

***Gender Effect on Student Teachers' Attitudes toward
Peer Feedback in a Wiki Learning Environment***

Yehuda Peled, Western Galilee College, Israel
Rakefet Sharon, Ohalo College, Israel

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Abstract

The focus of this research is pre-teachers' attitudes toward peer feedback in a wiki learning environment and its relation to their self-esteem. Results indicate that women find it harder to give and receive feedback. Men agree more with statements that represent high self-esteem. Women agree more with statements which represent lower self-esteem and learning from others. A correlation exists between self-esteem and readiness to give and receive feedback. Self-esteem has a gender-related influence on the willingness to give and receive feedback. Gender influences the tendency to pass the responsibility for feedback to the lecturer. This paper discusses the implication of these findings, as they relate to the education system with its majority of female teachers. We discuss the influence of these findings on the preparedness of the system to embrace meaningful learning based on critical thinking and constructive feedback, which are based on self-confident teachers and willingness to give and receive feedback, both from students and teachers. In conclusion, we discuss the following issues:

How well do colleges prepare teachers for the task of building evaluation processes that include critical thinking and feedback both from peers and students? Does teacher training stress women's empowerment, taking into consideration their tendency of lower self-efficacy and its influence on the readiness to give and receive feedback? Is it right to take these aspects into consideration while testing suitability for a teaching career?

Keywords: cooperative/collaborative learning, gender Studies, interactive learning environments

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1 INTRODUCTION

In a two-year study, academic writing in a wiki learning environment based on a peer feedback process was used to determine the added value to meaningful learning, ownership of the learning process, the improvement of academic skills and information literacy of pre-service teachers in Israel. The assignment was to create a course Wikipedia in three courses and a Wikibook in one course. During the courses each student was invited to (1) participate in an introductory exercise; (2) write four wiki entries; (3) give feedback to four of his or her peers' entries; and (4) update his or her own entries, according to peers' feedback. The teacher monitored the wiki activity in order to evaluate its effect on achieving the objectives set by the course's teacher. The characterization of the attitude to feedback in a wiki-environment framework indicated a gender effect (see Peled, Bar-Shalom, & Sharon, 2012). Other evidence pointed out that there's a gender difference in wiki posts. For instance, the 2010 UNU-MERIT survey found evidence of a significant gender skew: fewer than 13% of Wikipedia contributors are women (Antin, Yee, Cheshire, & Nov, 2011), a study on the pedagogical value of wikis (PVW) found gender differences and the PVW score being higher for males, which is consistent with previous research (Eachus & Cassidy, 2006) that found that males spend more time on the Internet than females, and therefore may be more comfortable with the technological aspects of Internet use (Sunil, North, & Moreland, 2009). Similar findings in related fields on videoconferencing have previously indicated that women react less favorably to videoconferencing in certain contexts (Armstrong-Stassen, Landstrom, & Lumpkin, 1998). In light of this evidence and Peled et al.'s (2012) findings, additional investigation was carried out in order to explain the effect of gender on the attitudes of pre-service teachers to feedback in a wiki learning environment provided by their peers and its relationship to their levels of self-esteem.

1.1 Gender related inequality, stereotypes and self-esteem

Gender is a sociological term used to define social differences between men and women and from which the differences between them can be inferred (Raz, 2005). Gender related inequality in working environments is equated with the differences between men and women on a number of levels: women are employed in "female" positions as opposed to men who are employed in "male" positions, salary levels, the number of women holding key positions and more (Raz, 2005; Yizraeli, 1999).

Apart from social definitions, gender stereotypes also exist which are defined as common, rigid and generalized patterns of thought that ascribe to men and women characteristics, personal qualities and behaviors which are attributed to their biological gender and which do not take into account any individual reality (Bobbitt-Zeher, 2011; Malach-Penas, 1998). Stereotypes cause the individual to attribute to men the characteristics and functions that match the male stereotype and to women those characteristics associated with the female stereotype (Archer, 1989; Koenig, Eagly, Mitchell & Ristikari, 2011). Perceptions, based on stereotypes, can also affect functionality. Research that examined 10 indexes relating to self-esteem (Gentile, Grabe, Dolan-Pascoe, Twenge, Wells, & Maitino, 2009) showed that low self-esteem amongst women adversely affects their academic performance and achievements.

1.2 Inequality within the educational system

During their initial socialization process both at home and at school, women are encouraged to study those subjects and professions considered to be “feminine” professions such as teaching, education and office work. Within these professions the employment environment provides fewer possibilities and rewards (Hanik, 1998). Today, numerous research questions why STEM is male dominant with no clear answer (see, e.g., English, Hudson & Dawes, 2011; Legewie & DiPrete, 2012; Sassler, Glass, Levitte, & Michelmores, 2011). This state is equivalent to that existing when choosing study tracks at school. For example, the few female students engaged in computer studies in schools report feelings of discomfort when they are amongst men (Drygulski, 1990). These conceptions and attitudes are strengthened as the age range rises (Shotick & Stephens, 2006).

Gender related research shows unequal opportunities between the sexes and existing imparities within the educational system. The creation of an equal opportunity culture within school requires that all educators, and especially pre-service teachers, to examine their positions and opinions before they instill values of equality into their students (Gilad, 2012). One of the tools for evaluating positions is reflection through feedback.

1.3 The role of feedback in teaching

Feedback plays an important role in teaching (Mory, 2004; Topping, 1998) and is vital to the learning process (Driscoll, 2000). Significant, qualitative and up to date feedback help students better understand the material being studied (Higgins, Hartley & Skelton, 2002). Feedback is also an important resource for improving performance and self-management that can lead, not only to achievements in task performance but also to increased feelings of capability (Miller & Karakowsky, 2005). Feedback can also function to shape and develop evaluation due to its ability to spur and improve the learning process (Nicol & Macfarlane-Dick, 2006), and assist in the development of self-esteem and reflection abilities. It encourages a dialogue relating to the learning process between teachers and their colleagues and encourages motivation and positive self-evaluation. Peled et al., (2012) identified three types of peer feedback in a wiki environment:

Constructive feedback – relevant and clear, defines both weak and strong points, clearly presents the characteristics of the problem and suggestions for improvement while referring to additional materials, examples and sources.

Mollifying feedback – sycophantic or flattering feedback with no relevant basis that does not refer to weak points or present suggestions for improvement. For example: “Very nice work”; “I enjoyed reading your work”; “I learned a lot from your writing.”

Meaningless/neutral feedback – non relevant, unclear definitions and non-relevant suggestions for improvement lacking concrete direction or examples.

Peled’s (2008) previous research found that student teachers have difficulty in providing their peers with meaningful/constructive feedback. Since the feedback/reflection tool is one of the central tools used in teacher training, there is great importance attached to identifying those factors that create difficulty in the giving of constructive criticism. Difficulty in giving feedback could be influenced by gender when the feedback is seen as being criticism. Previous research (Gentile et al.,

2009) shows that men with higher self-esteem show better performance results and less in terms of social behavior while women see greater importance in being able to get along with others and are, therefore, less concerned with what they perceive as criticism (Josephs, Markus, & Tatarodi, 1992).

Two hypotheses arise from the aforementioned: (1) since women and men relate differently to providing criticism and since feedback is, essentially, constructive criticism, the assumption is that gender has an impact on the willingness of student teachers to give and receive constructive criticism and (2) the giving and receiving of feedback requires self-confidence or high self-esteem. The assumption is that student teachers' levels of self-esteem are gender dependent and influence their readiness to give and receive feedback.

2 METHODS

2.1 Research population

The research was carried out amongst 52 student teachers studying in courses within a wiki environment. Students were asked to state their gender.

2.2 Research tools

The study used an anonymous questionnaire in which students were asked to grade on a scale of 1 = totally disagree to 5 = totally agree 63 statements. The statements were concentrated into six categories: (1) feedback is the lecturer's responsibility; (2) the difficulty in giving feedback; (3) the difficulty in receiving feedback; (4) readiness to provide feedback; (5) readiness to receive feedback; and (6) self-esteem (this was divided into two sub-categories: high and low).

A one directional T-test and variable analysis (ANOVA) followed by Tukey's HSD analysis were used to compare findings. Symmetry and Pearson regression were used to analyze correlation.

3 FINDINGS

3.1 Gender influence on the attitude of student teachers to peer feedback

Differences were found between male and female students in their readiness to give and receive feedback (see Figures 1 and 2). At the category level (see Figure 1) it would appear that women find it more difficult than men to accept feedback and clearly find it more difficult to give feedback (T-test: $t=2.39$; $p=0.017$). Men are significantly more prepared to accept feedback than women (T-test: $t=-2.01$; $p=0.045$). When the categories are spilt into distinctive statements (see Figure 2) it was found that men are clearly seen to agree with statements expressing willingness to give and accept feedback. Thus, "I find it easy to give feedback" (T-test: $t=2.07$; $p=0.044$), "It's not hard giving feedback" (T-test: $t=-2.65$; $p=0.011$), "Feedback helps both the giver and the receiver" (T-test: $t=2.54$; $p=0.015$), and "I was happy to get feedback" (T-test: $t=2.03$; $p=0.049$).

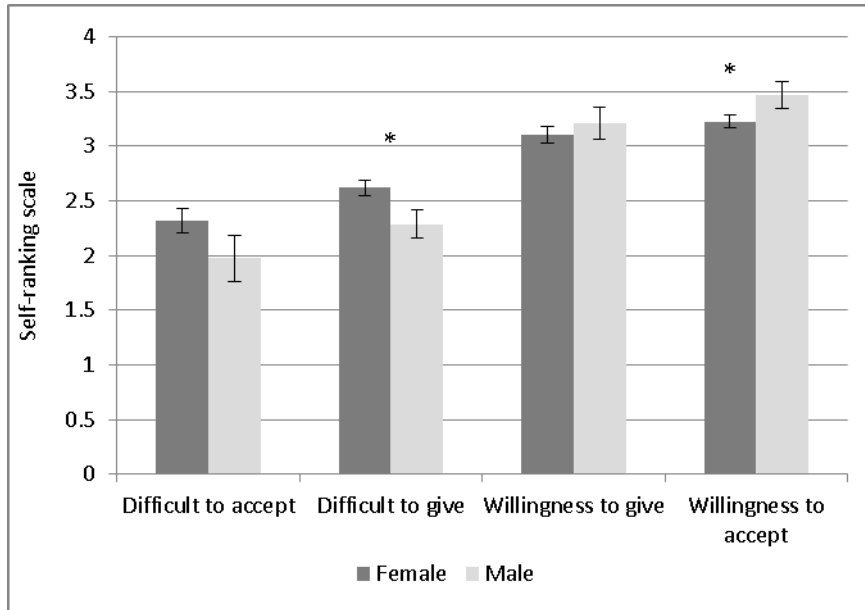


Figure 1: Degree of agreement, men and women, with statements compiled into give and receive feedback categories (average \pm standard error of all statements in a category). Asterisk indicates significant differences.

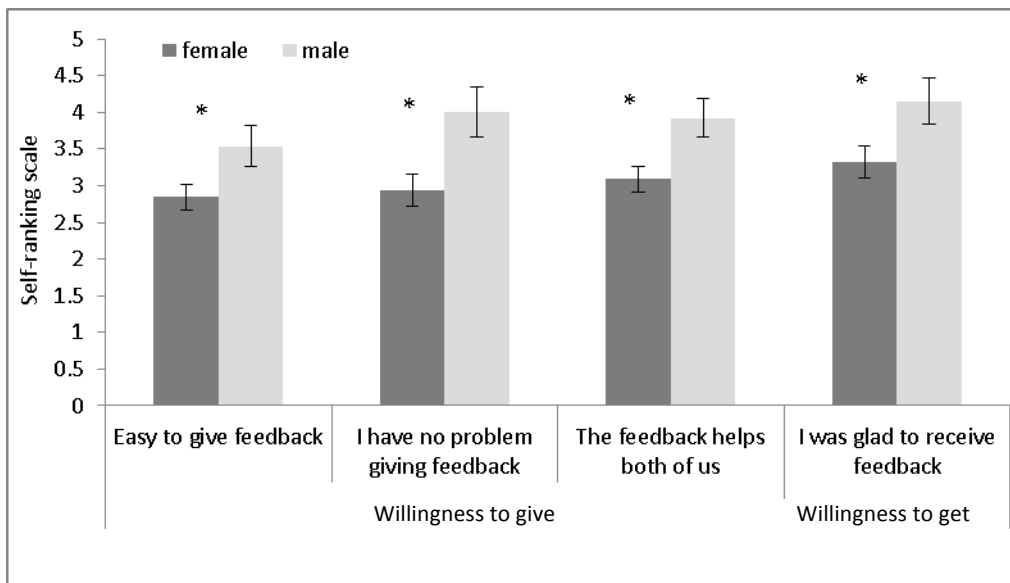


Figure 2: Examples of agreement levels with different statements representing categories of readiness to give and receive feedback (average \pm standard error for each statement). Asterisk indicates significant differences.

3.2 Gender effect on levels of self-esteem

Self-esteem of both men and women was evaluated by their attitudes in relation to various statements. These statements were compiled into categories that represent high and low self-esteem and also statements representing the willingness to learn from others as an indirect index of self-confidence (see Figure 3). It was found that men were clearly more in agreement with statements appearing in categories representing high self-esteem (T-test: $t=-4.59$; $p<0.0001$), while women are clearly

more in agreement with statements appearing in categories relating to low self-esteem (T-test: $t=3.37$; $p=0.0009$) and learning from others (T-test: $t=8.16$; $p=0.0001$).

When examining specific statements from all categories (Figure 4) it was found that men gave a higher score to the statement “I feel that I have merit” (T-test: $t=3.41$; $p=0.0014$), “I have positive characteristics” (T-test: $t=2.93$; $p=0.0053$), and “I function well” (T-test: $t=1.92$; $p=0.06$). Women, on the other hand, gave higher scores to statements that indicate lower self-esteem such as “I don’t have much to be proud of” (T-test: $t=2.13$; $p=0.039$) and “I would like to have more self-esteem” (T-test: $t=1.9$; $p=0.064$).

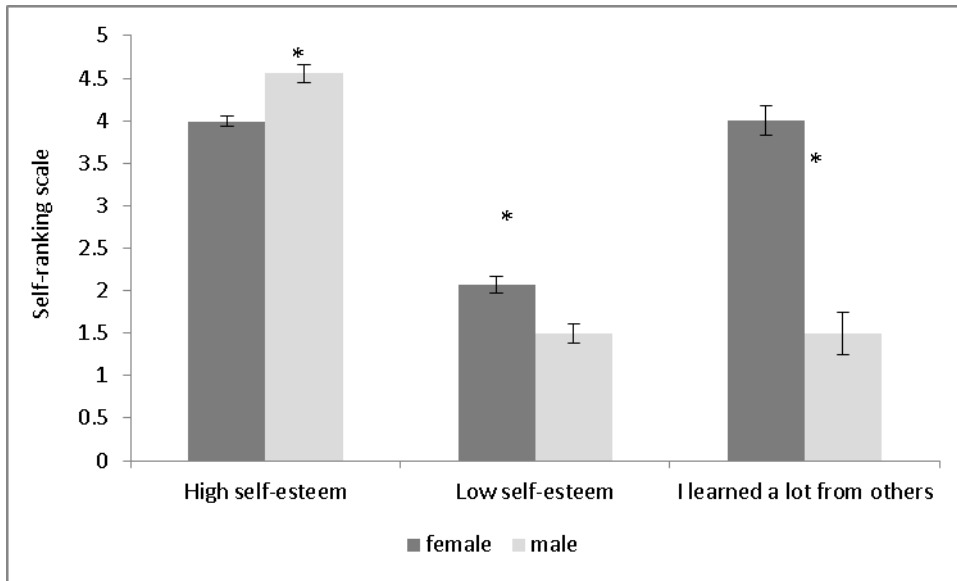


Figure 3: Levels of agreement with statements in categories representing high self-esteem, low self-esteem and statements representing a willingness to learn from others (average \pm standard error for all statements in a category). Asterisk indicates significant differences.

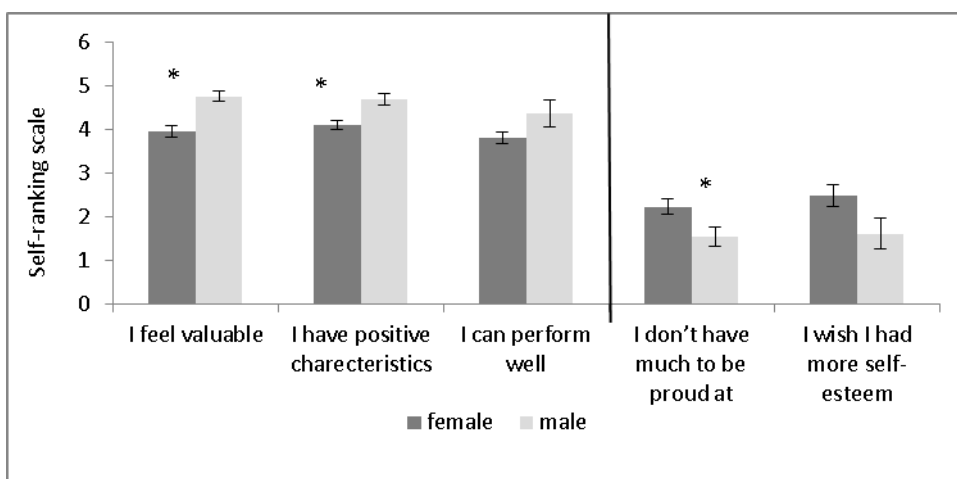


Figure 4: Levels of agreement with specific statements in categories representing high self-esteem and categories representing low self-esteem (average \pm standard error for each statement). Asterisk indicates significant differences.

3.3 The relationship between the willingness to receive and to give feedback as an indication of levels of self-esteem and the transfer of responsibility to the lecturer

The influence of self-esteem on willingness to give and receive feedback was also examined as expressed in the correlation between representative statements in the high self-esteem category and representative statements in the willingness to give feedback category (Figure 5A) and the willingness to accept feedback (Figure 5B).

It was found that a correlation exists both amongst men and women. However, it can be seen that there is a shift of the trend line on the x-axis that represents levels of self-esteem. Amongst women, points of convergence were found to be lower than amongst men. From this we can state that high levels of self-esteem have a gender dependent effect on the readiness to give and receive feedback. A similar phenomenon can be seen when examining the effect of low self-esteem on the difficulty of giving feedback (Figure 6A) and on the transfer of responsibility for the provision of feedback to the lecturer (Figure 6B). Therefore, low self-esteem has a gender dependent influence on the ability to provide feedback and on agreement that the responsibility for providing feedback is that of the lecturer.

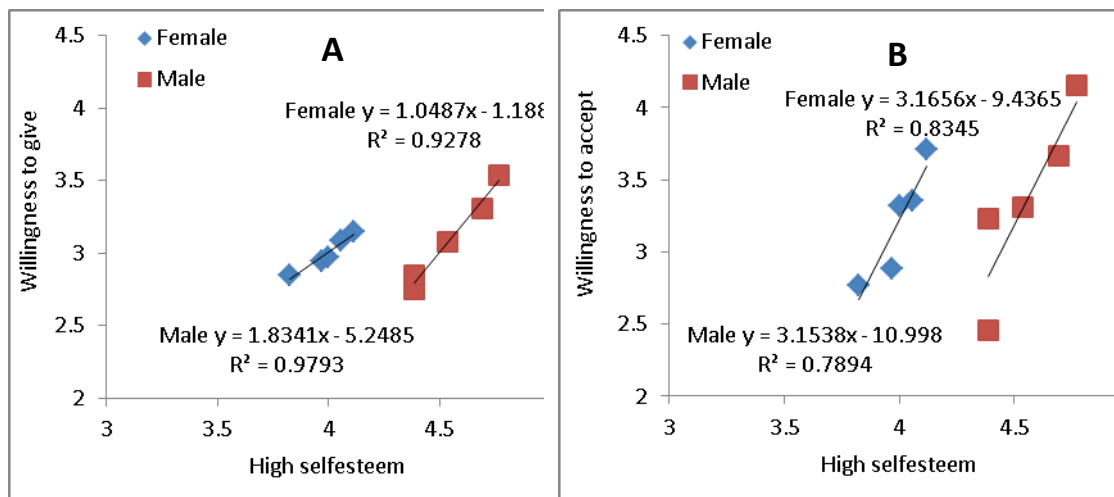


Figure 5: The relationship between high self-esteem and the readiness to give (A) and receive (B) feedback (average for each statement; 5 statements in each category).

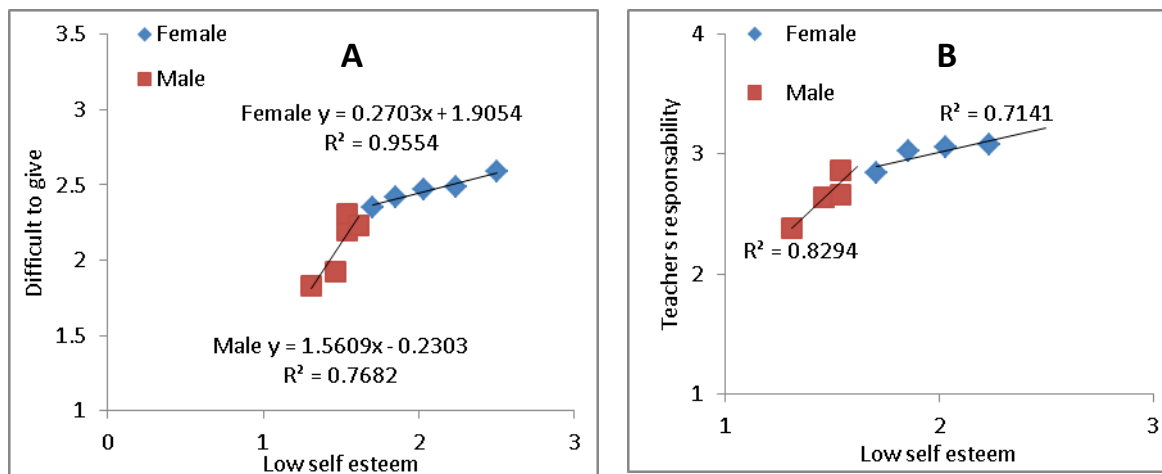


Figure 6: The relationship between low self-esteem and readiness to give feedback (A) and the responsibility of the lecturer to provide feedback (B) (Average for each statement; 5 statements in the low self-esteem category and 4 statements in the lecturer's responsibility category).

4 DISCUSSION AND CONCLUSIONS

This article focuses on the effects of gender upon the attitudes of student teachers to peer feedback and the link to their levels of self-esteem.

From the present research, it appears that men find it easier to give and receive peer feedback while for women this is more difficult. This finding is strengthened by previous research in which it was found that women are less interested in dealing with what they perceive as criticism (Josephs et al., 1992). The gender composition of those teaching in the educational system is primarily female with, in the Jewish educational sector, 86% of teachers in primary education, 80% in junior high, and 76% in high school being women. In the Arab educational sector, 77% of primary teachers, 66% of junior high teachers and in high schools 50% of teachers are female and the other 50% male. (Israel Central Bureau of Statistics, 2013). This composition further exacerbates the problem shown by the present research findings that if women find it more difficult than men to accept feedback and clearly find it more difficult to give feedback, and raises the question if this state effects their functioning as teachers? This finding also raises questions regarding the ability of the educational system to expand assessment through grades by combining formative assessment and the provision of constructive feedback when teacher reserves, the majority of whom are women, find it difficult to give and to provide constructive feedback. One possible way of achieving this is by increasing the use, within teacher training institutions, of Web 2.0 tools such as wikis, Twitter and Facebook, and any other social framework that sharpen the need to provide constructive feedback under the teacher's guidance during the process of constructing the feedback (Peled et al., 2012).

In addition to the dominant female presence within the educational system, stereotypes in course materials, books and children's books that describe the male as being the hero, as being brave, smart, successful, persevering and charismatic, also have a clear impact. This as opposed to the female figure that is described as weak, dependent, submissive, maudlin, yielding and unstable (Avrahami-Einat, 1989).

From the present research it is apparent that female student teachers value themselves less than the male student teachers. This finding is compatible with an analysis of 115 research studies (meta-analysis) carried out by Gentile et al. (2009) that found that men exhibit higher levels of self-esteem than women. When the majority of female student teachers and the educational system's teacher reserves are shown, as this research has discovered, as having low levels of self-esteem, then there is a danger that female stereotypes within the system will be perpetuated.

An additional problem shown by this research is the relationship that was found between the low self-esteem of women and the resulting difficulties of giving and receiving feedback and the transfer of responsibility for feedback to the lecturer. This is especially a concern during a period when teaching is undergoing a change and developing meaningful learning processes in which responsibility for learning is transferred from the lecturer to the student. Meaningful learning is based on critical thinking and encourages the student to ask questions and, as part of this process, self-confidence founded on the teacher's self-esteem and the feedback process play a central role. As Gilad (2012) mentioned that when referring to changes in personal positions and perceptions regarding stereotypes, the process of change is difficult, slow and complex. The difficulty in dealing with the issue of equality opportunity within the educational system results, first and foremost, from the fact that this is clearly an ideological issue that is seen firstly from an emotional point of view and only then from a rational point of view.

Lack of confidence and the inability to give and to receive constructive feedback, combined with traditional thinking that feedback is the teacher's responsibility will make it even more difficult to make changes in the educational system.

Applied questions raised by the research: To what extent do teacher training colleges train student teachers to build an assessment process that includes critical thinking and the giving and receiving of feedback from their peers and students? Is female empowerment emphasized as part of the teaching process and are the issue of lower self-esteem amongst women and the results of their willingness to give and accept feedback addressed? Also, should suitability for teaching also be examined from these points of view?

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