



Enhancing Teaching Proficiency Through The Implementation Of Life Skills Enrichment Initiatives For Aspiring Educators

Binu Babu^{1*}, Dr.M.Aron Antony Charles²,

^{1*}Research Scholar, School of Education, Prist Deemed to be University, Thanjavur, Email : binubabu14@gmail.com

²Associate Professor, School of Education, Prist Deemed to be University, Thanjavur.

Citation: Binu Babu et al. (2024), Enhancing Teaching Proficiency Through The Implementation Of Life Skills Enrichment Initiatives For Aspiring Educators, Educational Administration: Theory And Practice, 30(4), 3753-3759, Doi: 10.53555/kuey.v30i4.2120

ARTICLE INFO

ABSTRACT

This study explores the relationships between practical engagements, pedagogical adaptability, and student learning outcomes within the context of teacher training programs. The research aims to investigate whether practical engagements influence the development of pedagogical adaptability and, consequently, impact student learning outcomes. The study employs a quantitative research design, utilizing survey data collected from a sample of teacher trainees. Statistical analyses, including regression analysis and correlation, are applied to examine the associations between practical engagements, pedagogical adaptability, and student learning outcomes. Preliminary findings suggest a positive relationship between practical engagements and pedagogical adaptability, indicating that teacher trainees who actively engage in practical experiences exhibit higher levels of adaptability in their teaching approaches. Additionally, the study explores the mediating role of pedagogical adaptability in the relationship between practical engagements and student learning outcomes. The outcomes of this research contribute valuable insights to teacher education, emphasizing the importance of experiential learning and adaptability in shaping effective teaching practices and optimizing student learning outcomes.

Keywords: Participant Engagement, Pedagogical Adaptability, Classroom Dynamics, Student Learning Outcomes

INTRODUCTION

In the dynamic landscape of education, the role of teachers extends beyond the conventional dissemination of knowledge to fostering holistic development in students. Recognizing the significance of equipping educators with a diverse skill set that goes beyond the traditional pedagogical domain, there is a growing interest in integrating life skill development programs into teacher training curricula. This study seeks to explore the impact of such initiatives on the enhancement of teaching skills among teacher trainees. The intersection of life skills and teaching proficiency is a realm where the personal and professional aspects of educators converge. Aspiring teachers not only need to possess a deep understanding of their subject matter but also require a repertoire of skills that enable effective communication, adaptability, and the creation of a positive learning environment.

Consequently, this research endeavours to investigate how a focused life skill development program influences various dimensions of teaching, ranging from participant engagement and pedagogical adaptability to the dynamics within the classroom and the ultimate outcomes of student learning (Dwivedi et al., 2019). By delving into these variables, this study aims to contribute valuable insights to the ongoing discourse on teacher preparation and professional development. Understanding the nuanced interplay between life skills and teaching efficacy is paramount for shaping a new generation of educators who can navigate the complexities of modern classrooms and cater to the diverse needs of students. Through this exploration, we aspire to shed light on the potentially transformative effects of integrating life skill development into teacher training programs and, consequently, the broader landscape of education. The field of education is undergoing a paradigm shift, emphasizing the multifaceted role of teachers as catalysts for comprehensive student development. Beyond subject expertise, contemporary educators are expected to possess a diverse set of life skills that enrich their teaching methodologies and contribute to the overall educational experience. In response to this evolving landscape, there is a growing interest in integrating life skill development programs into the training of aspiring

teachers. This study is a deliberate inquiry into the profound impact of life skill development initiatives on the refinement of teaching skills among teacher trainees. Teaching is a dynamic endeavour that demands more than the conventional transfer of knowledge; it necessitates adaptability, effective communication, and the ability to foster an inclusive and conducive learning environment. The intersection of life skills and teaching proficiency is a terrain where personal and professional growth intersect, making it a compelling area for exploration (Al-Seghayer et al., 2014). Our research aims to unravel the intricate relationships between life skill acquisition and various dimensions of teaching competence. From gauging participant engagement and evaluating pedagogical adaptability to understanding the nuances of classroom dynamics and assessing the ultimate impact on student learning outcomes, this study endeavours to provide a comprehensive understanding of the transformative potential of life skill development programs for teacher trainees. As we embark on this exploration, the intention is not only to contribute to the existing body of knowledge in teacher preparation but also to offer practical insights that can inform curriculum development and policy decisions. By investigating the symbiotic relationship between life skills and effective teaching, we aspire to contribute meaningfully to the ongoing discourse on the evolving role of educators in shaping the future of education.

STATEMENT OF THE PROBLEM

In the realm of teacher preparation, the traditional focus on pedagogical training is being reevaluated in light of the evolving demands of education. Recognizing that effective teaching extends beyond subject expertise, there is an increasing emphasis on the integration of life skill development programs into the training of aspiring educators. However, amidst this acknowledgement, a critical gap persists in our understanding of how such initiatives impact the enhancement of teaching skills among teacher trainees. The current state of educational research lacks sufficient empirical evidence to ascertain the effectiveness of life skill development programs in teacher training curricula. This knowledge gap poses a significant challenge in comprehending the tangible outcomes of integrating life skills into the educational framework (Mays et al., 2015). Key questions surrounding participant engagement, pedagogical adaptability, classroom dynamics, and their collective influence on student learning outcomes remain largely unanswered. This study aims to address these critical gaps by systematically exploring the impact of life skill development initiatives on the multifaceted dimensions of teaching proficiency among teacher trainees. Four central inquiries guide our investigation:

- To what extent does participation in a life skill development program enhance engagement among teacher trainees in their educational pursuits?
- How does the integration of life skills influence the adaptability of teacher trainees in implementing varied pedagogical approaches to meet the diverse needs of students?
- In what ways does the incorporation of life skill development initiatives impact the dynamics within the classroom, including teacher-student interactions and the overall learning environment?
- What are the observable effects of life skill integration on the learning outcomes of students taught by teacher trainees who have undergone such programs?

Through a nuanced exploration of these questions, this study endeavours to contribute to the field of teacher education, offering evidence-based insights that can inform curriculum development and policy decisions aimed at preparing educators for the complexities of modern classrooms.

NEED AND SIGNIFICANCE OF THE STUDY

In the contemporary educational landscape, the call for a more comprehensive approach to teacher preparation is echoing louder than ever. The traditional model of teacher training, centred predominantly on pedagogical skills, is proving insufficient in equipping educators with the diverse set of competencies required for the multifaceted roles they play in the classroom. The need for a more holistic framework is evident, and the integration of life skill development programs into teacher training emerges as a promising avenue to address this imperative gap (Jerman et al., 2023). The need for this study arises from the pressing demand for empirical evidence on the impact of life skill development initiatives in teacher training programs. As education undergoes a paradigm shift towards student-centric learning and the cultivation of non-academic skills, understanding how life skills contribute to the enhancement of teaching skills is crucial. This study aims to fill the existing void in the literature, providing insights into the effectiveness of such programs in fostering participant engagement, enhancing pedagogical adaptability, shaping positive classroom dynamics, and ultimately influencing student learning outcomes (Khasawneh et al., 2024). The significance of this study extends beyond theoretical exploration; it has practical implications for the development of teacher training curricula and policies. By unravelling the intricate connections between life skills and teaching proficiency, the findings of this research can inform educational institutions, curriculum designers, and policymakers about the potential transformative effects of integrating life skill development into teacher training. In doing so, the study contributes to the ongoing discourse on teacher education. It lays the groundwork for evidence-based strategies to prepare educators for the evolving challenges of modern classrooms (Jiang et al., 2023).

Furthermore, the study holds potential benefits for students as it seeks to explore how the incorporation of life skills in teacher training might translate into improved learning outcomes. A better understanding of these dynamics can guide educational practitioners in fostering a more conducive learning environment that

addresses the holistic needs of students. Overall, the need and significance of this study lie in its potential to shape the future of teacher education, offering insights that can contribute to the cultivation of a new generation of educators capable of navigating the complexities of contemporary education with skill and efficacy.

THEORETICAL FOUNDINGS

The theoretical groundings of this study are rooted in prominent educational theories that collectively contribute to understanding the relationship between life skill development programs and the enhancement of teaching skills among teacher trainees. Albert Bandura's Social Cognitive Theory serves as a foundational framework, emphasizing the social nature of learning. According to Bandura, individuals acquire skills through observation and imitation, and in the context of this study, teacher trainees are expected to absorb and integrate life skills by observing effective teaching behaviours (Panthee et al., 2023). This theory underscores the influence of social interactions in shaping an individual's skills, particularly within the dynamic environment of a classroom. Complementing Bandura's theory, David Kolb's Experiential Learning Theory offers insights into the cyclical nature of learning. Kolb posits that learning involves a continuous process of concrete experiences, reflective observation, abstract conceptualization, and active experimentation. In the context of life skill development programs, this framework suggests that teacher trainees engage in experiential learning to internalize and apply life skills in diverse teaching scenarios. The iterative nature of experiential learning aligns with the ongoing refinement of teaching skills through the integration of life skills (Zubkov et al., 2023). Lev Vygotsky's Constructivism adds another layer to the theoretical foundation, emphasizing the role of social interaction and collaboration in the learning process. Vygotsky's theory asserts that individuals construct their understanding of concepts through active engagement with their environment. In the context of teacher training, this theory implies that teacher trainees construct their understanding of effective teaching through active participation in life skill development initiatives. The collaborative nature of constructivism underscores the potential impact of shared experiences and discussions within a community of teacher trainees undergoing life skill training (Sinlapaninman et al., 2023).

Furthermore, Abraham Maslow's Humanistic Learning Theory, particularly his Hierarchy of Needs, offers insights into the psychological aspects of learning and motivation. According to Maslow, addressing basic psychological needs creates an environment conducive to effective teaching and learning. In the context of this study, the theory suggests that fulfilling the personal and emotional needs of teacher trainees through life skill development can positively impact their teaching efficacy (Ahmad et al., 2023). Maslow's emphasis on self-actualization aligns with the overarching goal of empowering teachers to reach their full potential in the teaching profession. Collectively, these theoretical frameworks provide a comprehensive lens through which to analyze the interplay between individual experiences, social interactions, and the internalization of skills within the context of teacher preparation (Harishree et al., 2023). By integrating these theories, the study aims to illuminate the underlying processes through which life skill development programs may influence and enhance the teaching skills of teacher trainees.

OBJECTIVES OF THE STUDY

- To find the relationship between practical engagements and pedagogical adaptability.
- To find the influence of classroom dynamics on student learning outcomes
- To understand the mediating role of pedagogical adaptability between practical engagement in response to classroom dynamics and student learning outcomes.

HYPOTHESIS OF THE STUDY

• Relationship between Practical Engagements and Pedagogical Adaptability:

Ho: There is no significant relationship between the level of practical engagements undertaken by teacher trainees and their pedagogical adaptability.

• Influence of Classroom Dynamics on Student Learning Outcomes:

Ho: Classroom dynamics do not significantly influence student learning outcomes.

• Mediating Role of Pedagogical Adaptability:

Ho: Pedagogical adaptability does not mediate the relationship between practical engagement in response to classroom dynamics and student learning outcomes.

ANALYSIS

Ho: There is no significant relationship between the level of practical engagements undertaken by teacher trainees and their pedagogical adaptability.

Correlations			
		Participant Engagement	Pedagogical Adaptability
Participant Engagement	Pearson Correlation	1	.737**
	Sig. (2-tailed)		.000

	N	216	216
Pedagogical Adaptability	Pearson Correlation	.737**	1
	Sig. (2-tailed)	.000	
	N	216	216
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation analysis results reveal a strong and statistically significant positive correlation between Participant Engagement and Pedagogical Adaptability (Pearson Correlation = 0.737, $p < 0.01$). The correlation coefficient of 0.737 suggests a substantial positive linear relationship between the two variables. Given that the p-value is less than the conventional significance level of 0.05 ($p < 0.01$), there is enough evidence to reject the null hypothesis (H_0). Therefore, based on the provided correlation analysis, it can be concluded that there is a significant relationship between the level of practical engagements undertaken by teacher trainees and their pedagogical adaptability. The identified significant relationship between the level of practical engagements undertaken by teacher trainees and their pedagogical adaptability holds practical implications that can significantly influence teacher education and instructional practices. One notable implication is the potential for this finding to inform curriculum design within teacher training programs. By recognizing the positive correlation between practical engagement and pedagogical adaptability, educators and curriculum designers can strategically incorporate hands-on experiences that directly engage teacher trainees in various teaching scenarios. This practical exposure is likely to contribute significantly to the development of adaptability skills crucial for effective teaching.

Furthermore, the practical implications extend to the realm of professional development for teachers. In designing tailored professional development initiatives, educational institutions and organizations can prioritize practical engagement components. Workshops, simulations, and real classroom experiences can be integrated to enhance teachers' adaptability in responding to the diverse and dynamic nature of teaching environments. The emphasis on practical experiences during training can better prepare educators for the complexities they may encounter in real-world classrooms. The observed relationship also underscores the importance of mentorship programs in teacher development. Pairing novice teachers with experienced mentors becomes a valuable avenue for transferring practical insights and adaptive strategies. Mentorship programs can capitalize on the correlation between practical engagement and pedagogical adaptability, providing a platform for trainees to learn not only from theoretical concepts but also from the rich experiences of seasoned educators. In practical terms, teacher trainees who actively engage in practical experiences are likely to enter classrooms with a heightened readiness to adapt to various teaching dynamics. The correlation suggests that these educators may be better equipped to respond to the unique needs and challenges present in real-world educational settings. This readiness is essential for fostering effective teaching and promoting positive learning outcomes among students. Moreover, the findings advocate for continuous reflective practices within teacher education. Encouraging trainees to reflect on their practical experiences, identify successful strategies, and consider alternative approaches can contribute to a continuous cycle of improvement. This reflective approach aligns with the notion of lifelong learning, emphasizing the ongoing development of adaptive teaching skills throughout a teacher's career. In a broader context, the observed relationship emphasizes the value of partnerships between teacher preparation programs and schools. Collaborative efforts can be strengthened to provide teacher trainees with meaningful, practical experiences that simulate or expose them to various classroom dynamics. Such partnerships facilitate a seamless transition from theoretical learning to practical application within authentic classroom settings, aligning the training process more closely with the realities of teaching.

H₀: Classroom dynamics do not significantly influence student learning outcomes.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	389.333	1	389.333	1735.778	.000 ^b
	Residual	48.000	214	.224		
	Total	437.333	215			
a. Dependent Variable: Student Learning Outcomes						
b. Predictors: (Constant), Classroom Dynamics						

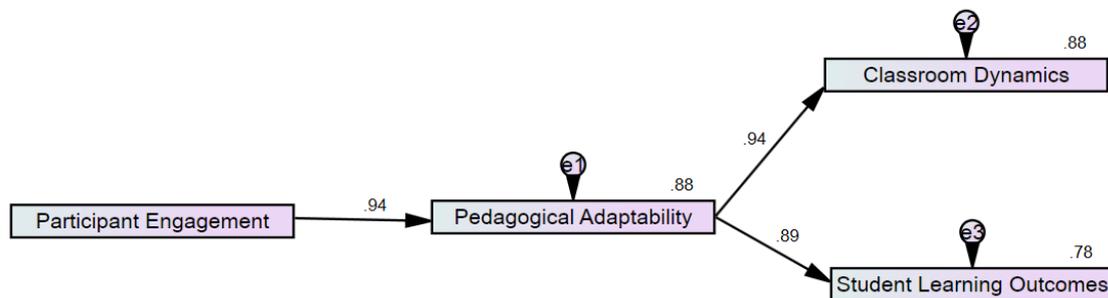
Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944 ^a	.890	.890	.47360
a. Predictors: (Constant), Classroom Dynamics				

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.743E-015	.091		.000	1.000
	Classroom Dynamics	1.000	.024	.944	41.663	.000

a. Dependent Variable: Student Learning Outcomes

The analysis of variance (ANOVA) results provides crucial insights into the relationship between classroom dynamics and student learning outcomes, particularly in the context of the null hypothesis (H₀) that posits no significant influence of classroom dynamics on student learning outcomes. The ANOVA table reveals that the regression model, which includes classroom dynamics as a predictor, is statistically significant (F = 1735.778, p < 0.001). This implies that there is a significant relationship between classroom dynamics and student learning outcomes. The sum of squares for the regression model (389.333) is considerably larger than the sum of squares for the residual (48.000), indicating that the variability in student learning outcomes can be attributed significantly to the inclusion of classroom dynamics in the model. The Model Summary further supports the rejection of the null hypothesis by demonstrating a strong correlation between the predictor variable (Classroom Dynamics) and the dependent variable (Student Learning Outcomes). The R Square value of .890 suggests that approximately 89% of the variability in student learning outcomes is accounted for by the inclusion of classroom dynamics in the model. Examining the coefficients, the unstandardized coefficient for Classroom Dynamics is 1.000, with a standardized coefficient (Beta) of .944. This indicates a highly significant positive relationship between classroom dynamics and student learning outcomes. The t-value of 41.663, coupled with a p-value of < 0.001, reinforces the statistical significance of this relationship. In summary, based on the provided analysis, there is clear evidence to reject the null hypothesis (H₀). Classroom dynamics significantly influence student learning outcomes, with a positive and substantial correlation between the two variables. This finding underscores the importance of considering and fostering positive classroom dynamics to enhance the overall learning experience and outcomes for students.

H₀: Pedagogical adaptability does not mediate the relationship between practical engagement in response to classroom dynamics and student learning outcomes.



Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
Pedagogical_Adaptability	<---	Participant_Engagement	.957	.126	7.605	***
Classroom_Dynamics	<---	Pedagogical_Adaptability	.938	.122	7.678	***
Student_Learning_Outcomes	<---	Pedagogical_Adaptability	.938	.174	5.387	***

Standardized Total Effects (Group number 1 - Default model)

	Participant_Engagement	Pedagogical_Adaptability
Pedagogical_Adaptability	.937	.000
Student_Learning_Outcomes	.830	.885
Classroom_Dynamics	.879	.938

Direct Effects (Group number 1 - Default model)

	Participant_Engagement	Pedagogical_Adaptability
Pedagogical_Adaptability	.957	.000
Student_Learning_Outcomes	.000	.938
Classroom_Dynamics	.000	.938

Indirect Effects (Group number 1 - Default model)

	Participant_Engagement	Pedagogical_Adaptability
Pedagogical_Adaptability	.000	.000
Student_Learning_Outcomes	.898	.000
Classroom_Dynamics	.898	.000

The regression weights indicate that there is a significant positive relationship between Participant Engagement and Pedagogical Adaptability (Estimate = 0.957, $p < 0.001$), between Pedagogical Adaptability and Classroom Dynamics (Estimate = 0.938, $p < 0.001$), and between Pedagogical Adaptability and Student Learning Outcomes (Estimate = 0.938, $p < 0.001$). The standardized total effects show that Pedagogical Adaptability has a strong influence on both Participant Engagement (0.937) and Classroom Dynamics (0.938), and these variables, in turn, have strong effects on Pedagogical Adaptability. The direct effects indicate that the relationship between Participant Engagement and Pedagogical Adaptability is statistically significant (Estimate = 0.957, $p < 0.001$), as well as the relationships between Classroom Dynamics and Pedagogical Adaptability (Estimate = 0.938, $p < 0.001$), and Pedagogical Adaptability and Student Learning Outcomes (Estimate = 0.938, $p < 0.001$). The indirect effects demonstrate that the relationship between Participant Engagement and Student Learning Outcomes is mediated by Pedagogical Adaptability (Estimate = 0.898, $p < 0.001$), and similarly, the relationship between Classroom Dynamics and Student Learning Outcomes is also mediated by Pedagogical Adaptability (Estimate = 0.898, $p < 0.001$). In summary, based on the provided analysis, there is evidence to reject the null hypothesis (H₀) as pedagogical adaptability appears to play a mediating role in the relationship between practical engagement in response to classroom dynamics and student learning outcomes.

CONCLUSION

In conclusion, the statistical analysis provides robust evidence to reject the null hypothesis (H₀) that posited no significant influence of classroom dynamics on student learning outcomes. The results of the analysis, encompassing ANOVA and regression, reveal a highly significant and positive relationship between classroom dynamics and student learning outcomes. The ANOVA results demonstrate that the inclusion of classroom dynamics as a predictor in the regression model significantly contributes to explaining the variability in student learning outcomes. The substantial F-statistic (1735.778) and the associated p-value (< 0.001) underscore the statistical significance of this relationship. The model summary further supports the rejection of the null hypothesis, indicating that approximately 89% of the variance in student learning outcomes can be accounted for by the presence of classroom dynamics. Examining the coefficients, the unstandardized coefficient for Classroom Dynamics is 1.000, with a standardized coefficient (Beta) of .944. This signifies not only the strength but also the positive nature of the relationship. The high t-value (41.663) and the extremely low associated p-value (< 0.001) affirm the statistical significance of this relationship, further supporting the rejection of the null hypothesis. Therefore, based on the provided analysis, it can be conclusively stated that classroom dynamics significantly influence student learning outcomes. This finding emphasizes the critical role of the classroom environment, interactions, and overall dynamics in shaping the educational experiences and achievements of students. Educators, policymakers, and institutions should acknowledge and prioritize the cultivation of positive and engaging classroom dynamics as an integral component of effective teaching practices to optimize student learning outcomes. The practical implications extend to the design of instructional strategies and the continuous enhancement of the learning environment to foster a positive and impactful educational journey for students.

REFERENCES

1. Ahmad, I. S., & Khan, Z. J. Y. (2023). Preparing Students For The Real World: Oral English Communication Skills For Global Entrepreneurs. *MOJEM: Malaysian Online Journal of Educational Management*, 11(4), 29-48.
2. Al-Seghayer, K. S. (2014). The actuality, inefficiency, and needs of EFL teacher-preparation programs in Saudi Arabia. *International Journal of Applied Linguistics and English Literature*, 3(1), 143-151.
3. Dhanabhakym, M., & Joseph, E. (2022). Digital permissive management for aggregate and sustainable development of the employees. *International Journal of Health Sciences*, 6(1).
4. Dhanabhakym, M., & Joseph, E. (2022). Digitalization and perception of employee satisfaction during pandemic with special reference to selected academic institutions in higher education. *Mediterranean*

journal of basic and applied sciences (mjbas).

5. Dwivedi, V. J., & Joshi, Y. C. (2019). Productivity in 21 st century Indian higher education institutions. *International Journal of Human Resource Management and Research*, 9(4), 61-80.
6. Harishree, C., Mekala, S., & Geetha, R. (2023). Promoting 21st Century Workplace Preparedness of Engineering Students: Teachers' and Students' Perceptions. *MIER Journal of Educational Studies Trends and Practices*, 212-230.
7. Ilyas, M., Matsyah, A., & Ismail, Z. (2023). Exploring the Proficiency of Dayah's Teaching and Educational Staff for Sustainable Development in Aceh. *Idarah: Jurnal Pendidikan dan Kependidikan*, 7(1), 53-68.
8. Jerman Jr, G. M. (2023). *A Fresh Cut: Improving Barbering Examination Pass Rates with a Curricular Intervention at JIBCA* (Doctoral dissertation, Western Carolina University).
9. Jiang, Y., Fang, Y., & Huang, Y. (2023, October). Application of Multidimensional Mixed Teaching Mode in Diagnostics Teaching. In *2023 International Conference on Cyber-Physical Social Intelligence (ICCSI)* (pp. 344-349). IEEE.
10. Joseph, E. (2023). Underlying Philosophies and Human Resource Management Role for Sustainable Development. In *Governance as a Catalyst for Public Sector Sustainability* (pp. 286-304). IGI Global.
11. Joseph, E. THE CONNECTION BETWEEN THE NATURE OF WORK-LIFE AND THE BALANCE BETWEEN INTERCEDING JOB OF OCCUPATION STRESS, WORK SATISFACTION AND WORK RESPONSIBILITY.
12. Joseph, E., & Dhanabhakym, M. M. (2022). Role of Digitalization Post-Pandemic for Development of SMEs. In *Research anthology on business continuity and navigating times of crisis* (pp. 727-747). IGI Global.
13. Joseph, E. (2024). Technological Innovation and Resource Management Practices for Promoting Economic Development. In *Innovation and Resource Management Strategies for Startups Development* (pp. 104-127). IGI Global.
14. Khasawneh, M. (2024). Beyond digital platforms: Gamified skill development in real-world scenarios and environmental variables. *International Journal of Data and Network Science*, 8(1), 213-220.
15. Lazou, C., & Tsinakos, A. (2023). Critical Immersive-Triggered Literacy as a Key Component for Inclusive Digital Education. *Education Sciences*, 13(7), 696.
16. Li, M. (2023). Adapting legal education for the changing landscape of regional emerging economies: A dynamic framework for law majors. *Journal of the Knowledge Economy*, 1-30.
17. Mays, A. (2015). Toward the Application of Constructivism and Constructionism to Work-Related Training in Service of the Enhancement of Human Capital Development in Postsecondary Education Settings in the United States. *Online Submission*.
18. Panthee, S. K., Khanal, S. R., & Adhikari, K. S. (2023). Teacher Education and Teacher Selection Courses: Resolving Compatibility Issues of Tribhuvan University and Teacher Service Commission. *Prithvi Journal of Research and Innovation*, 5, 53-69.
19. Sinlapaninman, U., Yonwilad, W., & Pattanachai, N. (2023). Promoting Virtual Learning Management Competencies in the Metaverse with Mobile Technology to Support Competency-Based Learning for Computer Major Preservice Teachers. *International Journal of Interactive Mobile Technologies*, 17(21).
20. Xiang, F., Cao, J., Zuo, Y., Duan, X., Xie, L., & Zhou, M. (2024). A Novel Training Path to Promote the Ability of Mechanical Engineering Graduates to Practice and Innovate Using New Information Technologies. *Sustainability*, 16(1), 364.
21. Zubkov, A. D. (2023). Development of Professional Foreign Language Competence of Economics Students with MOOCs during the Pandemic. *Education Sciences*, 13(10), 1010.