How do Students’ Self-Esteem and Attitude to Learning English Relate to Classroom Learning Environment?

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Abstract

This study investigates the correlation of secondary level learners’ attitudes for learning English and self-esteem with the classroom learning environment. From Punjab Province, 1002 public secondary school respondents formed the population. The sample consisted of males (486), females (516), urban (565) and rural (437) and was selected from two districts (Lahore and Kasur). Instruments namely WIHIC (Fraser, 2007), attitude towards learning English (Batool, 2016) and student’s self-esteem (Rosenberg,) scales having reliability 0.91, 0.83 and 0.68 (in Pakistani context) respectively, were used. Findings exposed a significant and more positive attitude for learning English among female respondents. Correlation (Pearson r) between the learning environment and attitude for learning English revealed no significant results at gender basis while on locale basis urban respondents showed significant correlation. The gender-based difference showed girls had more self-esteem than boys. Rural participants had more self-esteem concerning urban respondents.

Key Words
Attitude, Self Esteem, Learning Environment

Introduction

This is the age of science and technology and education which had brought revolutionary changes in our surroundings through the vital process of teaching. The key elements of the education system not only useful in classrooms but also have been helpful in postmodern societies. The learning environment of classes is based on psychological elements affecting the student’s attitude and achievement (Fraser, McRobbie & Fisher, 1996). According to Aldridge, Fraser, and Soerjaningsih (2001) learning of students is largely influenced by the

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environment of learning. In this regard, several international pieces of research have been focused to diagnose, classroom learning environment. A positive psychological environment develops the affective and cognitive results of students (Dorman, 2002). The acquisition of the second language and attitude of the learner is affected by many cultural and psychosocial factors. Dorman and Fraser (2009) describe that the inner classroom environment is closely linked with observation, experience and the feelings of students. Towards a specific subject, a constructive classroom learning environment creates liking or disliking, distress, and gladness. Therefore, learners’ perceptions regarding their classroom environment should be constructed so that students get better results. McRobbie, et al., (1997) are of the view that foreign language is a big challenge in the process of learning which involves different types of classroom environment dimensions. The language teachers also know the importance of learning environment because students’ attitude has been affected through the activities in the classrooms. In the classroom, learning dimensions cause different variations in the student’s learning styles. These three dimensions behavioral, cognitive and affective are very important in decreasing and increasing anxiety in the classroom.

It gave an idea to the researchers, in Pakistan for effective and ineffective teaching-learning of English is linked with the classroom learning environment. Correspondence in the English language is not considered for purposeful purposes in Pakistani institutions. In the field of trade engineering organization, science, and communication the use of the English language seems to be very important. If the youth of Pakistan are good enough in English, it may become helpful for getting better jobs with better remuneration. For developing the English language ability, one must focus on the teachings of the subject of English in schools and its linkage for the attitude of the students. Interestingly it is obvious how learning the English language is being influenced through the learning environment of the classroom, which is based on psychology and, pedagogy affects learners’ performance and attitudes (McRobbie, Fisher, & Fraser 1996).

In English language teaching, learning is closely linked with attitude. Attitude is a mixture including an individual’s feelings, emotions, believes and goals towards a specific object (George, 2001). The importance of student’s positive attitude cannot be denied particularly in the process of English language learning because English language learning and the positive attitude of students are related to one another. The positive performance of students creates a positive attitude towards their aim. On the other hand, negative deportment causes a great loss towards their aim. Attitude has three dimensions named behavioral, cognitive and affective that reflect the concept of attitude. Every concept shows its specific results of language attitude. These components theoretically based on cognitive humanism, and behaviorism which act as basic elements for the construct of attitude. Language acquisition has a linkage with the attitude of students.
According to researchers teaching and learning of the English language was highly linked with the attitude towards English. Attitude is associated with beliefs, feelings, and intentions concerning any object (George, 2006). For language learning, positive attitudes have crucial roles. Starks and Paltridge (1996) describe that acquisition of foreign language has influenced on learner’s attitude. According to Hannula (2002), there are four aspects of Attitude and these aspects are connected with emotions and emotions are linked with incentives, as like results and associations of a situation to personal values. As a result, the positive attitude and the pleasant environment provided to the learners are depending upon the teaching of a particular subject.

Several research studies show that the learning environment of learners' perception along with attitude towards the process of learning English have positive relationships. Thus, the researchers gave strong predictions about learners' attitude towards science (Myint et.al., 2001; Simpson, & Talton, 1987). The classroom learning environment affects to a great extent in the attitude and learning of students’ knowledge. The attitude of the students by peculiar objectives reflect by the environment. In the view of (Pintrich 1993; Maehr & Meyer, 1997) the social cognitive theorists mark their goal and destination and learning environment leaves deep effects on the attitude of the students.

Several pieces of research clearly show that the activities and the participation of the students in the classroom not only improve the attitude of the students but also result. “The educational environment is required to create hope among the students to set up effective attitudes who are already taking an active part in the selected activity and to give a successful performance to the students, the relevant activity is performed Marcy (2000). It has been narrated that the works and academic goals of students depend on the active participation of the students in the classroom learning environment. They, too, enhance variety (McRobbie, Roth, & Lucus, 1997). When the students learn a foreign language as a second language, the main reason for giving an obsession to learn a foreign language causes their attitude (Naiman, Frohlich, Stern and Tedesco 1978).

When the human being comes on this earth they have some needs to spend life and the needs of an individual’s increases with time. Self-esteem is described as the self which is related to intrinsic and extrinsic qualities of a person. In a view of Woolfolk (2005) and Rosenberg (1965), personal values can be changed as self-esteem. According to (Maslow, 1943) the human beings are busy with the fulfillment of their needs in which self-esteem is most important. In 1980, James was the first person who used the concept of self-esteem for the first time. Like this Maslow (1943) hierarchy’s needs provided an incredible place to self-esteem for its role in self-actualization of an individual. Self-esteem has various definitions, influencing factors, and terms of measurement that is why it is a difficult concept to grasp. To develop a personal feeling, self-worth and value.
self-esteem becomes more important. It is the basic human purpose that measures one’s experiences and quality of life (Knightly & Whitelock, 2007).

According to William, Tremblay, and Inman, (2000) in the school environment, self-esteem was especially very important because its advancement is the preliminary factor in developing motivation, determination or academic success of students. Self-esteem is a product of social interaction that reflected on social comparison, assessment and self-attribution (Rosenberg, 1989). Same as, in the other study, (Knightly & Whitelock, 2007) describe that both socially and individually self-esteem is created.

Self-esteem and achievement are strongly correlated with each other. According to Allik and Pullmann (2008), high self-esteem not only play a very important role in the achievements of learners but also plays a role in personal and social development. Wiggins (1987) states that an individual's capacity to overcome the various problems of life is self-esteem. This provides the feeling of worthiness and the desire to do something special and also to work hard.

According to Anthony (2007) describe that higher self-esteem students showed high achievements rather lower self-esteem students. Self-esteem affects all spheres of human lives named, school achievements, social and professional development and job success. Yet, the close correlation between student educational achievements and self-esteem (Wiggin, 1994). Similarly, in another research study, Maruyama (2008) had also concluded that learners who mostly feel confident showed well performance than those students who show less confidence demonstrate low performance in all spheres of their study.

Chiu (1990) has revealed that the students often feel helpless and powerless in the face of failure. These students fall easy prey to depression and despair and consequently retreat and give up their attempt to attain their goals. So, Delacourt (1997) gives an argument that self-esteem is based on the necessary components of education which prepare the students to get the highest potential of progress in every walk of life so that they may be social, moral, physical and mentally prepare. Fisher et al., (2000) concluded gender differences regarding the learning environment and found the girls’ attitude in the class is usually positive than the boys. It is added that the teacher should keep an eye on the needs and interests in connection with the learning of boys and girls to guide them and to remove the hinders in getting an education (Quek, Wong, & Fraser, 2002).

In the same way, the differences in a location were found in several types of research. According to Becker (1989), it is observed that the perception of the students in city areas was found more useful and positive than the rural students regarding the learning process of the classroom environment. On the contrary, the classrooms having a positive environment with good command and control of the teachers proves very helpful in getting the academic goals of the students. Wood (2001) also observed the same research study and brought out the research that
effective teachers can control the classroom by motivating the students. In the learning process, for eliminating the habits of rout learning some academic instruments such as investigation, equity and a deep understanding of the subjects were included as novel elements.

**Research Questions**

1. What is the level of classroom learning environment on gender and locale basis?
2. Do any differences exist among students for attitude towards learning English regarding gender and locale basis?
3. What is the difference among students for self-esteem on gender and locale basis?
4. Do any correlation exist between students ‘classroom learning environment, self-esteem and attitude for learning English regarding their locales and genders.

**Methodology**

To investigate research questions the researchers used multiple sampling techniques for the selection of participants. A sample of 10th-grade students was selected through a multistage sampling technique. Population were selected from Punjab. It consisted of secondary students from public schools of Punjab. The reason behind the selection was the importance of this stage in the Pakistani context. Especially achievement in English subjects this is important for the future of students as mostly secondary school students fall victim to failure in English. The population from 36 districts was selected on literacy basis. Then a selection of 2 districts was made for convenience that was based on literacy. In each selected district, stratification of schools was made on gender and locale base. Forty secondary schools (five male, five female, five rural and five urban schools) through a random selection of two districts of Punjab formed a convenient sample.

**Instrumentation**

Three tools for data collection related to the Classroom Learning Environment (WIHIC), attitude scale for the learning of English and Rosenberg scale for self-esteem were used. These three instruments used in this study were translated into Urdu. The reliability of three scales was measured by the Cronbach alpha coefficient and its values were 0.91, 0.83 and 0.68 respectively which revealed that the instruments were reliable for the study. Past research studies had already been established the validity of these tools in the context of Pakistan.
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**Procedure**

For the two districts, the researcher visited 40 schools which are including in the sample. The researcher takes permission from the concerned authority of the school for collecting data. Within the 2 months, the procedure of collecting data was completed. The researcher requests the participants that the researchers will never reveal their personal information with anyone.

**Data Analysis**

SPSS comparisons and correlations were explored on WIHIC, attitude, and self-esteem scales. To develop the relationship between these three instruments, the utilization of Pearson r values were calculated.

**Table 1.** Difference between boys & girls, rural and urban learners on the learning Environment of classroom

| Locale  | N   | Mean  | SD    | df   | t       | p       |
|---------|-----|-------|-------|------|---------|---------|
| Rural   | 565 | 224.76| 25.270|      |         |         |
| Urban   | 437 | 223.70| 24.477| 1000 | .667    | 0.505   |
| Male    | 486 | 223.42| 25.750|      |         |         |
| Female  | 516 | 225.12| 24.109| 1000 | -1.079  | 0.281   |

p>0.05

The above table depicts the values for t and df as 0.667, -1.07 and 1000 for locale gender and levels respectively. These values were not significant at p<.05. Mean and SD scores for rural and urban respondents were 224.76, 25.270 and 223.70, 24.477 and for male and female respondents were 223.42, 25.750 and 225.12, 24.109 respectively. These scores represent their perceptions about the learning environment in classes were not significant. This result showed no significant difference for boys, girls, rural and urban learners’ perception of the classroom learning environment.

**Table 2.** Gender and locale level differences on the attitude scale

| Gender | N   | Mean  | SD    | Df   | t       | p       | Effect size |
|--------|-----|-------|-------|------|---------|---------|-------------|
| Male   | 486 | 94.19 | 14.015|      |         |         | 0.661       |
| Female | 516 | 103.37| 13.735| 1000 | -10.480 | .000    |             |
| Rural  | 565 | 99.85 | 15.227| 1000 | 2.316   | .021    | 0.148       |
| Urban  | 437 | 97.70 | 13.684|      |         |         |             |
Gender *p <0.05, locale p>0.05

Table 2 explains that being effect size 0.661, t value (-10.480) with df (1000) was significant at p<0.05 for boys and girls which shows that girls (Mean=103.37, SD=13.735) got high score than the boys (Mean=94.19, SD=14.015) on the attitude scale indicating significant differences at gender level. On the other side being effect size 0.148, t value (2.316) with df (1000) was not significant at p<0.05.

For urban and rural students which also found that rural students (Mean=99.85, SD=15.227) got high score than the urban students (Mean=97.70, SD=13.684) on attitude scale but this difference reveals no significant differences between student’s perception of at locale level.

Table 3. Gender and locale level differences on the self-esteem scale

| Gender | N  | mean  | SD   | df  | t      | p     | Effect size |
|--------|----|-------|------|-----|--------|-------|-------------|
| Male   | 486| 35.57 | 7.139|     | -4.164 | 0.000 | 0.513       |
| Female | 516| 32.27 | 5.708|     |        |       |             |
| Locale |    |       |      | 1000|        |       |             |
| Rural  | 565| 35.79 | 7.197|     | -3.667 | .000  | 0.255       |
| Urban  | 437| 37.30 | 5.342|     |        |       |             |

*p <0.05

Table 3 describes that being the values of effect sizes were 0.513 and 0.255 for gender and locale levels respectively which were significant. The values for t and df (p<0.05), mean and SD for male and female participants were -4.164, 1000 and 35.75, 7.139, 32.27, 5.708 respectively. This explains that male respondents got high score than female participants on a self-esteem scale. It shows significant differences at the gender level. t-value -3.667 and df=1000 was significant with p<0.05. For urban and rural students which discover rural students (Mean=35.79, SD=7.197) got high score than urban students (Mean=37.30, SD=5.342) on self-esteem scale. It revealed that significant differences are found at the local level.

Table 4. Correlations on Learning Environment and Attitude scales

| Participants | N  | r     | Sig |
|--------------|----|-------|-----|
| Total        | 1002| 0.051 | Not sig. |
| Urban        | 565 | 0.114 | Sig. |
| Rural        | 437 | 0.046 | Not sig. |
| Male         | 486 | 0.033 | Not sig. |
| Female       | 516 | 0.052 | Not sig. |

Table 4 found no positive & significant correlation between all scores of learning environment scale and attitude scale with r = 0.051 at (p>0.05) level.
the same way, no significant correlation for rural students with \( r = 0.046 \) but urban students with \( r = 0.114 \) reveals a positive and significant correlation between the variables. For boys (\( r = 0.033 \)) and girls (\( r = 0.052 \)) reveals that both are not positive and significant at \( (p>0.05) \) which is less than 0.1. It revealed that the relationship of the learning environment is not so important for the development of positive attitudes regarding the learning of English in the classroom.

**Table 5.** Correlations of the learning environment with learners’ self-esteem

| Respondents | N   | r    | Sig     |
|-------------|-----|------|---------|
| Total       | 1002| 0.005| No sig. |
| Urban       | 565 | 0.016| No sig. |
| Rural       | 437 | 0.035| No sig. |
| Male        | 486 | 0.011| No sig. |
| Female      | 516 | 0.034| No sig. |

Table 5 found no significant and positive correlations between the variables (\( r = 0.005 \) at \( p>0.05 \)). In the same way, no significant correlation for urban students \( r = 0.016 \) and rural students \( r = 0.035 \). Hence, boys (\( r = 0.011 \) & girls (\( r = 0.034 \)) reveals that both are not positive and significant at \( p>0.05 \) which is less than 0.1. These recommended that the relationship of the learning environment is not so important in developing self-esteem in the classroom.

**Discussion**

The discussion was organized around the fundamentals of the results of present and past researches. The researchers, in this study, brought the difference to light between rural and urban students regarding the learning environment of the classroom and the difference between the perceptions that the learning environment was not enough. On the contrary, the researchers narrate that students’ perception directly affects the performance of students (Dorman 2001: and Fraser 2007). The result of the study clearly shows that the final result which is quite opposite from the previous researches which points out that the learners’ perceptions regarding the classroom learning environment were not adequate for both boys and girls. Some expert researches unveiled that the girl’s perception about the learning environment of the classroom was most favorable and successful than the boys’ perception (Henderson & Fisher 2008; Dorman & Fisher, 2009). Another remarkable fact and conclusion are that the student’s perception always remains different from cultural to cultural or with place location. Therefore, the rural and urban student’s perceptions always remain different from each other in every respect. According to Brekelmans (1989), the
research exposed the urban students to mostly perceive the learning environment helpful and more positive for rural students.

This research reached the following conclusions. Females showed a significant and more positive attitude toward learning English as compared to males. For the relationship between these variables, Pearson r was calculated. It was not significant at the gender basis regarding the learning environment relative to attitude toward English. Urban respondents showed significant between these variables as compared to rural students. Gender-based differences showed girls had more self-esteem concerning boys. Locale wise difference also revealed less self-esteem for urban students. On the other hand, Batool (2016) shows that boys and girls learners from urban and rural localities have a positive correlation with foreign language learning. It indicates that there should be created a pleasant and child-friendly atmosphere for the students where the students can easily learn and taught the lesson by the teacher. Paltridge and Starks (1996) describe attitude significantly correlated with the language learning process.

So, the argumentation proves that a good and conducive environment of the classroom causes positive behavior towards a foreign language and in the light of the instructor’s cooperation the students can get their aims and goals in the classroom very easily. So far as the student’s self-esteem is concerned, it was found more effective and positive for boys and girls, rural and urban learners regarding the correlation for the classroom learning environment. The study suggests that the supply of a more encouraging and developing attitude helps the students in making a positive attitude more effective towards self-esteem. However, according to (Carlson, Uppal & Prosser 2000; DuBoies 2002) the past research studies point out that the academic attainment and classroom learning environment may be influenced by the level of self-esteem on the base of gender. Also, the boys had low self-esteem in comparison with girls while Brien (1991) concluded different results.

**Recommendations**

A careful and critical research clearly shows that the teacher should create such an environment of the classroom as better interaction between learner and teacher, activity-based teaching in the classroom should be formed. Above all, for the interaction of the student, the teacher should use the style of interactive teaching and behavior of the students in learning English by removing the stress of failure. To crown all, the teacher should develop an attitude of positive encouragement and organize some programs regarding training. While using library teachers should speak short sentences to remove the fear of the students in English. The last but not the least point is that for the self-esteem of the learners the teachers should try to develop the sense of encouraging them.
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References

Aldridge, J.M., Fraser, B.J. & Soerjaningsih. (2001). Achievement, satisfaction and learning environment among Indonesian computing students at the university level. Paper presented at the annual meeting of the American Educational Research Association, Seattle, W.A.

Anthony, D. B., Holmes, J. G., & Wood, J. V. (2007). Social acceptance and self-esteem: Tuning the sociometer to interpersonal value. Journal of personality and social psychology, 92(6), 1024.

Aydin, Y. C., & Woolfolk Hoy, A. (2005). What predicts student-teacher self-efficacy. Academic Exchange Quarterly, 9(4), 123-127.

Becker, B. J. (1989). Gender and science achievement: A reanalysis of studies from two meta-analyses. Journal of Research in Science Teaching, 26, 141-169.

Bleidorn, W., Arslan, R. C., Denissen, J. J., Rentfrow, P. J., Gebauer, J. E., Potter, J., & Gosling, S. D. (2016). Age and gender differences in self-esteem—A cross-cultural window. Journal of personality and social psychology, 111(3), 396.

Carlson, C., Uppal, S., & Prosser, E. C. (2000). Ethnic differences in processes contributing to the self-esteem of early adolescent girls. The Journal of Early Adolescence, 20(1), 44-67.

Chiu, D. C. (1994). The cultural defense: Beyond exclusion, assimilation, and guilty liberalism. Cal L. Rev., 82, 1053.

Dorman, J. P., & Fraser, B. J. (2009). Psychosocial environment and affective outcome in technology-rich classrooms: Testing a causal model. School Psychology of Education, 12, 77–99.

Dorman, J.P. (2002). Classroom environment research: Progress and possibilities. Retrieved from http://www.iier.org.au/qjer/qjer18/ dorman.html

Driscoll, M.P. (2000) Psychology of Learning for Instruction. USA: Allyn & Bacon.

Fleming, J. S., & Watts, W. A. (1980). The dimensionality of self-esteem: Some results of a college sample. Journal of Personality and Social Psychology, 39(5), 921.
Fraser, B.J; McRobbie, C.J.and Fisher, D.L. (1996). Development, validation and use of
Fraser, B.J; McRobbie, C.J, & Fisher, D.L. (1996). Development, validation and use of personal and class forms of a new classroom environment instrument for assessing classroom. Journal of Research in Science Teaching, 32, 399-422.

George, R. (2006). A Cross-domain Analysis of Change in Students' Attitudes toward Science and Attitudes about the Utility of Science. International Journal of Science Education - INT J SCI EDUC. 28. 571-589. 10.1080/09500690500338755.

Henderson, D., Fisher, D., & Fraser, B. (2000). Interpersonal behavior, laboratory learning environments, and student outcomes in senior biology classes. Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching, 37(1), 26-43.

Hunus, R., & Fraser, B.J. (1997). Chemistry Learning Environment in Brunei Darussalam’s Secondary Schools. In D.L. Fisher., & T. Rickard. (Eds.), Science, Mathematics and Technology Education and National Development: Proceedings of the Vietnam Conference (pp. 108-120). Hanoi: Vietnam.

Hunus, R., & Fraser, B.J. (1997). Chemistry Learning Environment in Brunei Darussalam’s Secondary Schools. In D.L. Fisher., & T. Rickard. (Eds.), Science, Mathematics and Technology Education and National Development: Proceedings of the Vietnam Conference (pp. 108-120). Hanoi: Vietnam.

Hunus, R., & Fraser, B.J. (1997). Chemistry Learning Environment in Brunei Darussalam’s Secondary Schools. In D.L. Fisher., & T. Rickard. (Eds.), Science, Mathematics and Technology Education and National Development: Proceedings of the Vietnam Conference (pp. 108-120). Hanoi: Vietnam.

Maehr, M. L., & Meyer, H. A. (1997). Understanding motivation and schooling: Where we've been, where we are, and where we need to go. Educational psychology review, 9(4), 371-409.

Maslow, A. H. (1943). A theory of human motivation. Psychological review, 50(4), 370.
McRobbie, C.J., Roth, W.M., & Lucus, K.B. (1997). Multiple learning environments in a physics classroom. International Journal of Educational Research, 27, 333-342.

Myint, S. K., & Fisher, D. L. (2001). Classroom environment and teachers’ cultural background in secondary science classes in an Asian context.

Naiman, N., Frohlich, M., Stern, H.H. & Tedesco, A. (1978). The Good Language Learner, Research’ in Education series 7 Ontario Institute for studies in Education

Osborne. (April 2013). “Modern learning environment”

personal and class forms of a new classroom environment instrument for assessing classroom. Journal of Research in Science Teaching, 32, 399-422.

Pintrich, P. R., Smith, D. A., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the Motivated Strategies for Learning Questionnaire (MSLQ). Educational and psychological measurement, 53(3), 801-813.

Pullmann, H., & Allik, J. (2008). Relations of academic and general self-esteem to school achievement. Personality and Individual Differences, 45(6), 559-564.

Quek, C. L., Wong, A. F. & Fraser, B. J. (2002). Gender differences in the perceptions of chemistry Laboratory classroom environments. Retrieved from http://www.iier.org.au/qjer/qjer18/quek.html

Rawnsley, D. & Fisher, D. (1998). Learning environments in mathematics classrooms and their associations with students’ attitudes and learning. Paper presented at the Australian Association for Research in Education Conference, Adelaide, Australia. Retrieved from http://www.aare.edu.au/98pap/fis98269.htm

Robinson, E., & Fraser, B. J. (2013). Kindergarten students’ and parents’ perceptions of science classroom environments: Achievement and attitudes. Learning Environments Research, 16(2), 151-167.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.
Starks, D., & Paltridge, B. (1996). A note on using sociolinguistic methods to study non-native attitudes towards English World English, 15(2), 217-224.

Talton, E. L., & Simpson, R. D. (1987). Relationships of attitude toward classroom environment with attitude toward and achievement in science among tenth grade biology students. Journal of research in science teaching, 24(6), 507-525.

Wiggins, J. D., Schatz, E. L., & West, R. W. (1994). The relationship of self-esteem to grades, achievement scores, and other factors critical to school success. The School Counselor, 41(4), 239-244.

Wood, M. (2001). Preventing school failure: Teacher’s current conundrum. New York: McGraw Hill.

Wubbels, Th. & Brekelmans, M. (1998). The teacher factor in the social climate of the classroom. In B.J. Fraser and K.G. Tobin (Eds.), International Handbook of Science Education (pp. 565–580). Dordrecht, the Netherlands: Kluwer.