

**Influence of Pedagogical Approaches on Trainees' Acquisition of Practical Skills in TVET
Institutions in Meru County, Kenya**

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Abstract

TVET institutions play a crucial role in preparing individuals with the practical skills necessary for the workforce. In Kenya, the effectiveness of TVET education is influenced by various factors like class size, availability of training resources, and Trainers' workload and Pedagogical Approaches used in teaching and learning. The utilization of inappropriate training Pedagogy brings about Trainees who have inadequate hands-on skills, low creativity abilities, and minimal productivity in their jobs. The study sought to determine the Influence of Pedagogical Approaches on Trainees' Acquisition of Practical Skills in TVET Institutions in Meru County Kenya. The study employed a Descriptive Research Design and a sample of 357 respondents. The instruments for data collection were Questionnaires-for Trainees `and Trainers in TVETs. Interview Schedule was used on Industry Experts. The reliability of the instruments was approximated using Cronbach's Alpha coefficient at 0.854 for the Trainees' Questionnaire and 0.827 for the Trainers' Questionnaire. The data was analyzed using Descriptive Statistics with the aid of Statistical Package for Social Sciences (SPSS) version 26. It was established that the Pedagogical Approaches had a significant impact on Trainees' Acquisition of Practical skills. The findings also provide information to curriculum developers and policymakers in coming up with policies and strategies that would incorporate ideas of Dewey's philosophy on Trainees' acquisition of practical skills in technical institutions as well as provide the basis for further research.

Key Words: Pedagogy, Practical skills Acquisition, TVET, Industry

Introduction

Practical skill acquisition remains the major goal of TVET education and helps to satisfy the personal work needs of both the individual and society. In Kenya, Twalo (2010) emphasized that TVET programs are industrial-competencies oriented and require experts who have the right competencies and work environment. Rwamu (2019) adds the significance of TVET education in creating skilled personnel for the job market and coping with a high level of unemployment among graduates. TVET curriculum should include training pedagogies that impact high-order thinking skills such as problem-solving, experiential learning, and inquiry learning which fall under the umbrella of learning by doing. Problem-solving activities are tied to a learner's area of expertise and help them develop skills applicable to real-life challenges, as emphasized by pragmatist philosophers like John Dewey.

A research study by Audu (2019) revealed that the most effective and efficient teaching methods in a classroom include: demonstration, work-based learning (attachment), simulation, field trip, context-based learning, and discussion. He also posits that these methods provide hands-on experiences for real-world applications enhancing acquisition and mastery of practical skills needed in professional settings. A similar study by Biechler (2022) provides more emphasis on Problem-based learning is a key educational method that encourages learners to apply their knowledge to real-world problems, enhancing their understanding of the subject matter. This approach promotes critical thinking, collaboration, and the ability to connect theory with practice. Additionally, it fosters self-directed learning, as students take the initiative in exploring solutions. However, despite the prospected benefits and projections of pragmatists' tenets in skill acquisition graduates have a dismal display of competency in the area of training and this has prompted the need to carry out a study to determine the relationship between the Pedagogical Approaches and Practical Skill Acquisition among TVET Trainees in Meru County, Kenya.

Statement of the Problem

TVET education is designed to produce skilled persons who can perform basic functions both at home and work. Pedagogical approaches like problem based learning, scientific inuire, metacognitive approaches and Experimentalism, Trainees-should be engaged in hands-on activities, hence skill acquisition. It emphasizes Learner-Centered Approaches, which are associated with benefits, like innovativeness, creativity, and skill acquisition for self-reliance and the development

of employable skills. This study sought to determine the Influence of Pedagogical Approaches on Trainees' Acquisition of Practical Skills in TVET Institutions in Meru County, Kenya.

Objective of the study

The objective of the study was to find out the Influence of Pedagogical Approaches on Trainees' Acquisition of Practical Skills in TVET Institutions in Meru County, Kenya.

Hypothesis of the study

The hypothesis stated that:

There is no Statistically Significant Relationship between Trainers' Pedagogical Approaches Trainees' Acquisition of Practical Skills in TVET institutions in Meru County, Kenya.

Literature review

TVET is an education and training framework intricately aligned with industry needs and labor market demands. This approach ensures that its graduates possess the practical skills and competencies highly sought after by employers, making them valuable assets in the workforce. By bridging the gap between education and industry, TVET cultivates a skilled labor pool that responds adeptly to the evolving challenges of the job market. To enhance practical skill acquisition Different pedagogical methods varied impact on acquisition of practical skills among Trainees in Technical and Vocational Education and Training institutions

(Anane, 2013). To enhance the quality of TVET education the government geared towards emphasizing Competency Based Training (CBT). Competence-Based Training (CBT) has been defined as an approach to training that emphasizes what a person can do as a result of training. Adopting innovative pedagogies is essential for TVET programs worldwide to maintain relevance in the economy. Emphasizing outcome-based learning, serves as a significant driver, incentive, and motivator for Trainees, placing their needs and skills at the forefront. For instance, integrating project-based learning alongside traditional instruction fosters collaboration and critical thinking, equipping individuals with the competencies necessary for today's dynamic job market. Such approaches not only enhance student engagement but also prepare learners to meet the evolving demands of various industries. Audu (2019) revealed that other than CBT other pedagogies that effectively and effectively enhance practical skills acquisition include: demonstration, work-based

learning (attachment), simulation, field trip, context-based learning, and discussion. Audu placed more emphasis on Problem-based learning (project work) which is a key aspect of the hands-on learning theory approach. The method encourages learners to apply their knowledge to solve real-world problems, thus understanding the subject matter.

3.1 Methodology

The study utilized a Descriptive Survey Design. The choice of the design was informed by the fact that descriptive and inferential data analysis was required in the study. Mcburney and White (2020) indicate descriptive survey is used to describe the characteristics of a population or phenomenon being studied. Kerlinger (2023) observes that a Descriptive survey design is useful in securing evidence concerning an existing situation or current condition More so according to Mugenda and Mugenda (2003), a survey is an attempt to collect data from members of a population to determine the current status of the population concerning one or more variables. The design is used when the independent variables cannot be manipulated to make pre-post comparisons as in experimental designs

3.2 Data Collection

The researcher used the drop-and-pick method to administer questionnaires to the respondents. This was to ensure that most of the filled questionnaires were returned. Interviews were held with industrial experts in the organizations and work places whose institutions have a memorandum of understanding.

3.3 Data Analysis

The analysis was conducted using version 26 of the Statistical Package for Social Sciences (SPSS). According to Martin and Acuna (2020), SPSS is adept at managing large datasets, offering significant time efficiency and effectiveness. Frequency tables were employed to present the analysed quantitative data, while qualitative data was conveyed through descriptive narratives.

Results and Discussions

The objective sought to establish the influence of Pedagogical Approaches on Trainee Acquisition of Practical Skills in TVET institutions in Meru County, Kenya. Pedagogical Approaches are the methods and strategies used by educators to facilitate learning, tailored to student's needs and the

educational context. Items were included in the Trainees' Questionnaire to examine the influence of Pedagogical Approaches on Skill Acquisition. The findings are shown in Table 1.

Table 1:

Trainees' Feedback on the Impact of Pedagogical Approaches on Trainees' Skills Acquisition.

	Very Low		Low		High		Very High	
	F	%	F	%	F	%	F	%
Demonstration	9	2.7	16	4.8	83	25.2	222	67.3
Project work	11	3.3	30	9.1	165	50.0	124	37.6
Work-based method	9	2.7	28	8.5	162	49.1	131	39.7
Problem-solving approach	13	3.9	33	10.0	102	30.9	182	55.2
Lecture method	3	0.9	44	13.3	147	44.5	136	41.2
Inquiry approach	6	1.8	20	6.1	114	34.5	190	57.6
Field trips	33	10.0	40	12.1	101	30.6	156	47.3
Simulation	24	7.3	45	13.6	148	44.8	113	34.2
Experimental learning	12	3.6	23	7.0	129	39.1	166	50.3

Information in Table 1 indicates Pedagogical approaches like project work, work-based methods, problem-solving approaches, inquiry approaches, field trips, simulations, and experimental learning are highly rated among Trainees. This suggests that Trainees find hands-on learning and real-world applications beneficial for acquiring and mastering skills. Experiential learning methods such as field trips, simulations, and experimental learning were rated high. This suggests that providing opportunities for direct experience and application in real or simulated environments enhances skill acquisition significantly. The findings of the study are echoed by Ewing (2011) who argued that thoughtful reflection on previous and current educational experiences is especially important in

teacher preparation; teacher educators could then guide beginners to examine and test the usefulness of the beliefs formed from those experiences. Teacher educators, therefore, have a responsibility to arrange learning environments for beginning teachers to promote sequential experiences leading to an increased understanding of how children learn, and how the mind answers to the mind. These experiences can then help beginning teachers grow, not as classroom technicians, but as true teachers of teaching.

A high percentage of trainees (67.3%) expressed a very high agreement that demonstration is an effective method that enhances practical skill acquisition. A relatively high percentage of respondents (25.2%) expressed a high level of agreement that the use of the demonstration method promotes skill acquisition while a lesser percentage of trainees (4.8%) and (2.7 %) indicated low extent and very extent respectively that demonstration method when used in training enhances skill acquisition among the trainees in TVET institutions. The findings of the study are supported by Audu (2019) who revealed that the most effective and efficient teaching methods in a classroom include: demonstration, work-based learning (attachment), simulation, field trips, context-based learning, and discussion. A similar study by Biechler (2022) provides more emphasis on Problem-based learning. The method encourages learners to apply their knowledge to solve real-world problems, thus understanding the subject matter. The findings revealed that the pedagogical approaches promote the acquisition of practical skills among TVET Trainees in Meru County.

The elevated ratings indicate that field trips (43%), simulations (44%), and experiential learning (53%) are regarded as highly effective strategies for cultivating practical skills among trainees. These approaches offer immersive experiences and real-world applications, significantly enhancing the acquisition and mastery of essential skills required in professional environments. By engaging in workshop practices, and participating in field trips, simulations, and experiential learning activities, Trainees actively apply theoretical knowledge to practical scenarios. This active involvement not only deepens understanding but also fosters critical thinking, problem-solving abilities, and adaptability, thereby improving overall learning outcomes. The findings of this study agree with Biechler (2022) that workshop practice, field trips, simulation, and experiential learning highlight their effectiveness in promoting practical skill acquisition and preparing Trainees for successful careers. Emphasizing these methods in educational settings can lead to more engaged, competent, and well-prepared graduates who are equipped to meet the demands of their chosen fields.

The study sought to assess the impact of various Pedagogical methods employed by trainers on the acquisition of practical skills among trainees. Table 2 presents the distribution of responses regarding the effectiveness of different Pedagogical Approaches.

Table 2:

Trainers' Responses on the Impact of Pedagogical Approaches on Practical Skills Acquisition

	SD		D		UD		A		SA	
	F	%	F	%	F	%	F	%	F	%
Demonstration method	0	0.0	1	5.9	1	5.9	7	41.2	8	47.1
Work-based learning	1	5.9	2	11.8	2	11.8	7	41.2	5	29.4
Project work	1	5.9	0	0.0	2	11.8	7	41.2	7	41.2
Problem-solving	1	5.9	0	0.0	2	11.8	6	35.3	8	47.1
Lecture method	4	23.5	3	17.6	1	5.9	7	41.2	2	11.8
Field trips	1	5.9	0	0.0	2	11.8	8	47.1	6	35.3
Simulation	0	0.0	1	5.9	2	11.8	7	41.2	7	41.2
Experiential learning	0	0.0	1	5.9	4	23.5	7	41.2	5	29.4
Inquiry approach	0	0.0	1	5.9	2	11.8	6	35.3	8	47.1

The results presented in Table 2 show that the highest percentage (47.1%) of those who strongly agreed with the statements indicated that problem-solving approaches in training have a great influence on the Acquisition of practical skills by trainees in TVET institutions. This implies that the majority of respondents perceive problem-solving approaches as highly effective in enhancing practical skill acquisition. This suggests that such methods are considered crucial in bridging the gap between theoretical knowledge and practical application in the sampled institutions. Information on Table 2 also indicates that the highest percent of respondents who strongly disagreed lecture method enhances skill acquisition among trainees. This implies that the majority of the respondents did not believe lectures alone effectively enhance practical skill acquisition in

trainees. This further implies that there preference for methods that promote practical application and experiential learning over passive reception of information and the need for educators and trainers to be encouraged to explore and adopt teaching strategies that better align with contemporary educational theories emphasizing active learning, skill development, and application-oriented training.

The findings are in agreement with Sanders (2021) who postulated that by embracing active learning strategies, educators can potentially improve learning outcomes. Sanders adds that active learning methods, such as problem-solving tasks, group discussions, simulations, and hands-on activities, encourage deeper engagement and understanding among learners which leads to better retention of knowledge and skills. These study seemingly agree with Njuguna (2021) that by promoting deeper engagement and understanding, active learning methods enhance the effectiveness of education. John Dewey's writings on schooling are extensive and characteristically wide-ranging: teachers are expected to think deeply about knowledge construction, how we think and learn, the purpose of curriculum in the life of the child, and the role of school and societal reform. He worked throughout his life to develop and refine his philosophy of experience, describing all learning as defined by the quality of interactions between the learner and the social and physical environment. Teachers have a responsibility to structure educational environments in ways that promote educative learning experiences, those that change the learner in such a way as to promote continued learning and growth

To test the hypothesis the consistency was first examined in the variance of practical skill acquisition across different training approaches used by Trainers. Table 3 presents the results of the Test of Homogeneity of Variances, highlighting the relationship between trainers' pedagogical approaches and the acquisition of practical skills. The hypothesis stated that there was no statistically significant relationship between Trainers' Pedagogical Approaches and Trainees' acquisition of Practical Skills in TVET institutions in Meru County, Kenya.

Table 3:

Homogeneity of Variances: Training Approaches and Skill Acquisition

Levene Statistic	df1	df2	Sig.
1.543 ^a	2	13	.250

A significance level greater than 0.05 (in this case, .250) suggests that there is no statistically significant difference in the variances among the different training approaches. This implies that the variances are homogeneous, meaning the effectiveness of various training methods in skill acquisition is comparable in terms of variance. On running ANOVA to test hypothesis it was found that Pedagogical Approaches contribute significantly to practical skill Acquisition.

Table 4: ANOVA Trainers' Pedagogical Approaches and Acquisition of Practical Skills

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	289.577	2	144.788	9.185	.000
Within Groups	5154.487	327	15.763		
Total	5444.064	329			

The ANOVA results highlight a significant difference ($F = 9.185$, $p < 0.001$). This suggests a statistically significant impact of Trainers' Pedagogical Approaches on the Acquisition of Practical Skills. Conclusively the study revealed that Pedagogical Approaches influence Trainees' Acquisition of Practical at a 95% level of significance. The study revealed that many respondents support that pedagogical approaches influence skill acquisition. The null hypothesis there is no statistically significant relationship between Trainers' Pedagogical Approaches and Trainees' acquisition of Practical Skills in TVET institutions in Meru County, Kenya is not supported in the current study at 5% significance.

Conclusions

From the results of the study, the researcher concludes that integrating varied pedagogical approaches such as project work, experiential learning, and inquiry learning among others can enhance practical skill acquisition among Trainees in TVET Institutions.

Recommendations

The study recommends that Trainers should embrace Pedagogical Approaches that prioritize the active engagement of Trainees, thereby significantly enhancing the Acquisition of Practical Skills.

It is essential to raise awareness among Trainers, Trainees, and relevant Stakeholders regarding the profound impact of Pedagogical Approaches that emphasize the active involvement of Trainees in the learning process.

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