Full research paper

THE IMPACT OF THE LEARNING ENVIRONMENT ON SELF-EFFICACY AND ACHIEVEMENT GOALS OF ISRAELI PRE-SERVICE TEACHERS

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ABSTRACT

Advancing public education by improving the skills and knowledge of its teachers is a major challenge. The teacher-training phase shapes not only skills and abilities but also perceptions of pre-service teachers regarding their educational and teaching goals. We examined a hypothetical theoretical model that explains how pre-service teachers' perceptions of their own learning environment affects belief in their self-efficacy in teaching, and how this shape their achievement goals in teaching as future educators. The study included 278 pre-service teachers studying at all five colleges in our country that offer teacher training programs. Existing questionnaires were adapted to the study population and underwent structure validation. The hypothesized structural model was deemed a good fit for the data and was able to explain 35% of variance in the mastery goals of pre-service teachers, 24% of variance in performance-approach goals, and 65% of variance in performance-avoidance goals. The structural model shows that perception of the learning environment has a strong and significant impact on teaching ability and the achievement goals of pre-service teachers. Fostering a constructivist learning environment in teacher training colleges may increase belief in self-efficacy in teaching and enable pre-service teachers to adopt teaching control goals.

KEYWORDS

Achievement goals, learning environment, pre-service teachers, self-efficacy, teaching colleges

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Highlights

- *Pre-service teachers' perceptions of their own learning environment affect belief in their self-efficacy.*
- *Belief in self-efficacy can shape pre-teachers' achievement goals as future educators.*
- *A constructivist learning environment in teacher training colleges may increase belief in self-efficacy.*

INTRODUCTION

Teacher Training and Goal Theory

Teacher motivation towards orientation-achievement goals is critical since these directly influence both teaching and learning processes at large (Butler & Shibaz, 2008; Fasching et al., 2010; Retelsdorf et al., 2010). In the same respect, the orientation of achievement goals also confers particular repercussions on the dimensions of teachers' own professional development (Laine & Gegenfurtner, 2013; Minnaert et al., 2011; Segers & Gegenfurtner, 2013; Volet, 2013).

The prior assumption's main dimension and domain of application are the field of education at large, with its numerous aspects, multifaceted contexts, and particularly its strata, ranging from basic education institutions (Polychroni et al., 2012) to middle school, secondary school and up to the academic institutions (Bipp & Spinath, 2012) and teacher training (Nitsche et al., 2013). Butler's (2007) goal orientation theory comes up an effective scrutinizing tool via which achievement goals of pre-service teachers can be closely examined and reformulated while still at the preliminary training stage.

The primary conceptualization of achievement goals was a dichotomous model that set apart mastery and performance goals. Mastery goals are mainly concerned with the inner value of learning, the effective and constructive employment and implementation of efforts, the systematic development and emergence of mastery and skills, and enriching and reinforcing the learning of new skills and techniques. Conversely, performance goals have an obvious ad tangible

distinctive feature that is focusing on the individual's sense of self-esteem, determined by how one conceives their own capacity to perform. Individuals determine their capacities and capabilities in contrast with others, with the goal of exhibiting and providing tangible proof of their more distinguished abilities (Ames, 1992; Nicholls et al., 1985).

The predisposition in research, however, over the years in connection with teachers' achievement goals was the employment of the tri-chotomous model (Cho & Shim, 2013; Daniels et al., 2013; Kucsera et al., 2011; Van Daal et al., 2014). According to the previously mentioned model model, teachers' achievement goals are mastery goals, the yearning to gain and build professional skills (performance-approach goals), and the aspiration to exude a high-level capacity in comparison with the other teachers (performance-avoidance goals).

Based on the finding of prominent figures in the field, namely; (Aarts & Elliot, 2012; Elliot & Fryer, 2008; Gollwitzer & Oettingen, 2012), achievement goals are in reality *ability-dominant* goals that directly influence and may guide achievement behavior. These goals are mostly situational, contextual and attainable (Hagenauer & Hascher, 2010; Minnaert et al., 2011).

There is a well-established connection between aims, motivation, self-efficacy, and perseverance against difficulties (Elliot & Church, 1997; Patrick, Ryan & Kaplan, 2007). For instance, mastery goals have a positive correlation with self-efficacy (Nitsche et al., 2011), and may help to reduce teacher burnout, and positively impact teachers tendencies to seek helping hand in developing their capabilities (Butler, 2007). However as (Papaioannou & Christodoulidis, 2007) pointed out, this is not applicable for all kinds of goals, and while there is a positive connection between job satisfaction and mastery goals among teachers, no such connection is detected with performance goals, whether approach or avoidance. In addition to the prior, (Cho & Shim, 2013) discovered medium-positive relation between teaching efficacy on one hand, and mastery-approach goals on the other hand, and low-positive correlation between teaching efficacy and performance-approach goals, but no correlation whatsoever between teaching efficacy and performance-avoidance goals. Similarly, (Yildizlli, 2019) exuded no correlation between performance-approach goals and teachers' self-efficacy and burnout.

Mastery and performance goals promote numerous behaviors and methods of teaching. For instance, teachers who are in fact characterized by mastery goals aspire to advance their professional skills in teaching, and to provide support and feedback to their students. They motivate students to ask questions, examine, and scrutinize current and general situations; encouraging them to acquired better-shaped thinking skills. In comparison, teachers who are more focused on performance goals, aspire to exude transcending teaching abilities or *even* to veal inferior ones (Butler & Shibaz, 2008; Retelsdorf et al., 2010). In the same context, pre-service teachers who endorse mastery goals within the classroom environment are in fact more focused on their individual progress; by actively implementing *cognitive and metacognitive self-guided learning techniques* (Liu et al., 2019).

According to (Butler, 2007), teachers' achievement goals forego their teaching activities; consequently, the ultimate production of pre-service teachers as future educators may be anticipated and influenced by formulating their objectives, while still within the training phase. Besides, the learning atmosphere has a powerful and notable impact on the motives and achievement objectives that student teachers endorse (Kaplan & Maehr, 2007; Yıldızlı et al., 2016). Therefore, an environment that stresses the significance of effort and investment, possession of skills, individual growth, and proper assimilation of school assignments is expected to profoundly impact students to pursue mastery goals (Gonida et al., 2009. contrariwise, when the emphasis within the teaching environment is on grades, exterior consolidation, and social comparison, it might be more probable that students will endorse performance goals alternatively (Meece et al., 2006).

The social-cognitive approach to education perceives the learning atmosphere as a vital background to enhancing self-efficacy in the current learning effort (Ames & Archer, 1988; Bell & Kozlowski, 2002; Zimmerman, 1990; Zimmerman & Martinez-Pons, 1992). Within the same respect of teacher-training programs, the learning atmosphere also possesses a vital role in the development of self-efficacy of the actively involved pre-service teachers (Romi & Leyser, 2006), thus influencing which type of achievement goals prospective teachers endorse (Deemer, 2004; Wolters & Daugherty, 2007). Numerous researches on this subject have established a positive correlation between self-efficacy and mastery goals among students (Bong, 2001; Gerhardt & Brown, 2006), where students with a more notable sense of self-efficacy are more likely to endorse mastery goals than those students with less prominent efficacy.

One prominent element of teacher training is the learning atmosphere within the classroom, that directly impacts the achievement goals endorsed by the concerned student teacher (Kaplan & Maehr, 2007). A class that stresses mastery and learning goals, the significance of abtaining skills, investing effort into the assigned tasks, assimilating the school assignments, the individual's personal growth and progress, creating a learning atmosphere where it is highly probable that student teachers will endorse such objectives, inspiring them to implement and embloy efficient learning techniques, undertaking more difficult tasks, perseverance despite obvious and constant challenges (Gonida et al., 2009). Adversely, a classroom environment whose emphasis is on the importance of grades, external reinforcement and social comparison, will probably lead its students to adopt performance goals instead (Meece et al., 2006).

Teachers' self-efficacy is elucidated as their confidence in their own personal qualifications to employ particular teaching and learning tasks within the classroom walls, and to push on their students' achievements (Dellinger, 2001). One's beliefs concerning self-efficacy are the results and direct production of a cognitive and meta-cognitive process that depend on four sources: the performances and individual experiences of the individual; experties based on the observation of other individuals' behavior; verbal persuasion; and physiological and emotional reactions. The priors are expected to impact people's confidence in their ability to realize their full potential (Bandura, 1997; Chen & Usher, 2013; Usher & Pajares, 2008). Fruitful experiences at an early phase of training could assist pre-service teachers to cope better when they commence their first year of actual teaching, while early substandard experience

during training might dishearten pre-service teachers from the teaching career (Hoy & Spero, 2005).

Pre-service teachers' belief in their teaching self-efficacy as well as the trait of their achievement goals, may also guarantee successful management throughout their career with the fast rythm of innovations in professional knowledge that calls for uninterrupted adaptation of work techniques, starategies, and mechanisms. Thereupon, pre-service teachers' self-efficacy has been established to be linked to career commitment (Han et al., 2016; Klassen & Chiu, 2011), compulsion to obtaining the teaching degree (Pfitzner-Eden, 2016), and positively connected to students' academic achievement (Klassen & Tze, 2014).

Despite the fact some studies have established that self-efficacy in teaching varies according gender and year of study (Hoy & Spero, 2005), other researches found that the correlation was not of statistical significance (Kass & Miller, 2015). Cho & Shim (2013) arrived at the finding that female participants were more motivated than their male peers by mastery goals, while male participants were more motivated by performance goals. Besides, other studies found that, generally speaking, the achievement goals of pre-service teachers lessened in the course of their teacher training years (Fasching et al., 2010).

In conclusion, and based on then previously examined and analyzed literature review, it may be deduced that the experience of pre-service teachers during their studies, and their interaction with college lecturers regarding teaching, learning and assessment, may impact their self-efficacy in teaching and in the achievement goals they design for themselves and pursue as future teachers. Teacher-training colleges play a vital role in developing the self-efficacy of student teachers and in forming and formulating the achievement goals that will stand out in the classroom. The learning environment positively stresses teaching goals, increasing the self-efficacy of pre-service teachers, and reinforcing their propensity to set those goals. Therefore, the study focused on the following sole research question:

- To what extent can the achievement goals of pre-service teachers be predicted based on their perceptions of their college learning environment and their belief in self-efficacy in teaching?

METHODS

Study Participants

The sample included 278 pre-service teachers (231 female, 47 male) from five teacher-training colleges randomly sampled from all teacher-training colleges in our country. About 16% of the participants were first-year students, 41% second-year, 26.6% third-year, and 16.5% were in their fourth year, studying toward their degree in education. After receiving approval from the ethics committees of the five colleges, we arrived at the colleges and distributed the questionnaires to students who agreed to participate in the study. The data presented in this paper were collected from those completed questionnaires.

Research Instruments

The present research, conducted according to a quantitative-correlative approach, was based on one questionnaire of demographic data and three other questionnaires which had been translated into Hebrew and then back-translated into English as a control measure to ensure that the translation was true to the source.

Background data questionnaire: This questionnaire included the following variables: gender, age, study year, study subject.

'Preservice teacher's perception of the college learning environment' questionnaire: This questionnaire was comprised of 28 statements from the College and University Classroom Environment Inventory (CUCEI) and the Course Experience Questionnaire (CEQ). The two questionnaires have been considered reliable on the subject, as they examine experiencing the learning environment over a long period of time (Aldridge and Fraser, 2000). Items were rated on a Likert scale between 1 (lowest) and 5 (highest). Final scores were calculated using averages of the items included in each factor.

To check the validity of the structure of our questionnaire, which was adapted to the current study from the two questionnaires, exploratory factor analysis (EFA) was used in the first stage, and confirmatory factor analysis (CFA) in the second stage.

In the first stage, half of the research sample was selected randomly for the exploratory factor analysis (EFA). Four statements that had loadings of lower than 0.4 or that had a high loading on two or more factors at the same time (cross loading) were omitted. The exploratory analysis yielded a structure of six factors: good instruction, learning assignments, skill development, academic environment, traditional lecture, and appropriate assessment. The exploratory factor analysis succeeded in explaining 63.25% of the explained variance of the questionnaire.

In the second stage, a confirmatory factor analysis (CFA) was conducted on the remaining half of the sample. Its results fit the structure obtained in the exploratory factor analysis. The final questionnaire on the perceptions of the pre-service teachers regarding the learning environment at the college (and in the classroom) included 24 statements, divided into six different factors. its goodness-of-fit indexes were as follows: $\chi^2 = 404.586$, $df = 245$, $P = .000$; $\chi^2/df = 1.651$; SRMR = 0.053; CFI = .941 RMSEA = 0.048 (0.040, 0.057). The loadings on the variable of learning environment ranged from 0.36 to 0.90.

Achievement goals questionnaire: the preservice teachers' achievement goals were measured using the Butler's Goal Orientations for Teaching scale (2007) questionnaire which assesses the achievement goals of practicing teachers, adjusted for the present research population. The original questionnaire included four indices, of which only three were used in this study: mastery goals index, performance-approach goals index, performance-avoidance goals index. The fourth index—the goal of avoiding work—was found to be irrelevant to the present research and therefore those questions were not included in our questionnaire.

Each index in the questionnaire utilized in the present study was composed of four items, redefined to suit pre-service teachers. For example, the statement "I feel that a successful teaching day is when something occurs in the classroom that makes me want to deepen my professional knowledge" was replaced with "As a future teacher, I would feel successful if something occurred in the classroom that made me want to deepen my professional knowledge." the internal consistency estimates of reliability (Cronbach's alpha) scores for the different statements in each of the three indices of the current study ranged from $\alpha = 0.7$ to $\alpha = 0.78$.

Items were rated on a Likert scale between 1 (lowest) and 5 (highest). Final scores were calculated using averages of the items included in each factor.

Confirmatory factor analysis was used to examine whether the questionnaire structure was a good fit to the data of the present research population. $\chi^2 = 43.505$, $df = 24$, $P = .009$; $\chi^2/df = 1.813$; SRMR = 0.043; CFI = .979 RMSEA = 0.054 (0.027, 0.079).The factor loadings of the different achievement goals ranged from 0.53 to 0.92.

Teaching self-efficacy questionnaire: the current study used the Scale for Teacher Self-Efficacy (STSE) questionnaire. This questionnaire was developed for the actual teacher population and is also valid for the pre-service teaching population. The questionnaire includes 12 statements with response options from1-5, ranging from "not at all sure of my ability to do" to "completely sure of my ability to do" (Pfitzner-Eden et al., 2014). The questionnaire represents three dimensions: 1. Self-efficacy in implementing teaching strategies, 2. Self-efficacy in classroom management, and 3. Self-efficacy in the ability to involve students in learning.

Sample statements:

1. To what extent do you feel able to provide an alternative explanation or example when students are confused?
2. To what extent do you feel able to persuade students to follow classroom procedures?
3. To what extent do you feel you are able to help students think critically? (Develop critical thinking)

Confirmative factor analysis was used to examine the fit of the questionnaire structure to the data of the present research population. The structure of the three factors was confirmed. The goodness-of-fit indices of the final model obtained were $\chi^2 = 50.388$, $df = 31$; $P = .015$; $\chi^2/df = 1.625$; SRMR = 0.048; CFI = .978; RMSEA = 0.048 (0.021, 0.071). The loadings on the variable of self-efficacy in teaching ranged from 0.12 to 0.90, where the loadings of classroom management and ability to engage students in learning were high (0.8 and 0.9, respectively) compared with the low loading (0.12) of the factor of efficacy in employing teaching strategies.

Statistical Analysis

Data were entered and analyzed using SPSS version 28. First, descriptive statistics were produced using means and standard deviations for all variables. Reliabilities of the scales were evaluated by Cronbach Alpha, while their validities were estimated by Confirmatory Factor Analysis. Correlations between variables were assessed using Pearson correlations.

To assess the relationship between the independent variables and the dependent variable (self efficacy), path analysis using Structural Equation Modeling (SEM) was conducted. The following indices were used to evaluate the model: chi-squared, which is acceptable when the value is not significant; the goodness of fit index (GFI), the comparative fit index (CFI), and the non-normed fit index (NNFI), (adequate values - above 0.90, excellent fit - above 0.95); and the root mean square error of approximation (RMSEA) (adequate values - less than 0.08, excellent fit - less than 0.06) (Arbuckle, 2013). SEM was tested using AMOS software. Level of significance (p-value) was 5%.

RESULTS

Descriptive Statistics

The present research examined how pre-service teachers perceived their college learning environment, their belief in their teaching self-efficacy, and how these affected the prediction of their achievement goals as future teachers.

Table 1 presents the descriptive statistics of the six factors of the learning environment in teacher-training colleges. The results presented in Table 1 indicate that pre-service teachers agreed to a moderate degree that the essential components of the learning environment existed at the teacher-training colleges. They also agreed only to a relatively low degree that good instruction took place at the colleges at which they studied.

	Number of items	Reliability score (α)	Mean	Standard deviation
Student perceptions regarding good instruction in the college	4	0.83	2.06	1.07
Student perceptions regarding development of skills	4	0.85	3.16	.77
Student perceptions regarding academic environment	4	0.78	3.16	.82
Student perceptions regarding quality of assessment	3	0.77	3.16	.83
Student perceptions regarding quality of study assignments	3	0.78	2.96	.80
Student perceptions regarding traditional instruction at the college	5	0.63	3.38	.97

Table 1: Description of Factors of Perceptions of the Learning Environment Among Pre-service Teachers (Scale of 1-5, where 1 is lowest and 5 highest)

Table 2 presents the descriptive statistics of the three factors of self-efficacy in teaching of the pre-service teachers. The results presented in Table 2 indicate that the pre-service teachers' beliefs in their self-efficacy in teaching were at a moderate level. The level of their self-efficacy in employing teaching strategies was low-moderate and the level of their self-efficacy in managing the classroom and engaging their students in learning was moderate-high.

Table 3 presents the descriptive statistics of the factors of achievement goals in teaching of the preservice teachers. The results indicate that declared achievement goals of the preservice teachers as future teachers were relatively high regarding mastery goals and performance-approach goals, while the mean for performance-avoidance goals was of a moderate level.

	Number of items	Reliability score (α)	Mean	Standard deviation
Efficacy in teaching strategies	4	0.77	2.68	.60
Efficacy in classroom management	3	0.74	3.63	.68
Efficacy in engaging students	3	0.78	3.65	.74

Table 2: Factors of Self-Efficacy in Teaching of Preservice Teachers (Scale of 1-5, where 1 is lowest and 5 highest)

	Number of items	Reliability score (α)	Mean	Standard deviation
Mastery goals	3	0.77	3.70	.67
Performance-approach goals	4	0.74	3.94	.78
Performance-avoidance goals	3	0.78	3.10	.77

Table 3: Factors of Achievement Goals in Teaching of Preservice Teachers (Scale of 1-5)

Pearson Correlations between Study Variables

Table 4 presents the Pearson correlations between the main study variables. Efficacy in teaching strategies were positively correlated to learning environment factors ($.237 < r < .461$). In addition, efficacy in classroom management was positively related with learning environment factors (besides with good instruction in the college) ($.231 < r < .370$). similarly, efficacy in engaging students was positively related with learning environment factors (besides with good instruction in the college) ($.231 < r < .366$). Finally, Efficacy in engaging students was positively related with learning environment factors (besides with good instruction in the college) ($.168 < r < .225$).

Mastery goals were positively related to learning environment factors besides with good instruction in the college ($.226 < r < .311$), efficacy in classroom management ($r = .600$, $p < .01$) and Efficacy in engaging students ($r = .577$, $p < .01$).

Performance approach goals was negatively related to the student perceptions regarding good instruction in the college ($r = -.218$, $p < .01$), but positively related to the other learning environment factors ($.132 < r < .225$), and also positively related to efficacy in classroom management ($r = .346$, $p < .01$) and efficacy in engaging students ($r = .185$, $p < .01$).

Positively related to learning environment factors besides with good instruction in the college ($.226 < r < .311$), efficacy in classroom management ($r = .600$, $p < .01$) and Efficacy in engaging students ($r = .577$, $p < .01$).

In addition, a positive, significant correlation was found between learning environment at the college and self-efficacy in teaching ($r = .38$; $p < .001$), mastery goals for teaching ($r = .269$; $p < .001$), performance-approach goals ($r = .224$; $p < .001$), and performance-avoidance goals ($r = .317$; $p < .001$). The more positive the pre-service teacher's perception of the learning environment, the higher his/her self-efficacy in teaching, as well as the level of his/her achievement goals in teaching. Positive correlations were also found between self-efficacy in teaching and mastery goals for teaching ($r = .522$; $p < .001$), performance-approach goals in teaching ($r = .275$; $p < .001$), and performance-avoidance goals in teaching ($r = .294$; $p < .001$). The greater the self-efficacy in teaching of the preservice teachers, the higher their achievement goals. The correlations between the different achievement goals indicated a positive correlation between mastery goals for teaching and performance-approach goals ($r = .425$; $p < .001$), and between mastery goals for teaching and performance-avoidance goals ($r = .339$; $p < .001$) the higher the mastery goals, the higher the performance-approach and performance-avoidance goals. A positive, strong, and statistically significant correlation was found between performance-approach and performance-avoidance goals ($r = .778$; $p < .001$). The higher the performance-approach goals, the higher the performance-avoidance goals.

	1	2	3	4	5	6	7	8	9	10	11
Student perceptions regarding good instruction in the college											
Student perceptions regarding development of skills	.120*										
Student perceptions regarding academic environment	.127*	.648**									
Student perceptions regarding quality of assessment	.323**	.675**	.659**								
Student perceptions regarding quality of study assignments	.167**	.631**	.698**	.672**							
Student perceptions regarding traditional instruction at the college	.146*	.515**	.541**	.678**	.601**						
Efficacy in teaching strategies	.461**	.237**	.326**	.450**	.386**	.292**					
Efficacy in classroom management	-.042	.366**	.302**	.231**	.370**	.285**	.089				
Efficacy in engaging students	-.027	.225**	.205**	.168**	.242**	.195**	.082	.464**			
Mastery goals	-.100	.300**	.311**	.206**	.350**	.226**	.078	.600**	.577**		
Performance-approach goals	-.218**	.264**	.288**	.170**	.272**	.208**	.010	.414**	.321**	.388**	
Performance-avoidance goals	.001	.137*	.173**	.132*	.225**	.175**	.049	.346**	.185**	.303**	.474**

Table 4: Pearson correlations between the main study variables

Structural Model of Achievement Goals of Pre-service Teachers

The independent variables in the model were self efficacy and learning environment while the dependent variables were mastery goals, performance-approach goals, and performance-avoidance goals. Results showed acceptable goodness of fit indices χ^2 = 1207.95, *df* = 697, *P* = 0.001; χ^2/df = 1.733; SRMR = 0.061; CFI = 0.90; RMSEA = 0.05 (0.04, 0.06). The model examined data while controlling for background variables (gender; age, studying year). (see Figure 1: Pre-service achievement goals model).

The structural model showed that self-efficacy in teaching had a strong positive direct effect on the mastery goals of the pre-service teachers (β = .89, p < .001), and also a moderate positive direct effect on the performance-approach of the pre-service teachers (β = .32, p < .01). No significant direct effect was found between self-efficacy in teaching and avoidance goals (β = -.05, p = .89).

Hence, the preservice teachers who were characterized by high self-efficacy in teaching set mastery goals for themselves and aspired to develop their teaching abilities. However, they were also likely to set performance-approach but not performance-avoidance goals for themselves.

In addition, results also showed that college learning environment has a strong positive effect on goal avoidance (β = .88, p < .001), a moderate positive effect on goal-approach (β = .20, p < .01). No significant effect was found between college learning environment and mastery goals (β = .04, p = .75).

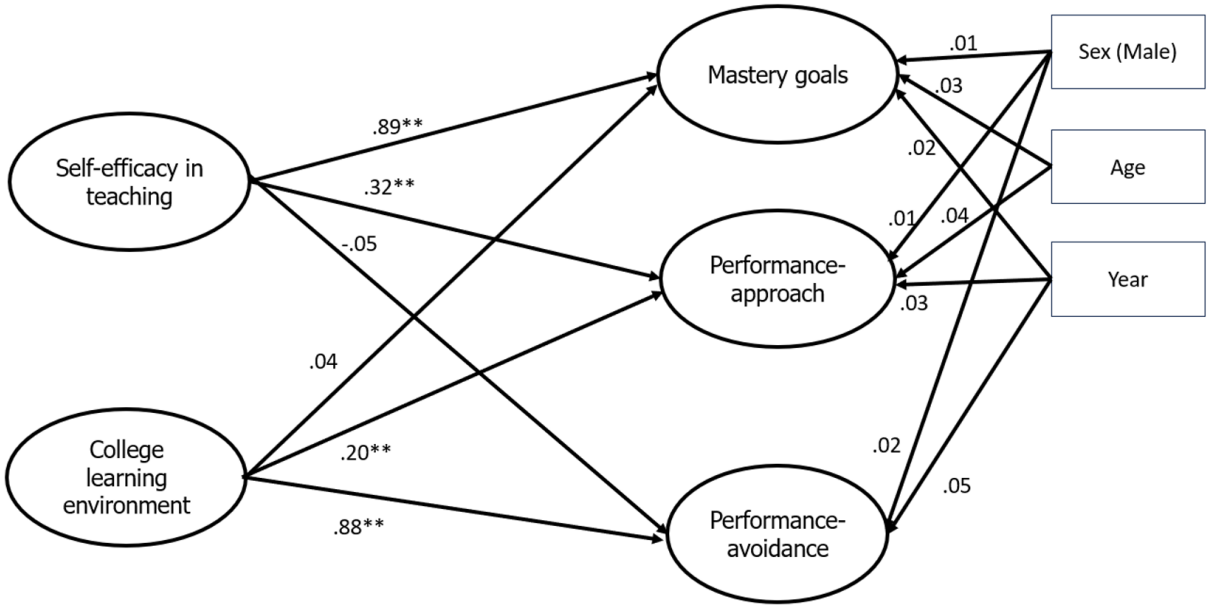

Figure 1: Relationship between self-efficacy in teaching and college learning environment with mastery goals, performance approach and performance avoidance

DISCUSSION

The research findings refer to a notable, direct, and positive effect of teaching self-efficacy in teaching on mastery goals and performance approach goals. This result highlights the self-efficacy in teaching in determining the mastery goals of pre-service teachers are particularly significant. These findings are in line with other studies on the same domain (Bong, 2001; Cho & Shim, 2013; Gerhardt & Brown, 2006; Yildizlli, 2019). It is obvious, based on the reached findings, that self-efficacy in teaching in fact makes it possible for pre-service teachers to approach a risky pattern to enhance their teaching capabilities, skills, methods, and techniques, and achieve more profound educational targets in the process of teaching, rather than satiating with formal instruction that sets apart achievement goals and the desire to exude one's abilities in teaching.

In addition to the prior, this study's final model indicated that the learning environment in teacher-training colleges plays a critical role in forming and reforming the performance goals of pre-service teachers. These findings are compatible with other studies that have indicated an obvious connection between learning environment, self-efficacy and achievement goals (Alkharusi, 2009; Elliot & Church, 1997; Nie & Lau, 2010; Urdan & Midgley, 2003; Yıldızlı et al., 2016).

Mastery goals for teaching are more challenging to achieve using the *top–down* teaching methods, which is characterized by classical -old–school- instruction, controlled mainly by the lecturers, without permitting the pre-service teachers' genuine practice and the opportunity to develop necessary teaching skills and strategies. Even though some teaching intervention by lecturers is indeed vital, the results of this study suggest a bottom–up teaching approach, characterized by a *constructivist* learning atmosphere that involves more engagement of the pre-service teachers in the training process at large. The prior approach is expected to enable the participants to independently construct their knowledge and actively create teaching strategies and techniques that would better advance their adoption of mastery skills rather than performance goals.

A constructivist learning atmosphere is mainly concerned with learning, dialogue in instruction, significant learning, and employment of alternative evaluation tools in training teachers. Such environment can provide pre-service teachers with numerous opportunities for actual and genuine teaching skills in the early stages of their studies. To enhance the learning

environment by changing its distinctive feature into a more constructivist one, the academic institution should pay close attention to six components:

1. Improving the instructional quality of lecturers: it is necessary in this respect to set an example of *the effective teacher figure*, who comprehends the students' challenges, illustrates the educational material in a proper and effective manner, and possesses the necessary skills to break the barriers and the rigidity of the curriculum that create a sense on boredom and monotony.
2. Providing more opportunities for pre-service teachers to develop general skills such as: conducting proper work plans, creating problem solving methods, possessing the capacity to deal with emerging problems, acquiring communication skills, and properly engaging in teamwork. For example, Israel's Ministry of Education is currently integrating pre-service teacher into schools with the aim of providing such opportunities.
3. Creating a more intellectually provoking academic environment, to raise the desire to learn.
4. Improving the current evaluation methods and promoting diverse evaluation tools that would stress high-level thinking, as well as constructive feedback for the pre-service teachers on the tasks they are assigned.
5. Investing more tangible effort into the structure of classroom assignments and activities, so that they are clear, engrossing, and in direct relevance to the pre-service teachers.
6. Promoting a variety of instruction methods, skills, and techniques, and shifting from classical, lecturer-centered instruction to instruction focused on the pre-service teachers themselves.

It is necessary to note that performance goals in particular are not undesirable in pre-service teachers, since they will need to assist their students achieve the standards designed and agreed upon by the education system. Certain studies have exuded that participants may possess multi-faceted goals concurrently (Levy et al., 2004; Yildizli, 2020). However, our study's structural model shows that the main emphasis should be attributed to mastery goals and development of skills which may, in turn, increase performance goals, demonstration of abilities, and the meeting of required standards of the college learning environment.

The findings of the current study suggest that there is pressing need to enhance the various components of self-efficacy of pre-service teachers, as effectively raising their self-efficacy at a premature phase of their training process is more likely to assist them cope better in their first year of teaching, a time at which they are most in peril and predisposed to be adversely influenced by substandard and undesirable experiences (Hoy & Spero, 2005).

Limitations

Together with the promising results from this study, there are some limitations that future research may address. First, although the model fit the data, alternative models may fit the data as well and should be tested in future research. Second, replication studies are necessary to confirm the results of the current study and to add to their generalizability. Third, a qualitative approach would likely aid in the interpretation of the significant effects revealed in the current study. Finally, the effect of the research variables on other outcome variables such as achievement in theoretical courses and in practicum, and emotional and social variables that characterize pre-service teachers throughout the training period, could also evaluate the efficacy of the training process in teacher-training colleges.

CONCLUSIONS

Learning environments have a significant effect on the adoption of achievement goals, both mastery goals and performance approach goals. our study shows a need for improving the learning environment at our country's teacher-training colleges. A learning environment more consistent with constructivist ideas would enable greater teaching self-efficacy and encourage pre-service teachers to set not only performance goals but also mastery goals for themselves.

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