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Article

Effectiveness of Instructional Skills Training for TVET Instructors in Nepal: Evaluation through the Kirkpatrick Model

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Abstract

This study assesses the effectiveness of instructional skills training offered by the Training Institute for Technical Instruction (TITI), Nepal, using the Kirkpatrick Model. The four levels of evaluation of this model - reaction, learning, behavior, and results - were used to assess the effectiveness of the training conducted for the Technical and Vocational Education and Training (TVET) instructors. The quantitative method was applied for this study. Data were collected through a structured questionnaire and administered to 51 participants of instructional skills (IS) training. The findings showed that IS participants rated reaction at 4.00, learning at 2.76, performance at 4.3, and overall results at 4.00. The overall training effectiveness was 3.76. These scores were based on a five-point Likert scale, where 1 meant "strongly disagree" and 5 meant "strongly agree." In this regard, training reactions were positively impacted; the learning was moderately achieved; the trainers improved their performance; and the trained instructors' outcomes was enhanced in the instructions. Finally, the training impacted positively to improve quality of the instruction in the teaching learning process.

Keywords: training of trainers, evaluation, training effectiveness, Kirkpatrick model

Introduction

Training is associated with the enhancement of competence and confidence in human resources. It facilitates the development of trainees' performance leading to better organizational results. In the context of Nepal, the Training Institute for Technical Instruction (TITI), a constituted training center of the Council for Technical Education and Vocational Training (CTEVT), has been mandated to conduct capacity development training for TVET professionals. The institute conducts various training programs, especially in the areas of instruction, curriculum development, management, community development, and e-learning.

The transfer of training in the TVET school from trainers to the trainees is fundamental for the acquisition of new knowledge, skills and attitude. In the current world economy, the knowledge, skills and abilities necessary to maintain a competitive advantage are growing and changing (Arguinis & Kraiger, 2009). The training is the application,

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generalization and maintenance of newly learned knowledge and skills on the job over a long period of time through transfer of training (Baldwin et al., 2017). In this scenario, training of trainers helps in delivering training more effectively to secure the desired results in the organization. So, training is an important and reliable technique of human resource development so that organizational productivity would be enhanced. The technical and vocational training is a bridge for connecting training institute and labor market, whereas the trained instructors transfer the competency needed to participants as per industry needs. Ahmad and Essien (2021) state that the TVET instructors training is very important to develop competencies for transferring skills, and innovative and effective teaching learning strategies. In this regard, IS training plays a vital role in the development of human capital along with the competitiveness to transfer employment skills from trainers to trainees to fit in the current labor market.

The training and retraining of TVET teachers is essential to develop innovative and effective teachers (Mohamad et al., 2009). Only skilled trainees are easily absorbed by the industry. This situation can be addressed by the effective teaching-learning procedures. The competency of TVET graduates is ensured when the trained trainers transfer their competencies.

The effective transfer of training is reflected in the workplace (Broad & Newstrom, 1992). Similarly, the training transfer is higher immediately after training, but decreases later (Newstrom, 1986). According to Holton (1996), the outcomes of training are: individual learning, individual performance, and organizational results. In the learning and development on 70:20:10 framework, the challenging assignments and on-the-job experiences make up 70 percent of learning, while the relationships with other people, networks and feedback 20% of learning, and the formal training courses and workshops constitute 10% of learning (McCall et al. 1988). In this way, training plays an important role in performance of the human resources.

According to the National Planning Commission (2022), the TVET institutions are enrolling merely 70% students of their capacity. Their graduation rate is about 80% and the employment rate of the graduates is 60%. The same study suggests that an institute must have at least 20% of instructors with two or more years of industrial experience and 50% of its instructors with at least one instructional skill-related training from TITI or other nationally recognized institutions. TITI training is therefore recognized as the foundation for quality enhancement of TVET instructors in training delivery.

Training of trainers is very important for improvement of instructional quality and trainers' development. Training needs to be designed to enhance the performance, efficiency and effectiveness of TVET instructors. The transfer of training is the desired outcome of the instructors. TITI has been providing training for TVET instructors

to improve quality of session delivery, but the status of transfer of training needs to be identified for further planning. Hence, this study assesses to what extent the transfer of training has occurred and identifies the effectiveness of training through trained trainers.

Literature Review

According Broad and Newstrom (1992), the transfer of training is related to effective and continuous application of the competency gained in training back in the workplace. The transfer level may be higher immediately after training, and declines over time (Newstrom, 1986). In this regard, the level of transfer of training depends on the application time. If training does not transfer as per the goals, it is a waste of time and resources.

According to Holton (1996), there are three primary outcomes of training: individual learning, individual performance, and organizational results. These are affected by a joint effort of motivational, environmental, and enabling factors. The outcome of personal learning is affected by the trainee's reaction to the learning environment, and the trainee's experience and capability. The outcome of trainee's performance is affected by the trainee's motivation to transfer, the internal and external environment, and the design of the training program. Similarly, the organizational results or performance are determined by the application of such training or the return on investment of time and resources.

The transfer of training is the application, generalization and maintenance of newly learned knowledge and skills on the job over a long period of time (Baldwin et al., 2017). The objective of the training of trainers' program is the improved training delivery of the individual instructors and enhanced organizational performance.

According to Alsalamah and Callinan, (2021), the Kirkpatrick evaluation model was very effective in evaluating educational training for head teachers in Saudi Arabia. The research in Saudi Arabia includes instruments for each of the four levels in the model of evaluation: reaction, learning, behavior and results criteria. So, this model is effective for training evaluation.

Evaluation of Training

In the goal-free evaluation, the evaluation is conducted without having particular knowledge of pre-defined goals and objectives. Goals are "broad statements of a program's purposes or expected outcomes, usually not specific enough to be measured and often concerning long-term rather than short-term expectations" (Jacobs & Weiss, 1988). In this way, without pre-defined goals training effectiveness can not be evaluated.

In the ADDIE model, training evaluation is done to identify adequate on-the-job performance so that the learners can learn sufficiently to perform a certain job or task (Branson et al., 1975). This model includes: analysis, which involves identifying learning needs; design, which focuses on planning

content and structure; development, which entails creating training materials; implementation, which involves delivering training; and evaluation, which assesses outcomes and allows for refinement.

The training evaluation entails assessing the training program to ensure its effective implementation and to measure the returns on investment related to the resources allocated to the operation (Gebrehiwot & Elantheraiyan, 2023). The four levels of evaluation of transfer of training in Kirkpatrick's Model are reaction, learning, behavior, and results (Kirkpatrick, 1996). The training transfer is related to acquisition of competency (attitudes, skills and knowledge) through training and transfer it into the workplace or organization.

The training program, if evaluated at the reaction level, is related to the feelings of the training participants. The learning level measures the level of competency (knowledge, skills, and attitudes) acquired by the participants. The performance level is concerned with positive changes in behaviors of the participants in the real world of work. The results level examines the institutional outcomes or improved organizational results. This article has adopted the Kirkpatrick Model for assessing the effectiveness of training. I use Kirkpatrick's framework due to its adaptability and effectiveness in a training evaluation.

Table 1 : Level of Evaluation in the Kirkpatrick Model

Level	Evaluation tools
Reaction	Evaluation tools and techniques
Learning	Feedback from the trainees to evaluate training experiences
Behavior	Skill exercise or technique learned in a training
Results	Trainees were providing techniques regarding quality standard and they use for quality improvements

The training need is defined as the gap between the existing and the desired competency of the employees in any organization. Training needs could be organizational as well personal for those working in the organization. The educationalists should identify their individual training needs to enable them to facilitate the training needs of other staff (Sheperd,1994). So, training needs deals with the competency gap between organization need and individual performance. The professional development in the TVET sector is done by identifying the training needs. The study is based on the premises of the system approach of identifying training needs as illustrated in Figure 1.

Figure 1: Model for Determining Training Needs

In this model, job requirements are the organization's job-related needs and capabilities. The existing competency of the instructors is their capacity, and the training need is the difference between organization's requirements and existing competency of the employees. The gap can be fulfilled by training and development approach.

The effectiveness of any instructional training program can be evaluated using the Kirkpatrik Model of training evaluation. This model evaluates the effectiveness of training at the level of reaction, learning, behaviour and results. These all four variables collectively determine the training effectiveness as dependent variable. So, these indicators are applied as the variables of training effectiveness in the study. These are contributing variables to determine the training effectiveness. The personal attributes collectively address gender, age, education, work experience, job nature and job status as independent variables. These both variables act in a complementary manner for enhancing training effectiveness among instructors of the technical schools.

Methodology

This research employed quantitative research method to evaluate effectiveness of training program conducted by TITI. The instructional skills training participants were from four CTEVT constituted schools. The instructors of two technical schools from Kathmandu and one technical school each from Rupandehi and Dhanusha were selected for this research. Due to staff turnover, I accessed only 51 participants for the study. Based on the Kirkpatrick Model, I administered a questionnaire with 11 questions for reactions level, 5 questions for learning level, 9 questions for performance level and 2 questions for results level. The feedback from the key stakeholders, including trainers and IS participants was taken to ensure that the questionnaire aligned with the constructs. The primary data were collected with the help of structured questionnaire. The descriptive statistics was applied for the data analysis with the help of SPSS (2025). This study was limited to the CTEVT constituted school instructors. The determination of training needs model was used while selecting the participants by TITI. I selected IS participants, who were participants of IS training in 2023. The survey was conducted by the researchers among those technical schools' instructors.

Results

The research presents the personal attributes of the respondents. Likewise, it includes overall reactions of the IS training, overall learning from the training, performance after the training and result of the training. The information is presented in Table 2 in order to evaluate objectives of training effectiveness in different level.

The sex, age, marital status, service period, education, job status and nature of job are categorized as their personal attributes.

Table 2: Personal Attributes of the Respondents

Variables		N	P	Variable		N	P
Gender	Male	41	80.4	Age	Below 30	27	52.9
	Female	10	19.6		30-40	19	37.3
	Total	51	100.0		Above 40	5	7.8
Education	Technical SLC	4	7.8		Total	51	100.0
	Diploma	11	21.6	Work Experience	Below 5 Yrs	26	51.0
	Bachelor	25	49.0		5-9 Yrs	21	41.2
	Master	11	21.6		More than 10 Yrs	4	7.9
	Total	51	100.0		Total	51	100.0
Job Status	Assistant Level	20	39.2	Job Nature	Contract	45	88.2
	Officer Level	31	60.8		Permanent	6	11.8
	Total	51	100.0		Total	51	100.0

Note: N=Number, P=Percentage

Table 2 shows that the total number of participants was 51, where 80.4% were male and 19.6% were female. Similarly, respondents with bachelor and above were 70.6%, and officer level comprised 60.8%. More than 50% respondents were under 30 years old; 51% respondents had work experience of less than 5 years, while 88.2% respondents were working as contract staff. Hence, the majority of trainers were young ones of under 30 years. It indicated that productive time of the trainers was spent in the training.

Table 3 shows the reactions to the training across different variables. The responses were taken on a 5-point Likert scale. The "friendly classroom environment" received the highest score of 4.4, indicating that the participants found the training environment highly conducive and pleasing. Similarly, the overall average score 4.0 of all responses suggests that the training was generally well-received by instructors. However, the "alignment of topics with current needs" received the lowest score of 3.6, highlighting the need for better updating of training content to meet participants' requirements.

Table 3 presents the learning outcomes of the training for each variable on 5-point Likert scale. The "on-the-job coaching is applied in the workplace," received the highest score of 3.92, indicating application

Table 3 : Overall Reactions of the Training

Reactions	N	Mean
I have got training as per my expectations.	51	3.8
Topic of training is updated to fulfill current requirements.	51	3.6
Resource material is organized, enough and useful.	51	3.8
Teaching materials were well prepared.	51	4.1
Training participants had well interacted with trainers.	51	4.3
Teaching methodology was good and relevant.	51	3.9
I read and learned useful things for future use.	51	4.0
Assignment was enough.	51	4.0
Trainer's presentation was useful and understandable.	51	4.0
Classroom environment was friendly.	51	4.4
It was better to provide more practical sessions.	51	4.2
Average	51	4.0

Note: 1.00-1.79 = completely disagree, 1.80-2.59 = disagree, 2.60-3.39 =neutral, 3.40-4.19 = agree, and 4.20-5.00 = greatly agree

of coaching techniques in the training. Similarly, "introduce a lesson to gain attention of learners" and "the product should be evaluated when there is more than one acceptable standard" both secured 2.06 as the lowest score, suggesting foundational pedagogical skills are identified but requires further emphasis for improvement. Trainees may benefit from guidance on effectively introducing lessons and applying different evaluation techniques, with more examples to enhance understanding. The overall average learning score across five variables was 2.76, reflecting a medium level of understanding

Table 4 : Overall Learning of the training

Learning	N	Mean
The lesson introduction is done to gain attention of the learners.	51	2.06
The product should be evaluated when there is more than one acceptable standard.	51	2.06
The purpose of giving feedback is to improve performance.	51	3.53
The adult learning strategies should be applied for motivation, curriculum and classroom strategies.	51	2.25
On-the-job coaching is applied in the workplace.	51	3.92
Mean	51	2.76

Note: 1.00-1.79 = completely disagree, 1.80-2.59 = disagree, 2.60-3.39 =neutral, 3.40-4.19 = agree, and 4.20-5.00 = greatly agree

with room for improvement in several areas.

Table 5 illustrates the performance outcomes of the training measured across different variables by applying a 5-point Likert scale. Respondents reported a high level of consistency in delivering daily classes which was reflected in a score of 4.7, indicating strong commitment to regular teaching schedules. The lowest score, 4.0, was observed for the use of terminal performance objectives and adult learning strategies in instruction. The overall mean score of 4.3 highlighted that the training was effective.

Table 6 shows the results level of the training effectiveness clearly demonstrates that the trained teachers play a crucial role in fostering better academic performance, skill transfer and examination success among students. The students' performance

Table 5 : Overall Performance of the Training

Performance	N	Mean
I am taking class daily.	51	4.7
I am taking class with lesson plan.	51	4.2
I am using terminal performance objectives for skill demonstration.	51	4.0
I am using different instructional methods while teaching.	51	4.4
I am teaching in an interactive environment.	51	4.5
I am starting class with the introduction of the topic at first.	51	4.6
I am using adult learning strategy while teaching.	51	4.0
I provide feedback to students for each and every learning activity	51	4.1
I use performance guide for every demonstration	51	4.3
Mean	51	4.3

Note: 1.00-1.79 = completely disagree, 1.80-2.59 = disagree, 2.60-3.39 =neutral, 3.40-4.19 = agree, and 4.20-5.00 = greatly agree

was improved when taught by the trained teacher rated 62%, indicating that effective teaching methods not only prepare students for assessments but also equip them with the knowledge, skills and attitudes necessary for success. The overall average performance across all indicators was 61.9%, suggesting a high level of impact of the trained teachers on the instruction.

Table 7 shows that the behavior, reactions and results all three rate 4.3, 4.0 and 4.0 respectively. Whereas, learning was lowest with 2.76. The average training effectiveness

Table 6 : Overall Results of the Training

Results	N	P
The students' performance was improved when taught by the trained teacher.	51	62.0
The students who were taught by the trained teacher improved their performance in the final examination.	51	61.8
Mean	51	61.9

Note: very low (0–20%), low (21–40%), medium (41–60%), high (61–80%), very high (81–100%)

was 3.76 which also indicated positive impact and effectiveness. The overall training effectiveness was positive in the aspects of reactions, behavior and results but there is need of improvement in the leaning aspects.

Discussion

Overall Training Effectiveness

The overall training effectiveness was indicated positive results of four level of training evaluation in the aspects of reactions, learning, behavior and results, but there is a need of improvement in the leaning aspects.

The reactions were 4.0 on a 5-point Likert scale of all responses. It suggests that the training was generally well-received by instructors in this study. Farjad (2012) reported that training reactions in Pakistan was "almost acceptable," with an average score of 2.76 on a 5-point Likert scale. The findings shown between these two studies from different countries may vary due to different social, economic, and cultural contexts. Such variations highlight the importance of how and which activities are focused during training programs.

The overall learning score was 2.76, showing a medium level of understanding with a

Table 7 : Comparing Average Major Variables of the Training Effectiveness

Variables	Mean	Training Effectiveness
Reactions	4.0	Agree
Learning	2.76	Neutral
Behavior	4.3	Agree
Results	4.0 (61.9%)	Agree
Mean	3.76	Agree

Note: 1.00-1.79 = completely disagree, 1.80-2.59 = disagree, 2.60-3.39 =neutral, 3.40-4.19 = agree, 4.20-5.00 = greatly agree and 0-20%- Likert scale=1, 21-40%- Likert scale=2, 41-60%-Likert scale=3, 61-80%- Likert scale=4, 81-100%- Likert scale=5

room for improvement in several areas of the participants in this study. A similar study conducted among TVET trainers from Japan demonstrated that instructors gained attitudes, skills and knowledge, which positively impacted teaching effectiveness (Naing et al., 2022). Likewise, in the context of Saudi Arabia, as Shani (2020) mentioned, the managerial training, using Kirkpatrick framework, was found highly effective for learning. All national and international studies highlight a positive impact of professional development training on trainers' learning.

This research highlighted high level of training effectiveness, suggesting that trainers effectively perform by applying the principles of learning strategies during the program. These findings align with Loeung (2024), the study in Cambodia reported that individual work performance improved by over 70% after training. The research study in two different contexts but with similar findings indicate similar patterns of effectiveness in Nepal and Cambodia. It further suggests that the training program's design and implementation strategies may be broadly applicable across different social, cultural and educational contexts.

This study shows improvement in the results of TVET instructors after their training. This improvement signifies the positive outcomes of the trained instructors that can arise from effective training of trainers' programs. The research conducted by Hafeez (2021) in Pakistan shows how different instructional methods such as lecture, discussion, inquiry, and demonstration impacted students' academic performance and interests, and the findings indicate that the demonstration teaching method had the most significant positive impact on students' achievement. Both researches resulted in positive effect on outcomes of trained instructors.

The overall training effectiveness was found positively impacted. A research conducted in Thailand on training activities with different four levels of the Kirkpatrick model: reaction, learning, and behavior (performance test), the overall result showed the participants' positive reaction to the outcome (Chernbumroong et al., 2022). The study conducted in different contexts, and similarity of the findings indicate similar patterns of training effectiveness in Nepal and Thailand.

The overall average performance across all indicators was suggesting the effective and positive impact of the trained instructors on the instruction. This improvement in the training delivery from the participants indicates the positive outcomes of the trained instructors that can arise from effective training of trainers' programs and interventions that likely focus on improving teaching methodologies, including possibly demonstration-based, practical and participatory approaches.

Conclusion

This study assessed the overall training effectiveness of the IS training conducted by TITI with the use of Kirkpatrick Model. The

findings reveal that the positive reactions of the participants towards the training; the trainers were utilizing their learning in the classroom environment, teaching methodologies.

The learning outcomes were moderately achieved. The training has a positive impact on improving the TVET instructors' performance. The application of pedagogical skills has a notable emphasis on on-the-job coaching and guiding. The performance after the training was seen effective. The results showed a positive impact in students' achievement with the help of trained instructors. Overall, training of trainers' programs is effective in the TVET institutions.

However, the policy makers and training implementing agency can make training more effective by updating training contents with the adoption of adult learning strategies, interactive learning environment and use of latest technology. It helps meet industry needs and standards. The training should also focus on-the-job practice for the trainers, and consistent performance of the instructors. Continuous monitoring and evaluation is equally necessary for the improvement of training.

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