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An empirical study of professional development of higher education teachers

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***Abstract*---**The investigation was undertaken to study Professional development of Higher Education Teachers. This study examines university teachers and college teachers professional development (PD) on the basis of length of service. The 420 teachers participated in this study from (University of Kashmir 120 and Govt. Recognized Degree Colleges college 300). Random sampling technique was used with equal chance for every University and College teacher to get selected in the sample. For the purpose of present study, Professional Development Index Scale (PDIS) has been constructed by the investigator to measure the level of professional development of the subjects. Percentage, mean, standard deviation and t- test were used to analyze the data. While analyzing the data significance of mean difference between University and college senior and junior teachers on various dimensions of Professional Development, the result depicts that both the groups turned to be significant on professional knowledge dimension. It means that university senior and college senior teachers possess better professional knowledge and professional ethics than their junior teachers. The results further reveal that university senior teachers are well versed with the subject matter and are more reflective in teaching learning process.

***Keywords*---**professional development, higher education, teachers, quality teaching.

Introduction

Teachers' professional growth in the relevant literature, has been presented and investigated in a variety of ways. However, at the core of such endeavours is the premise that professional development is about instructors learning, learning how to learn, and putting their knowledge into services for the welfare and benefit of their students' progress (Avalos, 2011; Duta 2012). Professional development, in a broader sense, refers to the development of a person in his or her professional role more specifically. Formal experiences such as attending workshops and professional meetings, mentoring, and so on as well as informal experiences including reading professional journals, viewing television documentaries relating to an academic topic, and so on are all part of the professional development (Ganser, 2000). Professional development enhances the abilities of educators aspiring to positions of leadership in the education and instructors will need to learn from other competent and experienced leaders in the future. (Mulford 2003). Professional development aims to make a person capable of carrying out his or her professional tasks in a pleasant manner. Teachers' professional development is defined as the teacher's professional growth as a result of his or her experience and rigorous analysis of his or her own practice (Duta 2012). Professional development is a process that aims to build and enhance instructors' capacities by providing access to education and training opportunities at work, through an external organisation, or by watching others do their professions (Powell et al, 2010).

Background Context

Several research studies have been conducted in Professional Development on Higher Education Teachers in India and abroad, Rienties et al.,(2013); Ana Ines (2013); Eva et al (2013)) investigated the perception of teachers towards professionalism and professional development skills. (Oner & Bumen 2012) examined the influence of faculty development programmes on the professional excellence of teachers on administrative functions. (Marea-Anne et al 2011) recorded the qualification deemed necessary by teachers' for them to effectively perform their pedagogical and educational duties. (Ingvarson, 2003) examined the purpose to review the recent work to advance the usefulness of evaluation of PD programmes. (Supovitz, 2000) carried out to study the effects of professional development on teaching practices and classroom culture. Little (2001) in his study assess the successful reforms in pursuit of professional development of Higher Education Teachers.

Need and Importance

A competent and effective teacher may transform the entire educational system in a favourable direction if he/she receives sufficient training and opportunities to update his knowledge and abilities on a regular basis. In pursuance of the recommendations of various committees on higher education, National Policy on Education, Central Govt. and UGC took several steps to improve the status, pedagogical skills and motivation of colleges and university teachers, the steps in this direction include revision of pay scales, creation of more avenues for career advancement linked with performance, incentives for research and provisions of

training opportunities for the in-service teachers. Teachers' professional development has long been acknowledged as critical to transforming classroom practise, strengthening schools, and increasing students' learning results (Borko, 2004). Professional learning takes place in formal learning settings such as professional development programmes, teaching research groups, and formal mentoring programmes (Timperley, 2011). Educators can also benefit from informal contacts such as collaborative planning, peer teaching, , and mentoring among colleagues (Little, 2012). The Duration, collaborative, content focused, active learning with modelled pedagogy, opportunities to reflect, and follow-up assistance are characteristics of Professional Development programmed that produce the changes in teacher practises espoused in policy documents (Wilson, 2013), which motivates the researchers to conduct the study in this area. Borko (2004) alerted the education research community to the crucial need for studies of teacher professional development (PD) programmes more than a decade ago. Professional growth among educators has been demonstrated in numerous studies at the school level (Hayan et al., 2017; Postholm, 2016, Postholm & Wge, 2016; Sung et al., 2016), but it has yet to be investigated at the college and university level, therefore further study is needed (Postholm 2018). More empirical study is needed to address the gaps in these instructors' professional demands. This research aims to close the gap by assessing the PD needs of teachers who have worked in the field of higher education.

Objectives

The present study was conducted with the following objectives:

1. To study the level of professional development of the University and College teachers.
2. To compare the professional development of the University and College teachers on the basis of length of service.

Hypotheses

In the light of the objectives enumerated above, the following hypotheses have been formulated for this study:

1. There is significant difference between University and College teachers on their levels of Professional Development.
2. Levels of professional development vary with reference to Length of experience of higher education teachers.

Methodology

This study adopts quantitative research approach and used descriptive research as a design. Quantitative research is a method of inquiry where data is collected in numerical form and then analyzed using different statistical methods (Gounderson, 2002). A descriptive study is intended to illustrate the distribution of one or more variables (Aggarwal & Ranganathan 2019).

Population, Sample and procedure

The population of this study consists of all the higher education teachers working in University of Kashmir and different Government recognized colleges of Kashmir, India. Random sampling technique was used with equal chance for every University and College teacher to get selected in the sample. The sample consists of (420) university teachers (120) and college teachers (300). The sample subjects were in the age group of 30-58 years.

Table 1. Showing University, College and Gender wise breakup of the sample

University Teachers	Male	Female	Total
	80	40	120
College Teachers	200	100	300
Total	280	140	420

Description of the Tool

The following tool was administered for data collection:

Professional Development Index Scale (PDIS): was constructed by the investigator (Mr. Tariq Ahmad Wani) under the supervision of Prof. (Dr.) N.A. Nadeem to measure the level of Professional Development of the subjects. It is based on five dimensions viz, Professional Knowledge, Training & Development, Teaching Competency & Professional Practice, Professional Commitment and Professional ethics. There are 40 items in the scale and each statement has a three point rating which is based on yes, uncertain and no type.

Operational Definition of Terms and Variables

Professional Development: Professional development refers to skills and knowledge attained for both personal development and career advancement. It helps to build and maintain morale of staff members and is thought to attract higher quality staff to an organization. For the purpose of present study, Professional Development Index Scale (PDIS) has been constructed by the investigator to measure the level of professional development of the subjects.
Higher Education Teachers: For the purpose of present study, higher education teachers refer to the teachers who are presently working in University of Kashmir and different Govt. recognized degree colleges of the Kashmir valley with respect to length of service.

Statistical technique

To find out and compare levels of professional development between university and college teachers in relation to length of service. The data was analyzed by using, percentage, Mean, S.D and t-test.

Results

Table 1.1 Showing Overall Percentage Comparison of Higher Education Teachers on Levels of Professional Development

Levels	Score Range	Higher Edu. Teachers	%age
Excellent	38 & above	71	16.90
Very Good	34-37	188	44.76
Good	30-33	108	25.71
Poor	29 & below	53	12.61
Total		420	100.0

The above table depicts that all the sample of higher education Teachers (N=420). A significant proportion of 44.76% has been found to possess very good professional development, 25.7% of the Teachers were categorized as good, and 16-90 % as excellent and 12.61% possessed poor professional development.

Fig. 1.0 Showing Overall Percentage Comparison of Higher Education Teachers on Levels of Professional Development

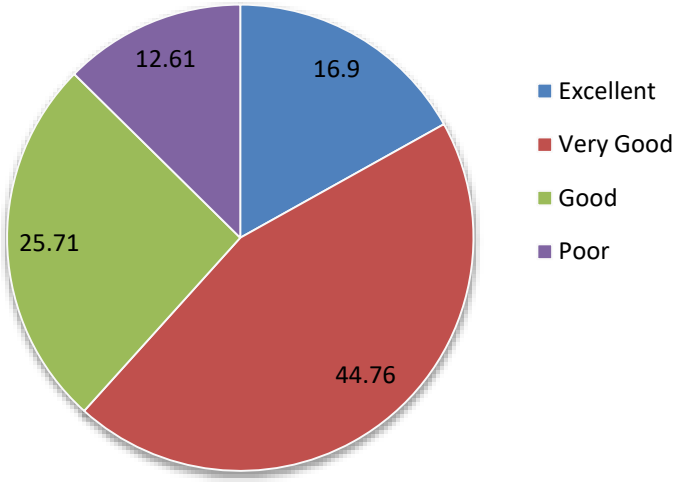

Table 1.2 Showing Percentage Comparison between University and College Teachers on levels of Professional Development

Levels	Score Range	University Teachers	%age	College Teachers	%age
Excellent	38 & above	18	15.00	53	17.70
Very Good	34-37	66	55.00	122	40.70
Good	30-33	26	21.70	82	27.30
Poor	29 & below	10	8.30	43	14.30
Total		120	100.0	300	100.0

The sub group analysis in relation to demographic background indicated that out of 120 University Teachers, 15% show excellent professional development, 55% show very good professional development, 21.7% show good professional development and 8.3% show poor professional development. Likewise, out of 300 college Teachers 17.7% show excellent, 40.7% very good, 27.30% show good and 14.30% show poor professional development respectively. The results clearly signify that college teachers have better professional development as compared to university Teachers.

Fig. 1.1 Showing Percentage Comparison of University and College Teachers on levels of Professional Development

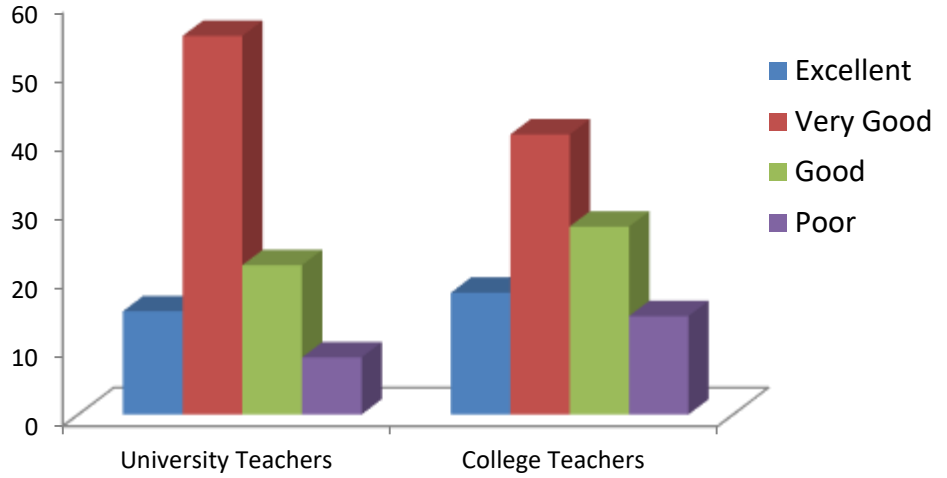

Table 1.3 Overall Comparison of University and College Teachers on Professional Development

Dimensions	Group	N	Mean	S.D.	t-value	Sig. level
Professional Knowledge	University Teachers	120	7.86	1.17	2.25	Significant at 0.05 level
	College Teachers	300	7.59	1.23		
Training and Development	University Teachers	120	6.16	1.13	1.83	Insignificant
	College Teachers	300	5.94	1.27		
Teaching Competency & Proff. Practice	University Teachers	120	6.57	1.24	0.41	Insignificant
	College Teachers	300	6.52	1.40		
Professional Commitment	University Teachers	120	7.32	0.85	2.66	Significant at 0.01 Level
	College Teachers	300	7.08	1.00		
Professional Ethics	University Teachers	120	6.63	1.05	1.09	Insignificant
	College Teachers	300	6.51	1.25		
Total	University Teachers	120	34.54	3.36	2.45	Significant at 0.05 Level
	College Teachers	300	33.63	3.98		

On overall comparison between University and College Teachers on various dimensions of Professional Development Scale. The results revealed that there is a significant difference between the two groups on professional knowledge and professional commitment dimensions of professional development . It clearly shows that University Teachers possess more professional knowledge and are more committed towards teaching learning process. The table further reveals that there is no significant difference between the two groups on training & development, teaching competency and professional ethics dimensions of Professional Development.

Table 1.4 Showing percentage comparison of Senior and Junior Teachers on levels of Professional Development

Levels	Score Range	Senior Teachers	%age	Junior Teachers	%age
Excellent	38 & above	26	17.10	45	16.80
Very Good	34-37	71	46.70	117	43.70
Good	30-33	38	25.00	70	26.10
Poor	29 & below	17	11.20	36	13.40
Total		152	100.00	268	100.00

The perusal of the above table shows overall percentage comparison of senior and junior teachers on levels of professional development . The results reveal that 17.1% of senior and 16.8% of junior teachers fall in excellent category, 46.7% of senior and 43.7% of junior teachers fall in very good category, 25% of senior and 26% of junior teachers fall in good category. The table further reveals that 11.2% of senior and 13.4% of junior teachers fall in poor category. The results signify that senior teachers possess better professional development than junior teachers.

Table 1.5 Showing percentage comparison of Senior and Junior University Teachers on levels of Professional Development

Levels	Score Range	Senior University Teachers	%age	Junior University Teachers	%age
Excellent	38 & above	5	9.6	13	19.10
Very Good	34-37	32	61.5	34	50.00
Good	30-33	12	23.1	14	20.60
Poor	29 & below	3	3.0	7	10.30
Total		52	100.00	68	100.00

A quick glance of the above table reveals that only 9.6% of senior university teachers fall in excellent category while as 19.1% of junior university teachers fall in this category. The table further reveals that 61.5% of senior and 50% of junior university teachers fall in very good category, 23.1% of senior and 20.6% of junior university teachers fall in good category, 5.8% of senior and 10.3% of junior university teachers fall in poor category. The above percentage distribution

of university teachers clearly indicates that junior university teachers possess better professional development skills than senior university teachers.

Table 1.6 Showing percentage comparison of Senior and Junior College Teachers on levels of Professional Development

Levels	Score Range	Senior College Teachers	%age	Junior College Teachers	%age
Excellent	38 & above	21	21.00	32	16.00
Very Good	34-37	39	39.00	83	41.50
Good	30-33	26	26.00	56	28.00
Poor	29 & below	14	14.00	29	14.50
Total		100	100.00	200	100.00

The above table shows the percentage comparison of senior and junior college teachers on levels of professional development. The results reveal that 21% senior and 16 % junior college teachers fall in excellent category, 39% senior and 41.5% junior college teachers fall in very good category, 26% senior and 28% junior college teachers fall in good category. The results further reveal that 14% senior and 14.5% junior college teachers fall in poor category. It signifies that senior college teachers possess better professional development skills as compared to junior college teachers.

Table 1.7 Showing overall significance of mean comparison between Senior and Junior Teachers on various dimensions of Professional Development

Areas	Group	N	Mean	S.D.	t-value	Sig. level
Professional Knowledge	Senior Teachers	152	7.85	1.12	2.63	Significant at 0.01 level
	Junior Teachers	268	7.56	1.26		
Training and Development	Senior Teachers	152	5.96	1.27	0.55	Insignificant
	Junior Teachers	268	6.03	1.22		
Teaching Competency & Proff. Practice	Senior Teachers	152	6.58	1.17	0.63	Insignificant
	Junior Teachers	268	6.51	1.16		
Professional Commitment	Senior Teachers	152	7.23	1.03	0.09	Insignificant
	Junior Teachers	268	7.10	1.02		
Professional Ethics	Senior Teachers	152	6.41	1.20	2.58	Significant at 0.01 level
	Junior Teachers	268	6.72	1.19		
Total	Senior Teachers	152	34.03	3.85	0.31	Insignificant
	Junior Teachers	268	33.91	3.83		

The results reveal that two dimensions of professional development scale i.e. professional knowledge and professional ethics turns out to be significant as the calculated t-values are found to be 2.63 and 2.58 which are significant at 0.01 level of significance. It indicates that senior teachers possess better professional knowledge to reflect new ideas and situations, this includes effective instruction and best practices. The results also signify that senior teachers fulfill professional obligations with honesty and integrity. However, both the groups turned to be

insignificant on the dimensions like training & development, teaching competency and professional commitment.

Table 1.8 Showing significance of mean difference between University Senior and Junior Teachers on various dimensions of Professional Development

Areas	Group	N	Mean	S.D.	t-value	Sig. level
Professional Knowledge	Sr. University Teachers	52	8.40	1.02	3.4	Significant at 0.01 level
	Jr. University Teachers	68	7.72	1.26		
Training and Development	Sr. University Teachers	52	6.08	1.29	0.7	Insignificant
	Jr. University Teachers	68	6.22	1.00		
Teaching Competency & Proff. Practice	Sr. University Teachers	52	6.54	1.16	0.28	Insignificant
	Jr. University Teachers	68	6.60	1.30		
Professional Commitment	Sr. University Teachers	52	7.37	0.81	0.64	Insignificant
	Jr. University Teachers	68	7.28	0.87		
Professional Ethics	Sr. University Teachers	52	6.54	1.05	0.89	Insignificant
	Jr. University Teachers	68	6.71	1.05		
Total	Sr. University Teachers	52	34.92	3.04	0.65	Insignificant
	Jr. University Teachers	68	34.53	3.61		

The above table reflects the comparison of senior and junior Teachers on various dimensions of professional development. The results showed that the two groups turned out to be significant at 0.01 level of significance on professional knowledge dimension of professional development scale. This implies that senior university teachers possess more professional knowledge as compared to junior teachers. The table further reveals that there is no significant difference between the two groups on training & development, teaching competency, professional commitment and professional ethics dimensions of professional development .

Table 1.9 Showing significance of mean difference between College Senior and Junior Teachers on various dimensions of Professional Development

Areas	Group	N	Mean	S.D.	t-value	Sig. level
Professional Knowledge	Sr. College Teachers	100	7.92	1.16	3.00	Significant at 0.01 level
	Jr. College Teachers	200	7.50	1.26		
Training and Development	Sr. College Teachers	100	5.90	1.26	0.4	Insignificant
	Jr. College Teachers	200	5.96	1.28		
Teaching Competency & Proff. Practice	Sr. College Teachers	100	6.60	1.18	1.00	Insignificant
	Jr. College Teachers	200	6.48	1.12		
Professional Commitment	Sr. College Teachers	100	7.16	1.13	1.08	Insignificant
	Jr. College Teachers	200	7.03	11.06		
Professional Ethics	Sr. College Teachers	100	6.35	1.28	2.66	Significant at 0.01 level
	Jr. College Teachers	200	6.69	1.24		
Total	Sr. College Teachers	100	33.93	4.20	0.53	Insignificant
	Jr. College Teachers	200	33.67	3.88		

The above table illustrate the mean difference between the two groups i.e. senior and junior college Teachers on various dimensions of professional development scale. The results depicts that the two groups turned to be significant at 0.01 level of significance on professional knowledge and professional ethics dimensions as the calculated t- value is found as 3.00 and 2.66. It implies that the senior Teachers possess more professional knowledge but the professional ethics dimension favours junior Teachers which imply that they possess better professional ethics than senior college Teachers. Further, the above table shows that there is insignificant mean difference between senior and junior college Teachers on dimensions of Training & development, Teaching Competency & Professional Practice, professional commitment.

Discussion and Conclusion

While analyzing the overall percentage comparison of Higher Education Teachers on levels of Professional Development, the findings showed that a significant proportion (44.76%) of teachers possesses very good and a sizable proportion (16.90%) of teachers possess excellent professional development. The results further show that 25.71% of teachers possess good and a small proportion of teachers (12.61%) were found to be poor on professional development. The results depict that the teachers who possess excellent professional development have complete hold on the domain knowledge/subject matter. Many investigators have reported substantial relationship between professional development and subject area (Darling-Hammond et al., 2009) examined the association between professional development components and specific subject area. It was discovered that professional development is paramount when embedded in the teachers' specific subject areas. It also signifies that the group uses the most effective pedagogical skills during the teaching learning process. These teachers in addition to their own subject knowledge also possess the knowledge of allied subjects and make best use of information technology in the lesson preparation and teaching.

On comparison between university and college teachers on levels of professional development, the maximum numbers of teachers from both the groups were found to be very good on a professional development. A small proportion of university teachers (8.3%) and a sizable proportion of college teachers (14.30%) were found to be poor on professional development. It is remarkable to note that (17.70%) of college teachers and (15%) 0f university teachers possess poor professional development. The results clearly signify that college teachers have an edge over university teachers on professional development. The finding was supported by (Mohan et al., 2017) stating that professional development needs change slightly between rural and urban instructors, owing to the needs of the students. While analyzing the overall mean comparison between university and college teachers on various dimensions of professional development, the results reveal that there is a significant difference between the two groups on professional knowledge and professional commitment dimensions of Professional Development. It signifies that university teachers possess more professional knowledge and are highly committed to their duties. It also reflects that university teachers perform their duties with honesty and integrity. The results further reveal that there is no significant difference between the two groups on training &

development, teaching competency and professional ethics dimensions of Professional Development. This shows that both the groups show similar performance on the above said dimensions.

On overall percentage comparison of senior and junior teachers on levels of Professional Development, the results confirm that senior teachers possess better professional development than junior teachers. A significant proportion of senior teachers were found to have excellent professional development which clearly signifies that length of experience does influence on subject matter and pedagogical skills of teachers. The results are consistent with (Gore et al., 2017) that independent of school type (primary/secondary), school location (urban/rural), and years of teaching experience, educators at each of twenty four schools observed significant positive effects on teaching quality. The results further confirm that a significant proportion of senior teachers (46.7%) were found to possess very good professional development which further reflects that they are professionally more committed and always fulfill professional implications with honesty and integrity. They always remain updated with current developments in field of education and have multi cultural perspective while teaching in classroom. It is truly said that a nation cannot be above the level of experienced teachers. A small proportion of teachers from both the groups were also found to be poor on professional development.

While analyzing the percentage comparison between senior and junior teachers on levels of professional development, the results reveal that only 9.6% of senior teachers fall in excellent category while as a significant proportion of junior teachers (19.10%) fall in the said category. It clearly indicates that junior teachers possess professional skills which can be reflected by their domain knowledge and fulfillment of professional responsibilities with honesty and integrity. The results further depict that a significant proportion of senior teachers (61.5%) were found to have very good professional development while as a small proportion of teachers from both the groups were found to possess poor professional development. The finding is supported by (Duta 2012) which highlighted that Teachers' PD is their professional progress as an outcome of their experiences and rigorous analysis of their own work. While analyzing the percentage comparison between college senior and junior teachers on Professional Development, the results reveal that the significant proportion of senior teachers were found to have excellent professional development which justify that length of experience does have potential impact on domain knowledge and pedagogical techniques. In another study conducted by (Suwaed & Rahouma 2015) where results highlighted that participants rely on their prior learning experiences and professional growth strategies like using web and reading books to tackle such challenges. It also signifies that training and development programs particularly orientation and refresher courses offered by Academic Staff Colleges and other Professional bodies play a significant role in professional excellence of teachers. These findings are in tune with the study conducted by (Roth et al,. 2018) the findings depicted That analysis-of-practice PD programme had a considerable influence on instructors' knowledge and practice when compared to the content-deepening PD programme. A significant association between teaching technique and student learning was discovered through mediating analyses. As per the trend the maximum number of teachers from both the groups was found to possess very good professional

development. The results further depict that an equal proportion of teachers from both the groups were found to have poor professional development.

While analyzing the overall significance of mean comparison between senior and junior teachers on various dimensions of Professional Development, the results reveal that professional knowledge and professional ethics dimensions turns out to be significant. It indicates that senior teachers possess better professional knowledge which indicates their hold on domain knowledge and effective pedagogical skills. They follow the best professional practices to reflect new understanding and contexts in teaching learning process. The results are in consisted with study (Ellingson et al,. 2021) which concludes that When compared to control teachers, teachers who participated in neuroscience Professional Development predicted improved student learning. The results further confirm that senior teachers fulfill professional obligations with honesty and integrity. Both the groups turned to be insignificant on dimensions like training and development, teaching competency and professional commitment. But it is interesting to note that the mean score of the above said three dimensions favors senior teachers which indicate that they have an edge over junior teachers in teaching competency and training & development.

On comparison between university senior and junior teachers on Professional Development, the findings depicts that both the groups turned out to be significant on professional knowledge dimension. It shows that senior teachers possess more professional knowledge and use the best pedagogical techniques in teaching learning process. While analyzing the significance of mean difference between college senior and junior teachers on various dimensions of Professional Development, the result depicts that both the groups turned to be significant on professional knowledge dimension. It signifies that senior teachers are well versed with the subject matter and are more reflective in teaching learning process. They have better understanding of curriculum development processes including planning, implementation and evaluation. The result further reveals that professional ethics dimension favors junior teachers which imply that they fulfill professional obligations with honesty and integrity.

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