“The school principal’s role as a leader in teachers’ professional development: the case of public secondary education in Athens”

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THE SCHOOL PRINCIPAL'S ROLE AS A LEADER IN TEACHERS' PROFESSIONAL DEVELOPMENT: THE CASE OF PUBLIC SECONDARY EDUCATION IN ATHENS

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Abstract

This research aimed to examine the role of leadership in the school environment and leadership's contribution to the effectiveness of teachers' professional development in the public secondary education of Athens to improve the learning process and school quality. More specifically, this study highlights the school principal's contribution as a leader in teachers' professional development. The choice of leadership style (education, administrative, transformational, ethical, participatory, and contingent) positively impacts teachers' professional development. Data were collected from 180 teachers of the public secondary education of Athens, involving lower secondary schools, upper secondary vocational and general schools, excluding private and other types of schools. SPSS software was used to perform quantitative analysis of the collected data. The results showed no statistically significant correlation between teachers' gender, skills, characteristics, and abilities. However, it was observed that there was a statistically significant correlation between age, tolerance, and rejection of educational techniques on teaching practice. The evidence from this study confirmed a direct impact of the school principal's training on teachers' professional development. Finally, it was concluded that the school principal – the leader should work as a learning manager to lead teachers in professional development and as a learning manager and an inspiration for lifelong learning.

Keywords school principal, school leadership, leadership style, professional development

JEL Classification I20, I29, M10, M12

INTRODUCTION

In the last few years, a growing interest in educational management and leadership field through various studies has arisen (Skordoulis et al., 2016; Knapp & Hopmann, 2017; Melissopoulos & Stravakou, 2018), highlighting the fact that leadership has a positive contribution to organizational learning and outcomes (Drosos et al., 2016; Harris & Jones, 2018). At the secondary school level, the primary responsibility for administration and organization lies with the school principal, who is required to perform the role of the leader (Kirkigianni, 2014). However, the school principal plays an essential role in educational change and effectiveness (Cheng & Townsend, 2000). School principals' roles and responsibilities include providing incentives for teachers to improve through personal skills, coordination of actions, diplomatic manipulations, and long-term experience (Green, 2001). Except for the teachers' interpersonal relations, the school principal's role has been expanding, for instance, on the effective communication with

school stakeholders (parents, students, etc.). Thus, it is important to acquire organizational capabilities and personal characteristics to play the role of the leader and manager at the same time on a school (Day, 2005). Leithwood and Day (2007) suggested some important factors that could lead to successful principal leadership, such as professional development experiences, individual traits, etc. On the contrary, Mulford (2007) believes that successful leadership is based on the school principal's core values and beliefs. Dinham (2005) suggested that intellectual capacity is another factor for successful leadership. The school principal-leader is the one who contributes decisively to the success or failure of the school organization, and his role is directly related to the school's effectiveness (Lazaridou & Iordanides, 2011; Hallinger & Heck, 1998) and student outcomes (McLeskey et al., 2016).

1. LITERATURE REVIEW

1.1. Leadership in the field of education

A considerable amount of literature has been published on leadership and highlighted its contribution to organizational science (Belias & Koustelios, 2014). Sometimes, the term of leadership is confused with management. Several researchers, however, note that management includes elements that concern the organization and less the encouragement and commitment of people who work for (Chalikias et al., 2014). Several empirical studies have concluded that leadership is one of the most complex and widely studied constructs in the organizational sciences (Belias et al., 2015). Despite all, leadership is directly related to the management (Togas & Rekleiti, 2013; Pashiardis, 2001; Bourantas, 2005). Stogdill (1950) referred that leadership is "the process (act) of influencing the activities of an organized group in its efforts toward goal setting and goal achievement". Zaleznik (1977) referred that "Leadership requires using power to influence the thoughts and actions of other people". Hersey and Blanchard (1988) also defined leadership as "the process of influencing the activities of an individual or a group in efforts toward goal achievement in a given situation". However, leadership is one of the concepts observed that were very difficult to be defined with a general definition because of its complexity (Koech & Namusonge, 2012; Silva, 2016). Silva (2016) supported that leadership is "the process of interactive influence that occurs when, in a given context, some people accept someone as their leader to achieve common goals". Moreover, Pashiardis (2004) set leadership as "the nexus of those behaviors used with others when trying to influence their own behaviors". Saitis (2008) pointed out that leadership application depends on the leader's characteristics. Leadership behaviors and styles have an important impact on the leadership process (Brinia, 2011). For this research, Bourantas' (2005) definition of leadership is adopted. Based on Bourantas' definition (2005), leadership is the process of influencing the thinking, attitudes, and behaviors of a group of individuals from a leader to work together voluntarily and achieve common goals. Shega and Tarekegne (2018) stated that leadership has an essential role in school effectiveness and diffuses through goal setting and accomplishment. Leadership skills can be acquired through educational training (Skoulas, 1983; Zaleznik, 1989) or are innate charisma (Kirkigianni, 2014). Greece has a centrally governed and managed education system compared to other countries in Europe (OECD, 2011). The crucial challenge for education reform is school leadership. School leadership is defined by Spillane et al. (2004) as the identification, acquisition, allocation, coordination, and use of the social, material, and cultural resources necessary to establish teaching and learning conditions. School leadership has a substantial role in achieving the school's goals (Saiti & Fassoulis, 2012).

1.2. Factors that affect teachers' professional development

In the literature, there seems to be no general definition of teachers' professional development. Avalos (2011) defined teachers' professional development as "teachers learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students' growth". O'Sullivan (2018) supported that teachers' professional development is an important component in the teaching and learning process and student outcomes. However, professional development presupposes

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the active presence of a principal (Athanasoula-Reppa, 2012). School principals shape a supportive learning environment for increasing teachers' professional development (Pashiardis, 2014). The effective school principal faces many challenges, especially creating a "culture of quality" to infiltrate into the processes and systems of the educational organization (Skordoulis et al., 2014; Argyropoulou & Symeonidis, 2017). School principals' contribution to teachers' professional development is recognized through improvements in the educational process (Togas & Rekleiti, 2013; Skordoulis et al., 2015). It is now accepted that the forming of appropriate conditions for leadership at school and the effective exercise of it are primary factors that positively affect both the school principal-leader and teachers to improve their skills, knowledge, teaching practices, and professional development (Papasavvas, 2014). Professional development is defined as "the activities that develop an individual's skills, knowledge, expertise, and other characteristics as a teacher" (OECD, 2009). Teachers' professional development is a cornerstone of school improvement in a school unit and can only succeed under the cooperation with the principal as a leader (Pashiardis, 2001). In his research, Marshall (2014) concluded that there was a positive correlation between the principal's leadership style and teacher's satisfaction. Other researchers point out that it is important to investigate other factors such as teacher's professional development, which can positively affect the level of satisfaction (Papasotiriou et al., 2018; Papasotiriou et al., 2019). Principals encourage, support, and provide chances for professional development to enhance teachers' skills (J. Blasé & Jo. Blasé, 2000; Tsitmideli et al., 2016).

1.3. The impact of the principal professional development opportunitiesofessional development

The school principal's role in the teacher's professional development is very crucial and often decisive. The school principal occupies a unique position in a complex school environment and can affect the teacher's professional development (Bredeson, 2000). However, the choice of a leadership style has a significant contribution to teachers' professional development. Then, the question that emerges is which leadership style is the best for a school principal (Athanasoula-Reppa, 2008). The school principal has a directional role through leadership. The school principal must choose a leadership style that is in line with each school unit's needs and the specific characteristics and abilities of the teaching staff (Papaioannou et al., 2013; Kirkigianni, 2014). School leadership style is recognized by the principal's behavior and his relationship with stakeholders of a school unit (teachers, students, parents). Athanasoula-Reppa (2012) concluded that three leadership styles exist for school principals as leaders: transformational, transactional, and distributed or shared leadership.

Transformational leadership is concentrated on the effect of the school principal's role as a leader on school development, the collaboration among teachers, and participative decision-making (Hendriks & Scheerens, 2013). Principal-teacher interaction is the key feature of transformational leadership. The school principal creates all these conditions that can make teachers and school units respond to the demands of the environment (Zimmerman, 2006; Ntanos et al., 2020). The most important element of this style is that the leader has the obligation to encourage teachers' professional development by creating visions (Athanasoula-Reppa, 2008, 2012). Brinia and Papantoniou (2016), in their research, concluded that most of the school principals in Greece apply transformational leadership style.

The success of distributed leadership, as noted by MacBeath (2005) and Hopkins (1987), depends on the existence of a "spirit of cooperation", encouraging professional development, recognition of teacher's contribution in the educational process, trust, and encouragement of initiatives. Leadership is exercised not only by managers but also by teachers (Spillane & Diamond, 2007; Menon – Eliophotou, 2011). Spillane et al. (2004) concluded that distributed leadership impacts the school leadership and practice of leadership. In fact, contrary to the above styles, transactional leadership is based on a system of rewards and punishment (Bass, 1990). The school principal benefits from recognizing his role, while the teacher increases the chance of choice for professional development (Pashiardis, 2012).

1.4. The school principal's role and leadership in teachers' professional development

School principals and teachers play a major role in developing a school culture for professional development (Lee & Li, 2015). The school principal leads training programs, seminars, and workshops; simultaneously, he informally assesses teachers' skills. Unanswered aspects of the relationship between school leaders and teachers and its effect on professional development were investigated (Sit, 2015). Based on previous studies (Green, 2001; Leithwood & Rielh, 2003; Day, 2005), the general characteristics that school principals must acquire as leaders of the school are as follows:

- creating relationships with educational staff, parents, and students;
- creation and transmission of common vision and goals;
- promotion of the leadership of power-sharing and allocating responsibilities;
- creating a feeling of collectivity;
- collaboration, understanding, and teachers' development;
- personality traits.

The school principal has a consultative and guiding role in achieving professional development (Owens, 2001). School principals are responsible for shaping the conditions of the school environment for professional development, based on their special characteristics. Leithwood (2005) referred that leaders' age, gender, and education can affect their behaviors.

2. RESEARCH HYPOTHESES

Based on the literature review, this research proposes and attempts to test the following hypotheses:

H_1: *The leadership characteristics, skills, and abilities of the school principal are differentiated depending on age and gender.*

H_2: *The role of the school principal as a leader affects the teacher's professional development.*

H_3: *School principal's education has an impact on teachers' professional development.*

H_4: *There is a relationship between incentives and teachers' professional development.*

H_5: *School factors (culture, educational work, and effectiveness) significantly correlate with teacher's professional development.*

H_6: *School principals' leadership role affects teachers' professional development.*

H_7: *School principals' leadership style is related to the teacher's professional development.*

3. AIMS AND METHODOLOGY

This research aimed to highlight the importance and impact of leadership in the school environment on the effectiveness of teachers' professional development to improve the learning process and school quality. Simple random sampling was used as the method of selection. The sample population consisted of teachers who work in 8 municipalities of the third public secondary education of Athens (Egaleo, Agia Varvara, Agioi Anargyroi, Ilion, Kamatero, Peristeri, Petroupoli, Haidari), involving lower secondary schools, upper secondary vocational and general schools. The questionnaire was developed and divided into four parts, including a) characteristics, skills, and abilities of a school principal, b) school factors (culture, educational work, and effectiveness) and teacher's professional development, c) the leadership role and its contribution on teachers' professional development, and d) demographic questions. All variables were measured using 5-point Likert scales (1 = totally disagree, 5 = totally agree). Data were processed, and all hypotheses were tested at the 0.05 significance level using SPSS.

4. RESULTS

4.1. Demographic data analysis

The demographic analysis of the sample characteristics (180 teachers) is presented in Table 1.

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Table 1. Demographic characteristics of teachers

General characteristics		Frequency	Percentage (%)
Gender	Male	86	47.8
	Female	94	52.2
Age	31-35	10	5.6
	36-40	13	7.2
	41-45	21	11.7
	46-50	43	23.9
	51-55	45	25.0
	56-60	42	23.3
	61-65	6	3.3
Education level	Bachelor's	137	76.1
	Master's	40	22.2
	Doctoral	3	1.7
School type	Lower secondary school	76	42.2
	Upper secondary general school	61	33.9
	Upper secondary vocational school	43	23.9
Years in service	0-5	1	0.6
	6-10	23	12.8
	11-15	33	18.3
	16-20	24	13.3
	21-25	40	22.2
	26 -30	37	20.6
	31-35	20	11.1
	36+	2	1.1

Based on the results of Table 1, it is shown that teachers are well experienced and educated.

4.2. Reliability analysis

The reliability was tested with Cronbach's alpha coefficient, which is the most commonly used measure of scale reliability (Field, 2013). Table 2 presents Cronbach's alpha results for the questions below. The internal consistency, calculated with Cronbach's alpha, ranged from 0.705 to 0.915, indicating acceptable internal consistency.

4.3. Testing of hypotheses

The results of the analysis of research data through the testing of research hypotheses offered important findings. Afterward, Pearson's Chi-squared test was carried out to test the hypotheses.

4.4. Testing of hypothesis H_1

According to the results of Table 3, except the variable "Application of administrative or organizational theories in practice" (sig. = .024 < 0.05), it is concluded that there is no statistical correlation between the variables of characteristics, skills, and abilities of the school principal and teacher's gender (questions 1 and 6 with gender).

The results from Table 4 showed a statistically significant correlation between the variables of flexibility and age (sig. = .006 < 0.05), as well as between the variables "Rejection of educational techniques which are related to teaching practices" and age (sig. = .049 < 0.05). The *p*-value for the other characteristics, skills, and abilities is smaller than 0.05, which suggests no statistical correlation with age. In this case, the test results were not statistically significant (sig. > 0.05); therefore, hypothesis H_1 is rejected. Overall, it is concluded that the characteristics, skills, and abilities of a school

Table 2. Results of reliability analysis using Cronbach's alpha

Items	Cases			Reliability statistics	
	Valid	Excluded	Total	N of items	Cronbach's alpha
To what extent do you think that the following components make up a school principal-leader?	127	53	180	27	.896
To what extent do you think that the following factors affect the teacher's professional development?	156	24	180	28	.915
To what extent do you think that a school principal-leader contributes to teachers' professional development?	–	–	–	–	–
To what extent do you agree with the following statement: The leadership role of the school principal contributes to teachers' professional development.	165	15	180	4	.818
To what extent do you agree with the following statement: The leadership style of the school principal contributes to teachers' professional development.	174	6	180	6	.705

Table 3. Chi-squared analysis for hypothesis H_1 based on gender

Characteristics, skills, and abilities of the school principal and teacher's gender	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Impartiality * Gender	.303	.207	.883	173
Perception of school reality * Gender	.510	.509	.248	174
Absoluteness * Gender	.267	.260	.395	175
Determination * Gender	.070	.069	.022	174
Democracy * Gender	.493	.336	.632	172
Flexibility * Gender	.104	.102	.019	172
Interest in teacher's professional development * Gender	.744	.745	.306	172
Enforce class rules and discipline at school * Gender	.430	.429	.262	174
Responsibility * Gender	.514	.425	.410	168
Recognition of teacher's work * Gender	.411	.303	.262	175
Taking initiatives * Gender	.657	.574	.328	175
Decision-making processes * Gender	.422	.419	.249	173
Conflict management * Gender	.738	.649	.837	173
Ensure the existence of a school vision * Gender	.380	.379	.118	170
Communication and cooperation with educational staff * Gender	.607	.608	.339	174
Provision of education incentives * Gender	.396	.393	.272	174
Promoting innovative actions * Gender	.538	.477	.594	173
Consciousness of climate change education * Gender	.911	.849	.980	172
Addressing and focusing on teacher needs * Gender	.606	.457	.852	174
Rejection of educational techniques related to teaching practices * Gender	.739	.737	.391	163
Creating trust and satisfaction * Gender	.741	.738	.638	173
Force persuasion * Gender	.914	.913	.930	174
Professionalism * Gender	.213	.138	.126	172
Application of administrative or organizational theories in practice * Gender	.024	.021	.006	173
Providing support and assistance of teacher's didactic work * Gender	.664	.663	.331	175
Promoting a friendly environment * Gender	.142	.087	.039	157
Personal prestige * Gender	.223	.167	.572	158

Table 4. Chi-squared analysis for hypothesis H_1 based on age

characteristics, skills, and abilities of the school principal and teacher's age	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Impartiality * Age	.913	.907	.450	175
Perception of school reality * Age	.980	.941	.642	177
Absoluteness * Age	.067	.024	.328	177
Determination * Age	.523	.444	.394	176
Democracy * Age	.181	.284	.190	174
Flexibility * Age	.006	.094	.214	175
Interest in teacher's professional development * Age	.366	.359	.717	175
Enforce class rules and discipline at school * Age	.339	.168	.904	177
Responsibility * Age	.584	.617	.516	171
Recognition of teacher's work * Age	.502	.411	.033	178
Taking initiatives * Age	.323	.516	.301	178
Decision-making processes *Age	.768	.698	.703	176
Conflict management * Age	.344	.302	.122	175

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Table 4 (cont.). Chi-squared analysis for hypothesis H_1 based on age

characteristics, skills, and abilities of the school principal and teacher's age	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Ensure the existence of a school vision * Age	.252	.224	.765	173
Communication and cooperation with educational staff * Age	.895	.863	.854	177
Provision of education incentives * Age	.085	.061	.484	177
Promoting innovative actions * Age	.280	.322	.536	175
Consciousness of climate change education * Age	.199	.446	.814	174
Addressing and focusing on teacher needs * Age	.125	.216	.097	176
Rejection of educational techniques related to teaching practices * Age	.049	.067	.522	165
Creating trust and satisfaction * Age	.160	.106	.126	176
Force persuasion * Age	.676	.606	.301	177
Professionalism * Age	.721	.784	.112	174
Application of administrative or organizational theories in practice * Age	.152	.203	.766	175
Providing support and assistance of teacher's didactic work * Age	.982	.954	.512	178
Promoting a friendly environment * Age	.275	.261	.803	159
Personal prestige * Age	.303	.283	.337	160

principal as a leader are not differentiated depending on gender and age (questions 1 and 7).

4.5. Testing of hypothesis H_2

The results from Table 5 revealed a significant and strong positive correlation between the examined variables (sig. < 0.05). In this case, H_2 is confirmed, and it is obvious that the school principal's role as a leader impacts the teacher's professional development (question 3).

Table 5. Chi-squared analysis for hypothesis H_2

The principal's leadership role and professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Creating conditions for professional development * To what extent do you think that a school principal-leader contributes to teachers' professional development?	.001	.006	.006	173
Control – supervision * To what extent do you think that a school principal-leader contributes to teachers' professional development?	.000	.000	.000	172
Encourage teachers to adapt to a new learning process * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.025	.000	169
Guidance – counseling * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	172

4.6. Testing of hypothesis H_3

The results from Table 6 revealed a statistically significant correlation of the following variables: Professional training through seminars, conferences, workshops (sig. = .000), Further education (sig. = .000) and Information and Communication Technologies (ICT) in education (sig. = .000), while for the remaining variables, no statistically significant correlations were found. Therefore, hypothesis H_3 is confirmed and showed that the school

Table 6. Chi-squared analysis for hypothesis H_3

School principal training in teachers' professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Induction * To what extent do you think a school principal-leader contributes to teachers' professional development?	.738	.640	.326	171
In service recurrent training * To what extent do you think a school principal-leader contributes to teachers' professional development?	.250	.232	.335	172
Professional training through seminars, conferences, and workshops * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.044	.112	172
Further education * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.010	.001	167
Self-regulation * To what extent do you think a school principal-leader contributes to teachers' professional development?	.448	.344	.285	168
Information and Communication Technologies (ICT) in education * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.001	.000	171

principal's level of education impacts teachers' professional development (question 3).

4.7. Testing of hypothesis H_4

Testing the hypothesis H_4, a statistically significant correlation was observed for the amount of incentives (sig. < 0.05) in Table 7 except the variable "continuing education" and "training" (sig. = .054> 0.05). The results showed that motivations such as the development of personal skills and knowledge (sig. =. 024), teachers evaluation ranking system (sig. = .002), educational trips (sig. = .039), educational licenses (sig. = .000), and additional benefits (sig. = .011) affect teachers' professional development. Therefore, hypothesis H_4 confirmed that incentives affect teachers' professional development (question 3).

4.8. Testing of hypothesis H_5

According to the results of Table 8 for hypothesis H_5, a statistically significant correlation between all the variables of school factors and teacher's professional development is showed (sig. < 0.05). Therefore, H_5 is confirmed that school factors (culture, educational work, and effectiveness) affect the teacher's professional development (question 3).

Table 7. Chi-squared analysis for hypothesis H_4

Teachers' incentives and professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Developing personal skills and knowledge * To what extent do you think a school principal-leader contributes to teachers' professional development?	.024	.013	.001	171
Teachers evaluation ranking system * To what extent do you think a school principal-leader contributes to teachers' professional development?	.002	.019	.001	170
Continuing education and training * To what extent do you think a school principal-leader contributes to teachers' professional development?	.054	.040	.002	171
Educational trips * To what extent do you think a school principal-leader contributes to teachers' professional development?	.039	.055	.022	171
Educational licenses * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.061	167
Additional benefits/fringe benefits* To what extent do you think a school principal-leader contributes to teachers' professional development?	.011	.030	.003	170

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Table 8. Chi-squared analysis for hypothesis H_5

School factors (culture, educational work, and effectiveness) and teacher's professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Teachers' emotions for their students * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.001	.004	170
Teacher's enthusiasm for teaching and learning process * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.001	.002	172
School values and objectives for relating to learning and the process of learning * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.003	.000	172
Organization and operation of school unit * To what extent do you think a school principal-leader contributes to teachers' professional development?	.020	.013	.001	173
Collaboration with the school principal as leader or colleagues * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	173
School climate * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.002	.000	172
Student progress *To what extent do you agree with the following statement: The leadership role of the school principal contributes to teachers' professional development?	.000	.000	.000	172
Improving teaching and learning process * To what extent do you think a school principal-leader contributes to teachers' professional development?	.001	.003	.001	168
Remedial teaching for students * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.049	.013	170
Organizing educational work * To what extent do you think a school principal-leader contributes to teachers' professional development?	.001	.001	.000	169
Strategies to educational change according to current requirements * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	169
Changing teaching and classroom practices * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.003	.000	170

4.9. Testing of hypothesis H_6

The results from Table 9 showed a statistically significant association was between the variables. More specifically, the school principal as a learning manager (sig. = .000), as a specialist on teaching, learning and school education (sig. = .000), as exemplary (sig. = .000) and instructor on teaching and learning issues (sig. = .000) affects teacher's professional development. Therefore, H_6 is confirmed, and it is concluded that the leadership role chosen by the school principal is not intricately linked to the teacher's professional development (questions 3 and 4).

Table 9. Chi-squared analysis for hypothesis H_6

The leadership role and teachers' professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
Learning manager * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	166
Exemplary (lifelong learning model) * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	164
Specialist on teaching, learning, and school education * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	166
Instructor on teaching and learning issues *To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	167

Table 10. Chi-squared analysis for hypothesis H_7

Leadership style and teachers' professional development	Asymp. sig. (2-sided)			
	Pearson Chi-squared	Likelihood ratio	Linear-by-linear association	N of valid cases
The school principal as leader follows effective educational leadership strategies, focusing on standards provision, teacher education, teacher's monitoring, and exchange of views (educational leadership) *To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	170
The school principal-leader exercises control and supervision to improve teachers and school unit (managerial leadership) * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	170
The school principal-leader encourages personal changes and improvements for total changes both in teachers and the school unit. He/she also creates a climate of mutual appreciation * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	171
The school principal-leader exercises power, and leadership stems from what he/she considers moral or not (moral leadership) * To what extent do you think a school principal-leader contributes to teachers' professional development?	.000	.000	.000	170
The school principal-leader is moving in a context of cooperation and participation with teachers through dialogue in educational decision making, by taking an active role from teachers' perspective (participative leadership) * To what extent do you think that a school principal-leader contributes to teachers' professional development?	.000	.001	.000	171
The school principal-leader adapts and applies a leadership style to the right situation (contingent leadership) * To what extent do you think that a school principal-leader contributes to teachers' professional development?	.003	.017	.184	170

4.10. Testing of hypothesis H_7

From the results of Table 10, a statistically significant correlation between the variables mentioned above was observed. Specifically, educational leadership (sig. = .000), managerial leadership (sig. = .000), personal changes and improvements for total changes both in teachers and the school unit (sig. = .000), moral leadership (sig. = .000), participative leadership (sig. = .000) and contingent leadership (sig. = .003) affect teacher's professional development. Therefore, hypothesis H_7 is confirmed (questions 3 and 5). It is concluded that leadership styles that are chosen by the school principal can affect the teacher's professional development.

CONCLUSION

Teachers' professional development has been an increasingly important issue in the field of education. The role and contribution of the school principal-leader are some of the most crucial and determinant factors in teachers' professional development. School principals' leadership is a crucial factor for teachers' professional development as a prerequisite for establishing and success of a learning community (Bredeson, 2000). Principals need to be "agents of change" within their school units (Romay et al., 2016) and lead change processes.

Initially, the results from the first hypothesis showed that depending on gender or age, characteristics, skills, and abilities of the school principal that make up the leader of a school unit are not differentiated. The second hypothesis revealed a statistically significant correlation between the school principal's role as a leader and teacher's professional development. The results of this study also reflect the direct impact of principals' training on teachers' professional development. Principals' leadership practices are considered an important element for teach-

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ers' leadership development (Szeto & Cheng, 2018).

The results showed that these variables affect teachers' professional development. The role of leadership is decisive in teachers' professional development, based on the school principal's experience of the subject and knowledge. Also, the research revealed an important correlation between professional development and leadership style. The role of the school principal has a substantial impact through leadership in teacher's professional development. Finally, teachers' professional development is linked to the school principal's role who should have features such as responsibility, communication, and impartiality while maintaining open communication channels with teachers.

AUTHOR CONTRIBUTIONS

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