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CREATIVITY AND MOTIVATION: THE PRIME FACTORS OF TEACHER'S PROFESSIONAL DEVELOPMENT FOR UNIVERSITY TEACHERS

Syeda Maria Zainab Gardezi¹ (Correspondence), Dr. Iram Gul Gillani², Dr. Farah Latif Naz³

Abstract

This study investigates the effects of implementing Teacher's Professional Development (TPD) on Teacher's Motivation (TM) and Teacher's Creativity (TC) within the context of Higher Education. It focuses on exploring the correlation between Teacher's Professional Development and Teacher's Creativity, as well as examining the relationship between Teacher's Professional Development and Teacher's Motivation. Additionally, the study considers the broader implications of these variables on overall institutional performance in Higher Education. Drawing from the Self-Determination Theory and Teacher's Professional Development theory, this quantitative research collected data from 455 university teachers, spanning from Lecturers to Professors. The findings indicate a significant positive association between Professional Development and the motivation and creativity of disciplinary teachers. Moreover, the study highlights a positive correlation between motivation and creativity, emphasizing their intertwined nature.

Keywords: Teacher's professional development (TPD); Teacher's creativity (TC); Teacher's Motivation (TM); University teacher, Higher education.

1. Introduction

Teacher professional development is widely recognized as crucial for enhancing educational quality worldwide [1-3] with substantial investments of time and resources [4-6]. Despite its importance, concerns persist about the varying quality and impact of professional development initiatives [2,7-11]casting doubt on their effectiveness in achieving educational goals. Ongoing, effective evaluation is deemed critical to enhancing both the quality and outcomes of professional development [8,12-14].

Numerous calls have been made for practitioners to routinely evaluate professional development activities[8,13,15-19], and efforts have been made to equip educators with the necessary evaluation skills [8,19-21]. However, it remains unclear to what extent these calls and resources have been reflected in routine professional development evaluations by school-based practitioners.

This study aims to address significant gaps in the literature regarding the impact of professional development on teacher creativity and motivation, particularly in higher education settings. Existing research primarily focuses on primary and secondary school teachers, neglecting the unique context of college and university educators. By investigating the relationship between professional development, motivation, and creativity among university professors, this study seeks to fill this critical gap in the literature.

¹ Ph.D. Scholar, Faculty of Education, Shaanxi Normal University, China. <u>mariagardezi110@snnu.edu.cn</u>

² Assistant Professor, Department of Education, Bahauddin Zakariya University, Pakistan. iramgul@bzu.edu.pk

³ Assistant Professor, Department of Education, Bahauddin Zakariya University, Pakistan. <u>farahlatif@bzu.edu.pk</u>



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The findings of this study will contribute to understanding how professional development initiatives influence teacher motivation and creativity in higher education. By focusing on this specific case of practitioner-led assessment of professional development, the study aims to inform future efforts to enhance the effectiveness of professional development programs and ultimately improve educational outcomes.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Teacher's Professional Development

The literature presents various perspectives on the scope, focus, and objectives of teacher professional development (PD). One aspect lacking consensus is the target demographic of PD. Within the Anglo-Saxon research community, the predominant view is that PD primarily caters to in-service teachers, considering them the true professionals[22].

Terhart (1997) [23] approaches professional growth within both broad and narrow contexts. In the broader context, a teacher's career progression spans from entry into the profession to retirement or cessation of practice. In the narrower sense, growth occurs during "critical periods" of advancement, with some teachers experiencing stagnant periods. This highlights the need to distinguish between years of service, experience, and consistency in professional development (Terhart, cited by Tatković, Šuran, & Diković).

Scholars like Borko (2004) [24] and Desimone et al. (2002) [24] view PD as vital for enhancing teachers' knowledge and teaching practices, emphasizing its critical objectives.

This monograph adopts the framework proposed by Avalos & Education (2011)[25], which synthesizes various topics discussed in recent years. According to Avalos' principle, the overarching focus of teacher PD should be on enhancing students' learning and achievement.

Professional development for teachers encompasses a comprehensive process involving study, learning, and the application of knowledge to benefit student development. It requires individual and collaborative cognitive and emotional engagement, the assessment of personal convictions and beliefs, and the adoption of appropriate strategies for improvement or change [25]. The conceptual Framework of Professional Development is given in Figure 1.



Figure 1. Conceptual Framework of Professional Development

Outreach

Enactment

HOW

PD strategies and delivery modes

Evaluation

Teacher professional development can be broadly defined as "any practice that aims to prepare staff members for greater success in their current or future roles" [22]. Scholars and professionals in professional learning have described professional learning as a patchwork of structured and unstructured activities such as arranged in-service coaching sessions, co-teaching, evaluations, book clubs, group observations and instructional rounds, action analysis, and even spontaneous conversations with colleagues[5,24,26-28] .A popular method of incorporating organized, professional learning programs is through "workshop" models. Instructors act as students and participate in standardized events such as lectures and meetings[11,29-31]. When determining professional development, the type of intervention is less important than the desired outcome, which is that teachers improve their instructional methods and student outcomes [31]. As a result, we use the term "professional development" to refer to any initiative, task, or preparation intended to improve skill acquisition, regardless of its structure.

Resources

Professional development is predicated on the premise that it promotes meaningful progress in teachers' and classrooms' performance[24,31,32]. Educational stakeholders organized professional development programs for teachers on the premise that professional development activities enhance educators' expertise and abilities and empower teachers to incorporate innovative concepts into their teaching approaches, resulting in meaningful gains in student achievement[31,32]. However, evidence of career learning success is inconsistent and has not kept pace with increased professional development usage [33,34].

2.2 Teacher's Motivation (TM)

The word motivation is derived from the principle of purpose, which describes a person's drives and needs to satisfy such desires[35]. Several motivational principles have been identified in prior investigations.



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Motivation refers to an individual's desire to make more significant attempts to accomplish specific aims, according to Maduka and Okafor (2014)[36]. Therefore, motivation emphasizes the sense of passion and attentiveness of a person to achieve their goals successfully. According to Robbins (2001)[37], an individual's motivation represents the energies that can inspire, direct, support, or strengthen their efforts. Motivation has often been articulated previously as an intrinsic inner urge within an employee to effectively perform his or her duties since those tasks are enjoyable and fit his or her desires[38]. Employee rewards should be expressed in conjunction with an individual's motivation to demonstrate their ability to reach specific goals in return for the desired premium. Motivation is an art to help people work willingly and influence them to do their job in a certain way [36]. Previous research discovered that technical motivation is a significant factor in staff success [39]. The impact of inspiration on the core results of professional learning is widely acknowledged. It has been discovered that pre-training motivation to learn correlates with post-training motivation to pass [40].

Education learners are more likely to be optimally motivated, according to SDT, when their fundamental psychological requirements for autonomy, maturity, and relatedness are met [41]. That is, when teachers believe they have a say about the type of training, its content, and how it is formulated, and how these elements are personally relevant to them based on their interests and preferences (for example, autonomy); are confident in their ability to improve their skills (for instance competence); and feel understood by the facilitator and peers (i.e., relatedness), they are more likely to fully intern. This Theory is reinforced by studies with secondary school teachers, which indicates that experiencing psychological need fulfillment during preparation predicts a shift in attitudes regarding the efficacy and viability of new knowledge, as well as their plans to apply this knowledge directly after the training, as well as their self-reported implementation of the learned knowledge [42]. Individuals' basic psychological needs are thwarted when they feel pressured to engage in training activities (i.e., autonomy frustration), doubt their abilities to master the new knowledge (i.e., competence frustration), and are rejected or disliked by the facilitator and peers (i.e., relatedness frustration) [43].

Ng et al. (2010) [11,44] state that "little is known about the conditions that motivate teachers to invest in professional learning." There is a significant literature gap on this subject. While there is a substantial body of literature on teachers' motivation, it is concentrated in the field of instructional psychology, employs objective methods, and conceptualizes teachers' motivation as distinct from their technical Education. Similarly, while research on teachers' learning is extensive, covering various fields and hypotheses, the motivational component of teachers' knowledge is conspicuously absent [5]. As a result of their significant contributions to the subject of teachers' motivation to learn, we logically grounded our study at the intersection of four research fields. The theoretical Framing of Research on TEACHERS' Motivation to Learn is given in Figure 2.



Figure 2. Theoretical Framing of Research on TEACHERS' Motivation to Learn

2.3 Teacher's Creativity (TC)

It has been generally accepted that creativity is a dynamic term for which no clear meaning exists (Prentice, 2000). It should be remembered that even describing the word can sound improper and ambiguous to others when referring to the idea of innovation [45]. Maybe the difference between invention and innovation is worth beginning with. While innovation and creativity are closely connected, they vary when creativity is used through innovation, turning new concepts into use as goods or active activities. The definition of creativity involves innovations, inventions, and breakthroughs, introducing a new idea [46] although creativity is described as "the effective execution of new ideas within an organization" [47,48]. For this analysis, 'creativity will be used as the primary concept of ideas, imagination, and originality.

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Nonetheless, considering the different concepts, there seems to be a common understanding of the principle of creativity as the "ability to create work that is both fresh and acceptable[49,50]. Although this definition appears to be the most fitting, various other meanings are considered for this literature review. In generating new concepts and behaviors that help set the innovative process in motion, knowledge is the toolbox for inventiveness, and creativity is also critical [47].To demonstrate the connection between creativity and pedagogical practices, a creative pedagogy philosophy is posited, affected by the assumptions and factors of invention fostered within education.

Creative pedagogy is a teaching method that fosters innovation by integrating three components: innovative teaching, teaching for creativity, and creative learning. Rather than developing into two distinct processes that rarely interact (see Figure 3), the three interconnected components complement and result in one another, resulting in a resonant method (see Figure 4). The



interaction of innovative and productive instruction (facilitated by the creative facilitator) and creative learning creates an environment conducive to developing creative abilities and characteristics (by the active learner).



Figure 3. The Three Elements of Creativity Pedagogy (Lin, 2009)

We will examine innovation in the context of twenty-first-century instructional technologies in this study. Creativity has received increased attention in psychology and education, and popular culture[49], imagination is a highly prized state of thought that is frequently a necessary component of growth and transition. Additionally, educational studies confirming the importance of imagination in thinking and learning have increased [51].

We begin by examining the global context for a focus on creativity, followed by an explanation of the foundations for creativity in culture and education, as well as educational technology. This emphasis on imagination and its incorporation into the curriculum requires planning and preparation. We propose three critical threads for innovative education through technology, based on a systems paradigm for innovation in larger society: teacher education, evaluation, and educational policy. In this three-pronged approach, we demonstrate how each of these three elements contributes to developing practical instructional contexts that meet the needs of 21st-century learners and teachers.





Figure 4. Hypotheses Model

2.4 Hypothesis development

- H1: There is a significant relationship between TPD and DF.
- H2: There is a significant relationship between TPD and TC.
- H3: There is a significant relationship between TPD and TM.

3. RESEARCH METHODOLOGY

3.1 Data Population and Sample

This study includes the faculty member of the higher education institutions in Pakistan. The faculty members include lecturers, associate professors, assistant Professors, and full professors who are currently teaching and researching in different universities during this study. The study's findings will be based on 455 faculty members/teachers' data in a non-probabilistic simple sample. The focus will be on university academicians, i.e., lecturers and full professors. A questionnaire was developed to determine a significant relationship between teachers' professional development, motivation, and creativity in higher education.

The first stage involved developing a questionnaire based on three variables borrowed from various studies, namely teacher professional development [52], teacher motivation [53], and teacher creativity [54].

The second stage involved developing the borrowed questionnaire and demographic data and sending it to my supervisor and a group of subject-matter experts.



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Third stage: experts thoroughly analyzed the questionnaire and made necessary amendments based on the content of this paper

Fourth stage: the questionnaire was reviewed and then distributed to a group of teachers for reliability testing. Higher Education Teachers were asked to complete the questionnaire and make suggestions on how to improve the questionnaire's reliability for this research.

Finally, the questionnaire was found to be reliable, but a few minor modifications were suggested. These modifications were made and then distributed to respondents for data collection. The following is a list of 55 independent and dependent variables.

4. Results and Discussion

This part discusses the data analysis, interpretation, and discussion of the study, explaining the hypothesis's significance and insignificance using the Statistical Package for Social Sciences (SPSS). 25.

4.1 Descriptive Statistics

Around 1000 questionnaires were distributed via Email and Social Media apps to respondents across Pakistan's university faculties, but only 455 were returned ultimately. As a result of the Pandemic situation in my research in January 2020, the recovery is less than 50%. Due to the COVID -19 lockdown, the questionnaire could not be completed in person. This study examined higher education institutions in Pakistan that are technologically underdeveloped and academics unaware of these advancements. Three questionnaires contain missing values, and as a result, we exclude the data due to its unreliability. The following are the demographic characteristics

Demographic Variables	Frequency	Percentage
Gender		
Male	287	63.1%
Female	168	36.9%
Teaching Experience		
5 years or less	259	56.9%
6 to 10 years	119	26.2%
11 to 15 years	56	12.3%
16 to 20 years	0	0%
More Than 20 Years	21	4.6%
Education:		
Bachelors	7	1.5%

Table 1. Descriptive Analysis: Demographic Variables



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Μ	lasters	56	12.3%
Ν	MPhil	231	50.8%
	PhD	161	35.4%
Status of	f University:		
Researc	h University	14	3.1%
Research and T	eaching University	343	75.4%
Teachin	g University	98	21.5%
Desi	gnation:		
Le	ecturer	343	75.4%
Assista	nt Professor	91	20.0%
Associate Professor		14	3.1%
Professor		7	1.5%
Teachir	ng Subjects:		
	Arts	28	6.2%
S	cience	98	21.5%
Tec	hnology	49	10.8%
Medic	al Science	1	0.2%
Eng	ineering	58	12.7%
Socia	al Science	221	48.6%

4.2 The Measure of Variable Validity

Factor analysis is used to determine the validity of independent and dependent variables.

	KMO and Bartlett's Test
Teacher's Professional Development	.835
Dimension of TPD	
Workshop	.793
Learning	.795
Research	.583

 Table 2.
 Teacher's Professional Development Validity Test

ELRI Educational research and innovation	EDUCATIONAL RESEAR	Vol. 4, No. 4 (2024) RCH AND INNOVATION (ERI)
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	Collaboration	.865
Teacher's Motivation		.659
Teacher's Creativity		.747
	Dimension of TC	
	Teachers self-Efficacy	.818
	Societal Values	.879
	Student potential	.864

Factor analysis was used to determine the validity of the independent variable, teacher professional development. Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of independent variables is 0.835. KMO and Bartlett's results of Teacher's Professional Development Elements, which are enlisted in the research questions of this study. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of the workshop is 0.793. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of learning is 0.795. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of Research is 0.583. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of Collaboration is 0.865, which is greater than 0.5, indicating that data sets are correlated. Teacher Motivation. Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of dependent variables is 0.659. Factor analysis of Teacher Creativity which reveals the KMO value that is 0.747. Teacher's Creativity's Elements which are enlisted in the research questions of this study. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of Teachers' self-Efficacy is 0.818. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of Societal Values is 0.879. The Kaiser-Meyer-Olkin sampling adequacy analysis reveals that the KMO of Student potential is 0.864, which are greater than 0.5.

4.3 Reliability Analysis

Table 3.	Reliability	Test
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	Cronbach Alpha Value
Teacher's Professional Development	.920
Dimension of TPD	
Workshop	.842
Learning	.872
Research	.627
Collaboration	.890
Teacher's Motivation	.641

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Teacher's Creativity		.946
	Dimension of TC	
	Teachers self-Efficacy	.894
	Societal Values	.922
	Student potential	.851

Value level of reliability Cronbach's alpha can be seen in Table 4.3 [55]. Cronbach's Alpha was used to determine the internal consistency or reliability of the Teacher Professional Development. Cronbach's Alpha of Professional Development is 0.920, as determined by the results. Cronbach's alpha values for the 21 items of Teacher Professional Development are greater than 0.60[55]. Teacher Professional Development, as defined by the research questions, consisted of four major components: workshops, learning, research, and collaboration. When we performed a reliability analysis on each of these four elements separately, we discovered that Cronbach's alpha value was greater than 0.60 [55], indicating that the measure of Teacher Professional Development is reliable. Cronbach's Alpha for Teacher's Motivation is 0.641. If we remove the 3rd and 4th items from the questionnaire scale, Cronbach's Alpha for Teacher's Motivation is 0.715. Cronbach's Alpha for Teacher's Creativity is 0.946. Teacher Creativity, according to the research questions, consisted of three major components: teacher self-efficacy, societal values, and student potential. When we performed a reliability analysis on each of three major components: teacher self-efficacy, societal values, and student potential. When we performed a reliability analysis on each of these three elements separately, we discovered that Cronbach's alpha was greater than 0.60, indicating that the measure of Teacher Creativity is reliable.

4.4 Correlations Analysis

As the study's objective was to ascertain the relationship between teacher professional development, motivation, and creativity. According to Mukaka M. M. (2012)[56] table of the rule of thumb of interpreting the correlation coefficient's size, we demonstrate that the independent and dependent variables are positively and significantly correlated. Professional development is positively correlated with motivation and creativity, 38.7% and 63.9%, respectively, at the significance level of 1%. Motivation is positively correlated with creativity at a 1% level of significance, and the relationship between them is 36.1%.

		5			
Pearson Correlation					
		PRO DEVELOPMENT	MOTIVATION	CREATIVITY	
PRO DEVELOPMENT	Pearson Correlation	1	.387**	.639**	
	Sig. (2-tailed)		.000	.000	

T 1 1 4	a 1.	
Table 4.	Correlatio	n Analysis
I HOIC II	Contenano	11 1 11101 9 515

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	Ν	455	455	455
MOTIVATION	Pearson Correlation	.387**	1	.361**
	Sig. (2-tailed)	.000		.000
	Ν	455	455	455
CREATIVITY	Pearson Correlation	.639**	.361**	1
	Sig. (2-tailed)	.000	.000	
	Ν	455	455	455
**. Correlation is sign	ificant at the 0.	01 level (2-taile	ed).	

4.5 Regression Analysis

 Table 5. Regression analysis for hypothesis testing

Constructs	Model 1 TM	Model 2 TM	Model 3 TC	Model 4 TC Teacher self- Efficacy	Model 5 TC Social Values	Model 6 TC Students Potential
Professional Development	.337***		.602***			
Workshop		.006		216***	.100*	065
Learning		.106**		.407***	.018**	.796***
Research		.214***		.038	078	028
Collaboration		.153**		.393***	.496***	.011
Constant	2.688***	2.574***	1.834***	1.611***	2.173***	1.022***
R ²	.150	0.209		.531	0.349	.370
\mathbf{F}^2	80.037***	29.741***		127.483***	60.364***	65.992***
Observations	455	455	455	455	455	455

5. CONCLUSIONS

This study involved examining demographic data from 455 respondents, collected through questionnaire-based methods. Subsequently, the study conducted a series of analyses including



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the Missing Value Test, Factor Analysis, Reliability Analysis, Pearson Correlation, and Regression (Measurement Model) to explore the relationships between variables. The regression analysis's output was divided into two Models:

In Model 1, teacher professional development was found to significantly predict teacher motivation, with a slope coefficient of 0.387, t-value of 8.946, and p-value of 0.000. The adjusted R2 value indicated that 14.8% of the variance in teacher motivation was explained by professional development, supported by the significant F-statistic of F (1, 453) = 80.037, p < .000. The unstandardized coefficient for professional development was 0.337.

In Model 2, the impact of teacher professional development on teacher creativity was examined, revealing a significant relationship. The slope coefficient was 0.639, t-value was 17.686, and p-value was .000. The adjusted R2 value showed that 40.7% of the variance in teacher creativity was accounted for by professional development. The F-statistic demonstrated a significant fit of the model to the data, with F (1, 453) = 312.805, p < .000. The unstandardized coefficient for professional development was 0.602.

The regression analysis revealed that teacher professional development significantly predicts both teacher motivation and creativity.

Using SPSS 25, the study assessed the significance of the relationship between the independent variable, teacher professional development, and the dependent variables, teacher motivation, and teacher creativity. Factor analysis confirmed the validity of teacher professional development, as indicated by a Kaiser-Meyer-Olkin (KMO) sampling adequacy analysis value exceeding 0.5 for both independent and dependent variables. Reliability analysis, based on Cronbach's Alpha, demonstrated high internal consistency for all variables, with values exceeding 0.60.

Pearson Correlation revealed significant positive correlations between professional development, motivation, and creativity, emphasizing their interconnectedness.

In conclusion, the study found a significant positive relationship between teacher professional development and both teacher motivation and creativity. The regression models demonstrated that teacher professional development serves as a strong predictor for both outcomes, with substantial proportions of variance explained. These findings underscored the critical role of ongoing professional development initiatives in enhancing teacher effectiveness and fostering a conducive learning environment. By investing in professional development, educational institutions can promote continuous growth and innovation among educators, ultimately benefiting student learning outcomes.

Supplementary Materials: The supporting information can be available in the form of my thesis soon.

Author Contributions: M.G.: Conceptualization, methodology, software, validation, formal analysis, investigation, and writing. IG.: Methodology, supervision, review. FL.: Methodology, supervision, review, and UA. Writing, editing. All authors have read and agreed to the published version of the manuscript.

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References

1. Darling-Hammond, L. How teacher education matters. *Journal of teacher education* **2000**, *51*, 166-173.

2. Gore, J.; Lloyd, A.; Smith, M.; Bowe, J.; Ellis, H.; Lubans, D. Effects of professional development on the quality of teaching: Results from a randomised controlled trial of Quality Teaching Rounds. *Teaching and teacher education* **2017**, *68*, 99-113.

3. Opfer, D. Conditions and practices associated with teacher professional development and its impact on instruction in TALIS 2013. **2016**.

4. Cornman, S.Q.; Zhou, L. Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2013-14 (Fiscal Year 2014). First Look. NCES 2016-301. *National Center for Education Statistics* **2016**.

5. Hochberg, E.D.; Desimone, L.M. Professional development in the accountability context: Building capacity to achieve standards. *Educational psychologist* **2010**, *45*, 89-106.

6. Jacob, A.; McGovern, K. The Mirage: Confronting the Hard Truth about Our Quest for Teacher Development. *TNTP* **2015**.

7. Addey, C.; Gorur, R. Translating PISA, translating the world. *Comparative Education* **2020**, *56*, 547-564.

8. Guskey, T.R. *Evaluating professional development*; Corwin press: 2000.

9. Ling, L.M.; Mackenzie, N.M. An australian perspective on teacher professional development in supercomplex time. **2015**.

10. Ling, L.; Mackenzie, N. An Australian perspective on teacher professional development in supercomplex times. Psychology, Society, & Education, 7 (3), 264-278. **2015**.

11. Opfer, V.D.; Pedder, D. Conceptualizing teacher professional learning. *Review of educational research* **2011**, *81*, 376-407.

12. Porritt, V.; Spence-Thomas, K.; Taylor, C. Leading professional learning and development. *School leadership and education system reform* **2017**, 121-130.

13. Killion, J. Assessing impact: Evaluating staff development; Corwin press: 2008.



EDUCATIONAL RESEARCH AND INNOVATION (ERI)

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14. Mitchem, K.; Wells, D.L.; Wells, J.G. Effective integration of instructional technologies (IT): Evaluating professional development and instructional change. *Journal of Technology and Teacher Education* **2003**, *11*, 397-414.

15. Earley, P.; Porritt, V. Evaluating the impact of professional development: The need for a student-focused approach. *Professional development in education* **2014**, *40*, 112-129.

16. Borg, S. Evaluating the impact of professional development. *RELC Journal* **2018**, *49*, 195-216.

17. Grossman, T.; Hirsch, E. State Policies to Improve Teacher Professional Development. Issue Brief. *NGA center for best practices* **2009**.

18. Kelleher, J. A model for assessment-driven professional development. *Phi delta kappan* **2003**, *84*, 751-756.

19. Guskey, T.R. Evaluating professional learning. *International handbook of research in professional and practice-based learning* **2014**, 1215-1235.

20. Blank, R.K.; De las Alas, N.; Smith, C. *Does teacher professional development have effects on teaching and learning?: Analysis of evaluation findings from programs for mathematics and science teachers in 14 states*; Council of Chief State School Officers: 2008.

21. Puma, M.E. Evaluating standards-based professional development for teachers: A handbook for practitioners. **2001**.

22. Little, J.W. Teachers' professional development in a climate of educational reform. *Educational evaluation and policy analysis* **1993**, *15*, 129-151.

23. Castle, J.B. Toward understanding professional development: Exploring views across a professional development school. *Teachers and Teaching* **1997**, *3*, 221-242.

24. Borko, H. Professional development and teacher learning: Mapping the terrain. *Educational researcher* **2004**, *33*, 3-15.

25. Ávalos, B. Teacher Professional Development: Revisiting Critical Issues. In *Approaches to Teaching and Teacher Education*; Emerald Publishing Limited: 2023; Volume 43, pp. 59-71.

26. Merchie, E.; Tuytens, M.; Devos, G.; Vanderlinde, R. Evaluating teachers' professional development initiatives: towards an extended evaluative framework. *Research papers in education* **2018**, *33*, 143-168.

27. Darling-Hammond, L.; Richardson, N. Research review/teacher learning: What matters. *Educational leadership* **2009**, *66*, 46-53.

28. Postholm, M.B. Teachers' professional development: A theoretical review. *Educational research* **2012**, *54*, 405-429.



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29. Scarparolo, G.E.; Hammond, L.S. The effect of a professional development model on early childhood educators' direct teaching of beginning reading. *Professional Development in Education* **2018**, *44*, 492-506.

30. Hoekstra, A. *Experienced teachers' informal learning in the workplace*; IVLOS, Universiteit Utrecht Utrecht: 2007.

31. Kenny, J.; Hobbs, L.; Whannell, R. Designing professional development for teachers teaching out-of-field. *Professional development in education* **2020**, *46*, 500-515.

32. Hoekstra, A.; Beijaard, D.; Brekelmans, M.; Korthagen, F. Teachers' informal learning at the workplace. **2007**.

33. Timperley, H.; Wilson, A.; Barrar, H.; Fung, I. *Teacher Professional Learning and Development. Best Evidence Synthesis iteration (BES)*; 2007.

34. Limongelli, C.; Sciarrone, F.; Temperini, M.; Vaste, G. The Lecomps5 framework for personalized web-based learning: A teacher's satisfaction perspective. *Computers in Human Behavior* **2011**, *27*, 1310-1320.

35. Said, N.S.M.; Zaidee, A.S.E.A.; Zahari, A.S.M.; Ali, S.R.O.; Salleh, S.M. Relationship between employee motivation and job performance: A study at Universiti Teknologi MARA (Terengganu). *Mediterranean Journal of Social Sciences* **2015**, *6*, 632.

36. Maduka, C.E.; Okafor, O. Effect of motivation on employee productivity: A study of manufacturing companies in Nnewi. *International Journal of Managerial Studies and Research* **2014**, *2*, 137-147.

37. Torkzadeh, J.; Harati, F.D. A Comparative Analysis of Staff Organizational Behavior Foundations (A Case Study of Shiraz University). *Asian journal of research in social sciences and humanities* **2015**, *5*, 239-261.

38. Graen, G.B.; Uhl-Bien, M. The transformation of professionals into self-managing and partially self-designing contributors: Toward a theory of leadership-making. **1991**.

39. Zameer, H.; Ali, S.; Nisar, W.; Amir, M. The impact of the motivation on the employee's performance in beverage industry of Pakistan. *International journal of academic research in accounting, finance and management sciences* **2014**, *4*, 293-298.

40. Gegenfurtner, A.; Veermans, K.; Festner, D.; Gruber, H. Integrative literature review: Motivation to transfer training: An integrative literature review. *Human resource development review* **2009**, *8*, 403-423.

41. Ryan, R.M.; Deci, E.L. Self-determination theory: Basic psychological needs in motivation, development, and wellness; Guilford publications: 2017.

42. Aelterman, N.; Vansteenkiste, M.; Van Keer, H.; Haerens, L. Changing teachers' beliefs regarding autonomy support and structure: The role of experienced psychological need satisfaction in teacher training. *Psychology of Sport and Exercise* **2016**, *23*, 64-72.



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43. Vansteenkiste, M.; Ryan, R.M. On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of psychotherapy integration* **2013**, *23*, 263.

44. Appova, A.; Arbaugh, F. Teachers' motivation to learn: Implications for supporting professional growth. *Professional development in education* **2018**, *44*, 5-21.

45. Papaleontiou-Louca, E.; Varnava-Marouchou, D.; Mihai, S.; Konis, E. Teaching for creativity in universities. *Journal of Education and Human Development* **2014**, *3*, 131-154.

46. Van de Ven, A.H. Suggestions for studying strategy process: A research note. *Strategic management journal* **1992**, *13*, 169-188.

47. Amabile, T.M. *Creativity and innovation in organizations*; Harvard Business School Boston: 1996; Volume 5.

48. Amabile, T.M.; Conti, R.; Coon, H.; Lazenby, J.; Herron, M. Assessing the work environment for creativity. *Academy of management journal* **1996**, *39*, 1154-1184.

49. Gabrielli, S.; Kimani, S.; Catarci, T. The design of microlearning experiences: A research agenda (on microlearning). **2017**.

50. Sternberg, R.J.; Lubart, T.I. The concept of creativity: Prospects and paradigms. *Handbook of creativity* **1999**, *1*.

51. Henriksen, D.; Mishra, P. We teach who we are: Creativity in the lives and practices of accomplished teachers. *Teachers College Record* **2015**, *117*, 1-46.

52. Steinert, Y.; Mann, K.; Anderson, B.; Barnett, B.M.; Centeno, A.; Naismith, L.; Prideaux, D.; Spencer, J.; Tullo, E.; Viggiano, T. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. *Medical teacher* **2016**, *38*, 769-786.

53. Roohani, A.; Dayeri, K. On the Relationship between Iranian EFL Teachers' Burnout and Motivation: A Mixed Methods Study. *Iranian Journal of Language Teaching Research* **2019**, *7*, 77-99.

54. Rubenstein, L.D.; McCoach, D.B.; Siegle, D. Teaching for creativity scales: An instrument to examine teachers' perceptions of factors that allow for the teaching of creativity. *Creativity Research Journal* **2013**, *25*, 324-334.

55. Hair, J.; Black, W.; Babin, B.; Anderson, R. Multivariate Data Analysis 7th Edition New York. **2010**.

56. Mukaka, M.M. A guide to appropriate use of correlation coefficient in medical research. *Malawi medical journal* **2012**, *24*, 69-71.