Predicting Self-Efficacy based on Professional Ethics & Professional Development

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Abstract

Background: Today, teachers' self-efficacy is one of the most important issues in education. On the other hand, studies have shown that ethics and professional development play an important role in self-efficacy. Therefore, the aim of the present study was to predict self-efficacy based on professional ethics and professional development.

Method: The method of the present study was descriptive-correlation and applied in terms of purpose. The statistical population was all student-teachers of Farhangian University of Isfahan province in the academic year 2009-2010. Based on Morgan and Krejcie (1990) table, 150 people were selected as a research sample by random sampling method. The research instruments were Martin (2003) Teacher self-efficacy questionnaire, Petty professional ethics questionnaire (1995) and professional development questionnaire, the reliability of which was 0.86 with Cronbach's test. Descriptive statistics (frequency, percentage and mean) were analyzed by Spss26 software and inferential statistics (structural equations) were analyzed by Amos24 software.

Results: Data analysis showed that the path coefficient of professional development with self-efficacy is equal to 0.54 and professional ethics with self-efficacy is 0.69 (P <0.05). Also, about 0.76 of the changes in the criterion variable, i.e. self-efficacy, can be explained by "professional development" and "professional ethics."

Conclusion: It can be concluded that professional ethics and professional development have a significant relationship with self-efficacy and therefore it is necessary to pay more attention to the ethics and professional development of student physical education teachers.

Keywords: Professional ethics, Professional development, Self-efficacy, Physical education teachers

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Introduction

Physical education teachers as agents of sports education in schools have an important role in fostering the educational spirit and quality of life of students. Physical education teachers, in addition to fostering the spirit of sports in students and creating vitality in them, can also identify sports talents. They can also train sports elites to support national champions. Achieving these goals requires the skills, motivation and self-efficacy of the teacher in facing the various challenges of the career (1).

Teachers' self-efficacy is one of the most important issues for teacher empowerment. Self-efficacy is a firm belief in one's ability to control the environment and control things (2). Self-efficacy comes from four main sources: past performance gains, succession or pattern experiences, verbal persuasion, and emotional and physiological states. These factors interact with each other and influence people's judgment, which in turn changes individual ways of acting. Therefore, self-efficacy can affect the belief in abilities (3). Some experts consider the self-efficacy of physical education teachers in 4 dimensions. The student dimension, which is related to students' attitudes toward physical activity, and one of the factors that measure teacher self-efficacy is the management of students who do not enjoy physical activity. The factor of educational or sports atmosphere of physical education class can also be a tool for teacher evaluation. In situations where there is insufficient space for physical activity, there are problems with education, teachers' self-efficacy also decreases, and because schools are different in terms of facilities and space for physical education, their self-efficacy may also be different (4). The third dimension is time, and the time given to the physical education teacher may be insufficient, and the fourth dimension is to the school organization, where the views of the organization or school management and their performance on physical activity and training may differ (5).

One of the factors affecting self-efficacy is professional ethics. Professional ethics refers to a set of ethical instructions and codes in the course of one's profession that are formed according to values and norms (6). In other words, professional ethics refers to the norms that individuals must follow voluntarily and in accordance with the voice of their conscience and nature in doing professional work, without any external obligation or in case of violation of legal penalties (7). The concept of professional ethics is a broad field for which researchers have listed several components. Some researchers have considered the dimensions of professional ethics including internal and external organizational dimensions, individual and external and spirituality (8). Other researchers have introduced attachment and interest in work, perseverance and seriousness in work, healthy and humane relationships in the workplace, collective spirit and participation in work as components of professional ethics (9). Studies have shown that professional ethics behavior is difficult and if a person has a good level of professional ethics in the workplace, they are more likely to show higher self-efficacy (10).

Another factor affecting teachers' self-efficacy is professional development (10). Although there is no single definition for professional development, experts have offered different definitions. The development of professional careers is a constant that constantly enhances the skills, knowledge and attitudes of teachers (11). Professional development is a long-term activity that ranges from teacher training at the university to in-service courses for teachers (12). Some researchers have elements such as context; Which includes the organization-culture or place where new learning takes place, content; Which is the skills and knowledge that teachers need to perform their educational tasks should be acquired by participating in professional development activities and process; Which represents the methods of design, organization, implementation and follow-up have been considered as the main components of professional development (13). Other researchers acknowledge that professional development involves in-service training, adaptation to the student-centered learning environment, and a desire to learn in teachers (14). Research shows that the development of the teaching profession can increase the quality of teacher education

and overall better results in teacher output (15) Researchers have shown in a study that the more professional ethics, the more self-efficacy (16). The results of another study showed that there is a significant relationship between self-efficacy in job decision making and work and ethical climate. Also, the work ethic variable is the best predictor of self-efficacy (17). Other researchers have found that there is a positive and significant relationship between job self-efficacy and moral climate (18). In another study, it was concluded that teachers' professional ethics are able to predict their self-efficacy (19). Other researchers have concluded that teachers' professional ethics and competencies play a positive and significant role with their self-efficacy beliefs (10). Other researchers have found that employees' professional development has the potential to predict their self-efficacy (20). Another study showed that with increasing professional development of employees, self-efficacy also increases (21). As a result of another study, researchers found that lack of professional skills and training has a negative effect on teachers' self-efficacy (22). In another study, it was reported that professional development leads to increased teacher efficiency and the adoption of better teaching methods for students (23). Another study concluded that the individual values of the teacher as part of professional ethics can increase their self-efficacy beliefs (24).

According to what has been said and discussed in the literature, ethics and professional development are related to the self-efficacy of teachers. However, few studies have examined the role of both variables with self-efficacy. Therefore, the aim of the present study is to predict the self-efficacy of student teachers of physical education based on ethics and professional development variables.

Material and Methods

The method of the present study was descriptive-correlation and in terms of purpose it was among the applied researches. The statistical population included all student teachers in Farhangian University of Isfahan province in the academic year 1399-1398 that based on Morgan and Krejcie table, 150 people

were selected as the sample size (table 1). The sampling method was simple random.

Research tools include: 1- Teachers' self-efficacy questionnaire: This questionnaire was designed in 2003 and has 4 components (organization, time, student and space) and 16 items and each component has four items. This questionnaire is scored on a Likert scale in five parts: very high (5), high (4), somewhat (3), low (2) and very low (1) (5). The reliability of this tool in some internal studies has been 0.86. (4).

2 -Professional Ethics Questionnaire: This questionnaire was created in 1995 and has four components (attachment and interest in work, perseverance and seriousness at work, healthy and humane relationships in the workplace, collective spirit and participation in work) and 23 items. It is also scored on a five-part Likert scale (9). In some studies, the reliability of this tool is 0.85. (25).

3 -Professional Development Questionnaire: This questionnaire is designed to measure the professional development of teachers and its latest version was presented in 2014 and has 11 components with some modifications of 9 components (learner development, learning differences, learning environments, knowledge Content, assessment, educational planning, professional learning, leadership and collaboration, and practical ethics were considered in the present study (26). This questionnaire is scored on a five-part Likert scale and its reliability has been obtained in a study about 0.91 (27).

To analyze the data, descriptive statistical tests (mean, percentage and frequency) were used in Spss26 software and inferential tests with structural equations in Amos24 software were used.

Table 1: Demographic characteristics of the research sample

Variables		Frequency	Percentage
Gender	Male	120	0.57
	female	88	0.43
Educational major	Human sciences	139	0.66
	others	69	0.34
Educational status	1st grade	55	0.26
	2nd grade	21	0.10
	3rd grade	72	0.34
	4th grade	60	0.30

Results

Table 2 presents the mean and standard deviation of research variables (self-efficacy, professional ethics and professional development).

Table 2: Descriptive indicators of research variables

Variables	Range	Mean	SD	Min	Max
Self-efficacy	1 to 5	3.05	0.74	1.23	4.16
Behavior of students	1 to 5	3.57	076	1.17	4.53
Space	1 to 5	3.26	0.59	1.14	4.29
Organization	1 to 5	2.7	0.83	1.27	4.41
Time	1 to 5	2.68	0.77	1.28	4.32
Professional development	1 to 5	3.26	0.77	1.06	4.41
Learner development	1 to 5	3.38	0.89	1.14	4.42
Learning Differences	1 to 5	3.25	0.87	1.13	4.35
Learning environments	1 to 5	3.66	0.52	1.21	4.30
Content knowledge	1 to 5	2.75	0.54	1.36	4.33
Assessment	1 to 5	3.41	0.93	1.05	4.23
Educational Planning	1 to 5	2.83	0.95	1.09	4.56
Vocational learning	1 to 5	3.1	0.71	1.14	4.47
Leadership and cooperation	1 to 5	3.39	0.76	1.19	4.36
Practical ethics	1 to 5	3.58	0.75	1.16	4.29
Professional ethics	1 to 5	3.27	0.89	1.56	5.26
Interest in work	1 to 5	2.63	0.8	1.36	5.34
Perseverance in work	1 to 5	3.05	0.82	1.49	6.35
Collective spirit and participation in work	1 to 5	3.53	0.99	1.51	6.19
Human relations in the workplace	1 to 5	3.87	0.95	1.78	5.8

Descriptive findings in table 2 show that in the dimension of self-efficacy, the component of student behavior (3.57), in the dimension of professional development, the component of learning environments (3.66), in the dimension of professional ethics, the component of health and human relations at work (3.87) have obtained the highest average.

Then, in order to analyze the data and select the relevant type of tests, first, the normality of the variables is investigated using the Shapiro-Wilkes test.

Table 3: Results of examining the normality of the main dimensions of the model

Variables	Shapiro-Wilks	Sig.	Skewness	Kurtosis	Result
Self-efficacy	0.995	0.628	0.57	0.37	Normal
Professional development	0.991	0.496	0.69	0.66	Normal
Professional ethics	0.992	0.917	0.473	0.91	Normal

The results in table 3 show that the significance level of Shapiro-Wilkes test for all three main variables (self-efficacy, professional development and professional ethics) is more than 0.05. Therefore, the null hypothesis is accepted. Therefore, it can be said that the distribution of the main variables of the research is normal, so the structural equation modeling method can be used to fit the conceptual model.

Structural equation modeling helps the researcher to test and evaluate a theoretical model consisting of various components, both in general and in part. To study the model, first, confirmatory factor analysis has been used to measure the relationships between hidden variables and their measurement items. The factor validity of the questionnaire was done with the help of confirmatory factor analysis

and using Amos software. The fit indices of the measurement models are summarized in table 4.

Table 4: Fit indicators for each of the measurement models

Indicator	Optimal deal	Self-efficacy	Professional Development	Professional ethics
X2/df	Near to Zero	1.42	1.64	1.43
RMR	<0.9	0.098	0.040	0.080
GFI	<0.9	0.918	0.921	0.906
AGFI	<0.9	0.933	0.942	0.910
NFI	<0.9	0.957	0.926	0.909
RFI	<0.9	0.906	0.911	0.944
IFI	<0.9	0.916	0.936	0.957
TLI	<0.9	0.934	0.930	0.937
CFI	<0.9	0.918	0.921	0.906
PRATIO	<0.5	0.620	0.724	0.703
PNFI	<0.5	0.620	0.555	0.526
PCFI	<0.5	0.677	0.683	0.723
RMSEA	>0.08	0.022	0.067	0.006

Table 5: Factor loads and construct validity and reliability indices

variable	Factor load	P	α	CR	AVE
Self-efficacy	-	-	0.883	0.814	0.864
Behavior of students	0.76	P<0.001			
Space	0.82	P<0.001			
Organization	0.85	P<0.001			
Time	0.81	P<0.001			
Professional development	-	-	0.703	0.932	0.900
Learner development	0.78	P<0.001			
Learning Differences	0.81	P<0.001			
Learning environments	0.84	P<0.001			
Content knowledge	0.75	P<0.001			
Assessment	0.72	P<0.001			
Educational Planning	0.76	P<0.001			
Vocational learning	0.77	P<0.001			
Leadership and cooperation	0.79	P<0.001			
Practical ethics	0.76	P<0.001			
Professional ethics	-	-	0.811	0.869	0.859
Interest in work	0.85	P<0.001			
Perseverance in work	0.78	P<0.001			
Collective spirit and participation in work	0.83	P<0.001			
Human relations in the workplace	0.88	P<0.001			

The results of confirmatory factor analysis showed that the measurement models have a good fit because the value of χ2 / df (chi-square divided by the degree of freedom) is less than 3, and the value of RMSEA is less than 0.08, the values of GFI,

AGFI and NFI are greater than / 9. 0 and eco-nomical indices (PNFI and PCFI) are more than 0.5. In the following, the validity and reliability of the model structures are examined (table 5).

The results of table 5 show that the selected com-ponents for measuring the model structures have the necessary accuracy because the standardized factor load is all more than 0.7 and significant (P <0.01). The mean value of the extracted variance index (AVE) for all structures is greater than 0.5 and the composite reliability index is greater than 0.6 and the Cronbach's alpha value of all three structures is greater than 0.7, so each of the struc-tures of the model has convergent validity and good composite reliability for measuring research variables. Figure 1 shows the fitted structural model.
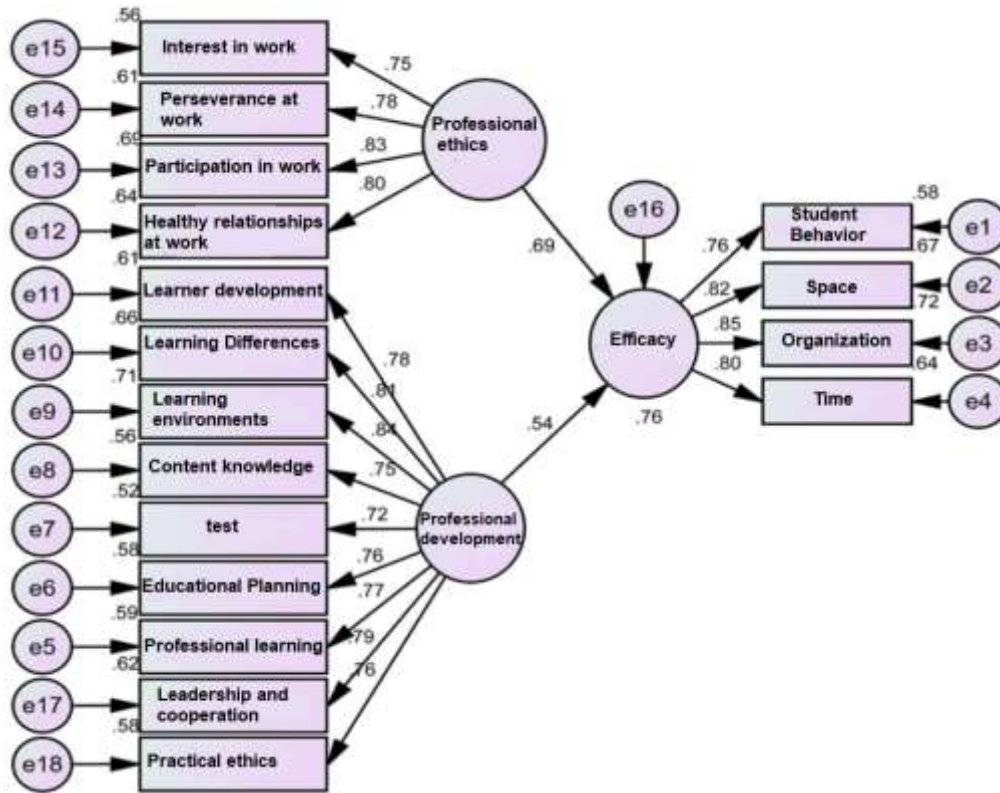

Fig. 1. Fitted structural model

The structural model (figure 1) shows that the fac-tor load of the components in all dimensions is greater than 0.7, which shows that the compo-nents explain the dimensions well. The coefficient of determination of the self-efficacy variable is 0.76, which means that 76% of the changes in self-efficacy can be explained by two independent var-iables; "professional development" and "profes-sional ethics". Table 6 shows the suitability indica-tors of the model.

The results of table 6 show that all indicators are in the desired range, so the structural model of the research is approved. In table 7, the significance of the path coefficient and the level of significance between the main variables are reported. Findings show that the coefficient of path of professional development path with self-efficacy is equal to 0.54. Also, the value of path coefficient of profes-sional ethics with self-efficacy is equal to 0.69 and both coefficients are significant at 95% confidence level. They have a positive and significant effect.

Table 6: Fitness indicators of the research model

Fitness indicators	χ 2/df	RMSEA	CFI	TLI	IFI	GFI	AGFI
Reported value	1.26	0.0452	0.912	0.934	0.956	0.927	0.961
Acceptable value	Less than 3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.8

Table 7: Significance of path coefficient

Relationship	Path coefficient	CR	Sig.	Result
Professional development with self-efficacy	0.54	6.17	0.001	Significant
Professional ethics with self-efficacy	0.69	7.28	0.001	Significant

Discussion

The aim of this study was to predict the self-efficacy of student-teachers of Farhangian University based on ethics and professional development. The results showed that the mean of self-efficacy, professional ethics and professional development were 3.55, 3.27 and 3.38, respectively, which indicates that they are in the average range on a scale of 1 to 5. The results of structural equations showed that the coefficient of professional ethics with self-efficacy is 0.69 and professional development is 0.54. Both variables can also predict about 0.76 variance of the criterion variable (self-efficacy). The results of the present study confirm the results of studies that concluded that professional ethics and its dimensions have a significant relationship with self-efficacy (10, 16-19, 24). It is also consistent with another group of studies that have found that professional development can be a predictor of self-efficacy (20-23).

In explaining the relationship between professional ethics and self-efficacy, it can be said that professional ethics is the application of ethical teachings in the profession and job. Morality is a kind of inner conscience of a person and his beliefs about phenomena. In fact, the root of the category of ethics in general and professional ethics in particular, should be sought primarily in religion; Because in religious teachings and hadiths and narrations, many recommendations have been made to observe ethics and ethical issues in organizations. Another is that morality is more internal, and when people are bound by a set of moral principles, they inevitably have to take responsibility

for them, and this is where the external dimension manifests itself, and individuals must work to balance the two. In fact, when a person considers himself bound to observe ethical principles in his profession, he does not need legal supervision and norms, so it can be said that this belief in observing ethics, itself produces the self-efficacy of teachers' professions. Another point is that ethics creates a kind of inner belief that a source of self-efficacy and meeting the challenges of professional life. Therefore, it can be said that ethics increases the self-efficacy of teachers by creating a kind of internal mechanism, and in the shadow of this self-efficacy, it overcomes many challenges of working life.

Professional development is also a tool for empowering teachers. Professional development can take place throughout the life of a teacher. In fact, there is a conceptual closeness between professional development and self-efficacy. Professional development is the adaptation to the environmental and professional conditions that the teacher acquires during his / her job, and this ability creates a kind of self-efficacy and self-belief for the teacher (28). A teacher's belief in efficiency is the teacher's judgment about his or her ability to achieve the desired results from students' activities and learning, even in relation to students who are less motivated and have difficulty learning, and this kind of belief will affect the teacher's effort and perseverance in teaching (29). Studies have shown that improving professional development can increase teachers' self-efficacy. This study has shown that there is a close relationship between

the two variables so that any improvement in professional development leads to an increase in belief in teachers' self-efficacy (30).

One of the limitations of the research is the case study, which was only at the level of Farhangian University of Isfahan province, so to be surer of the generalized findings, other studies should be done at the macro level. Another limitation of the research was that the present study was conducted with a quantitative method, but the combined method (qualitative exploratory and quantitative) can be used simultaneously. The outbreak of the coronavirus also limited the researcher. Due to the holidays at Farhangian University and the minimal presence of students, the researcher faced many challenges in finding them. In line with the results of the research, the following theoretical and practical suggestions are presented: 1- It is suggested that researchers study other variables in the future (such as gender study, socio-economic status of teachers, cultural beliefs, etc.) that can predict self-efficacy. 2- It is suggested to use the combined method in future studies. The advantage can be that according to the conditions of Farhangian University, researchers can study their native and exploratory components. 3- It is suggested that considering the fact that student teachers are still in the process of formal education and learning, skill courses with the priority of professional development should be included in their curriculum. The results also showed that the important components of professional development, namely knowledge and content and educational planning, had the lowest average and therefore less importance among the respondents; Therefore, paying attention to the components of knowledge and educational planning is an undeniable necessity during the student-teacher education. 4- In the field of professional ethics, it is also suggested that the moral competencies of student-teachers be paid more serious attention during their studies. In this regard, it is suggested that a code of ethics be established to monitor the issues of professional ethics of student-teachers. Due to the fact that the component of interest in work in the present study was of little importance to the respondents, in this regard, it is necessary to review the employment of students applying for the teaching profession and those who are fully interested in the teaching profession should be included.

Conclusion

The results showed that ethics and professional development is a good predictor of teachers' self-efficacy, so it can be concluded that addressing these variables in cultural universities since teachers are during the training period. From this point of view, it is possible to increase their professional knowledge and professional ethics more easily.

Ethical Consideration

In order to comply with the ethical criteria, the subject and purpose of the research were first explained in detail to the respondents and they were assured that the data obtained from the research is only for research work and will not be provided to another person.

Acknowledgement

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