study aims to develop a theoretically grounded questionnaire to measure teacher student rapport among EFL teachers in Indonesian Islamic higher education. It further seeks to validate the factorial structure of the instrument through first-order confirmatory factor analysis (CFA), evaluate the reliability and goodness-of-fit indices of the proposed measurement model, and identify the most prominent rapport-building behaviors as perceived by EFL teachers within this context.

2. LITERATURE REVIEW

2.1. Conceptualizing Teacher-Student Rapport

Scholars such as Nova (2017), who developed an instrument for teachers' self-assessment of rapport building in the EFL classroom, have emphasized the importance of rapport between teachers and students in the Indonesian context. Hongwidjojo, Monika, and Wijaya (2018) examined the relationship between high school students' well-being and trust in their teachers. Satriani (2020) further investigated the connection between teacher-student rapport and students' English-speaking proficiency in ELT, with findings indicating that increased student-teacher trust correlates with higher levels of school well-being. Suarman, Aziz, Aziz, and Mohammad Yasin (2011) attempted to explore the nature of interactions between instructors and students at the University of Riau, Indonesia. Additionally, research on how teaching experience moderates the relationship between a teacher's subjective well-being and students was conducted by Farhah, Saleh, and Safitri (2021).

Researchers typically define rapport as a peaceful, intimate relationship between two or more individuals characterized by mutual regard, open communication, and trust (Flanigan, Ray, Titsworth, Hosek, & Kim, 2023). A connection marked by reciprocal trust and liking is also referred to as rapport (Tatum, 2019). Student-teacher rapport pertains to the positive relationships and connections that educators aim to establish with their pupils (Li, 2022). According to Murphy and Rodríguez-Manzanares (2012), rapport is defined by harmonious exchanges or a

relationship characterized by mutual understanding and satisfactory communication between teachers and students. Chávez et al. (2017) state that a good rapport between the instructor and pupils fosters trust and encourages casual interpersonal communication in the target language.

Rapport is an emotional connection between student and instructor shaped by their cultural values and beliefs (Yadav et al., 2022) and functions as a relationship-based interpersonal bond in education (Frisby & Martin, 2010). It encompasses a mutual, trustworthy, and pro-social link, characterized by pleasant interaction and personal affinity. Establishing such a positive connection is central to effective teaching (Delos Reyes & Torio, 2021) and involves open communication, emotional support, and academic assistance (Pianta, 2001), as well as personal connection and enjoyable engagement (Gremler & Gwinner, 2008). Wright, Jones, and D'Alba (2015) describe it as a close-knit relationship built on shared control, trust, and collaborative growth, while Ozis and Winfree (2020) emphasize mutual trust and understanding developed through frequent, positive interactions. Doyle, Brady, and Byrne (2009), as cited in Chávez et al. (2017), define it as a respectful, favorable, and mutually trusting academic and personal relationship, and Ahmed (2020) views rapport as the capacity to build harmony and trust in the classroom.

It is clear from the above-related concepts that rapport is described as the friendly, positive, and emotional interaction between teachers and students that helps them collaborate in the classroom. A healthy learning environment that facilitates effective teaching and learning will emerge from a solid teacher-student relationship. According to numerous academics, there are various approaches to building rapport between the teacher and students in an EFL classroom. According to Dörnyei (2001), the following actions should be taken: move around the classroom, introduce yourself, remember students' names, notice noteworthy aspects of their appearances, learn something unique about each student, inquire about their lives outside of school, show interest in their hobbies, acknowledge birthdays, and send notes to absent students (Chávez et al., 2017). Delos Reyes and Torio (2021) also suggest more approaches. Some strategies for building a strong rapport with students include demonstrating an interest in their uniqueness, giving constructive criticism, promoting freedom of speech, honoring students' opinions, using humor, and forming a supportive team dynamic with them.

In a language classroom, building rapport with students can also be accomplished by demonstrating an interest in each student, providing feedback on their progress, encouraging students to share their ideas, appreciating and respecting their opinions, sharing humor with them without making fun of them, cooperating with them rather than against them, and genuinely expressing happiness when they succeed (Nguyen, 2007). Buskist and Saville (2001) go into further detail about developing rapport. These include having a good sense of humor, being approachable before, during, and after class, promoting class discussion, sharing personal perspectives and experiences with the group, connecting the course material to real-world situations and examples, and recognizing that obstacles can occasionally develop and unintentionally impede students' progress.

Moreover, the instantaneous expression of both verbal and nonverbal teaching actions fosters rapport. Building rapport can be facilitated by utilizing the student's name, sharing personal experiences, employing humor, maintaining eye contact, grinning, nodding, and offering praise (Santana, 2019). Additionally, Harmer (2007) identified seven key roles that facilitate the development of positive teacher-student relationships (Ahmed, 2020). These roles include recognizing students as individuals, offering feedback, comments, and suggestions regarding their progress, validating students' impressions, ideas, or feelings, valuing and respecting what students say to their teachers, laughing with them rather than at them, collaborating eagerly and not opposing them, and genuinely expressing gratitude when they succeed or learn something.

Furthermore, Wright et al. (2015) suggest seven guidelines for creating a close and harmonious relationship between teacher and student for distance learning. These include the teacher's promotion of student-faculty relationships, the development of reciprocity and cooperation among students, the encouragement of active learning, prompt feedback, emphasis on time spent on tasks, communication of high expectations, and respect shown to a variety of learning styles and aptitudes. Nova (2017) offers several perspectives on building rapport between teachers

and students that should be used in the classroom. She states that it will be effective if teachers show interest in each student as an individual, give feedback on each person's growth, genuinely listen to students, value and respect their opinions, laugh with students rather than at them, work as a team with them rather than against them, and cultivate a sincere feeling of vicarious joy when they succeed in some way.

Developing a rapport with students requires specific characteristics from teachers, such as humor (Tatum, 2019). The intended recipient perceives deliberate verbal and nonverbal cues that evoke chuckles, laughter, and other impulsive behaviors as signs of joy, happiness, or surprise. Confirmation communication follows. This transactional process involves teachers conveying support, value, and acknowledgment of students as important individuals. It should be operationalized in three ways: (1) teachers can convey confirmation by answering students' queries and comments; (2) teachers can demonstrate interest in students' learning; and (3) teachers can show confirmation through their pedagogy. The latter involves exhibiting an interest in students' learning, while the third emphasizes paying attention to their needs.

Granitz, Koernig, and Harich (2008) identify three key antecedents to teacher-student rapport: approach, personality, and homophily. Approach encompasses both physical and psychological dimensions. Physical approachability includes availability through office hours, email, or phone, while psychological openness involves responsiveness, active listening, and creating a sense of shared purpose, underpinned by mutual respect and trust based on truthfulness, competence, and shared values. Personality comprises positivity (e.g., friendliness, humor, and cheerfulness), empathy (sensitivity to students' emotions and challenges), and caring (a commitment to supporting learning and removing obstacles). Finally, homophily refers to the natural connection formed when individuals share similarities, either in values, beliefs, and communication styles (value homophily) or in social attributes such as age, gender, ethnicity, education, or religion (status homophily), both of which facilitate rapport development.

Lammers and Gillaspy Jr (2013) propose that rapport in educational settings is primarily built through connectivity, which they define as a sense of presence grounded in trust, respect, and compassion, and comprising two components: social-academic integration and immediacy behaviors. Complementing this, Flanigan et al. (2023) highlight that specific teacher actions significantly shape rapport, particularly through five categories: uncommonly focused attention, linking behaviors, information exchange, polite behavior, and shared grounding. Additionally, contextual factors such as course design and class size influence rapport development. A learner-centered curriculum, especially one that integrates tools like mobile devices for focused tasks, is more conducive to rapport than a teacher-centered approach. Moreover, smaller class sizes enable more frequent one-on-one interactions, fostering stronger interpersonal connections between instructors and students compared to large lecture settings.

According to Thakur et al. (2019), there are additional elements of teacher-student rapport, such as students' enthusiasm and motivation (enjoying the material, liking to attend class, and willingness to take more classes taught), their expertise and problem-solving skills, the teacher's personality or qualities (helpful, considerate, and respectful toward students), open communication (willingness to listen to ideas and suggestions from students, filter them out, and put them to use), approachability (approachability for casual and lighthearted interactions), authenticity (being friendly with all students and yet being fair), and congruence (teacher's awareness of the amount of effort students put into the class). Additionally, five teacher behaviors such as being uncommonly attentive, establishing common ground, courteousness, connecting, and information sharing are essential for rapport building (Gremler & Gwinner, 2008; Webb & Barrett, 2014).

According to Delos Reyes and Torio (2021), building a positive rapport with students is a good sign of an excellent teacher. According to Wilson et al. (2010), teachers who exhibit immediate response behaviors such as addressing students by their first name or nickname, making eye contact, offering affirmations, moving around the classroom, and using appropriate gestures during lectures will encourage students' interest in learning and build their trust. Establishing a positive relationship with students requires a teacher to possess several attributes, such as

empathy, respect, patience, and an understanding of the anticipated behaviors of both parties. These traits all work together to create a conducive environment in the classroom (Sánchez, De González, & Martínez, 2013).

Experts and practitioners generally agree on what constitutes a positive EFL teacher-student relationship. For instance, Dörnyei (2001), as cited in Chávez et al. (2017), describes several indicators of EFL teacher-student rapport, including the teacher welcoming the class, recalling students' names, noting noteworthy aspects of their appearance, and discovering something special about each student. Rapport is also reflected when the teacher inquires about students' lives outside the classroom, expresses interest in their pastimes, and honors their birthdays. Additional indicators involve the teacher moving around the classroom, using personal examples and topics in instruction, and providing homework assignments or notes to absent students.

Ozis and Winfree (2020) propose key indicators for building teacher-student rapport, such as treating students with decency, using relevant case studies, being accessible via email, showing teaching passion, holding regular office hours, using students' names, favoring dialogue over lecturing, incorporating humor, clarifying course policies, smiling, maintaining eye contact, learning personal details, offering compliments, staying after class, and arriving early for informal interaction. Santana (2019) complements this by emphasizing that effective teachers strive to understand and motivate students, show genuine concern and fairness, communicate clearly, demonstrate respect, remain approachable, use appropriate humor, and stay authentic. Murphy and Rodríguez-Manzanares (2012) further enrich this view by highlighting openness, truthfulness, dignity, consistent encouragement, individualized recognition, and relational behaviors like sharing, mirroring, and imitation to foster mutual understanding and emotional alignment.

According to Nova (2017), teachers should consider eleven key factors when fostering a positive connection with their students: identifying students through warm greetings, using their names, and recognizing their abilities; practicing cooperation; building mutual confidence; ensuring fair and equal treatment; engaging in reciprocal sharing of ideas, feelings, experiences, and humor; listening attentively to promote equitable communication; using nonverbal cues such as body language, gestures, facial expressions, and eye contact; and providing immediate, clear, constructive, and encouraging feedback. Complementing this, Lammers and Gillaspy Jr (2013) identify additional markers of a strong instructor-student relationship, including the teacher's genuine understanding of students, consistent encouragement and concern, fair treatment, effective and respectful communication, earned mutual respect, approachability when students seek help, and the overall satisfaction students express regarding their relationship with the teacher.

2.2. Gaps in Teacher-Student Rapport Research

Although numerous scholars and practitioners have examined teacher-student rapport and affirmed its critical role in fostering motivation, engagement, discipline, and well-being, few studies have developed a psychometrically validated scale to measure this relationship. As Sabnani and Goh (2020) highlight, the quality of the teacher-learner relationship directly shapes students' willingness to take linguistic risks and persist through challenges, a view reinforced by Hanh and Nguyen (2007), who see rapport in the target language as both a pedagogical and psychological scaffold. Despite this strong theoretical and empirical consensus on rapport's foundational importance, there remains a significant gap in the availability of rigorously validated instruments, particularly those grounded in advanced methods like confirmatory factor analysis (CFA) and adapted to culturally specific contexts such as Indonesian Islamic higher education, where local pedagogical norms, religious values, and institutional structures uniquely shape rapport dynamics.

Despite this rich theoretical and empirical foundation, a critical gap persists in the methodological domain. While numerous studies describe, interpret, or advocate for rapport-building practices, very few have undertaken the systematic development and psychometric validation of a measurement instrument tailored to EFL higher education. Most existing tools either originate from general education or service contexts (e.g., Gremler and Gwinner (2008))

or lack rigorous statistical validation through advanced techniques such as confirmatory factor analysis (CFA). For instance, Nova (2017) developed a self-assessment instrument for EFL teachers in Indonesia, but its validation relied primarily on exploratory methods and expert judgment rather than structural equation modeling. Similarly, Wilson, Ryan, and Pugh (2010) created the Professor–Student Rapport Scale, yet its applicability in non-Western, religiously grounded higher education environments remains untested.

This methodological gap is particularly salient in the Indonesian context, where Islamic higher education institutions operate within a unique sociocultural and pedagogical framework. These institutions emphasize not only academic excellence but also moral and spiritual development, which may shape the expression and perception of teacher-student rapport in ways distinct from secular or Western models. As Farhah et al. (2021) note, teacher well-being and student outcomes in Indonesian Islamic universities are deeply intertwined with relational ethics rooted in Islamic values such as *rahmah* (compassion), *adab* (respectful conduct), and *ukhuwah* (brotherhood/sisterhood). Consequently, rapport-building behaviors may include religiously resonant practices such as offering prayers for students' success, acknowledging Islamic holidays, or integrating ethical reflections into language lessons.

Moreover, the operationalization of rapport in prior studies often suffers from conceptual overlap or excessive breadth. Some frameworks conflate rapport with general teaching effectiveness (e.g., Wright et al. (2015)), while others treat it as synonymous with immediacy or confirmation behaviors (e.g., Webb and Barrett (2014)). Although these constructs are related, they are not identical. Rapport, as defined by Murphy and Rodríguez-Manzanares (2012), is specifically characterized by mutual understanding and harmonious communication, whereas immediacy refers to behaviors that reduce psychological distance, and confirmation denotes the acknowledgment of students' worth. A precise measurement model must therefore isolate rapport as a distinct latent construct with clearly delineated indicators.

To address these limitations, the present study draws on an integrative theoretical framework that synthesizes insights from multiple scholarly traditions. First, it adopts Dörnyei (2001)'s motivational strategies for language classrooms, which emphasize personalization, recognition, and emotional support as key rapport enablers. Second, it incorporates Buskist and Saville (2001)'s behavioral taxonomy, which identifies approachability, humor, and real-world relevance as core rapport-building actions. Third, it integrates Granitz et al. (2008)'s antecedent model, which highlights homophily, approachability, and personality as foundational to rapport formation. Finally, it aligns with Lammers and Gillaspy Jr (2013)'s connectivity model, which positions presence, trust, and compassion as the emotional bedrock of student-instructor relationships.

From this synthesis, four coherent and theoretically grounded indicators of teacher-student rapport emerge: (1) recognizing students as individuals, (2) supporting and monitoring their academic and emotional needs, (3) being personable and approachable, and (4) interacting with students through verbal and nonverbal channels. These indicators are not only consistent with global literature but also resonate with local educational values. In Indonesian Islamic higher education, where collectivism and relational harmony are highly valued, behaviors such as remembering students' names, celebrating their achievements, and maintaining a gentle demeanor carry significant cultural weight. As Suarman et al. (2011) observed in their study at the University of Riau, Indonesian students perceive teachers who demonstrate personal concern and moral integrity as more trustworthy and effective. Similarly, (Hongwidjojo et al., 2018) found that student-teacher trust was a stronger predictor of school well-being among Indonesian high schoolers than academic support alone, underscoring the primacy of relational quality in this context.

Despite these contextual insights, no prior study has validated a measurement model of teacher-student rapport specifically for EFL teachers in Indonesian Islamic higher education using confirmatory factor analysis (CFA). CFA is particularly appropriate because it evaluates whether empirical data align with a pre-specified theoretical structure, offering stronger evidence of construct validity than exploratory methods, and enables rigorous assessment of model fit through multiple statistical indices. The lack of such a validated instrument creates practical challenges: without a reliable scale, educators and researchers cannot effectively evaluate professional development programs, compare

rapport across contexts, or examine causal relationships between rapport and student outcomes. As Pedler et al. (2020) observe, while qualitative evidence is abundant, educational policy and practice require quantifiable metrics for informed decision-making. Moreover, this study addresses calls for contextually grounded research in the Global South; as García Sánchez (2013) argues, Western-derived frameworks often overlook local epistemologies, power relations, and cultural norms.

It is also important to acknowledge the challenges that EFL teachers in Indonesia face in building rapport, as Nguyen (2007) and Santana (2019) point out that large class sizes, limited instructional time, and students' low English proficiency can hinder meaningful interaction, making it difficult for teachers to remember all students' names, engage in personalized conversations, or provide individualized feedback; yet Zhou (2021) and Kang and Wu (2022) demonstrate that even small, consistent rapport-building can significantly enhance students' sense of belonging and motivation, suggesting that rapport relies not on extensive personal disclosure or informal friendship but on intentional, respectful, and responsive pedagogy. The literature further underscores the bidirectional nature of rapport: while teachers typically initiate rapport-building behaviors, students' responsiveness, engagement, and trust reciprocally reinforce the relationship (Delos Reyes & Torio, 2021; Frisby & Martin, 2010), whereas poor rapport can trigger a negative feedback loop in which students disengage, teachers become frustrated, and the overall classroom climate deteriorates (Wang et al., 2021; Yadav et al., 2022), thereby affirming that measuring rapport is not merely an academic exercise but a practical necessity for sustaining healthy and productive learning environments.

Therefore, the explicit aims of this paper are: (1) to develop a theoretically grounded questionnaire measuring teacher-student rapport among EFL teachers in Indonesian Islamic higher education; (2) to validate the factorial structure of this instrument using first-order confirmatory factor analysis; (3) to assess the reliability and goodness-of-fit of the measurement model; and (4) to identify the most salient rapport-building behaviors as perceived by EFL teachers in this context. Through these objectives, the study offers a practical tool and empirical evidence to support the enhancement of relational quality in EFL classrooms, ultimately contributing to more effective and humane language education.

3. METHODOLOGY

3.1. Research Design

In order to define the measurement model of teacher-student rapport in EFL classrooms, this study used a quantitative approach. This factor analysis method examined and corroborated a wide range of underlying elements that supported the research variables.

3.2. Sample and Data Collection

This study was conducted in Indonesia's state-run Islamic higher education institutions. In Indonesia, there are 58 Islamic higher education institutions. In the meantime, 111 EFL teachers from all of Indonesia's provinces made up the research sample. The researchers received an official permission letter from the State Islamic University of Mahmud Yunus Batusangkar to obtain the data. This study was approved by the Institutional Review Board of State Islamic University of Mahmud Yunus Batusangkar, Indonesia, under protocol number: B-459/Un.25/L.I/KP.07/11/2023. Informed verbal consent was obtained from all participants prior to data collection, and written consent was documented for interviewees. All participants were informed of the study's purpose, their right to withdraw at any time, and the confidentiality of their responses. Finally, all collected data were anonymized and stored securely to protect participant identity and ensure confidentiality in accordance with ethical research standards.

3.3. Research Instruments

This study employed a closed-ended questionnaire. The closed-ended section utilized the Likert scale, which provides a limited set of response options. The instrument was specifically designed to measure positive teacher-student rapport (PTSR) in EFL contexts, grounded in established theoretical frameworks (Buskist & Saville, 2001; Chávez et al., 2017; Dörnyei, 2001; Harmer, 2007). Prior to the main data collection, the questionnaire underwent a pilot test with 30 EFL teachers from institutions not included in the final sample to assess clarity, relevance, and face validity. Feedback from the pilot informed minor wording adjustments to enhance item comprehension and reduce ambiguity.

3.4. Data Collection Techniques

The final questionnaire was developed by operationalizing four core indicators of teacher-student rapport derived from the aforementioned theories of building positive teacher-student rapport from Harmer (2007); Buskist and Saville (2001) and Dörnyei (2001), as well as theories of teacher-student rapport in EFL classes from Chávez et al. (2017). These theories yielded 24 measurable items, as detailed in Table 1. An additional item was included to capture general rapport perception, resulting in a 25-item instrument. Responses were recorded on a five-point frequency scale: never, seldom, sometimes, often, and always. The survey was administered to 111 EFL teachers across Islamic higher education institutions in Indonesia. This sample size exceeds the commonly recommended minimum of 100–150 for conducting confirmatory factor analysis (CFA) with moderate model complexity, ensuring adequate statistical power and stable parameter estimates. Complementing the survey, semi-structured interviews were conducted with a subset of participants to gather in-depth qualitative insights.

Table 1. The distribution of PTSR indicators and items.

Indicators	Positive teacher-student rapport items	Code
Recognizing students	Greeting students	A1
	Calling student's name	A2
	Knowing student's special features	A3
	Knowing student's uniqueness	A4
	Sharing personal information	A5
	Learning student's hobbies	A6
	Knowing student's special events	A7
	Celebrating student's special events	A8
Supporting and monitoring students	Sharing equal attention to students	B1
	Using personal topics and examples	B2
	Disclosing personal insights or experiences	B3
	Relating course material in everyday terms and examples	B4
	Understanding students' problems and helping them out	B5
	Praising student's special talent	B6
	Interacting with students	B7
Being personable and approachable	Sending notes/homework to absent students	C1
	Being available and accessible in (non) classroom interaction	C2
	Encouraging class discussion	C3
	Showing enthusiasm	C4
Interacting with students	Injecting humour	D1
	Appreciating students	D2
	Making eye contact	D3
	Being gentle and polite	D4
	Being respectable	D5
	Smiling	D6

3.5. Data Analysis

Quantitative data were analyzed using confirmatory factor analysis (CFA) to evaluate the hypothesized four-factor structure of the PTSR construct. CFA, a multivariate technique, assesses how well observed (indicator)

variables reflect underlying latent constructs (Harrington, 2009). In other words, Herwin and Nurhayati (2021) assumed that indicator variables could be directly observed and measured, while latent variables could not be instantly formed or constructed.

In this study, the 25 questionnaire items served as observed indicators, while the four rapport dimensions represented latent variables. Data analysis was performed using LISREL 8.80. The measurement model was specified as.

Indicator = λ construct + error

$$x = \lambda\xi + \delta$$

Where:

x: Vectors for indicator variables.

ξ: Exogenous latent variables.

λ: Loading factor.

δ: Error.

To interpret the coefficient, the loading factor was no less than 0.4. After that, reliability analysis was used to obtain the construct reliability coefficient. It was calculated through Cronbach's alpha using the following formula.

$$\alpha = \left(\frac{k}{k-1}\right)\left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2}\right)$$

Where:

α : The number of items in the measure.

$\sum \sigma_i^2$: The variance associated with each item.

σ_t^2 : The variance associated with the total score.

A construct was deemed reliable if α > 0.80. Model fit was evaluated using multiple goodness-of-fit indices (Tungkunanan, 2020): p-value > 0.05, RMSEA < 0.08, GFI > 0.90, AGFI > 0.90, and $\chi^2/df < 2$ (see Table 2).

Table 2. Goodness-of-fit model testing indicators.

Goodness of fit index	Cut of value
P-value	> 0.05
RMSEA	< 0.08
GFI	≥ 0.9
AGFI	≥ 0.9
Chi-square (X²)	Expected low (X² < 2df)

4. FINDINGS

Confirmatory factor analysis is performed, and the research topic is addressed. The previously determined teacher-student rapport variable construct serves as the foundation. In addition to other things, this concept has four indicators: identifying the person or individual, also referred to as identifying students; monitoring and assisting students; being affable and approachable; and communicating with students. The proof of the goodness-of-fit model for each construct and four indicator items is used to describe the research findings, as shown.
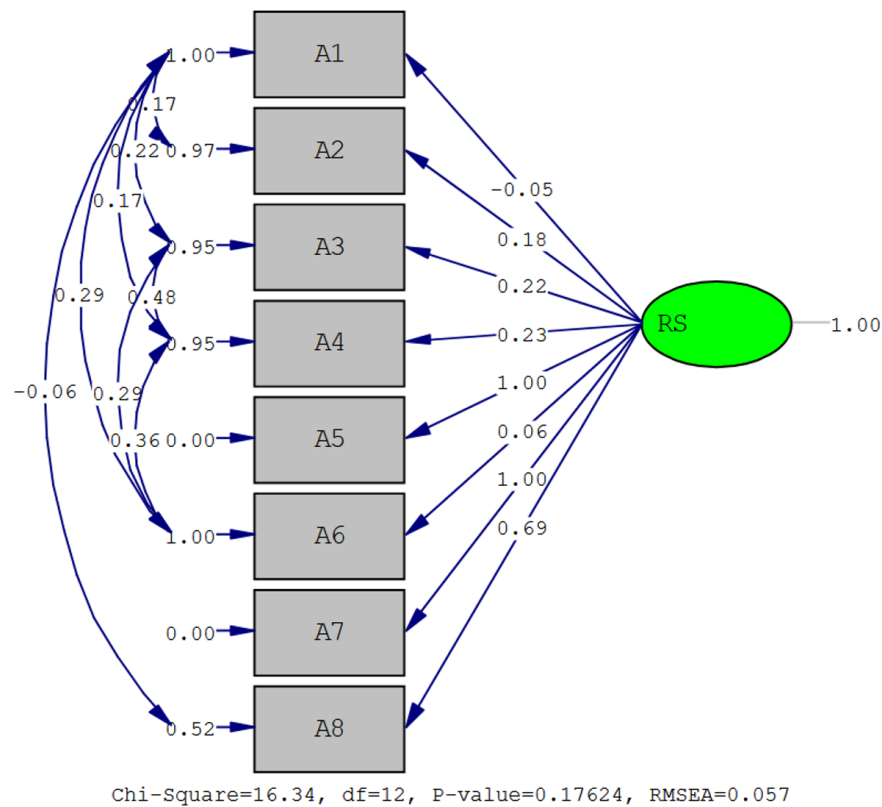
Chi-Square=16.34, df=12, P-value=0.17624, RMSEA=0.057

Figure 1. The standardized estimate value of RS indicator.

4.1. Recognizing Students (RS)

With a coefficient greater than 0.4, the eight measuring items of the responding students have passed the significance test, according to the confirmatory factor analysis results shown in Figure 1. Celebrating students' special occasions (A8) emerged as the measuring item that contributed most to the positive teacher-student relationship variable out of the eight.

The results of the goodness of fit model test must then be examined. The p-value coefficient is 0.176, which is greater than 0.05; the RMSEA coefficient is less than 0.08 at 0.057; the GFI coefficient is 0.97, which is greater than 0.90; the AGFI coefficient is 0.90, which is slightly below 0.92; and the Chi-Square coefficient is 17.25, which is greater than 2df. These results indicate that all the requirements for the goodness of fit index have been satisfied. The researchers conclude that this model is a good fit, as the theoretical measurement model for the student identification indicator aligns with the empirical data.

4.2. Supporting and Monitoring Students (SMS)

The second test is based on the monitoring and support of students' indicators. This indicator includes seven elements: (B1) Giving each student equal attention; (B2) Using personal topics and examples; (B3) Sharing personal insights or experiences; (B4) Relating course material in terms and examples that are relatable to everyday life; (B5) Recognizing and assisting students with their problems; (B6) Praising students for their unique talents; and (B7) Interacting with students. Figure 2 shows how the confirmatory factor analysis turned out.
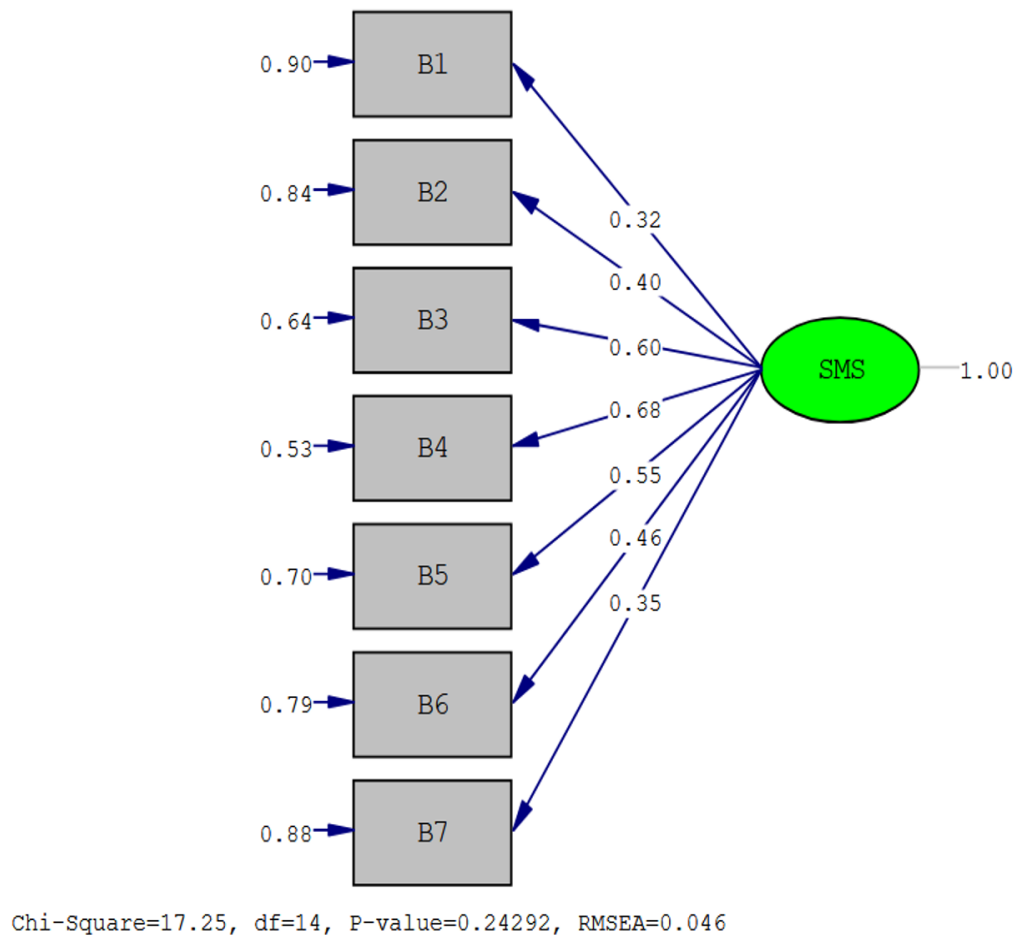
Figure 2. The standardized estimate value of SMS indicator.

The confirmatory factor analysis results shown in Figure 2 indicate that the seven measuring items linked to monitoring and helping students have passed the significance test with a coefficient greater than 0.4. The item (B4), which related course material to real-world instances and phrases, emerged as the most significant contributor to the good teacher-student rapport variable among the seven measuring items.

The goodness-of-fit model test findings must then be investigated. The Chi-Square coefficient is larger than 2df by 17.25, the GFI coefficient surpasses 0.90 by 0.96, the AGFI coefficient exceeds 0.90 by 0.91, and the p-value coefficient exceeds 0.05 by 0.243. The RMSEA coefficient is less than 0.08 at 0.046. This demonstrates that every goodness-of-fit index requirement has been met. Since the theoretical measurement model for the indicator of monitoring and supporting pupils fits with actual data, the researcher finds that this model fits.

4.3. Being Personable and Approachable (BPA)

Being affable and approachable is the indicator used for the third exam. This indicator is composed of four elements: (C1) sending homework assignments or notes to absent students; (C2) being approachable and available during (non)class interactions; (C3) promoting class discussion; and (C4) demonstrating zeal. Figure 3 shows how the confirmatory factor analysis turned out.
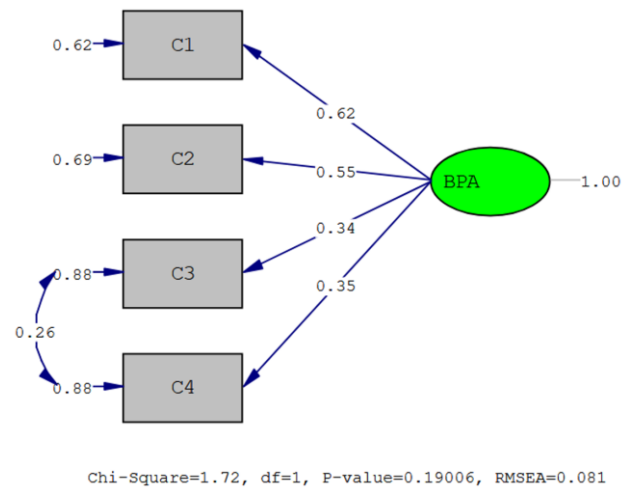
Chi-Square=1.72, df=1, P-value=0.19006, RMSEA=0.081

Figure 3. The standardized estimate value of BPA indicator.

Related to the confirmatory factor analysis results, as seen in Figure 3, the four measuring items of supporting and monitoring students have fulfilled the significance test with a coefficient of more than 0.4. Of the four measuring items, (C1) sending notes/homework to absent students became the most significant contributor to the positive teacher-student rapport variable. Afterward, the goodness of fit model test results need to be conducted. The p-value coefficient exceeds 0.05 by 0.19, the RMSEA coefficient is greater than 0.08 by 0.081, the GFI coefficient exceeds 0.90 by 0.99, the AGFI coefficient exceeds 0.90 by 0.92, and the Chi-Square coefficient is greater than 2df by 1.72. This demonstrates that every goodness of fit index requirement has been met. This shows that this model fits since the theoretical measurement model for the indicator of being personable and approachable is fit with empirical data.

4.4. Interacting with Students (IWS)

The indicator for interacting with children was assessed through four tests. Six indicators comprise this overall indicator: (D1) Adding Humor; (D2) Expressing Appreciation to Students; (D3) Maintaining Eye Contact; (D4) Acting Mild and Courteous; (D5) Showing Respect; and (D6) Grinning. The results of the confirmatory factor analysis are illustrated in Figure 4.
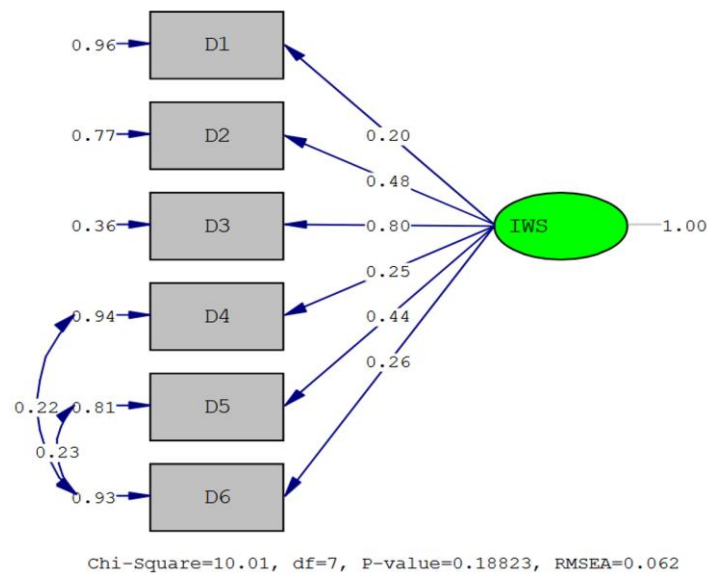

Chi-Square=10.01, df=7, P-value=0.18823, RMSEA=0.062

Figure 4. The standardized estimate value of IWS indicator.

The results of the confirmatory factor analysis are presented in Figure 4. A coefficient greater than 0.4 indicates that the six items representing the interactions between students passed the significance test. Making eye contact (D3) emerged as the most contributing item to the positive teacher-student rapport variable among the six.

The goodness-of-fit model test findings must then be investigated. The coefficients for RMSEA, GFI, and AGFI are as follows: RMSEA is 0.062, less than 0.08; GFI is 0.97, more than 0.90; AGFI is 0.91, more than 0.90; and Chi-Square is 10.01, more than 2df. With a p-value of 0.19, it is more significant than 0.05. This proves that all the requirements for the goodness-of-fit index have been satisfied. It is reasonable to presume that actual data fits the theoretical measurement model for the personability and approachability indicator. According to the analysis's findings, all four indicators fulfill the goodness-of-fit model and are significant. The overall analysis utilized the confirmatory factor analysis first-order technique, which was the subsequent analysis. The purpose of this is to identify the correlation of hidden variables. The findings of the first-order analysis are displayed in Figure 5.
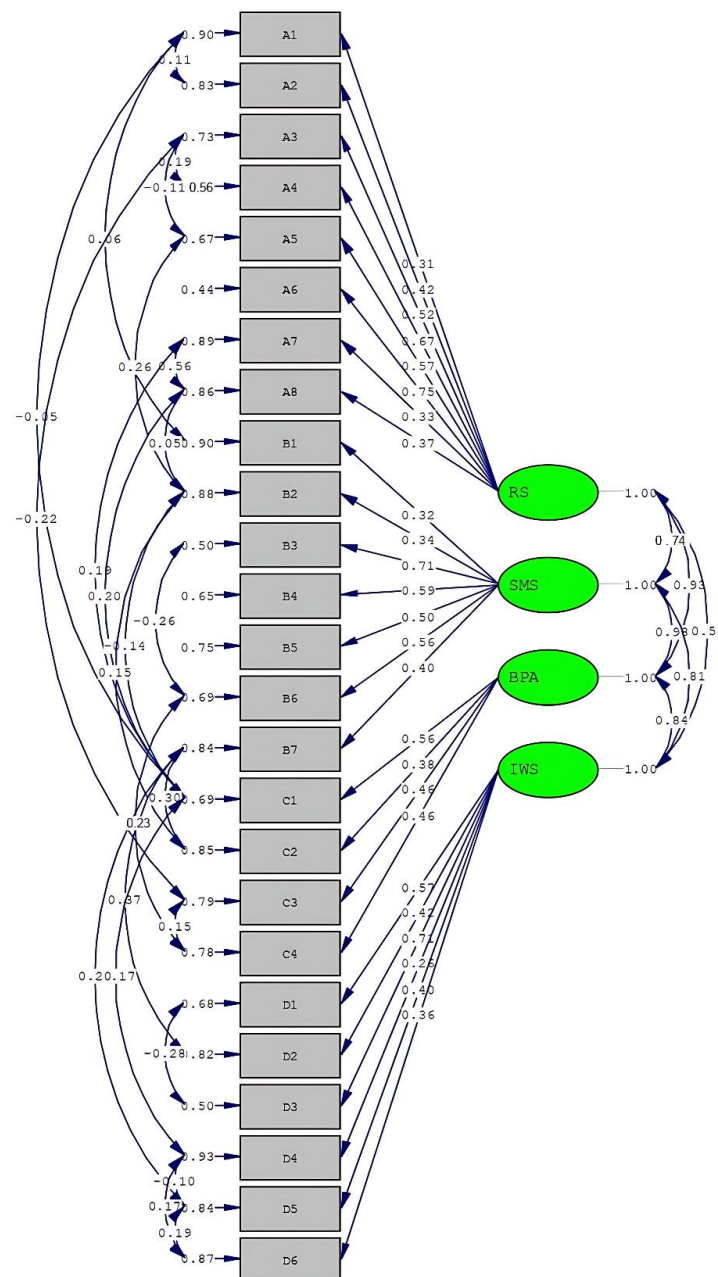
Chi-Square=277.47, df=245, P-value=0.07547, RMSEA=0.035

Figure 5. The results of the first-order analysis.

Twenty-five latent variables were found to correlate significantly in the first-order analysis. The results of the investigation of the general goodness-of-fit models are as follows: Upon completion of the inquiry, the Chi-Square coefficient is 277.47, which is greater than 2df; the GFI coefficient is 0.83, which is less than 0.90; the AGFI coefficient is 0.78, which is less than 0.90; the p-value is 0.076, which is greater than 0.05; and the RMSEA coefficient is 0.035, which is less than 0.08. This indicates that the goodness-of-fit index has been satisfied on three of the five factors. Therefore, this model is appropriate. The data fit the theoretical measurement model for the personability and approachability index. According to Cronbach's alpha, the construct dependability of the total latent variables is 0.86. Based on the criteria, which is more than 0.80, it is feasible to assess the reliability of the positive teacher-student rapport measurement model in EFL classes. The reliability of the model was also tested, and it was found that the Cronbach's Alpha coefficient is 0.857, which exceeds 0.80.

5. DISCUSSION

This study validates a four-dimensional model of positive teacher-student rapport (PTSR) in EFL classrooms: recognizing students, supporting and monitoring students, being personable and approachable, and interacting with students. Each dimension demonstrated strong construct validity, with all 24 items loading above the 0.40 threshold (Herwin & Nurhayati, 2021), and the overall scale achieved high reliability (α = 0.86), confirming its consistency in measuring rapport as a unified construct.

Key findings reveal that specific rapport-building behaviors carry disproportionate weight. Celebrating students' special events (A8), a form of personal disclosure (Chávez et al., 2017; Rubinsztein, Gestwicki, Murphy, & Klionsky, 2007) emerged as the strongest indicator of recognition. Similarly, relating course material to everyday examples (B4) significantly enhanced rapport, aligning with evidence that contextualized, student-centered instruction fosters connection (Buskist & Saville, 2001; Murphy & Rodríguez-Manzanares, 2012; Ozis & Winfree, 2020; Wright et al., 2015). Among approachability behaviors, providing notes or homework to absent students (C1) signaled genuine care (Lammers & Gillaspy Jr, 2013; Murphy & Rodríguez-Manzanares, 2012; Santana, 2019) while consistent, respectful eye contact (D3), a critical nonverbal cue, proved most impactful in interaction (Buskist & Saville, 2001; Delos Reyes & Torio, 2021; Nova, 2017; Ozis & Winfree, 2020).

Although the model fit indices for the p-value (> 0.05), RMSEA (< 0.08), and chi-square to degrees of freedom ratio (χ^2/df < 2) all met the commonly accepted thresholds for good model fit, the values for the Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) fell slightly below the recommended cutoff of 0.90 (Tungkunanan, 2020). This minor shortfall suggests a modest degree of misfit between the hypothesized theoretical structure of positive teacher-student rapport and the empirical data collected from the sample of EFL instructors. Such discrepancies are not uncommon in social science research, particularly when applying complex latent variable models to context-specific educational settings where cultural, institutional, or pedagogical factors may influence response patterns. However, given that the majority of fit indices, especially those considered more robust to sample size and model complexity, such as RMSEA and the χ^2/df ratio, indicate acceptable fit, and considering the strong factor loadings (all > 0.40) and high internal consistency (α = 0.86), the overall body of evidence strongly supports the adequacy and practical utility of the proposed model for measuring teacher-student rapport in EFL classrooms. Thus, while refinements may enhance future iterations of the instrument, the current model demonstrates sufficient validity and reliability to serve as a meaningful framework for both research and reflective teaching practice in similar EFL contexts.

These findings carry important implications for classroom practice. Instructors can intentionally cultivate rapport by integrating personal acknowledgment (e.g., remembering names, celebrating milestones), grounding lessons in real-life relevance, maintaining accessibility beyond class hours, and using affirming nonverbal communication. Such strategies not only humanize the learning environment but also align with established rapport frameworks (Dörnyei, 2001; Harmer, 2007).

A key limitation is the sample's restriction to EFL teachers in Indonesia's state Islamic higher education institutions, which may limit generalizability. Additionally, this study focused on rapport's structure and prevalence, not its causal impact on learning outcomes. Future research should employ experimental or longitudinal designs to examine how teacher-student rapport statistically influences student engagement, motivation, and academic achievement. Expanding the instrument's validation across diverse cultural and educational contexts would further strengthen its applicability. For now, this validated tool offers stakeholders a reliable means to assess and enhance the relational quality of EFL instruction, ultimately supporting more connected, effective, and human-centered classrooms.

6. CONCLUSION

This study successfully developed and validated a four-dimensional model of positive teacher–student rapport (PTSR) in the Indonesian EFL higher education context. The findings confirmed that the model possesses strong construct validity and high internal reliability, providing empirical evidence for its use as a reliable instrument to measure rapport. The study highlights the importance of relational behaviors such as recognizing students personally, contextualizing learning materials, showing care through supportive actions, and maintaining positive nonverbal communication. These behaviors collectively strengthen emotional and pedagogical connections between teachers and learners. Despite minor limitations in model fit indices and the restricted sample scope, the validated scale offers a valuable framework for both research and reflective teaching practices. Future studies are encouraged to apply and further refine this instrument across diverse educational and cultural settings in order to obtain an understanding of how rapport enhances engagement, motivation, and learning outcomes in EFL classrooms.

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