

EVALUATING THE IMPACT OF PROFESSIONAL DEVELOPMENT ON TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) TEACHERS: A FOCUS ON ACTIVE LEARNING STRATEGIES

ENKHJARGAL BAYARSAIKHAN

MONGOLIAN NATIONAL UNIVERSITY, DEPARTMENT OF EDUCATION,
EMAIL: 23D1NUM0036@stud.num.edu.mn

LKHAGVASUREN URGAMAL, PHD

MONGOLIAN NATIONAL UNIVERSITY, DEPARTMENT OF EDUCATION, EMAIL: lkhagvasuren.u@num.edu.mn

SOYOLJIN SUKHBAATAR, PHD

MONGOLIAN NATIONAL UNIVERSITY, DEPARTMENT OF EDUCATION, EMAIL: soyoljin@num.edu.mn

Abstract: This study explores the impact of professional development training on Technical and Vocational Education and Training (TVET) teachers, with a particular emphasis on the implementation of active learning strategies in Mongolia. Over the past two to three years, we have facilitated practical training sessions for over a thousand teachers across various educational institutions, aimed at enhancing their pedagogical skills and teaching effectiveness. Among these participants, 641 were TVET educators. To assess the overall satisfaction and effectiveness of this training, a comprehensive survey comprising 23 items was administered to participants. Preliminary data collection yielded responses from 78 teachers, representing 12 percent of the total educators who participated in this training. The participants ranged in age from 23 to 57 years, with a minimum teaching experience of 1 year and a maximum of 37 years. The findings indicated that 87.18% of the participants expressed satisfaction with the training and provided positive feedback regarding its impact on their teaching practices. The statistical reliability of the survey was measured at 0.965, indicating a high level of reliability for assessing the intended construct. However, a correlation coefficient of $r = 0.524$ suggests a moderate positive relationship, indicating that while the training has a noticeable impact on teachers' satisfaction and their use of active learning strategies, it may not be overwhelmingly significant. This suggests the potential need for additional survey items to further examine the factors influencing the use of active learning strategies.

Key words: teachers' professional development; active learning strategies; pedagogical skills; teaching effectiveness; teaching practice

1. INTRODUCTION

Definition and Importance of TVET

Technical and Vocational Education and Training (TVET) is a critical component of the educational landscape, designed to equip learners with the skills and knowledge necessary for employment in various sectors. According to UNESCO-UNEVOC, TVET encompasses education, training, and skills development across a wide range of occupational fields, including production, services, and livelihoods. It is integral to lifelong learning and can occur at secondary, post-secondary, and tertiary levels, often involving work-based learning and continuing professional development. TVET plays a pivotal role in achieving social equity, inclusion, and sustainable development, as it prepares individuals to meet the demands of a rapidly changing labor market (UNESCO, 2015).

Overview of TVET in Mongolia and Professional Development

In Mongolia, the TVET system is a crucial component of our national education system. It includes formal and non-formal training institutions, offering a range of programs from vocational education to higher vocational education. There are 69 technical and vocational education institutions in Mongolia with a total of 2,351 teachers, wherein 1,576 are vocational teachers (Ministry of Education and Science, 2024). 21 percent of students in all levels of educational institutions are students of vocational education schools. This shows a significant number of students benefiting from TVET programs across the country.

At TVET in Mongolia, general education teachers are mainly graduates of the Educational University of Mongolia, having been formally trained as educators. In contrast, professional and vocational teachers often come from technical or professional backgrounds without formal teacher training. This highlights a need to enhance the quality of TVET teacher education through various programs and initiatives aimed at improving their skills and competencies.

Therefore professional development for TVET teachers is essential to ensure that they remain effective in delivering quality education. As the educational and industrial landscapes evolve, TVET teachers must continuously update their professional knowledge, teaching competencies, and innovative teaching strategies. This ongoing development is crucial for equipping future workforces with the necessary skills and dispositions to thrive in dynamic environments. Professional development activities for TVET teachers often focus on enhancing digital and pedagogical skills, aligning with daily teaching practices, and integrating active learning strategies to foster student engagement and learning outcomes (Freeman et al., 2014; Prince, 2004).

Purpose and Scope of the Paper

This paper aims to evaluate the impact of professional development on TVET teachers, with a particular focus on active learning strategies. By examining the theories and frameworks underpinning teacher professional development, as well as the role of active learning in TVET, this study seeks to provide insights into the effectiveness of professional development initiatives. Ultimately, the goal is to inform policy and practice, offering recommendations for future research and development in the field of TVET.

Within the scope of this research, the researcher proposed the following hypotheses:

1. TVET teachers are satisfied with and benefited from the teacher development training focusing on Active learning strategies.
2. Teachers are effectively integrating active learning strategies in their teaching practices.

2. LITERATURE REVIEW

Theories and Frameworks in Teacher Professional Development

The professional development of TVET teachers is informed by various theories and frameworks, including adult learning (Malcolm Knowles), cognitive apprenticeship (Allan Collins, John Seely Brown, and Ann Holum), situated learning (Jean Lave and Etienne Wenger), and lifelong learning. These theories emphasize the importance of both individual efforts and institutional support in fostering teacher competencies.

UNESCO's strategic plan for teacher development emphasizes the crucial role of well-qualified, trained, and motivated teachers in delivering quality education (UNESCO, 2015). Reflecting this vision, Mongolia is implementing several initiatives to enhance educational quality. For instance, Article 27, Section 27.1.2 of the General Law on Education mandates the organization of training programs to qualify teachers and support their continuous professional development. In response, the General Agency for Education is conducting specialized training for teachers at vocational education schools and polytechnic colleges. This training integrates the content and assessment standards of the WorldSkills Competition into vocational and technical education curricula, ensuring that educators are equipped with the latest skills and methodologies. (Source: <https://edu.gov.mn/public/article/2664>).

Active Learning Strategies in TVET

The 21st century is an era of rapid technological advancement, industrial revolution, digitalization, and globalization. However, alongside these developments, the world faces significant global challenges and issues. The Organisation for Economic Co-operation and Development (OECD) describes today's society as VUCA—volatile, uncertain, complex, and ambiguous—highlighting the instability and multifaceted nature of current global dynamics (cited from Itgel et al., OECD, 2021). UNESCO's "Education 2030" Framework for Action emphasizes the importance of ensuring opportunities for active, lifelong learning for everyone, highlighting the transformative power of active learning to achieve this goal. (UNESCO, 2015).

Viewing education as a key tool for promoting sustainable development, the goal of education for sustainable development is to equip everyone with the knowledge, skills, values, and attitudes necessary to support sustainable development. In this context, it is defined as essential to develop learners' critical thinking, collaboration, problem-solving skills, the ability to overcome complexity and risk, resilience, and the capacity to think creatively from multiple perspectives. (Oyun-Chimeg. E., Narantuya. Sh, 2022). The most important aspect of pedagogy is for teachers to adapt their teaching methods to align with learner-centered learning and constructivist approaches. This involves focusing on equipping students with a variety of strategies for independent learning and creative problem-solving. (Ichinkhorloo. Sh, 2019).

Active learning strategies are pedagogical approaches that engage students in the learning process, encouraging them to participate actively rather than passively receiving information. In the context of TVET, active learning can involve hands-on activities, collaborative projects, problem-based learning, and the use of technology to simulate real-world scenarios. These strategies are particularly effective in vocational education, where practical skills and experiential learning are paramount. By incorporating active learning into their teaching practices, TVET teachers can enhance student motivation, critical thinking, and problem-solving abilities (Bonwell & Eison, 1991; Freeman et al., 2014).

Previous Studies on Professional Development Impact

Research has shown that professional development can have a significant impact on TVET teachers' competencies and teaching effectiveness. Studies have highlighted the positive effects of professional development activities on teachers' proficiency in teaching techniques, curriculum design, and evaluation strategies. Moreover, the integration of active learning strategies has been associated with improved student engagement and learning outcomes (Freeman et al., 2014). However, the success of professional development initiatives often depends on

the alignment of these activities with teachers' needs and the support provided by educational institutions and policymakers.

3. METHODOLOGY

Research Design and Approach

This study employs a mixed-methods research design, combining quantitative and qualitative approaches to evaluate the impact of professional development on TVET teachers. The research aims to gather comprehensive data on the effectiveness of professional development initiatives and the role of active learning strategies in enhancing teaching practices.

Sampling

We have facilitated practical training sessions for over a 1000 teachers across various educational institutions, aimed at enhancing their pedagogical skills and teaching effectiveness. Among these participants, 641 were TVET educators. Preliminary data collection yielded responses from 78 teachers, representing 12 percent of the total educators who participated in this training. The participants ranged in age from 23 to 57 years with a minimum teaching experience of 1 year and a maximum of 37 years. 61.54% teachers were general education teachers at TVET. 38.46% were vocational and technical discipline teachers.

Data Collection Methods

Data collection involves surveys, interviews, and classroom observations. Surveys are distributed to TVET teachers who participated in the professional development training that we initiated to assess teacher's satisfaction with the training and the integration of active learning strategies. Interviews with teachers and administrators provide qualitative insights into the challenges and successes of professional development programs. Classroom observations are conducted to evaluate the practical application of active learning strategies in TVET settings.

A 23-item structured questionnaire was developed collaboratively with educational specialists, incorporating both quantitative Likert scale items and qualitative open-ended questions to capture a holistic view of participant satisfaction and training effectiveness.

Scale description: 5- strongly agree, 4- agree, 3- neutral, 2- disagree, 1- strongly disagree

The collected data were statistically analyzed to measure the effectiveness and impact of the training and teacher satisfaction.

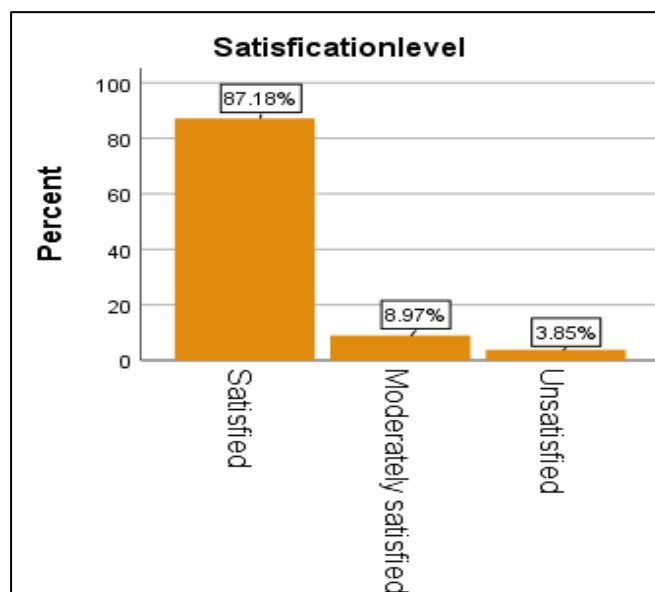
Analysis Techniques

Quantitative data from surveys are analyzed using statistical methods to identify trends and correlations between professional development training and teaching outcomes. Qualitative data from interviews and observations are analyzed thematically to explore the experiences and perceptions of participants. This mixed-methods approach allows for a comprehensive evaluation of the impact of professional development on TVET teachers.

4. FINDINGS

High satisfaction level

The findings indicated that 87.18% of the participants expressed satisfaction with the professional development training and provided positive feedback regarding its impact on their teaching practices.



Positive teaching impact

The use of Cronbach's alpha coefficient, yielding a score of 0.965, confirms the high internal consistency of the survey instrument, indicating that the items effectively measure the constructs of satisfaction and effectiveness in professional development training for TVET educators.

Statistics		
Satisfactionlevel		
N	Valid	78
	Missing	0

Reliability Statistics	
Cronbach's	
Alpha	N of Items
.965	23

Moderate correlation identified

The survey revealed a correlation coefficient of 0.524, indicating a moderate positive relationship between the training received and the increased use of active learning strategies, emphasizing the importance of ongoing professional development in fostering innovative teaching methods.

Correlations		
Satisfaction		
Factor		
	.524	1
	.000	
	77	77

5. CONCLUSION

Impact of Training Programs

The professional development training for TVET educators significantly enhances teaching effectiveness, as evidenced by high satisfaction rates and improved implementation of active learning strategies in classrooms. The integration of active learning strategies is also supported by literature, which emphasizes the benefits of student-centered approaches in vocational education (Prince, 2004).

Need for continues improvement

Ongoing evaluation and adaptation of training programs are essential to meet the evolving needs of educators and ensure alignment with industry standards and educational best practices. By fostering a culture of continuous learning and innovation, professional development initiatives can empower TVET teachers to meet the evolving demands of the labor market (Freeman et al., 2014).

Implications for Policy and Practice

It is expected that the findings of this research will significantly contribute to the discourse on teacher training and professional development, offering valuable implications for the educational practices within the TVET sector for the future. Educational institutions should provide ongoing support and resources to facilitate teachers' professional growth. By fostering a collaborative and supportive environment, stakeholders can enhance the quality and effectiveness of TVET education (OECD, 2021).

6. SUMMARY OF KEY FINDINGS

This study highlights the positive impact of professional development training focusing of active learning strategies for TVET teachers. Professional development is essential for the continuous improvement of TVET education. Its' initiatives enhance teachers' competencies, enabling them to deliver effective and engaging instruction. Active learning strategies play a crucial role in fostering student engagement and improving learning outcomes (Freeman et al., 2014). By equipping teachers with the skills and knowledge necessary to implement active learning strategies, professional development initiatives can enhance the quality and effectiveness of vocational education. As the demands of the labor market continue to evolve, ongoing investment in teacher development will be crucial for preparing future workforces and achieving sustainable development goals (UNESCO, 2015).

7. RECOMMENDATIONS FOR FUTURE RESEARCH

Future research should prioritize longitudinal studies that assess the long-term effects of professional development on educators' teaching practices and student learning outcomes. This approach will provide insights into the sustainability of training benefits and inform the design of more effective educational interventions in TVET settings.

REFERENCES

1. Bonwell, C. C., & Eison, J. A. (1991). Active Learning: Creating Excitement in the Classroom. ASHE-ERIC Higher Education Report, Washington DC: School of Education and Human Development, George Washington University.
2. Боловсролын шинжлэх ухааны салбарын статистикийн эмхэтгэл. (2024). Боловсрол шинжлэх ухааны яам, Улаанбаатар.
3. Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111 (23), 8410-8415.
4. Ичинхорлоо, Ш. (2019). Сурахуй хийгээд сурах арга. УБ: Алмаз пресс.
5. Итгэл, М., Отгонбаатар, Х., Туяа, У., Эрдэнэ, Л., & Пунцагсүрэн, Д. (2023). Боловсролыг системийн үзлээр хөгжүүлэх шийдлүүд. Боловсролын судалгааны монголын сэтгүүл, 28, 25-37.
6. OECD. (2021). Building the future of education. <http://www.oecd.org/education/future-of-education-brochure.pdf>
7. Оюунчимэг, Э., & Нарантуяа, Ш. (2022). Тогтвортой хөгжлийн боловсролын олон улсын туршлагын эмхэтгэл. УБ: Соёмбо Принтинг.
8. Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93 (3), 223-231.
9. Retrieved from: <https://edu.gov.mn/public/article/2664>