Research Paper

Student Trust in Teacher Questionnaire: An Instrument for Measuring High School Students' Trust in English Teachers

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Abstract

Trust between students and school authorities has proven to yield significant advantages, including academic achievement, improvement in student behavior, and enhancement of the quality of classroom management. However, there is no reliable and valid instrument for the measurement of interpersonal trust in the educational context; therefore, the present study strived to fill this gap through devising a questionnaire to measure students' trust in English teachers. To that end, a 5-point Likert-scale Student Trust in Teacher Questionnaire was devised within a sample of 255 male and female

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high school students in several schools of Iran. Then it went through processes of reliability and validity examination of item analysis, exploratory factor analysis, omega coefficient analysis, and confirmatory factor analysis. Maximum likelihood factor analysis with a cut-off point of .40 and Kaiser's criterion of eigenvalues greater than 1 suggested a 4-factor solution as the best fit for the data. Analyses suggested the instrument's acceptable reliability and validity for measuring students' trust in their English teachers in terms of four teacher traits: pedagogical competence, individual consideration, trustworthiness, and situational professionalism. It bears mentioning that although the questionnaire was applied to English teachers in the current study, it is not confined to the context of language education. Thus, the findings of this study can be useful for all stakeholders in the education system, especially teachers to school principals and administrators.

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1. Introduction

Trust is the cornerstone of human relationships; without trust, they will undeniably fall apart. Whether it is a romantic, business, or any other kind of relationship, it requires trust to be sustainable. And yet this important issue has not been sufficiently investigated in the field of education, particularly in schools. As Romero (2015) states, there is much concentration on the school instruction's physical properties, e. g. the organization of schools, testing and assessment, and curriculum, whereas there is a concurrent insufficient attention to socio-cognitive factors, such as trust. She adds that although the importance of trust in high schools and its high impact on student achievement is well established, we still do not know much about student trust in particular, and whether or not it matters, and how.

With regard to the value of trust, Lewis and Weigert (2012) declare, "as a realist social a priori, trust stays relevant throughout emerging sociohistorical

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eras, like an aborning global, cosmopolitan postmodern society in which cooperative actions may provide realist possibilities of trust arising among contemporaries that know each other as strangers" (p. 25). On an educational scale, Cerna (2014) emphasizes the role of trust in such a field, where she believes stakes are high and risks are traditionally adverse, asserting that trust increases the feeling that the other actors will use their goodwill in a joint search for innovative solutions, and creates safe spaces for novel approaches and exchanging ideas. Moreover, she points out that in the education system, trust has an impact not only on the functioning of the system but also on the actions of individual actors. She further believes that it can act as a cause, an effect, or a moderator. In addition, Niedlich et al. (2021) confirm that both educational governance and education institutions depend on trust. And Whiteman et al. (2015) acknowledge the important role of trust in school effectiveness, a claim that is supported by Bryk and Schneider (2002), as well as and Forsyth et al. (2011).

A number of studies have proclaimed trust as one of the prominent factors in the field of education, and note its impact on such factors as school effectiveness and improvement, student achievement and school reform, collective decision-making and improved educational outcomes, as well as being a crucial contributor to the stability of relationships in schools (e. g. Byrk & Schneider 2002; Forsyth et al., 2011; Niedlich et al., 2021, Tschannen-Moran & Hoy, 1997). Nevertheless, there is scarcity of knowledge about students' trust, in particular, in their schools and the educational system (Adams & Forsyth, 2009; Mitchelle et al., 2008; Murray & Zvoch 2011; Romero, 2015). Moreover, there is lack of reliable and valid instruments and scales for the measurement and analysis of trust in language education and discovering its underlying factors and contributors to its strength and weakness in a systematic manner. Therefore, this study intends

to contribute to the literature by developing a reliable and valid instrument (STTQ) for the measurement of Iranian high school students' trust in their English teachers. The following research question was used to guide the study:

- How can students' trust in English teachers be operationalized in an instrument?

2. Literature Review and Theoretical Framework

Trust has long been the subject of empirical studies in a wide variety of disciplines, such as sociology, philosophy, psychology, business, and, not the least, education (e. g. Adams et al., 2008; Castelfranchi & Falcone, 2010; Costa et al., 2017; Isaeva et al., 2019; Jones & Nangah, 2020; Kroeger, 2015; Lee & Schallert, 2009; Lewis & Weigert, 2012; Pytlikzillig & Kimbrough, 2016; Syakur et al., 2020). Trust was first studied in a systematic way first in the early 1980s when Hoy and a number of his colleagues embarked on a series of school studies on organizational trust, when they formed the concept of trust and developed constitutive as well as operationalized definitions for the term. A decade later, Hoy and his colleagues reconceptualized trust and added new aspects to it that were more directly relevant to student achievement in schools. More specifically, relying on the facets of trust proposed in the interdisciplinary literature, they redefined trust as "a state in which individuals and groups are willing to make themselves vulnerable to others and take risks with confidence that others will respond to their actions in positive ways, that is, with benevolence, reliability, competence, honesty, and openness" (cited in Forsyth et al., 2010, pp. 19-20). Also, they made a distinction between interpersonal trust and collective trust.

Investigations of trust in the field of language education have continued since then. One example is a study by Adams and Forsyth (2013): Revisiting a study by Goddard et al. (2001), which had found that student achievement

in urban elementary schools is predicted by collective faculty trust in clients, they attempted to further explore this issue a decade later. Their study included two parts: first, testing the principal effect of collective faculty trust on the achievement of students by controlling for free and cheaper lunch and also students' previous achievement, and second, determining whether or not self-regulated learning has an effect on the relationship between collective trust and achievement. Data was collected from 1,648 students and 1,039 teachers in 56 urban elementary schools. The results of their study revealed that in schools where there is a stronger culture of collective faculty trust, the average math and reading achievements were higher. These schools also had students who showed more self-regulated learning.

Lee and Schallert (2009) conducted a study on the relationship between feedback and revision cycles of teachers and students and constructing trust in an EFL writing class. Their participants were a nonnative English teacher and 14 students in her English writing class in a university located in Korea. Their data were collected by means of classroom observations, as well as three types of interviews (i.e., formal, informal, and text-based), and students' drafts with their teacher's comments. They found that caring was enforced in complex and mutual ways, and intertwined factors from the larger society, the teacher, the course, and the student influenced it. Their findings also suggested that students' level of trust in their teacher's English ability, her teaching methods and written feedback, as well as the teacher's trust in certain students resulting from how well they revised their work, had an important role in the creation and development of a mutual rapport between them.

More recently, Romero (2015) has studied the connection between student trust, behavior and academic outcomes. The participants were a sample of high school students in USA that were considered to be nationally

representative ($N = 10585$). Romero used structural equation modeling to scrutinize the relationship between student trust, behavior and school results, while controlling for student socioeconomic status, school size and prior achievement. Several academic achievement factors were also considered. The results of the study indicated a significant relationship between student trust, behavior, and high school outcomes. She found that students who trusted their teachers and schools had fewer behavioral problems and showed better academic results. The findings also suggested that trust influences behavior, irrespective of student socioeconomic status, the size of the school or former achievement.

In a more comprehensive study, Van Maele and Van Houtte (2012) investigated if teachers' trust in their principal and colleagues, as well as their students and parents has different relations to various facets of teachers' efficacy beliefs. In this study, several analyses were made on data extracted from a total of 2,091 teachers across what was considered to be a representative sample of Belgian secondary schools (i.e., 80 secondary schools in Flanders). The results revealed that teachers' sense of efficacy was supported by positive perceptions of their relationships' quality with other school participants, which would in turn reduce teachers' feeling of alienation at work. In addition, they found that school policies that place focus on building trust could cause an increase in the effectiveness and retention of the teachers, which is one of the concerns of current educational policies.

Tschannen-Moran and Gareis (2015), in a study exploring the indirect way in which principals impact students' achievement, argued that among the four paths proposed by Leithwood, Patten, and Jantzi (2010), i. e. Rational Path, Emotions Path, Organizational Path, and Family Path, through which this indirect influence flows, trust is key. In their study, they focused on the relationship between trust and three directly relevant mediators: academic

press (a normative environment in which teachers not only hold the belief that students have the capability to succeed academically but also emphasize on helping struggling students to meet academic expectations), collective teacher efficacy (a motivational construct founded on the communal persuasion of teachers that the overall exertions of the faculty will positively impact the learners), and teacher professionalism (a dedication to their clients' needs, the capability to develop customized interventions accordingly, and the optimal use of assessments). They also assert that trustworthy leadership has been shown to have a relation to the three strong aspects of school culture mentioned above. They conclude that "Trust, then, is an important factor associated with student achievement, as well as an important mediator of other leadership behaviors associated with student achievement" (p. 267).

The most recent study of trust in the field of education is a systematic literature review of 183 peer-reviewed articles published in recent years on trust in education. Conducted by Niedlich et al. (2021), this study introduces a wide-ranging model of trust in multi-level education systems. This model includes four elements that are interconnected: generalized trust, educational governance, educational settings and educational attainment. The findings of their study indicated that among these four domains, the first three can be found in the literature; however, the relationship between trust in educational settings and generalized trust have received the highest amount of attention. With regard to trust in educational settings, while a large variety of aspects have been addressed, they report that overall, a growing interest has been confirmed in the trusting relationship among staff, learners, leaders, and parents.

Nonetheless, systematic studies of trust as a multi-layer phenomenon remain uncommon (Fulmer & Dirks, 2018; Bentzen, 2019), and this is

especially true with regard to education (Niedlich et al., 2021). Moreover, as can be seen in the literature review, the issue of students' trust in their teachers has not been addressed sufficiently. Therefore, attempting to fill the gap in research, the present study has attempted to develop a valid and reliable instrument for gauging high school students' trust in their English teachers.

Recognizing the illusiveness of the term trust and the challenge involved in trying to reach an agreed-upon definition for it, McKnight and Chervany (2001) provide definitions of an interconnected set of theoretical, measurable constructs that capture the spirit of the definitions of trust and distrust across a number of disciplines (psychology, economics, sociology, social psychology, and other disciplines), with the aim of facilitating a comparison of empirical research results. In the same way, a thorough review of definitions in literature for trust as a construct was done in this study to reach the most suitable one to the context of education.

On the other hand, although the complexity and illusiveness of trust as a construct has been proclaimed by a large number of researchers (Adams et al., 2008; Khodyakov, 2007; McNight & Chervany, 2001; PytlikZillig & Kimbrough, 2016; Raimondo, 2000), a thorough examination of various definitions of the term in several disciplines, reveals some common features in its definition. For instance, in a review of various models and methodologies for measuring trust in the marketing studies by Raimondo (2000), trust in someone or something is defined as an attitude that is characterized by the belief in the other person's (e. g. supplier or client) reliability. Raimondo further reports a study conducted by Castaldo (1995) where two main constitutive components are mentioned for trust: 1) predictability, based on experience of the learning process, and 2) the confidence that the other person could not act on the basis of opportunity and

that his/her actions would be aimed at achieving joint benefits. Raimondo emphasizes that whatever the definition of trust is, as asserted by a number of authors, it depends on the perception that there is no opportunism from the other party, which would be reinforced by the certainty that an action is intended to achieve a joint objective.

Another almost similar definition of trust is presented by Mayer et al. (1995) as, "the willingness of a party to be vulnerable to the outcomes of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (p. 712). In a more detailed explanation, they mention three factors that lead a person to consider the other party to be trustworthy:

A. *Ability*: refers to the competence of the trusted person to provide what the trustor expects;

B. *Integrity*: refers to the fact that principles acceptable to the trustor guide the partner;

C. *Benevolence*: refers to the intention of the trusted person to do their best for the trustor and to put aside their selfish personal desires, and overall consistently act in the interests of the trustor. These three factors, more or less, have been mentioned as the main constituents of trust in several other studies, too (e.g., Adams et al. 2008; Andaleeb, 1992; Ganesan, 1994).

Having reviewed and analyzed the definitions provided for trust in different disciplines and their commonalities and their scopes, the definition of trust proposed by Adams et al. (2000) was deemed to be the most relevant and also comprehensive enough to be applied in the context of education, and, therefore, was used in the present study. There were two reasons for choosing this model: First, Adams and his colleagues indicate that the items of their model are applicable in general to small teams, and the classroom is considered to be a small team. Second, this model was primarily designed to

exploit person-based trust that builds up over time through joint history, as well as positive mutual experiences; similarly, the focus in the classroom is upon students and their teacher and their relationship with one another. Also, the four subcomponents of trust in this model are suitably applicable to the context of education. These subcomponents are defined as follows:

1. *Competence*: the degree to which a person demonstrates a group of skills, competencies and characteristics which enables them to be influential in a specific domain;

2. *Integrity*: the degree to which a person is perceived as honorable and their actions and words match one another;

3. *Benevolence*: the degree to which a person is perceived to be unaffectedly caring and concerned;

4. *Predictability*: the degree to which a person's behavior is consistent.

Admittedly, all systems are in constant need of revision and reform in order to remain efficient. Education systems are no exception. By way of illustration, restruction is being undertaken by education systems found in Western welfare states, which has resulted in raising the issue of trust in education governance (Niedlich et al., 2021). On the other hand, Schechter & Atarchi (2014) believe that a commonly identified step towards reform is stressing the importance of school members experiencing professional collaborations and learning together. Atai et al. (2012) similarly emphasize the importance of communication between curriculum planners on the one hand and curriculum implementers on the other in order for existing problems in ELT education in Iran to be solved and reform in various levels be enforced.

Niedlich et al. (2021) maintain that contextual conditions are essential to increase trust. For this reason, it would appear that a constructionist approach can be conducive to trust in language education, since there is a strong focus

on learning *in* interaction, and in such an approach, beliefs and ideas are passed on to the newcomers of a sociocultural group. Moreover, prominence is given to the relations between and among students, teachers, families, and the community (Woolfolk et al., 2011), and "collaboration to understand diverse viewpoints is encouraged and traditional bodies of knowledge often are challenged." (p. 321). Woolfolk et al. also assert that this mutual understanding and feeling that there is enough freedom to share ideas stimulates a higher level of trust among people in communities and in turn leads to increased efficiency. Consequently, trust is crucial to reform, mutual understanding and innovation in the educational community.

In light of the above, constructionism appears to provide sufficient theoretical support for trust in the context of school and classroom for the following reasons: First, interaction and communication are encouraged for optimal acquisition of knowledge, hence leading to interpersonal trust. Second, collaboration between teachers and their students and students' freedom to express their thoughts and feelings is both a prerequisite and a product of trust. Finally, the natural outcome of such an open interactive environment will be mutual understanding and innovation, which are necessary requirements for reform in the education system.

3. Methodology

This part provides details of the participants, data collection, procedure and data analysis of the study leading to the development of the Student Trust in Teacher Questionnaire (STTQ).

3.1 Participants

For the purpose of this study, data was initially collected from a total number of 255 Iranian high school students, ages ranging from 12-18 (grades 7 to 12; $M = 15$). The reason for choosing high school students, among others, is that teaching English as a mandatory subject starts from the 7th

grade in high schools in Iran. Plus, since high school is the mediating stage between primary school and university, it was considered to be a key stage in the students' education. However, later in the stage of factor analysis, this number was reduced to 204 due to complete redundancy in answers to 51 questionnaires. It's worth pointing out that females were overrepresented in this sample, as they comprised 78.8% of the total participants. All the students' first language was Persian. They went to a number of high schools in Iran, all of which provide educational services within the standards and regulations announced to them by the Ministry of Education in Iran. Table 1 shows the types of schools and the percentage of students who participated in this study from each school.

Table 1
Schools and Percentage of Students Participating in the Study

School	Percentage of Students
State Schools	45
Private Schools (Gheyre Entefaei)	34
Gifted Students' Schools (Nemooneh Mardomi & Tiz Hooshan)	21

3.2 Procedure

Data was collected via a 5-point Likert-Scale questionnaire (STTQ) developed by the researchers to measure the degree of high school students' trust in their English teachers. The five points of STTQ ranged from 1 = Totally disagree to 5 = Totally agree. Students were required to choose one out of the five options based on their own experiences. The reliability of the scale was established via Cronbach's Alpha, showing an alpha coefficient of 0.97, which is considered to be high (Clark & Watson, 1995). Moreover, the validity of the instrument was ensured by being examined by two university professors of ELT; both professors had sufficient expertise in the field of

English language education and research, both quantitative and qualitative methods. Additionally, in order to increase the validity of the responses, the respondents were assured of their anonymity (a point mentioned by Ary et al., 2010).

The first draft of STTQ included 32 items devised based on the four components of the construct of trust proposed by Adams et al. (2000). For the three first components of integrity, benevolence and predictability, the definitions proposed by Adams et al. (2000) formed the basis for developing the items. For example, since according to their model integrity refers to the extent that a person is perceived as honorable and their words and words match one another, one of the items addressing the integrity of the English teachers was formed as: The English teachers' words usually match their actions. The same procedure was followed for benevolence and predictability. However, for the fourth component of trust (competence), the items addressing teachers' competence were devised based on the definition of competence, stating that it refers to the extent that a person demonstrates a group of skills, competencies and characteristics allowing them to have influence in a specific domain. In order to adjust the definition more precisely to the teachers' competence, the items were developed according to the "ten teacher competencies" introduced by the National Council of Teacher Education (NCTE) for making teachers professionally content (cited in Aggarwal, 2014) to cover more comprehensively the question of students' trust in their English teachers. The ten competencies with a short definition of each are presented here:

1. Contextual competencies: "… ability to understand various context[s], including historical background, present conditions of socio-economic, cultural, … and linguistic context of the family milieu and the community profile" (p. 252).

2. Conceptual competencies: A clear thought and understanding of educational theories, methods and techniques, different stages of child development, classroom organization and effective curricular and co-curricular activities inside and outside of the learning environment;

3. Content-related competencies: Complete mastery of the content of the subject that is to be taught, the ability to discover the problematic areas in the curriculum that need elaboration and explanation, and identifying areas in the curriculum where there is enough scope for creativity;

4. Transactional competencies: The skill of quotidian teaching to accomplish educational goals efficiently via meaningful communication with pupils and the milieu through employing various approaches, activities, and technology in a cohesive and useful way;

5. Educational activities related to competency: the capability to organize curricular as well as co-curricular activities to achieve educational aims, and to organize sociocultural events and activities, such as morning assembly, days celebration, etc.;

6. Competencies to develop teaching-learning material: the capability to develop stimulating teaching-learning aids and textual and self-learning material for children according to their age, and needs, and knowing how to develop workbooks and activity books, and how to use electronic gadgets;

7. Evaluation competencies: the ability to constantly assess and validate the students' level of achievement of the objectives laid down in the curriculum by carrying out continuous evaluation, maintaining records for the purpose of evaluating the children's likes and dislikes, etc., as well as diagnosing the problems faced by students in understanding what is taught, and undertaking action research;

8. Management competencies: the teacher's skills to attain high-quality educational goals spending the least amount of time, energy, and money;

9. Competencies related to working with parents: the teacher's capacity to obtain the parents' cooperation and contribution for reaching the objectives;

10. Competencies related to working with community and other agencies: teacher's ability to bring the school and the community close to each other, and to link them together as much as possible.

For each of the ten competencies, a number of items were formed according to its definition. For example, for contextual competence, one of the items developed according to the definition was: The teacher is sufficiently aware of the present cultural conditions of the society. For conceptual competence one of the items formed was: The teacher can clearly explain the subject that he/she intends to teach to the students. All the items of the questionnaire were formed in this manner. It is worth mentioning that as the competence of the teachers had ten sub-components and each one had an extended definition, in the first draft of the questionnaire, the number of items relating to this component was the highest (26) among all the four components of trust.

Data was collected from the target population comprising 255 high school students from several schools across Iran through an online survey devised on *Google Forms* the link of which was shared with the respondents through social networks to answer and submit. Besides, in order to ensure the validity of responses, on top of the questionnaire, the students were reassured that their responses would be used for research purposes only, and that their personal information would remain completely confidential.

3.3. Data Analysis

After preparing the questionnaire, several analyses were conducted to explore the structure and psychometrics of the questionnaire: *Item Format Analysis, Exploratory Factor Analysis, Omega Coefficient Analysis*, and

Confirmatory Factor Analysis. The statistical analyses were done via SPSS version 25. Following is a detailed account of each procedure and its outcome.

1) *Item format analysis:* Since in item format analysis, test makers focus on the degree of propriety in which an item is written to ensure that it measures all and only the intended content (Brown, 1996), STTQ was first presented to two ELT professors at Alzahra University for review and validity examination. Having received their feedback, the researchers made several modifications related to wording, comprehensibility, preciseness, clarity, relevance to the social and educational context of Iran, and redundancy or double-barreled items. At this stage, one item was added, raising the total number to 33 items. Then the questionnaire was translated into Persian to make understanding the questions easier for the students. The translated version was re-examined by the experts and further revisions were made to the Persian version. It was then piloted on 20 high school students similar to the target population. Feedback was received from the students through analyzing the completed questionnaires and also interviews asking them whether there were parts which were incomprehensible or hard for them to understand. None of them expressed any difficulties in understanding and answering the questions.

2) *Exploratory factor analysis:* Data gathered from the target population of 255 students were subjected to exploratory factor analysis for purifying the multi-item scale, i. e. identifying the best functioning items and treating or removing the non-identifying or poorly-functioning items. In all the factor analyses, items with correlation of less than 0.2 were considered to be poor (Revelle, 2020) and were therefore removed. In the first exploratory factor analysis, 51 out of the 255 completed questionnaires were found to have 100% overlap and were eliminated from the corpus of data to avoid their

undesired interference, which might influence the results, though the reason behind this remarkable number of overlapping responses remained unclear to the researchers. Then, a second exploratory factor analysis was conducted on the 204 remaining questionnaires. This time, the results showed factor loadings less than 0.2 for ten items, which were also eliminated from the questionnaire, rendering the total number of items 23.

Next, a third exploratory factor analysis was performed on the remaining 23 items. The output of this analysis showed double loadings with different degrees (2, 3.5 and 4) for seven of the items. Moreover, maximum likelihood factor analysis with a cut-off point of 0.40 and Kaiser's criterion of eigenvalues greater than 1 yielded a four-factor solution as the best fit for the data (Field, 2009; Stevens, 1992) accounting for 62.03% of the variance. Detailed analysis of the items plus comparing them with the definitions of the subcomponents of trust revealed that the 10 competences introduced by the National Council of Teacher Education (NCTE) (as cited in Aggarwal, 2014) used for investigating the competence of the teachers were too detailed in definition, including all the three pedagogical, social, and interpersonal aspects of the teacher's profession, that they had caused an overlap with the items designed to evaluate the other three factors (integrity, benevolence, and predictability). Hence, the problem was ironed out by limiting teacher competence components to the pedagogical aspect only, leaving the social and interpersonal dimensions of trust to be addressed by the other three factors. Consequently, the number of teacher competencies was reduced from 10 to 3: *1) conceptual competency*, *2) content-related competency,* and *3) contextual competency*. In fact, this model of distribution proved to be more accurate than the one initially formed.

3) Omega coefficient analysis: In order to further establish the reliability of the questionnaire, McDonald's (1999) omega coefficient analysis was

conducted on the redistributed 23 items. It was conducted as a complementary process for exploratory factor analysis in order to establish the reliability of the questionnaire through further purifying the data (Revelle, 2020). Zinbarg et al. (2006) believe that this variance ratio is important both as reliability and a validity coefficient. Omega coefficient was utilized at this stage because Dunn, Baguely and Brunsden (2014) believe that compared to coefficient alpha, "Omega is less risk of overestimation or underestimation of reliability" (p. 13). In addition, among other advantages of omega coefficient analysis, one that most concerns this study is that "employing 'omega if item deleted' in a sample is more likely to reflect the true population estimates of reliability through the removal of a certain scale item" (p. 15). In the same vein, because several items had been deleted from the questionnaire, it was deemed necessary to confirm the internal consistency of the scale with omega coefficient analysis. The results of this analysis showed high discrimination values for STTQ (see Table 2), and a 4-factor solution to the data distribution.

Table 2
Item-Total Correlation Statistics of STTQ

Alpha	0.97
G.6	0.98
Omega Hierarchical	0.88
Omega H asymptotic	0.89
Omega Total	0.98

The result of omega coefficient analysis also led to the reduction of the total number of items to 20. The reasons for omitting the other three items were that two of them (20 and 22) did not load on any of the four factors of trust and the third one (no. 30), when reexamined in terms of its meaning, was found to be overlapping with another item (no. 32) and had to be omitted to prevent redundancy.

4) Confirmatory factor analysis: After obtaining significant results from omega coefficient, confirmatory factor analysis was performed on the output as a final step for the validation of STTQ and also to make the results reportable. In addition, since the items had been redistributed under the four factors, in order to make them more relevant to the educational system, their names were changed to more accurately represent the aspects that they and their items addressed. Hence, competence was changed to *pedagogical competence*, integrity was changed to *individual consideration*, benevolence and predictability were merged into one item as a result of an overlap in their definitions and also because their items closely interrelated, making the third factor named *trustworthiness*, and finally the last factor was named *situated professionalism*.

4. Results

This section provides details on the results obtained from the process of the validation of STTQ and statistical analyses of the data.

4.1 Results of exploratory factor analysis

To identify the validity of the initial sample, all 33 items of the questionnaire were subjected to exploratory factor analysis. First of all, the items were investigated in terms of duplicate cases, wherein 10 such cases were identified and eliminated from the data corpus. To purify the resulting 23 items, they were then subjected to exploratory factor analysis with oblimin promax. The Kaiser-Meyer-Olkin sampling verified the sampling adequacy for the analysis (KMO = 0.962), and Bartlett's test of sphericity (Approximate Chi Square = 5223.034; *df* = 276; Sig. ‹ 0.001) indicated that correlation structure is adequate for factor analyses (Revelle, 2020). Maximum likelihood factor analysis with a cut-off point of 0.40 and Kaiser's criterion of eigenvalues greater than 1 yielded a 4-factor solution as the best fit for the data (Field, 2009; Stevens, 1992) accounting for 62.035% of the variance (Table 3). However, as indicated in table 3, there were double

loadings in seven of the items, yet because the data gathered by these items was essential to the research, they could not be omitted. Alternatively, detailed analysis of the questionnaire's items and comparing them against each other and the definitions of the four factors was done, which then revealed a close interrelatedness among the four factors underlying the construct of 'trust'. Therefore, McDonald's omega coefficient was conducted for extra purification of the data.

Table 3
Exploratory Factor Analysis of the Items of STTQ (Rotated Factor Matrix)

STTQ Item	Factor loading			
	1	2	3	4
1.The teacher is sufficiently aware of the present cultural conditions of society.	**.578**			.311
2.The teacher is sufficiently aware of the present socio-economic conditions of the students' families.				**.869**
3.The teacher is sufficiently aware of the present linguistic context of the families.				**.852**
4.The teacher is sufficiently aware of the present linguistic context of the community.	**.489**			.385
5.The teacher can clearly explain the subject that s/he intends to teach to the students.	**.859**			
6.The teacher has enough knowledge of various English teaching theories, methods, and techniques.	**.928**			
8.The teacher has knowledge of classroom organization and management, and can effectively organize curricular and co-curricular activities <u>inside</u> the classroom.	**.845**			
11.The teacher has full mastery of the content that s/he is teaching.	**1.017**			
12.The teacher has the ability to find	**.822**			

out the hard spots and gaps in the curriculum that need elaboration and explanation.		
13. The teacher uses joyful activities, group work and other such things to teach the subjects and makes learning joyful.	**.650**	.532
14. The teacher uses different activities and methods to achieve educational goals efficiently.	**.706**	.427
16. The teacher has the ability to develop teaching-learning aids self-learning material for children according to their age and nature.	**.853**	
17. The teacher has the ability of adapting and adopting learning materials to meet the educational needs of children with special needs, such as children from disadvantaged groups and working children.	**.694**	
20. The teacher carries out continuous evaluation in a regular and principled manner.	**.619**	
21. In evaluating children, the teacher also pays attention to their likes and dislikes, habits, values and attitudes.	**.484**	.389
22. The teacher diagnoses the problems that the children face in comprehending what is taught.	**.581**	
24. The teacher has the ability to get the parents' cooperation and involvement to achieve the educational objectives.	**.879**	
25. The teacher has the ability to discuss various problems faced by children with their parents and suggest some workable solutions.	**.800**	
27. The teacher's words match his/her actions and s/he never does anything other than he/she says s/he will.		**.779**
28. The teacher keeps his/her promises as much as he/she can.		**.800**
29. The students can count on the		**.804**

teacher's words.		
30.The teacher is caring towards the students.	**.594**	.410
32.The teacher cares about the students' feelings.	**.476**	.366

Note: The items in the original questionnaire are in Persian.
*Extraction method: Principal Component Analysis. *Rotation method: Promax with Kaiser Normalization.

4.2 Results of omega coefficient analysis

Revelle (2020) suggests McDonald's omega coefficient analysis as a way to define a model and establish the general factor saturation of a test. He believes it is possible to do more complete analyses of the reliability of a single scale by using the omega function that pinpoints ω☐ and ω☐ on the basis of hierarchical factor analysis and then to perform a confirmatory (bi-factor) analysis. In fact, omega is an exploratory factor analysis function that makes use of a Schmidt-Leiman transformation. It is specifically useful when the exploratory factor analysis solutions and rotation options are not satisfactory and therefore provides an alternative. Moreover, a necessary prerequisite for conducting omega coefficient analysis is the assumption of the existence of a latent variable common to all the scale's indicators (Revelle, 2020). Similarly, in this study, the results obtained from the third exploratory factor analysis were considered not completely satisfactory due to several double loadings, and also all the four factors contribute to defining the one latent variable of trust. Considering the fact that the two necessary conditions were met, omega coefficient was considered to be the analysis that would best purify the results. As such, the results of the previous analysis of the 23 items in STTQ were subjected to omega coefficient analysis (Alpha = 0.97; G.6 = 0.98; Omega Hierarchical = 0.88; Omega H asymptotic = 0.89; Omega Total = 0.98). Figure 1 shows the results obtained from omega coefficient analysis.
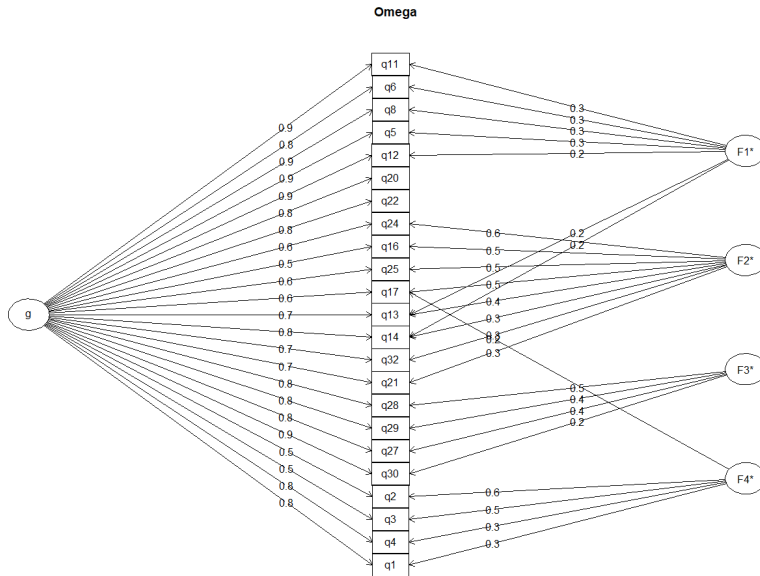
Figure 1. Omega Coefficient Analysis of STTQ

As Figure 1 indicates, items 20 and 22 did not load on any of the four factors, hence were omitted from the questionnaire. Item number 30 was almost similar in meaning to item number 32, and was removed. Also, item 17 loaded on both factors 2 and 4 (0.5 and 0.2 respectively). Analyzing the item and the two factors' definitions, and also with regard to the item's higher loading on factor 2, it was decided that the item be placed under the second factor. This was also the case with items 13 and 14 which loaded on both factors 1 (both 0.2) and 2 (0.4 and 0.3 respectively). The same analysis was done for these two items, and they were decided to be put under factor 2. Consequently, the total number of items in the final questionnaire reached 20. The distribution of the items under omega coefficient analysis was further analyzed, leading to the following changes to the initial model:

1. Factor 1 included 4 items addressing conceptual and content-related competencies; therefore, its name changed to *pedagogical competence*.

2. The name of factor 2 was changed from benevolence to *individual consideration* so that it would encompass all the aspects addressed by its sub-components and also to be more relevant to the educational context. It included 8 items.

3. The definitions of Factors 3 and 4, namely integrity and predictability, overlapped in the initial model, so they were merged into one factor and named *trustworthiness*. This part included 3 items.

4. In the omega coefficient model Factor 4 included items addressing contextual competency, so it was renamed *situated professionalism*. It included 4 items. Table 4 shows the changes in the names of the four factors after conducting omega coefficient to more accurately fit the context of language education.

Table 4
Names of Four Factors Underlying Trust Before and After Change

Factor	Name before change	Name after change
1	Competence	Pedagogical Competence
2	Benevolence	Individual Consideration
3	Integrity	Trustworthiness
4	Predictability	Situational Professionalism

4.3 Results of confirmatory factor analysis

Finally, the bi-factor model that had emerged from the omega coefficient analysis was examined through a confirmatory factor analysis (Chi Square = 376.911; df = 206; CU = 0.22, prob ˂ 0.0001; RMSEA = 0.072; SRMR = 0.033; CFI = 0.96; TLI = 0.95), showing good fit of the model to the data. Below, measures of factor score adequacy are presented in table 5. Additionally, omega total (the omega coefficient: the reliability estimate of the overall variance which is due to both a general factor and specific factors), omega hierarchical (general) (the ω□ coefficient: the reliability estimate of the overall variance which is due to a general factor), and omega

group (the summary statistics for the omega total, omega hierarchical (general) and omega within each group) for each subset are indicated in table 6. Also, table 7 shows the distribution of the questions under the four subcomponents of trust.

Table 5

Measures of Factor Adequacy

	G	F1	F2	F3	F4
Correlation of scores with factors	0.95	0.55	0.92	0.79	0.81
Multiple R square of scores with factors	0.91	0.31	0.85	0.62	0.65
Minimum correlation of factor score estimates	0.82	0.39	0.70	0.23	0.30

Table 6

Total, General and Group Omega for Total Scores and Subscales

	G	F1	F2	F3	F4
Omega total	0.98	0.96	0.91	0.96	0.87
Omega general	0.88	0.89	0.63	0.80	0.62
Omega group	0.06	0.07	0.28	0.16	0.25

Table 7

Distribution of Questions Under the Four Factors of Trust

	Trust			
Factors	Pedagogical Competence	Individual Consideration	Trustworthiness	Situational Professionalism
Questions	5-6-7-8-9	10-11-12-13-14-15-16-20	17-18-19	1-2-3-4

5. Discussion

Language education, like any other field of humanities, is built upon interpersonal relationships, and trust is the glue that holds and keeps these

relationships solid and sustainable. The fundamental role that trust plays in enhancing the quality of education and affecting educational attainment (Byrk & Schneider 2002; Forsyth et al., 2011; Niedlich et al., 2021; Tschannen-Moran & Hoy, 1997) renders obvious the need for research about it through the most precise and accurate means at disposal. Therefore, the present study sought to develop a valid and reliable questionnaire to measure Iranian high school students' trust in their English teachers. The detailed and comprehensive processes of exploratory factor analyses, omega coefficient analysis and confirmatory factor analysis conducted for analyzing STTQ were in favor of its validity and reliability.

Soodmand Afshar and Hosseini Yar (2019) believe that although the value of some concepts in EFL education, such as reflective teaching, are established, the method of reflection is also important. In the same vein, in spite of the fact that the importance of trust has been acknowledged in the education system, the method of its evaluation also matters. For that reason, this instrument is believed to provide an opportunity to analyze trust in more detail and specificity on the basis of its main subcomponents, and to pinpoint exactly where and in which aspect trust is failing and in need of attention and repair. That being so, following is a detailed analysis and discussion of the four subcomponents of trust and their items in the questionnaire.

1. *Pedagogical Competence* addressed the teacher's ability to clearly explain the subject that s/he intends to teach to the students, their sufficient knowledge of various teaching theories and language teaching methods and techniques, their ability to teach the subject according to the students' age in a simple and comprehensible manner, their knowledge of classroom organization and management, and finally, their ability to effectively organize curricular and co-curricular activities both inside and outside the classroom.

2. *Situational Professionalism* addressed the teacher's sufficient awareness of the present cultural conditions of the society, the present socio-economic conditions of the students' families, and the present linguistic context of the families and the community.

3. *Trustworthiness* addressed the teacher's ability to adapt/adopt existing learning materials to meet the educational requirements of children that have special needs, e.g., children who come from disadvantaged groups, labor children, etc. It also included knowing how to develop workbooks and activity books, and how to use electronic devices such as computers, CDs, the Internet, etc.

4. *Individual Consideration* was the fourth subcomponent of trust and addressed the teacher's understanding of concepts such as globalization, liberalization, modernization and privatization, full mastery of the content being taught, the teacher's ability to discover the problems in the curriculum that need elaboration and explanation, use of joyful activities, group work and other such things to teach the subjects in a joyful manner, use of different activities and methods to achieve educational goals efficiently, use of technology in an integrated and effective manner, the ability to develop teaching-learning aids and self-learning material for children according to their age and nature, and finally carrying out continuous evaluation in a regular and principled manner.

The results of the present study are supported by Herian and Neal (2016) who take the position that recognizing trust as a multi-level phenomenon can improve cross-disciplinary studies, and that context influences the nature of trusting relations. They also emphasize the many considerations that researchers have to make when taking a multi-level view of trust. Herian and Neal caution that the theoretical and empirical models that are used to measure trust have to be scrutinized with sufficient care before being used for

the conceptualization and measurement of trust across various settings. In the same way, this study appropriated commonly agreed-upon definitions of trust to the field of education, treating trust as a multi-layer phenomenon, and developed a reliable and valid instrument for its measurement based on its underlying subcomponents.

In fine, building upon and supporting previous research on the fundamental and effective role of trust in the enhancement of education from different perspectives, particularly in high schools (e.g. Niedlich et al., 2021; Romero, 2015; Van Maele & Van Houtte, 2012; Whiteman et al., 2015), including but not limited to, school effectiveness, school achievement, and school reform, the present study attempted to take research on trust one step forward by devising an instrument for measuring and analyzing trust between teachers and students with its four main subcomponents, providing a robust, empirical evidence for the obtained information as well as the possibility to understand the exact points of strength and weakness, which in turn would result in more effective and efficient solutions and plans to strengthen and enhance trust between teachers and students.

6. Conclusion and Implications

The purpose of the present study was to contribute to the body of research on trust in language education through developing a reliable and valid instrument for measuring students' trust in English teachers. Previous research has suggested that student trust plays an important role in the students' identification with schools, their behavior, and other factors connected with student achievement (e.g., Crosnoe et al., 2004; Forsyth et al., 2008; Romero, 2015; Tschannen-Moran et al., 2013). This research attempted to analyze trust between students and their teachers in more detail and pinpoint the exact specifications of their relationship in this regard in a more tangible, observable manner.

This study extended the literature by conducting empirical research that developed a questionnaire for measuring the construct of trust in language education in depth with regard to its basic subcomponents in order to help pinpoint the invisible underlying factors contributing to forming this abstract entity and then enforce the necessary remedial measurements in each specific part namely, pedagogical competence, individual consideration, trustworthiness, and situational professionalism.

The findings of this study have practical implications for the everyday practice of school teachers and educators. They are especially of relevance for high school teachers in terms of both instruction and classroom management. English teachers must be aware of the fact that their responsibilities are not limited to conveying the subject matter to the students. They are urged to recognize the importance of the amount of trust they can create in their students, and how this can impact the success of their mission. They are urged to try to build a connection with their students based on trust and mutual understanding. Only that way they will reach the optimum goal of education, that is, attaining higher levels of learning.

Furthermore, classroom management in high schools is one of the challenging issues for teachers. However, as considered and implied by the items in STTQ, provided that the teacher builds an environment rich in trustworthiness, individual consideration of the students' conditions and requirements, awareness of the social, economic, and psychological circumstances, and efficient knowledge and use of teaching resources and strategies, not only is the issue of classroom management expected to become easier to handle, but academic efficiency will also be enhanced.

On the institutional level, the findings of this study have broad implications for schools, as organizational trust also applies to schools. It behooves school administrators and principals to have a valid and reliable

instrument for evaluating trust between their students and teachers in detail and analyze and understand the aspects that specifically need attention and remedy so that they can maintain sustainable relationships between them.

The present study only managed to scratch the surface of the deep, multilayer issue of trust in language education. There is still so much more to learn about this prominent aspect of human relationships in collective communities. One important aspect that would be complementary to the present study would be a qualitative examination of the underlying factors of students' trust in English teachers in order to reach workable solutions to enhance trust between students and teachers. Another aspect of trust needing investigation is trust in other levels of the educational system, such as trust between teachers and principals, trust between teachers and their colleagues, trust between children's parents and teachers, and trust at the macro level—that is, between principals and policy makers. It would also be interesting to explore what further insights an Islamic perspective on the issue of trust in educational settings and in general could provide, particularly for the Iranian context. All these issues need to be investigated, both qualitatively and quantitatively, in order to reach a comprehensive understanding of the status of trust in language education, thus finding practical solutions to the current problems that are leading to a shaken trust in different levels in the language education system.

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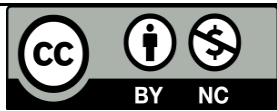
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