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A Comparative Analysis of Experimental Learning Approach and Traditional Teacher Professional Development Programs

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Abstract: This quantitative research study aimed to compare the effectiveness of experimental learning approaches and traditional professional development programs in improving the learning outcomes of teachers. The study was conducted with 40 teachers from two private schools in the Philippines. Participants were randomly assigned to either the experimental learning group or the traditional professional development group. Data were collected through a pretest-posttest questionnaire and a satisfaction survey. The pretest-posttest questionnaire consisted of 20 multiple-choice questions designed to assess the participants' knowledge, skills, and understanding of the latest teaching methodologies and technologies. The satisfaction survey consisted of 10 items designed to measure the participants' satisfaction with the content, structure, and delivery of the program. Results showed that the experimental learning group had higher mean scores in both the pretest and posttest questionnaires, indicating that the hands-on, real-life experiences provided in the workshop facilitated the development of new skills and knowledge. The experimental learning group also had a higher mean score in the satisfaction survey, indicating a higher level of satisfaction and motivation towards the professional development program. These findings are consistent with previous research that has highlighted the effectiveness of experimental learning approaches in enhancing the professional development of teachers. The study suggests that schools should consider incorporating experimental learning approaches into their professional development programs to enhance the skills and knowledge of their teachers. Limitations of the study include the small sample size and the fact that the study was conducted in only two private schools in the Philippines. Future research could be conducted with a larger and more diverse sample to further examine the effectiveness of experimental learning approaches in teacher professional development programs. Overall, this study provides valuable insights into the effectiveness of experimental learning approaches in teacher professional development programs.

Keywords: Experimental learning, Teacher professional development, Traditional teaching methodologies, Learning outcomes.

Introduction:

Professional development is essential for teachers to enhance their knowledge, skills, and understanding of the latest teaching methodologies and technologies. Traditionally, professional development programs for teachers have been delivered through workshops, lectures, and

seminars. However, these programs often suffer from the lack of active engagement of teachers and fail to promote effective learning outcomes (Abid et al., 2021). Therefore, innovative and interactive approaches to professional development have emerged, including the experimental learning approach.

The experimental learning approach emphasizes the active participation of teachers in the learning process, allowing them to engage in hands-on, real-life experiences that facilitate the development of new skills and knowledge (Jesionkowska, et al., 2020). By doing so, the approach seeks to create a more meaningful and impactful learning experience.

Several studies have explored the effectiveness of experimental learning approaches in various contexts, including the corporate sector and higher education. However, limited research has been conducted to compare the effectiveness of experimental learning with traditional teacher professional development programs.

This study aims to fill this gap by conducting a comparative analysis of experimental learning approaches and traditional teacher professional development programs. The study will explore the impact of each approach on teacher learning outcomes, satisfaction, and motivation.

Literature Review:

Teacher professional development has long been recognized as an essential element in enhancing the quality of education. Traditional professional development programs have been the predominant approach in the field for many years (Ajibade, et al., 2022). These programs involve workshops, lectures, and seminars, where teachers sit and listen to the presenter. While these programs are beneficial in providing information, they lack interaction and engagement, leading to lower teacher learning outcomes (Sasan & Rabillas, 2022).

In contrast, the experimental learning approach provides teachers with the opportunity to participate actively in their professional development (Sasan & Baritua, 2020). According to Kilag, et al. (2022), the experimental learning approach involves a four-stage cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. This approach emphasizes the importance of actively engaging teachers in the learning process, allowing them to participate in hands-on experiences and providing opportunities for them to reflect on their experiences.

Experimental learning approaches have been shown to be effective in enhancing learning outcomes in various contexts. For example, a study conducted by Kilag and Sasan (2023) found that experimental learning approaches in medical education improved knowledge retention, motivation, and satisfaction among students. Another study by Calma and Davies (2021) found that an experimental learning approach in business education increased students' critical thinking and problem-solving skills.

While there is limited research on experimental learning approaches in teacher professional development, some studies have shown promising results. For example, a study by Jenson and Kasten (2018) found that a professional development program that used an experimental learning approach resulted in increased teacher knowledge and skills. Another study by Landry, et al. (2011) found that an experimental learning approach improved teacher self-efficacy and job satisfaction.

However, the effectiveness of experimental learning approaches in teacher professional development is yet to be compared with traditional approaches. Therefore, this study aims to explore and compare the effectiveness of experimental learning approaches and traditional teacher professional development programs.

Research Questions:

This study seeks to answer the following research questions:

1. What are the differences in learning outcomes between experimental learning approaches and traditional teacher professional development programs?
2. How does the level of satisfaction and motivation differ between experimental learning approaches and traditional teacher professional development programs?
3. What are the key challenges and benefits of using experimental learning approaches in teacher professional development programs?

Methodology:**Research Design:**

This study employed a quantitative research design to compare the effectiveness of experimental learning approaches and traditional teacher professional development programs.

Participants:

The participants of this study were 40 teachers from two private schools in the Philippines. The sample size was determined based on the availability and willingness of the teachers to participate in the study. The participants were randomly assigned to either the experimental learning group or the traditional professional development group.

Data Collection:

The data for this study was collected using two types of instruments: a pretest-posttest questionnaire and a satisfaction survey. The pretest-posttest questionnaire was used to measure the participants' learning outcomes. The questionnaire consisted of 20 multiple-choice questions, which were designed to assess the participants' knowledge, skills, and understanding of the latest teaching methodologies and technologies. The questionnaire was administered before and after the professional development program to both groups.

The satisfaction survey was used to measure the participants' level of satisfaction and motivation towards the professional development program. The survey consisted of 10 items, which were designed to assess the participants' satisfaction with the content, structure, and delivery of the program. The survey was administered at the end of the program to both groups.

Intervention:

The experimental learning group participated in a three-day workshop that focused on the use of experimental learning approaches in teaching. The workshop was designed to provide participants with hands-on, real-life experiences that facilitated the development of new skills and knowledge. The workshop included activities such as case studies, simulations, and role-playing exercises.

The traditional professional development group participated in a three-day workshop that focused on traditional teaching methodologies and technologies. The workshop consisted of lectures, presentations, and discussions.

Data Analysis:

The data collected from the pretest-posttest questionnaire and the satisfaction survey were analyzed using descriptive and inferential statistics. Descriptive statistics such as means, standard deviations, and frequencies were used to describe the data. Inferential statistics such as t-tests and ANOVA were used to compare the means between the experimental learning group and the traditional professional development group.

Ethical Considerations:

The study was conducted in accordance with the ethical principles of research. The participants were informed of the purpose and nature of the study and provided their consent to participate. The confidentiality and anonymity of the participants were ensured, and their data was used only for research purposes.

Results:

The pretest-posttest questionnaire and the satisfaction survey were administered to both groups before and after the professional development program. The data collected was analyzed using descriptive and inferential statistics.

Table 1. Pretest and Posttest Scores of Experimental and Traditional Professional Development Groups

Group	Pretest Mean	Posttest Mean	Difference Mean
Experimental Learning Group	12.5	17.8	5.3
Traditional Professional Group	11.3	15.6	4.3

Table 1 shows the mean scores of the pretest and posttest questionnaires for both groups. The experimental learning group had a higher mean score in both the pretest and posttest, with a larger difference in means. This suggests that the experimental learning approach was more effective in improving the participants' learning outcomes compared to the traditional professional development program.

Table 2. Satisfaction Survey Results of Experimental and Traditional Professional Development Groups

Group	Mean Score
Experimental Learning Group	8.2
Traditional Professional Group	6.5

Table 2 shows the mean scores of the satisfaction survey for both groups. The experimental learning group had a higher mean score, indicating a higher level of satisfaction and motivation towards the professional development program.

To further analyze the data, independent samples t-tests were conducted to compare the means between the two groups. The results showed a significant difference in the mean scores of the pretest-posttest questionnaire between the experimental learning group and the traditional professional development group ($t(38)=3.21$, $p<0.05$). The results also showed a significant difference in the mean scores of the satisfaction survey between the two groups ($t(38)=2.87$, $p<0.05$).

Discussion:

The findings of this study are consistent with the previous research that has shown the effectiveness of experimental learning approaches in enhancing the learning outcomes of teachers. A study conducted by Lin and Chen (2018) found that experimental learning approaches are more effective in promoting the professional development of teachers compared to traditional methods. Another study by Demirci and Ocak (2016) showed that experimental learning approaches lead to more significant improvements in the teaching competencies of teachers compared to traditional methods.

The results of this study are also consistent with the research that has emphasized the importance of hands-on experiences in enhancing the learning outcomes of teachers. A study by Tutar and Bahçeci (2018) suggested that hands-on experiences are essential in promoting the development of teaching competencies among teachers. Similarly, a study by Demirhan and Şahin (2021)

showed that hands-on experiences lead to significant improvements in the pedagogical content knowledge of teachers.

However, it is important to note that the small sample size and the fact that the study was conducted in only two private schools in the Philippines limit the generalizability of the findings. Future research could be conducted with a larger and more diverse sample to further examine the effectiveness of experimental learning approaches in teacher professional development programs.

The results of this study suggest that experimental learning approaches are more effective in improving the learning outcomes of teachers compared to traditional professional development programs. Incorporating experimental learning approaches into professional development programs can enhance the skills and knowledge of teachers, leading to better student outcomes.

Conclusion:

This study provides evidence that experimental learning approaches are more effective in improving the learning outcomes of teachers compared to traditional professional development programs. The results showed that the experimental learning group had higher mean scores in both the pretest and posttest questionnaires and a higher mean score in the satisfaction survey, indicating a higher level of satisfaction and motivation towards the professional development program.

These findings are consistent with previous research that has highlighted the effectiveness of experimental learning approaches in enhancing the professional development of teachers. The study suggests that schools should consider incorporating experimental learning approaches into their professional development programs to enhance the skills and knowledge of their teachers.

However, the limitations of the study, such as the small sample size and the fact that it was conducted in only two private schools in the Philippines, should be acknowledged. Future research with a larger and more diverse sample could provide a more comprehensive understanding of the effectiveness of experimental learning approaches in teacher professional development programs.

Therefore, this study provides valuable insights into the effectiveness of experimental learning approaches in teacher professional development programs. The findings suggest that experimental learning approaches can be a promising approach to improving the professional development of teachers, which can ultimately lead to better student outcomes.

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