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Correlation between Internal Factors and High School Teachers' Engagement in Professional Development

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Abstract: ***It is commonly known that teachers' professional development (PD) plays a vital role in the quality of the whole education system of any country. This study examines the impact of some demographic factors that affecting high school teachers' participation in professional development learning. To achieve this goal, author apply questionnaire for 966 high school teachers from various areas of Nghe. An province, Vietnam. Findings reveal that teaching experience and university where teachers graduated were correlated to their participation in PD activities. Based on the collected data, the article gives some recommendations for teachers and educational managers to increase their participation in PD activities, hence contributing to the quality of teaching and learning in education system.***

Keywords: teachers' professional development, participation, effective

1. Introduction

It is generally known that education in 21st century has been characterized by the development of information technology, science and techniques. This results in the change of education basically in which teachers have faced up with the continuous development of curriculum and professional activities. Technological changes and a globally connected society requires teachers become a multi-tasking problem solvers (Reimers F. M. & Chung C. K., 2016). The key aspect of this argument is that teachers have to continuously improve their professional competencies including knowledge, attitude, pedagogical and technology-related skills through professional development (PD) learning (Drossel K. & Eickelmann B., 2017; Sprott R. A., 2019). To put it another way, teacher is an important factor not only with the quality of any school (Visser T. C. et al., 2010) but also affects students' competencies and traits during their life time (Bayar A., 2014).

During the past decades, there has been much discussion about PD and teacher change (Garet M. S. et al., 2001). Professional development can be considered as an opportunity of change (Pedder D. & Opfer V. D., 2011)with which teachers gain expertise (Loneragan D., 2016) enhance their professional competencies, contribute to the development quality teaching and learning, and support school improvement (Stoll L., 2015).PD consist of activities that are designed to help teachers develop as professionals(Coldwell M., 2017), in and with a group of professionals. Through networks of colleagues in PD learning, teachers have greater chances to reflect on professional practice and may increase participation in more challenging and interactive forms of PD (Lieberman A., 2000). In general, PD can be defined as learning activities which is designed for teachers besides their teacher training programs (Creemers B. et al., 2013). By participating PD activities, teachers have opportunities to look back, refresh themselves, increase their motivation (Yoon K. S. et al., 2007), and develop their commitment to accepting and enhancing their knowledge, skills and emotional intelligence which are necessary for teaching process (Day C., 1999).

Much work in the field has shown that teachers' personal characteristics migh impact their participation in PD learning. According to Bayindir's perspective, teaching experience can be seen as a factor that effect teachers' engagement in PD activities (Bayindir N., 2009). She puts forward the information that teachers with less than 5 years of teaching and 21 years or over are not willing to participate in PD activities since they considered these activities as a waste of time. Besides teaching experience, Ozer & Beycioglu argues that gender also impacts teachers' participation in PD (Ozer N. & Beycioglu K., 2010). Torff and Sessions found out that age, teaching experience and grade level affect teachers' PD learning (Torff B. & Sessions D., 2008).

The study examines the correlation between characteristics of teachers and their participation in PD activities. The respective results are expected to provide foundation for implementing effective PD activities that draw larger number of teachers.

2. Methods

The participants of the study comprised a total of 966 high school teachers in Nghe An province, Vietnam. Multi-stage stratified method of sample was used to select high schools while high school teachers were selected using systematic random sampling technique. A questionnaire was developed and the values of Cronbach's Alpha for all variables were analysed. Responses to the scale were statistically analyzed using t-test to determine the relationship between characteristics of teachers and their participation in PD activities.

3. Results and discussion

966 high school teachers in Nghe An province took part in the survey in which there are 490 female teachers (50.7%) and 476 male colleagues (49.3%). That the number of female teachers participating in the survey is bigger than that of male colleagues may represent the level of willingness to engage in PD activities between male and female teachers. However, according to the statistical data on average days of participating PD in the last previous 12 months, the number of days participating PD for both genders is 37.44 days.

Table 1: Characteristics of participants

	Frequency	Percent (%)
Gender		
Male	476	49.3
Female	490	50.7
Teaching experience		
First year	69	7.1
1-4 years	24	2.5
5-10 years	85	8.8
11-15 years	200	20.7
16 - 20 years	379	39.2
More than 20 years	209	21.6
Grade		
Grade 10	347	35.9
Grade 11	304	31.5
Grade 12	315	32.6
Degree		
Bachelor	462	47.8
Master	484	50.1
Doctor	20	2.1
Class hour/week		
13	151	15.6
17	177	18.3
18	148	15.3
19	150	15.5
20	171	17.7
21	169	17.5

In overall, teachers participating in the survey received their Bachelor degree or higher which meet the requirement of Circular 04/2021/TT-BGDĐT. On average, teachers with Master degree or higher qualification received more days of PD (37 days) than those with Bachelor degree (21 days). This difference can be explained by the fact that teachers with Master degree or higher are considered as expert and experienced staff in schools who can receive PD learning and disseminate knowledge in a good manner than novice or inexperienced teachers.

On average, there is no statistical significant difference in the amount of PD teachers received in terms of gender. According to the data, female teachers received 37.4 days of PD compared with 36.9 days for male teachers. However, the number of days participating in PD activities in the study is higher than those of other countries. OECD data shows that the average days of PD among teachers in Mexico, Korea, Bulgari, Ireland, Republic of Slovak, Malta, Belgium and Slovenia are 34, 30, 27.2, 5.5, 7.2, 7.3, 8, 8.3 days respectively (OECD, 2009)

Table 2: Participation in PD activities in previous 12 months

Days of participating in PD	Frequency	Percent (%)
30	64	6.6
31	65	6.7
32	60	6.2
33	56	5.8
34	51	5.3
35	64	6.6
36	61	6.3
37	51	5.3
38	65	6.7
39	67	6.9
40	68	7.0
41	57	5.9
42	72	7.5
43	57	5.9
44	64	6.6
45	44	4.6
Total	966	100

From participants' data, it was found that gender, education degree, class hour per week, grade is not significantly correlated to teachers' engagement in PD activities. It can be seen from the table 3 that most of sig. values are > .05 presenting that some factors are not correlated to PD participation. However, teaching experience and the university from which teachers graduated are significantly correlated to teachers' participation in PD learning (sig. value is .021 (<.05). According to the statistical data, the amount of professional development that participants aged 30-50 years received is 36 days following by 15 and 20 days for teachers under 30 years of age and aged 50 years and over. In other words, teachers aged 30-50 years participated twice as many days of PD as teachers aged under 30 years. This may result in the fact that there has been an inequality in participant choosing for PD activities. The novice teachers should received more days of PD since they have to improve their competencies to ensure the quality of teaching and learning in schools. With regard to this age difference, it can be noted that when teachers reach their "golden period" of professional at age 30-50, their participation in PD activities would also increase. To put it another way, teaching experience can be seen as a solid foundation in terms of perception and professional works for teachers to reflect effectively about real picture of participating PD learning

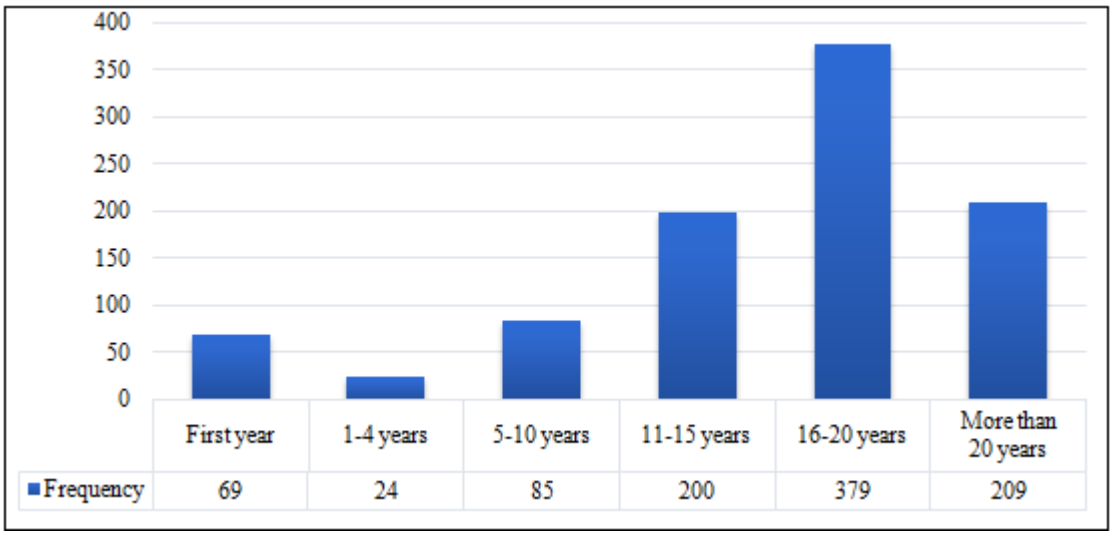

Figure 1: Teaching experience of participants

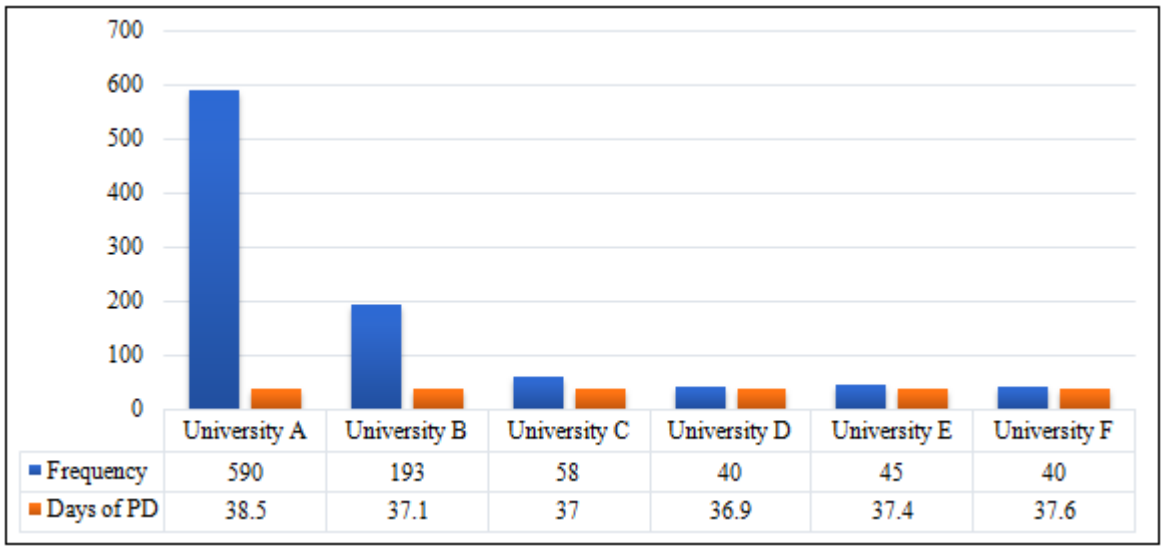

Figure 2: Days of PD based on university that teachers graduated

Having considered "University where teachers graduated", it should be highlighted that University A is the institution with highest number of participants graduated (N=590, 61.07%). The number of teachers graduating from University B, C, D, E, F are 193 (19.97%), 58 (6%), 40 (4.14%), 45 (4.68%) and 40 (4.14%) respectively. Results show that there is a positive correlation between "University graduated" and teachers' participation in PD activities. The reason for this finding might stem from the history and culture of the land that teachers grew up. Most of participants grew up in "the land of learning", attended the university which is famous for its pedagogical training. Certainly, most of teachers are highly aware and ready to participate in every PD activities with the aims at enhancing their professional competencies.

Table 3: Correlation between demographic factors and teachers' participation in PD activities

		Gender	Qualification	University graduated	Teaching experience	Grade	Class hour/ week	PD Participation
Giới tính	Pearson Correlation	1	.034	.007	.005	-.056	.002	.039
	Sig. (2-tailed)		.293	.816	.875	.084	.947	**.223**
	Sig. (2-tailed)	.281	.689	.484	.658	.766	.248	**.524**
Qualification	Pearson Correlation	.034	1	.038	.019	.017	-.019	-.026
	Sig. (2-tailed)	.293		.232	.563	.595	.553	**.418**
University graduated	Pearson Correlation	.007	.038	1	.465**	.014	-.009	.074*
	Sig. (2-tailed)	.816	.232		.000	.656	.769	**.021**
Teaching experience	Pearson Correlation	.005	.019	.465**	1	.053	.027	.074*
	Sig. (2-tailed)	.875	.563	.000		.097	.399	**.021**
Grade	Pearson Correlation	-.056	.017	.014	.053	1	-.068*	-.022
	Sig. (2-tailed)	.084	.595	.656	.097		.034	**.501**
Class hour/week	Pearson Correlation	.002	-.019	-.009	.027	-.068*	1	-.042
	Sig. (2-tailed)	.947	.553	.769	.399	.034		**.192**

		Gender	Qualification	University graduated	Teaching experience	Grade	Class hour/ week	PD Participation
	Sig. (2-tailed)	.837	.751	.858	.004	.119	.028	**.123**
PD Participation	Pearson Correlation	.039	-.026	0,074*	.074*	-.022	-.042	1
	Sig. (2-tailed)	.223	.418	0,021	.021	.501	.192	

T-Test is used to find out the difference between variables based on graphical area and teachers' engagement in PD activities. It is known that T-test isa testing method which is used to compare the means of two populations(Kim T. K., 2015). T-test can be classified into 3 types including (1) One Sample T-test, (2) Independent sample t-test and (3) Paired sample t-test. One Sample T-test is used to compare the mean of population with that of a known or hypothesized value. Independent Sample T-test compares the means of two independent groups while Paired Sample T-test compares the means of two measurements taken from the same individual. Table below presents the number of teachers taking part in the survey based on region.

Table 4: Participant based on geographical region

	Frequency	Percent %
Delta	457	47.3
Coastal region	227	23.5
Mountainous Region	282	29.2
Total	966	100.0

As can be seen from table 4, the *p*-value of Levene's Test between among pairs of region are <.05 representing that there is significant difference in the test scores. Sig T-Test values of Delta and coastal, delta and mountain are.009 and .011 respectively (<.05). Therefore, there was a significant difference in teachers' participation in PD learning between delta region and other regions. However, *p*-value of coastal region-mountainous region illustrated that there is no significant difference in teachers' engagement in PD activities in these two regions (sig T-Test = .773 > 0.05). In a contrary vein, OECD data showed that there is also no statistically significant differences in school location (OECD, 2009). On the basis of OECD's evidence, the geographical locality of the schools does not appear to influence teachers' participation in PD activities.

4. Conclusion

Results of the study presented demographic factors influencing high school teachers' participation in PD learning in Nghe An province, Vietnam. We can conclude that gender, education qualification, grade, amount of class hour per week, and geographical factor did not have significant impact on teachers' participation in PD activities. On the other hand, teaching experience and university graduated have significant impact on teachers' participation in PD learning. Th results urge that school and/or educational managers at all level have to take necessary actions to encourage experienced and expert teachers, hence increase the motivation for other teachers of difference group of ages. It is important for a positive relationship between teaching experience and teachers' engagement in PD learning. That is to say the more years of teaching, the higher level of teachers' participation in PD activities.

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