

The Correlation between Professional Development and Teacher's Self-Efficacy

Egoza Wasserman¹, Zipi Maymon²

¹Herzog Academic College, Hechal-Shlomo, King-Goerge 58 Jerusalem, Israel. Tel: 972-2-5320906, fax: 972-2-5327208, E-mail: egozaw@gmail.com

²Herzog Academic College, Hechal-Shlomo, King-Goerge 58 Jerusalem, Israel. Tel: 972-2-5320906, fax: 972-2-5327208, E-mail: zipimaymon@gmail.com

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Abstract


The purpose of this study is to examine the correlation between professional development of the teaching staff in schools using training courses, and teacher self-efficacy. This study was conducted using the qualitative method, with 144 questionnaires given to teachers in training courses in the Pisgah Centers (Development of Teaching Staff Centers) in Israel, where the questionnaires examined the length of the training, the teacher's self-efficacy, and their standpoint regarding the professional development program. Results of the research show a distinct positive correlation between most of the teacher's standpoints and most of their feelings of self-efficacy. Thus the standpoint of the teachers on the subject of effective teaching methods of the organization predicted the feeling of self-efficacy in the objective, relationships and organizational factors. In addition, the teacher's standpoint on the subject of environment predicted the feeling of self-efficacy in the objective factor and the teacher's standpoint on the subject of ICT predicted the feeling of self-efficacy in both the objective and relationship factors. Furthermore, a definitive correlation was found between the length of the training course and the feeling of self-efficacy amongst the teachers in both the objective and organizational factors.

Keywords: professional development; teacher self-efficacy

1. Introduction

1.1. Teacher's Professional Development

In the past few decades the trend of teacher's professional development has spread and gained momentum

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for the most part because of the complex and numerous challenges that teachers and pupils must face in the modern era. The trend of professional teaching development is due to the realization of the importance of the teacher as a formative and influential agent in various aspects of the pupils' lives. It was found that teachers are the main cause of most of the pupils' learning achievement (Carey, 2004; Sanders & Rivers, 1996). Because of its centrality in the past few years, there have been several attempts to evaluate the quality and effectiveness of the professional development programs (Little, 2006).

1.2. The Advantages of Professional Development

The advantage of professional development is that it provides a wide range of interactive activities that are designed to improve the teacher's professional knowledge and skills, as well as their teaching practices, and to contribute to their personal growth, both socially and emotionally (Avidav, 2000).

In addition, according to Darling-Hammond (1998), many challenges have been imposed upon the professional development courses: an in-depth understanding by the teachers of the academic and learning material, conferring tools and skills to develop pupil's motivation and presenting the learning material in an experiential and interesting manner, expanding the teacher's knowledge in the fields of developmental psychology and various learning disabilities. Indeed, there exist various development programs that focus on unique challenges and specific situations that demand special training of the teachers. Thus, the trend of mainstreaming that has been prevalent in the past few years, in which special needs children are integrated into the regular classroom, has increased the need for giving guidance and appropriate tools for teachers in these classes. The various programs that focus on mainstreaming special needs children concentrate amongst other things on giving guidance and appropriate tools to teachers for these children. For example, there is a program which focuses on training teachers for integrating children with behavioral disorders into the classroom, in addition to programs for improving teacher interaction and practicing skills with the child, which has brought a high success rate of integration in comparison to situations where the teacher did not have this training course (Webster-Stratton, 1998).

In the last few years, in light of the amount of technology in our lives, the trend is spreading to develop professional training that focuses on expanding the technological knowledge of the teachers. Research that examined the influence of developing professional training that focuses on technology amongst the thousands of teachers teaching sciences, found that training courses that were given continuously and for more than a year, brought significant improvement in the pupil's achievements with those teachers (Gerard, Varma, Corliss & Linn, 2011).

1.3. Types of Professional Development

The professional development for teachers comes in many forms, for example courses in academic institutions, local and national teacher conferences, workshops, special institutions, etc. In the past decade, there has been a momentum in communities and local teacher groups that focus on professional development and see it as a social process that is based for the most part on interaction. These groups supply the participating teachers with tools for growth and professional development (Desimone, 2011).

The development of a professional learning community (PLC) has been encouraged by the schools that support professional development of their teachers. The PLC has two basic tenets. First, the assumption that knowledge is gained by the everyday experiences of teachers and can be best understood by looking at these experiences with other teachers who share these experiences. The other basic tenet is the assumption that participating in the group will expand the professional knowledge of the teachers and improve their pupil's achievements (Vescio, Ross & Adams, 2008).

According to Newman and his partners (Newmann *et al.*, 1996) PLC has a few key characteristics, which amongst other things, include the following properties: firstly, values and norms that are shared by all the members of the group, regarding the way in which they perceive children and their ability to learn, priorities set by the school for the distribution of time and resources, and the proper roles of parents,

teachers and principals. Another essential characteristic of PLC is the clear and consistent emphasis on meaningful learning by the pupils, Along with managing a dialogue on the subjects of curriculum, teaching methods and the pupil's development. These characteristics of PLC gained the support of other researchers as well (Bolam *et al.*, 2005).

Many researchers found that a PLC which is developed thoroughly can have a positive influence on teachers and pupils (Vescio *et al.*, 2008; Vogt & Rogalla, 2009). In the past few years many Facebook groups have been opened that are designated for teachers. The professional developments of these groups are not official and are not supervised, but the Facebook groups allow thousands of teachers throughout the world to participate in discussions that deal with education at any given moment of the day. According to Rutherford (2010), these Facebook groups have the potential to improve the teaching methods of the participating teachers as a result of their exposure to the variety of opinions in a neutral and non-critical surrounding.

The use of these frameworks for the professional development of teachers exists also in official channels as well. For example the National Board for Professional Teaching Standards (NBPTS) which is a professional program that is active in the United States. In the framework of this program teachers are asked to analyze their teaching methods and the needs of the pupils, to present videos on their teaching approach and to suggest ways of developing their pupil's achievements and creativity. A study which examined the influence of this program found that the majority of teachers who took part in this program reported a significant improvement in their teaching techniques after participating in the program (Sato, Wei & Darling-Hammond, 2008). Beyond this specific program, the great advantage of formal professional development programs is that they can be monitored and the effects can be examined more accurately than non-formal programs (Little, 2006).

1.3.1. Pisga Centers

Pisga centers, (Teaching Staff Development Centers) which are designed to deliver professional development programs for teachers, are under the auspices of the Ministry of Education's Center for Teaching Staff Development. The Department is responsible for formulating policy for professional development, guiding and assisting the Pisga Centers in fulfilling their mission, managing and supervising the centers and operating the learning frameworks for the staff in these centers. Control and supervision of the centers is carried out by a CLT (control and learning team), whose members are inspectors of the Pisga Department and the Department of Training.

An additional key principle underlying the Pisga center is the concept of continuum, which emphasizes the importance of learning and development throughout the years of the profession. Accordingly, the basic tenet underlying the Pisga Center is that professional development is a constant advancement of knowledge and professional skills throughout the teacher's professional life. Also, the goal of the professional development program, which includes the Pisgah centers, is to expand the knowledge of the teacher, deepen his understanding of all teaching and learning processes, develop new teaching methods and perfect skills in order to advance their performance and the pupil's achievements. This goal also espouses the assumption of continuous education (Avidov-Ungar, 2013).

In order to achieve these goals, the local Pisga centers have training courses in various formats, seminars and meetings with various teachers, discussion, group guidance, etc. These activities are directed by the staff of academic professionals and didactic counselors. The training courses and learning are conducted in different areas, and include in-depth professional knowledge of the material that the teachers teach, and also learning of teaching skills, and addressing issues relevant to teaching. A large part of the training course is conducted using non-book resources and include a diverse variety of teaching and learning tools, including didactic data base, computer classes and ICT, communication and production, educational games and videos. In addition, Pisga centers will often offer ongoing guidance and advice to teachers participating in the programs after-hours, such as observation in the field whose purpose is not

evaluation but growth and empowerment of the teachers (Gutman, 2011).

1.4. Self-Efficacy

The concept of self-efficacy grew out of Bandura's theory of social learning (Bandura, 1986), and concerns the judgement of one's ability to behave in a successful manner that will lead to the desired result. We can see that the concept of self-efficacy does not relate to real skills but rather the belief in ability and results. Indeed, it was found that the feeling of self-efficacy can lead to different results in different people even when the skills were similar (Bandura, 1986, 1993).

1.5. Teacher Self-Efficacy

The perception of self-efficacy in teachers relates to his judgement of his ability to realize his potential and deal effectively with the challenges of his profession. In the past, it was acceptable to relate to the teacher's self-efficacy concerning one objective, the belief in his ability to advance his pupil's achievements. Accordingly, Gibson and Dembo (1984), divided the teacher's abilities into personal capability – the teacher's belief in his ability to advance academic achievement of his students, and general capability – his belief in the influence of education in general regardless of his pupil's skills. In contrast to these studies, which examined the self-efficacy of teachers with regard to the objective component only, the three-fold component model that Friedman and Wax (2000) found in their study, points to the perception of the teacher's competence as being comprised of three fields: the objective field, the relationship field, the teacher's belief in his ability to build a positive relationship with his pupils beyond the formal aspect, and finally the organizational field, which is expressed in the belief of their ability to influence the decision making process in the school and to advance from within. In accordance with this model, Friedman and Wax (2000) defined self-efficacy as a belief in the teacher's ability to perform the accepted educational objectives and to influence the important decisions in the school.

Studies in self-efficacy (Ashton & Webb, 1982) have shown a significant correlation between the teacher's self-efficacy and pupil's achievements in language and mathematics. In their research they discovered that teachers with a high self-efficacy set high academic standards, demonstrated confidence, created an atmosphere of acceptance, related to the unique needs of their pupils and showed clearer academic direction.

It was also found that the students' perception of the communicative ability of the teacher is a significant predictor of his sense of competence (Schaller & DeWine, 1993). Ashton and Webb (1982) found that teachers with high self-efficacy used less threats and expressions of anger toward their pupils with behavioral problems. In addition, findings from various studies indicate a correlation between high self-efficacy of the teacher to pupil motivation, improving pupil self-confidence, a positive attitude towards school, and improved self-direction of the pupils (Peled, 2005; Zee & Koomen, 2016).

Another aspect of the relationship component which is expressed by teacher self-efficacy, is the degree in which teachers allow their pupils autonomy. It was found that teachers with high self-efficacy manage their classrooms with a larger degree of autonomy which demands a larger amount of pupils involved in classroom objectives and higher achievement of the pupil (Woolfolk, Rosoff & Hoy, 1990).

There exist several research findings that relate to the field of organization of the three-fold component model, and focus on the teacher's belief in his ability to influence decision making in the school. These findings indicate that the teacher's self-efficacy on the organizational level influences his commitment to the teaching profession and the level of burn-out from the profession (Kess, 2000; Chesnut & Burley, 2015). If so, the research literature shows that the teacher's self-efficacy has significant implications for his pupils. A teacher with high self-efficacy demonstrates certain characteristics, including creating an acceptable environment, setting high academic standards, effective functioning of the class, a love of learning, etc. (Kess, 2000).

Giving professional development courses to teachers should deepen their knowledge of the world of content, grant them effective management skills, and more frequent meetings with other teachers, while giving support and encouragement, and participation in projects between them. All these are liable to influence the teachers' self-efficacy. Indeed it was found that cooperating in a professional development program strengthened the teacher's self-efficacy in the field of class management and control (Ross & Bruce, 2007). Teacher self-efficacy was strengthened not only in class management but is also liable to be strengthened and change according to the content of the specific program. Thus it was found that participation in professional development programs that focused on integrating technological tools in the school strengthened the teachers' self-efficacy in dealing with technology (Overbaugh & Lu, 2008).

1.6. Purpose of the Study

The purpose of the study is to examine the relationship between professional development of the teaching staff using training courses and self-efficacy amongst the teachers. Is there a correlation between the teacher's feelings towards training courses they have taken to the various factors of teacher self-efficacy?

2. Method

2.1. Research Method

The study was conducted using the quantitative method.

In this study 144 teachers (33.3 % men and 66.6% women) participated in Israel, these teachers were trained in the Pisga center and a sample of teachers was taken to participate in the study. These teachers teach in a wide variety of institutions, and they trained in local and regional programs.

2.2. Research Tools, Reliability and Validity

The research tool was a written self-report questionnaire that included closed questions only and contained three sections.

Section one – which was formulated for the purpose of this study included questions concerning the participants stance regarding the training they received in three different aspects: 1. Teaching method (11 items, for example - the seminar helped organize my prior knowledge). 2. Effectivity and Implementation (4 items, for example – I received tools for thinking in the seminar). 3. Environment (5 items, for example – there was an environment of learning in the seminar). 4. ITC (3 items, for example – the site is a source of cooperation and discussion between the group members). For all 23 items in the questionnaire concerning the training the participants were asked to rate to what extent the statement is true using the Likert scale of 1-5, 1 = not at all, 5 = very much.

Alpha reliability was calculated for all the items in this section, $\alpha = 0.948$. Alpha reliability data was calculated for each factor of the feedback: teaching methods - $\alpha = 0.925$, effectiveness and implementation - $\alpha = 0.762$, environment - $\alpha = 0.836$, ICT- $\alpha = 0.912$.

Section Two – questions regarding teacher self-efficacy. This section was taken entirely from the "Teacher Self-Efficacy Questionnaire" of Kess (2000). In this section there were 29 statements that reflect the feelings of the teachers concerning self-efficacy in their work in school where every statement requires the best answer on the Likert scale (1= never, 6 = always). The statements deal with issues such as the teacher's ability to be flexible in teaching and management of the class, etc.

The reliability of the statements in the Kess (2000) study found $\text{Alpha}=0.88$, in our study we found the calculation of reliability of the statements $\text{Alpha} = 0.91$. In the analysis of the findings we found three main factors: objective of teaching, organization and relationship. In the reliability section of "objective of teaching" we found in the original study $\text{Alpha}=0.88$, and in our study reliability was $\text{Alpha} 0.92$. In the

reliability section of "organization" the original study was Alpha 0.81 and in our study it was Alpha 0.81 as well. In the reliability section of "relationships" the original study was Alpha 0.76 and in ours it was Alpha 0.68 (see appendix 2).

Section Three – demographic data: gender, seniority, title, area of teaching.

2.3. Research Process

The questionnaires were sent to all the participants of the training course via email and google docs. From the various schools 144 teachers answered the questionnaire and participated in the study. All of the 144 teachers answered the questionnaire in full. It was emphasized to the participants that the questionnaire was anonymous.

3. Results

3.1. The Dependent Variable: Teacher Self-Efficacy

Presentation of the three factors of the variable: Teacher's sense of self-efficacy

Table 1. Analysis of the variable, sense of teacher self-efficacy: Objective of teaching, organization, relationships (N = 144).

Factor	No. of Items	Reliability Factor	Examples
Objective of teaching	16	0.91	- I think I can be very creative in my work with pupils. - If a pupil does not remember the lessons, I know how to proceed so that he will remember the next lesson better.
Organization	7	0.91	- I feel that I contribute to the decision making in school. - I think that I can advance and take on more important roles in my school
Relationships	5	0.70	- I feel that I do not have difficulty requesting things from the administration. - I think that I do not have real influence on essential decisions.

Table 2. Pearson correlations of the three factors

	Objective of teaching	Relationships	Organization
Objective of teaching	1	0.24**	0.51**
Relationships	0.24**	1	0.44**
Organization	0.51**	0.44**	1

Table 2 shows that the correlation between these three factors are at a moderate level (0.24, 0.51, 0.44) because they relate to the same world of concepts, but every factor stands on its own.

Table 3: Average and standard deviation of the three factors

	Average	Standard Deviation
Objective of teaching	4.66	0.57
Relationships	4.62	0.90
Organization	4.36	1.03

Table 3 shows that the averages and standard deviations of the three dependent variables are: Objective of teaching: M=4.66, standard deviation 0.57. Relationships: M=4.62, standard deviation 0.90. Organization: M=4.36, standard deviation 1.03.

3.2. The Teacher's Attitude Concerning Training Courses

Table 4. Analysis of Factors of Teacher's Standpoint Concerning Training Courses: Teaching Methods, Effectiveness, Environment and ICT

(N = 144)

Factor	No. of Items	Reliability Factor	Examples
Teaching Methods	12	0.91	- Training gave me new knowledge - Training helped organize previous knowledge
Effectiveness	4	0.92	- I received tools for thinking - I received tools and strategies for teaching
Environment	5	0.88	- There was an atmosphere of learning - There was an atmosphere of listening and openness
ICT	3	0.85	- The site is a place for participation and advice amongst the group members

Table 5. Average and standard deviation of the training course factors

	Average	Standard Deviation
Teaching Method	4.04	0.69
Effectiveness	3.94	0.83
Environment	4.35	0.63
ICT	3.33	1.04

Table 5 shows that the average and standard deviation of the four factors of training course are: Teaching Methods: M=4.04, standard deviation 0.69. Effectiveness: M=3.94, standard deviation 0.83. Environment: M=4.35, standard deviation 0.63. ICT: M=3.33, standard deviation 1.04.

3.3. Analysis of Research Hypotheses

Table 6 below shows the correlation between the factors of attitude towards the course and sense of self-efficacy of the teachers.

Table 6. Pearson test results for the correlation between the three factors of self-efficacy

	Objective of teaching	Organization	Relationships
Teaching Method	0.25**	0.33**	0.23**
Effectiveness	0.34**	0.25**	0.18*
Environment	0.31**	0.16	0.05
ICT	0.23**	0.22**	0.13

Note: P<0.05* P<0.01**

From Table 6 we can see that:

1. There was a distinct low positive relationship ($r_p=0.25$, $p<0.01$) between teaching methods and objective of teaching.
2. There was a distinct medium positive relationship ($r_p=0.34$, $p<0.01$) between effectivity and objective of teaching.
3. There was a distinct medium positive relationship ($r_p=0.31$, $p<0.01$) between environment and objective of teaching.
4. There was a distinct low positive relationship ($r_p=0.23$, $p<0.01$) between ICT and objective of teaching.
5. There was a distinct medium positive relationship ($r_p=0.33$, $p<0.01$) between teaching methods and organization.
6. There was a distinct low positive relationship ($r_p=0.25$, $p<0.01$) between effectivity and organization.
7. There was no distinct relationship ($r_p=0.16$, $p>0.05$) between environment and organization.
8. There was a distinct low positive relationship ($r_p=0.22$, $p<0.01$) between ICT and organization.
9. There was a distinct low positive relationship ($r_p=0.23$, $p<0.01$) between teaching methods and relationships.
10. There was a distinct low positive relationship ($r_p=0.18$, $p<0.01$) between effectivity and relationships.
11. There was no distinct relationship ($r_p=0.05$, $p>0.05$) between environment and relationships.
12. There was no distinct relationship ($r_p=0.13$, $p>0.05$) between ICT and relationships.

Table 7 below examines the relationship between training and the three factors of self-efficacy.

Table 7. Spearman test results for the correlation between length of training course and the three factors of self-efficacy

	Objective of teaching	Organization	relationships
Length of training course	0.25**	0.29**	-0.15

From Table 7 we can see that:

1. There was a distinct low positive relationship ($r_s=0.25$, $p<0.01$) between teaching methods and number of years of training.

2. There was a distinct low positive relationship ($r_s=0.29$, $p<0.01$) between organization and number of years of training.
3. There was no distinct positive relationship ($r_s=-0.15$, $p>0.05$) between relationships and number of years of training.

4. Discussion

The purpose of this study was to examine the relationship between professional development of teaching staff in the schools using training courses, and the feeling of self-efficacy amongst the teachers.

We found a distinct positive relationship between the teacher's standpoint on teaching methods of the training courses, their perception of the influence of training on their teaching methods and their feelings of self-efficacy from the aspects of objective of teaching, organization and relationships. In other words, the more their perception of the training course as being influential on their teaching the more confidence they had in their ability to reach higher achievement with their pupils, to manage positive relationships with their pupils, to influence decision policy and to advance in the school. The correlation between the teacher's standpoint on teaching methods of the training course and their feeling of self-efficacy and the teacher's belief in his ability to establish positive relationships with his pupils beyond the formal aspect, matches the findings in the literature of that subject, which points to a high self-efficacy in the factor of relationships that are related to greater autonomy in classroom management (Woolfolk *et al.*, 1990), and teaching methods based on less anger and threats towards pupils with behavioral problems (Peled, 2005).

In addition, there was a distinct correlation between the teacher's standpoint on the effectiveness of training and their feeling of self-efficacy. In other words, the more they perceived the training to be effective, the more they believed in their ability to reach higher achievement with their pupils, to manage positive relationships with the pupils and to influence decision making and to advance in the school. We see from this that participation in a professional, effective and qualitative training course strengthened the teacher's self-efficacy in the area of control and management of the classroom, and therefore influenced the self-efficacy in the objective and relationship factors as well (Ross & Bruce, 2007). Also, the different aspects that express the effectiveness of the training courses – expanding the professional knowledge of the teachers, developing new teaching methods, personal and professional empowerment and developing interaction between other teachers – were also found to be connected to the feeling of self-efficacy in the objective, relationship and organization factors (Shachar & Shmulevitz, 1997; Skaalvik & Skaalvik, 2007; Tschannen-Moran, Hoy, & Hoy, 1998).

In addition, support for the research hypothesis was given from the positive correlation found between the teacher's standpoint about environment and the self-efficacy factor, so that the greater the environment of the professional development program was perceived as positive, the more belief they had in their ability to improve their pupil's achievements. This finding agrees with the findings of Shachar & Shmulevitz (1997) which indicates that the self-efficacy factor is influenced to a great degree by cooperation with other teachers, and discussion with other colleagues tend to strengthen the teacher's self-efficacy.

Another support for the research's hypothesis was found from the positive correlation between the teacher's standpoint towards ICT in the professional development program and the objective and relationship factors of self-efficacy. In other words the more the teachers perceived the professional development program as encouraging cooperation and discussion amongst the members of the group the more they believed in their ability to improve their pupil's achievements and to conduct positive relationships beyond the formal aspect. These findings are supported by the research findings that indicate a correlation between cooperation and discussion with other teachers and the objective factor of self-efficacy (Shachar & Shmulevitz, 1997) and the relationship factor of self-efficacy (Shachar & Shmulevitz, 1997; Skaalvik & Skaalvik, 2007) and the organizational aspect of self-efficacy (Peled, 2005).

However, contrary to the hypothesis of the research, we did not find distinct correlations between the teacher's standpoint towards environment and the factors of relationships and organization in their self-efficacy, and also their standpoints between ICT and the factor of organization and relationships. These findings do not match those found in the literature that exists in this area, which find a correlation between cooperation with other teachers – which might be achieved with help of environment in the professional development training – to the relationship factor of self-efficacy (Skaalvik & Skaalvik, 2007).

Another hypothesis which the research presents is that there should be a positive correlation between number of years of training and teacher self-efficacy, in various components. Thus the more years' teachers underwent training the more self-efficacy they would have. The findings gave only partial support to this hypothesis. Thus, a positive correlation was found between number of years of training and the objective and organization factors of feeling self-efficacy. These findings match those found in the existing literature on this subject and indicate that participation in professional development programs for a longer period should have more effect on the teachers -including influence on their teaching methods, their perception towards the school, relationships with their colleagues, etc. – and because of this on their self-efficacy (Little, 2006).

4.1. Conclusions

The purpose of this study was to examine the correlation between professional development of the teaching staff in schools using training courses, and teacher self-efficacy. The results of the research show a distinct positive correlation between most of the teacher's standpoints and most of their feelings of self-efficacy. Thus the standpoint of the teachers on the subject of effective teaching methods of the organization predicted the feeling of self-efficacy in the objective, relationships and organizational factors. In addition, the teacher's standpoint on the subject of environment predicted the feeling of self-efficacy in the objective factor and the teacher's standpoint on the subject of ICT predicted the feeling of self-efficacy in both the objective and relationship factors. Furthermore, a definitive correlation was found between the length of the training course and the feeling of self-efficacy amongst the teachers in both the objective and organizational factors.

4.2. Limitation

The study was conducted only at one of the PISGA centers and not in all of the PISGA centers located in Israel. For this reason, the research should be expanded and implemented in a larger and more diverse population in order to confirm and expand the findings of the study.

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