



Training Evaluation for Nurses and Midwives Using the Kirkpatrick Model: A Qualitative Descriptive Study



Putu Sudarmika ^a, Ni Luh Putu Nurhaeni ^b, Tri Fajari Agustini ^c, I Wayan Santyasa ^d,

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Corresponding Author ^a

Abstract



Keywords

*evaluation;
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nurses;
training;*

Evaluation of training implementation is a form of evaluation of training that has been carried out as a basis for further training development. The purpose of this study is to evaluate the implementation of training for nurses and midwives. This study used a qualitative study design by adopting the Kirkpatrick evaluation model. The sampling technique used purposive sampling. The stages of data analysis were carried out by content analysis using thematic coding, analytical induction, and technical concept mapping. A total of 12 people were involved in this study with 75% nurses and 25% midwives. The results of the FGDs and interviews found that the expected form of training was mixed training, learning media that supported time and place flexibility, evaluation of results based on significant pretest and posttest scores, no visible changes in behavior, and training provided increased knowledge, attitudes, and skills. The implementation of training planning is a systematic process starting from implementation and evaluation. Evaluation of training implementation using the Kirkpatrick model can be the basis for improving training delivery such as the form of training, training venues, training time, and meeting learning needs.

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^a Research and Development Department, Central General Hospital Prof. Dr. I.G.N.G. Ngoerah, Denpasar, Indonesia
^b Research and Development Department, Central General Hospital Prof. Dr. I.G.N.G. Ngoerah, Denpasar, Indonesia
^c Human Resource Department, Central General Hospital Prof. Dr. I.G.N.G. Ngoerah, Denpasar, Indonesia
^d Education Science, Ganesha University of Education, Singaraja, Indonesia

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1 Introduction

Learning is a process that never ends even though the staff is working well, they still need refreshment in the form of training as self-appreciation (Narasimhan & Ramanarayanan, 2014). Continuous professional development for all health service providers including nurses and midwives is very important to be updated and able to provide quality services (Alnair et al., 2019). The Government of the Republic of Indonesia has set minimum service standards regarding the type and essential hospital service quality. To receive the minimum quality, hospitals must regularly maintain their human resource. Work performance can be measured by determining the primary type and quality of services for hospitals (Muhadi & Efendi, 2020). Assessment and increased training can support healthcare workers (Sarre et al., 2018). Evaluation of the implementation of training provides benefits in identifying obstacles during the implementation of training (Mann et al., 2022). Nursing and midwifery education programs are structured to reduce the gap between theory and practice. Training is believed to be able to reduce this gap (Ahmadi et al., 2020).

The results of the preliminary study found that as much as 47.2% liked the mixed training model (face-to-face and online), as much as 86.4% liked training through e-learning and as much as 78.9% liked audio-visual media compared to PowerPoint media, and text modules (Sudarmika et al., 2023). To find out the results, impacts, and benefits obtained from the training provided to employees, it is necessary to evaluate each training. After the training is given, of course, it is necessary to find out to what extent the training has contributed to changes or improvements in the performance and competence of each member of the organization and the organization as a whole. This is important considering that the training provided is not certain and those that have absorbed large funds always provide effective results following the training goals to be achieved by the company (Pateda et al., 2020).

The results of the research by Aragón-sánchez et al. (2010), stated that training evaluations in many organizations were not carried out or did not exist at all due to a lack of funds, time, and measurement systems to determine the changes resulting from training (Urbancov et al., 2021). Evaluation that has been carried out in training is carried out through a formative evaluation of each training implementation. Innovation in evaluating can be an important element in constructing educational change and culture. Kirkpatrick's evaluation framework model has been used in the training and education of nurses to evaluate the real impact of learning practices (Johnston et al., 2018; Li et al., 2020; Mann et al., 2022). Kirkpatrick's model uses four levels, namely reaction, learning, behavior, and results.

Kirkpatrick's framework gives excellence in evaluation by mapping out clear needs for training evaluation. This evaluation model focuses more on evaluation after training in addition to evaluating participant reactions and training learning. This model can also be used in constructing and testing the application of learning after training and analyzing training outcomes, such as organizational impact (Cutting et al., 2022). There are three reasons for evaluating the implementation of training. The most common reason is that evaluation can tell how to improve future performance. The second reason is to determine whether training should be continued or discontinued. The third reason is to demonstrate the existence of a training section and its budget as evidence to top management that training has real and positive results (Kirkpatrick & Kirkpatrick, 2008). The training provided to nurses and midwives is very important as management support for nurse performance. Nurses and midwives are the front lines of defense in health services (Goodwin et al., 2020). Training in basic nursing skills and specialization in special conditions, advanced health care systems, and related psychological skills can add to the professional capacity of nurses working in the health and social care fields (George et al., 2020). Based on some of the empirical data above, it is necessary to conduct a study to evaluate the implementation of training from the perspective of nurses and midwives so that it is hoped that it can provide

input for policymakers to develop and organize training according to needs. The research aims to evaluate the implementation of training for nurses and midwives.

2 Materials and Methods

Design and setting

A qualitative research design method was employed for this study (Colorafi & Evans, 2016). In order to generate meaningful and rich data, FGDs were chosen to capitalize on the interactions between the research participants (Kitzinger, 1995). Nurses and midwifery training was conducted in many ways, specifically after the pandemic. The online training through Zoom, G-meet, or any social media make a huge impact in continuing professional education for the healthcare profession. Some studies combine online and on-site (hybrid). The change of the situation is needed to evaluate to improve the training system for nurses and midwifery. Consolidated criteria for reporting qualitative research (COREQ) was used to guide this study (Tong et al., 2007).

Participants

Sources of information (informants) were selected by purposive sampling technique to obtain information about training needs for nurses. The inclusion criteria were nurses ward coordinator, experienced more than 10 years, and ever joined on-site, online, and hybrid training. Researchers gave announcements of this research through posters and WhatsApp groups. Participants contacted the first researcher to register. The various clinical discipline of participants were involved, including medical surgery, geriatric, psychiatric, pediatric, critical, emergency, and maternal.

Data collection

Registered participants would be sent an invitation letter to the designated informants and give informed consent when the Focus Group Discussion (FGD) via Zoom media began. Zoom participants as research subjects can withdraw as research subjects until data analysis. The information obtained from the informants was recorded with a tape recorder. Important matters related to the interview process are recorded in a notebook. The interviews were designed in the form of semi-structured in-depth interviews to help respondents share their broad experiences and ideas about the main topic (Mammadova, 2020). The sample in this study was 12 people in charge of the room who agreed as respondents by signing informed consent.

Data analysis

Data is based on recordings during focus group discussions and then transcribed verbatim. Based on verbal and visual data, qualitative content analysis was chosen (Sandelowski, 2010). The verbatim was done from recorded conversations of each participant, and several chunks of code were noted according to the data. (Colorafi & Evans, 2016). Then, codes with similar detail were grouped. To derive sub-categories and categories, the participant's code was continuously compared and examined. The process was repeated to reach themes that correlated with categories and sub-categories (Cope, 2014). To ensure confirmability and dependability, the process was saved in files. Transferability was done by describing participants' descriptions in Table 1 (Sandelowski, 2010). The credibility of the research was done by members checking the participant to check the results (Colorafi & Evans, 2016). To improve its accuracy, the study was checked by expert in this field (Colorafi & Evans, 2016; Guba, 1981).

Ethical approval

Research Ethics Committee of the Udayana University Number 1827/UN14.2.2.VII.14/ LT/2022 was approved for this study. Participants signed the consent form and agreed to participate in the research after

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receiving information in writing and verbally related to the research purpose, objective, and methods. Participants joined voluntarily, and they could withdraw until data analyze. Anonymity was done to protect participants' privacy. Data would not be shared and used for any interest (Baird et al., 2018; Snowden et al., 2015; Moyer et al., 2016).

3 Results and Discussions

Result

A total of 12 people were involved in the study. In the early stages, the researcher approached the research subjects who met the inclusive criteria and then explained the aims and objectives of the research. The researcher conducted pre-discussion by conveying the topics to be discussed in the discussion. Characteristics of further research subjects are presented in Table 1

Table 1
Characteristics of subject

Characteristics	Sample (n=12)
Age (mean \pm SD)	48.2 \pm 5
Gender (n, %)	
Male	3 (25%)
Female	9 (75%)
Education degree (n, %)	
Diploma	4 (33.4%)
Strata 1	5 (41.6%)
Masters	3 (25%)
Profession (n, %)	
Nurses	8 (66.6%)
Midwives	4 (43.4%)
Length of work (mean \pm SD)	25.2 \pm 5.2

Table 1 shows the age of the participants in this study with a mean of 48.4 years (SD: 5). Characteristics based on gender found as many as 3 men (25%) while women as many as 9 people (75%). Based on educational status, there were 4 people with DIV (33.4%), 5 people with S1 (41.6%), and 3 people with Masters (25%). Based on the type of profession, there were 8 nurses (66.6%) and 4 midwives (43.4%). Length of work was obtained with an average of 25.2 (SD: 5.2). The focus group discussion was carried out starting with an introduction and a brief explanation from the researcher. The results of the interviews are described in narrative form and adapted to the research objectives. Participants involved in the FGD and subsequent interviews were assigned a participant code (P). In this research, the evaluation of training implementation uses Kirkpatrick's 4-level model as follows.

1) Reaction

In the reaction stage, evaluating the learning reactions of the trainees, in this case, nurses and midwives. Learning is considered effective if the learning process is fun and satisfying for the trainees. Comfort is closely related to motivation to learn. The results of the focus group discussion were obtained as follows.

"Training should be done online and face-to-face, maybe during Covid-19 all training was done online but it felt less effective, especially training that contained skills. If possible, the training location is carried out internally because it will save costs and effort so that the service does not collapse" (P1)."

"If internal training meets better quality internally besides being close, nursing services can also be arranged for example when the training is over they can return to service, whereas externally they cannot provide services and of course, it requires time, money, manpower, the most important is the same quality (P3)."

In my opinion, the e-learning that is in Simars is not quite right, there should be training that must be offline, combined with online, meaning that there is face-to-face training, there is training with video, so it has to be combined, in my opinion, only then can friends understand that it requires direct practice in e-Learning is not suitable if it is not supported by good learning media (P4)"

"Organizing training as long as our resources support it should be done internally because it will be more cost-effective, then will not be divided in their minds, and if internally we can use our resource persons who are already good because they are also resource persons. elsewhere (P6)"

"Training should be in the form of media if skills need learning media, for example, videos so that friends can see not only reading, it can motivate for friends to learn (P8)."

"Training should be carried out internally because it can enable the effectiveness of staff who have finished training to be able to continue service (P9)"

The results of discussions and interviews with participants can be concluded that the implementation of conventional training, is felt to be less effective in helping to learn. The expected form of training should be a combination of online and conventional (face-to-face) training. The form of learning media was also mentioned as not meeting the learning needs of the trainees. The results of discussions and interviews also found that training venues are more effectively held internally because they can save time, costs, and human resources. This condition can be shown in the organization of training for nurses and midwives so that the training is held following the needs of nurses and midwives. The results of data triangulation show that the need for training, especially in efforts to increase skills, should indeed be held in the form of mixed training, namely theory and hands-on practice. If you practice directly, of course, you need tools, places, and so on, maybe other media can be used, such as learning videos that can be repeated and seen as real which can be seen from various sides (Agrawal et al., 2016; Cooper et al., 2012; Dawson et al., 2015).

2) Evaluation of learning

Evaluation of learning is done by assessing learning outcomes (output). Interviews on learning evaluation focused on pre-training and post-training results. The results of interviews with participants obtained the following results.

"In my opinion, as we all know, friends are divided into several specialties. it is necessary to make a mapping of the competencies that must be possessed by each and then the nurse friends who are served propose what their training needs are (P2)."

"In my opinion, if the implementation of the training is following the needs of midwives, the results of the training should be analyzed compared to after the training, if only what is seen is cognitive, it must be good, but if you look at the skills, it needs to be re-evaluated so that it is following what needs to be updated, what the midwives themselves want to know. . what should be refreshed again like that (P4)."

"If the training is for cognitive purposes, it is only to test knowledge, but if it is related to competence, it is not enough to know how far a person is competent. For training, especially for those with skills, it should be direct or face-to-face training, but it is necessary to know knowledge, skills, and attitudes. for knowledge, you can go online, but for knowing skills and attitudes, you have to go offline. The self-assessment for the competency value should be carried out immediately with a phantom or with a patient according to the criteria, does it only need observation, assistance or is it considered competent like that (P5)"

"The organization of training, especially in the ICU, has become an indicator, that is, more than 75% of nurses need training, whereas now only 70%, if possible, is held 2 times a year to reach 75% or even more, so a higher percentage will be better for service improvement (P7)."

The results of the interviews found that learning evaluation must be carried out comprehensively not only by evaluating knowledge but also by evaluating attitudes and skills. There is an increase in learning outcomes between before training and after training. The results of data triangulation by looking at the results of one training held a year obtained the average value after the training and before the training, there was a significant increase. Learning outcome data are presented in Table 2.

Table 2
Learning outcome

Variable	Min-max	Mean \pm SD	Mean difference	95% CI	<i>p</i>
Pre-test	40-100	81.5 \pm 18.3	17.6	24.6-9.6	0.001
Post-test	96-100	98.6 \pm 1.9			

Table 2 shows the pretest scores of the trainees obtained with an average of 83.5 (SD: 18.3), a minimum value of 40, and a maximum of 100. Posttest scores were obtained with an average of 98.6 (SD: 1.9), a minimum value of 96, and a maximum of 100. The results of the data normality test showed that the data were not normally distributed. Furthermore, the data were analyzed using the Wilcoxon signed-rank test. Statistically, the *p*-value was <0.05 , so it was concluded that there was a difference between the pretest and posttest values. The posttest score is obtained with a higher average than the pretest value. These results indicate that the training was successful. Implementation of training should be aimed at meeting the need for competency improvement. The results of data triangulation were obtained through training as a way to find out the level of our officers, nurses, and midwives (Kruijver et al., 2000; Gorostidi et al., 2007; Schafer et al., 2011).

3) Evaluation of behavior

Behavioral evaluation is different from learning evaluation. Learning evaluation focuses on teaching and learning activities while behavior assessment focuses on changes in the behavior of the trainees after completing learning.

"The training that is organized must be adjusted to the competence of staff because it relates to competencies that will be used in the workplace to improve their performance (P1)."

"In my opinion, it goes back to culture, e-learning or online, maybe not everyone will read it, let alone friends who have attended training and answered the questions, e-learning will be good if read and followed as an example, yes, new staff are declared to have graduated. Basic life support training but when they are asked if they are not able to do Basic Life Support, our learning media is lacking so it also needs to be allocated for practice (P2)."

"The need for care after kidney transplant surgery is temporarily held in house training so that friends have a legal aspect to treat these patients even though their competence is far from perfect (P7)."

"For hospitalization, the results of the training are following the existing seminars because my position is in sub-surgery, so automatically the seminars are more in the field of medical surgery, following the white papers that have been issued by the nursing committee, there are basic medical surgical nursing, advanced, and that is being the ongoing training may be outside the standard, of course, the training gives results, even though competence is not optimal, it is enough to provide knowledge for nurses in providing services (P10)."

"We see that the training has a very large impact on increasing the competence and skills of nurses. we have a list of required training according to their area of competence and then we list whether the time is still relevant or not. As for the topic of training, there is something that is required from the committee and the hospital (P11)"

"So what we have been doing so far in terms of knowing the needs of friends in the operating room is what competencies are needed by friends in the operating room... so, in this case, it is related to seminary organizations, the hope is that we can connect how our profession can match the service institutions in the operating room. from professional organizations and institutions, we have basic training and advanced training. Related basic training related to the needs of our friends who have never been or who we have just recruited for the operating room, is one of our strategies for conducting a need assessment of training needs (P12)."

From the results of discussions and interviews, it can be concluded that implementation has an influence on changes in behavior, but these changes in behavior require longer and more in-depth evaluations and observations. Most stated that the implementation of training could assist staff in implementing it in the workplace, especially training that had been held according to interest.

4) Evaluation of results

The focus of the evaluation of results is the final result after the learning program. The result of a learning program is an increase in learning outcomes, an increase in knowledge, and skills.

"The community is starting to be critical, we are also required to be able to explain to the public, so friends need to know, pathophysiology like that, the course of the disease, so if we are unable to explain to the public there will be distrust from the community so it is important to instill public trust so that it is very important to attend training that is tailored to their needs (P2)."

"I am sure that even though I can answer the pretest post-test, the desired competency is not following our expectations even though I have been taught in this training but still cannot take action (P2)"

"We re-data of what trainings have been carried out and what has not been done that has been done, double check in each file, maybe there are training that has been carried out, we will see directly or if not, we have a master table of what trainings have taken place. we need them to be refreshed (P3)."

The results of discussions about the implementation of the training found that the implementation of the training should provide an overview of increasing knowledge and skills so that they can deal with the community. The results of the discussions and interviews can be concluded that implementation influences the competence of nurses and midwives. There is an increase in knowledge and skills, but this knowledge and skills must always be updated according to advances in technology and information so that training objectives can be achieved.

Discussion

Discussion of research results is presented according to Kirkpatrick's evaluation model.

Reaction evaluation

The results of discussions and interviews with participants can be concluded that the implementation of conventional training, is felt to be less effective in helping to learn. The expected form of training should be a combination of online and conventional (face-to-face) training. The form of learning media was also mentioned as not meeting the learning needs of the trainees. The results of discussions and interviews also found that training venues are more effectively held internally because they can save time, costs, and human resources. The previous study found mixed training is the most desirable one (Sudarmika et al., 2023). Mixed learning is a combination of online learning and face-to-face learning which is called blended (Nasution et al., 2019). Research conducted by Dziuban, Hartman, and Moskal shows that mixed learning can improve learning outcomes and can increase learning interest compared to full learning using online learning. It was also found that blended learning is better than face-to-face learning (Dziuban et al., 2004).

The use of Blended learning can be applied using the following combinations 50/50 means 50% online and offline learning 50% face-to-face learning, 75/25 i.e. 75% online and offline learning 25% face-to-face learning, or 25/75 so 25 % of online and offline learning 75% of face-to-face learning from the allocation of learning time (Abdullah, 2018). It is necessary to provide a conceptual understanding of distance learning in online training, in addition to providing practice using online learning instruments or applications like Zoom, youtube, Edmodo, and google forms (Ariadhy et al., 2021). The mixed face-to-face training model and mentoring carried out online shows that there is an increase in knowledge after being given training and the quality of preparing lesson plans is a very good qualification (Sudarma & Prabawa, 2021). Material according to needs, encourages independence while studying, assignments can be enriched with the latest knowledge obtained on the internet but some problems are also found in online training such as internet network disturbances, expensive internet quota fees, communication is not smooth, lack of interaction, lack of material explanation (Dwikurnaningsih & Waruwu, 2022). By meeting the various requirements for the need for training, curricula, and policies can complement each other to meet needs and allocate resources appropriately in administering training (Baier et al., 2020).

Because nurses are able to learn on their own and find new information relevant to their work, they have an expectation of having flexible training time. Choices in training resources, types of learning activities,

learning support media, and many other opportunities are all examples of the flexibility that can be afforded to learners. The selection of trainees to participate in various aspects of the learning experience is the most important concept (Boer, 2021). Trainees are free to move around in any and all aspects of their education, training, and employment when the education system is flexible. Because of flexibility, trainees are able to adapt their learning path over the course of their training to better suit their interests and abilities (Cedefop, 2020). Additionally, there is no evidence that hurt patient care or training quality, flexible training regimens would improve patient care and training quality (Tomlinson, 2012).

The traditional face-to-face teaching method in the future will be changed to worldwide web-based training. Health workers need to update their knowledge without worrying about many obstacles such as lack of time, being in close contact with one another, and fostering independent study (Alit et al., 2022). The place where the training is carried out is closely related to the learning environment. The learning environment is known as a predictor of higher learning outcomes. Positive perceptions of the teaching environment affect not only academic achievement but also qualitative learning outcomes. The learning environment is characterized by good teaching and self-reliance enhancing academic skills. The learning environment consists of five components: the structure of the course, institutional support, infrastructure, trainee activities, and research (Bhina, 2014; Lizzio et al., 2002). Place of implementation of training as an effective clinical learning environment for the nursing learning process. Clinical learning experience contributes to learning from experience to streamline time and reduce the financial burden in education and training (Baraz et al., 2015). Training is essential as it provides knowledge to staff on the effective use of technology, ensures competitive advantage in the marketplace, promotes safety and health among staff, creates opportunities for career development and personal growth, is an important factor in retaining workers, helps management comply with laws and regulations and increase productivity and profitability (Uma, 2013).

Learning evaluation

Measurement of learning outcomes can be done by determining the knowledge learned, changes in attitudes, and skills that have been developed or improved. Measuring learning outcomes is more difficult and time-consuming than measuring reactions. Assessment of learning outcomes can involve groups that participate in training and groups that do not participate in training by comparing pretest and posttest results (Kirkpatrick & Kirkpatrick, 2008). The results of the discussions and interviews can be concluded that learning evaluation must be carried out comprehensively not only by evaluating knowledge but also by evaluating attitudes and skills. There is an increase in learning outcomes between before training and after training. The results of data triangulation by looking at the results of one training held a year obtained the average value after the training and before the training, there was a significant increase.

Evaluation of the implementation of training requires feedback from staff based on the learning programs that have been carried out and follow-up must be carried out in each workplace to see the application of the skills and knowledge acquired during the training. An empirical study conducted by Ludwikowska (2019), found that it is important to design training programs as part of continuous professional development in achieving efficiency and leading to benefits for the organization (Ludwikowska, 2019). Training has a strategic position to improve employee performance and capabilities. Assessment and increased training can support healthcare workers (Sarre et al., 2018). The purpose of training and development is to increase individual and organizational capabilities in terms of knowledge, attitudes, and work procedures that are directed at improving the performance of human resources. The intense involvement of the training participants due to awareness of the importance of training materials will have an impact on the application of training and development results in actual work practices (Asniwati, 2020). Evaluation of training activities, in general, is very important for the proper management of training. This assessment helps to understand the achievement of the training objectives that have been achieved, the training needs, and the satisfaction of the target group from each training (European Commission, 2014).

Behavior evaluation

From the results of discussions and interviews, it can be concluded that implementation has an influence on changes in behavior, but these changes in behavior require longer and more in-depth evaluations and

observations. Most stated that the implementation of training could assist staff in implementing it in the workplace, especially training that had been held according to seminars. Evaluation of training and development means assessing the impact of training on the performance and behavior of the trainees (Topno, 2012). In line with the behavioral survey findings of Mohamed & Alias (2012), showing that training participants can apply the knowledge, skills, and attitudes acquired from the training program to the workplace. Nursing care has a central role in health services. Nurses function in the delivery of most of the interventions and care needed for individuals utilizing health care services. Nurses and midwives are required to have the ability to apply theory to practice so that every aspect of training carries important weight (Ziba et al., 2020). Training participants have the potential to change their behavior at work (Alsyabany, 2019).

Training is more than just teaching. Training is a means to facilitate learning by those who are being trained so that they acquire new knowledge, skills, and attitudes. In many cases, training can be seen as an intervention. However, the training aims to create an impact that goes far beyond the training itself. Training is only one element in creating a learning environment in which people can both develop personally and use their new abilities to improve work outcomes (WHO, 2011). Cutting et al. (2022), state that it is very important to identify critical behaviors when designing training in training impact evaluation. Critical behavior is specific, observable, measurable behavior that must be carried out by trainees leading to the expected results by emphasizing the importance of bridging training with post-training behavior change (Kirkpatrick & Kirkpatrick, 2008). Behavioral evaluation is successful if students can change their behavior at work (Calvo et al., 2018).

Result evaluation

The results of discussions about the implementation of the training found that the implementation of the training should provide an overview of increasing knowledge and skills so that they can deal with the community. The results of the discussions and interviews can be concluded that implementation influences the competence of nurses and midwives. There is an increase in knowledge and skills, but this knowledge and skills must always be updated according to advances in technology and information so that training objectives can be achieved (Ferrell et al., 1993; Astiti & Surya, 2020; Susanti et al., 2021). The evaluation phase represents a central moment that influences future decisions, especially in consideration of future training actions. The main risks associated with evaluation moments are misconceptions or errors that result from improperly or poorly collected data sets. Therefore with proper evaluation, it will be possible to decide which new training projects can be projected and implemented for the future of the organization (Iannone, 2019).

Training is an important program for everyone in the organization to implement a new process or if the employee is new to a particular process. staff assigned to specific jobs often require appropriate knowledge and skills about the job to be performed. Training can help employees to know about organizational processes, job content, interests, and awareness about job assignments. Training is always necessary to understand, grow and gain success in a new job role in an organization. Training results in mutual growth between employees and the organization (Borate et al., 2014).

The implementation of education and training programs affects government employee productivity and the impact of implementing education and training programs has a more dominant impact on increasing government employee productivity (Priatna, 2020). A training program is not complete until it evaluates its methods and results so to get a successful and consistent training program is to have a systematic approach to measurement and evaluation (Dahiya & Jha, 2011). Evaluation of the effectiveness of training is not easy because it is often difficult to measure the quantity available. It needs a precise definition and ensures training control through training evaluation (Urbancov et al., 2021). Training evaluation is a process of evaluating measurement results based on certain criteria to determine the effects and benefits of educational programs. Evaluation is needed to identify and correct deficiencies and failures in training programs. Feedback obtained from evaluation results can be used to improve training programs (Topaktas et al., 2022). There is a significant relationship between the assessment of training needs and the evaluation of training activities. Training evaluation helps to identify new training needs. Feedback from participants is very important in updating training needs (European Commission, 2014). Through a combination of different training needs assessment methods it can identify new training needs and ensure that training programs meet those needs promptly (Union, 2020).

4 Conclusion

Evaluation at the reaction level found that training should use mixed training, namely a combination of online learning and face-to-face learning. The delivery of mixed training can be applied to skills-based training courses. Evaluation at the learning level found that there was a significant increase in knowledge based on the results of the pretest and posttest scores. Training is essential as it provides staff with knowledge about the effective use of technology, promotes safety and health among staff, creates opportunities for career development, and increases productivity. Evaluation at the behavioral level is an increase in competence according to the needs and performance of staff at work. Evaluation of the level of training results found that training can increase knowledge, skills, and attitudes. The purpose of evaluating a training program is to determine the effectiveness of the training program so that it can be improved for future programs.

Evaluation can help us learn from the experience of previous training programs. But in this study, there are limitations because the evaluation of the level of results must be carried out more deeply, especially in assessing the effects of training on institutions, improving performance, and achieving organizational goals. we suggest making improvements in the process of organizing blended learning-based training, improving innovative learning media that not only improves cognitive skills but also attitudes and psychomotor skills. Development of innovative learning media so that training participants can access learning media anytime and anywhere so they can overcome time and distance limitations. Kirkpatrick's model in evaluating training implementation is very relevant to determine the effectiveness of training programs so that it can become material for program preparation and improvement efforts that can be carried out with the stages of identifying the objectives of evaluating training implementation, determining the appropriate evaluation method, compiling tool designs for evaluation, collecting data and conducting analysis and compiling results reports.

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Biography of Authors

	<p>Putu Sudarmika He is a nurse who is interested in education. He completed the doctoral study program in educational sciences. He is currently working in the research and development department of a public hospital. He is active in conducting research in the field of nursing education. <i>Email: sudarmika_sanglah@yahoo.co.id</i></p>
	<p>Ni Luh Putu Nurhaeni She is a doctor who has completed a master's degree in management and a master's degree in health. She is currently working in the research and development department of a public hospital. <i>Email: dr.nurhaeni@gmail.com</i></p>
	<p>Tri Fajari Agustini She is a dentist and pediatric consultant. She completed her master's degree in hospital administration in 2003. Currently, she works in the Department of human resource management, education, and Research. <i>Email: trifajariagus@gmail.com</i></p>
	<p>I Wayan Santyasa He was appointed by the Indonesian Government as a Lecturer in the Department of Physics Education and graduated with a Master of Science (M.Sc). On July 1, 2005, He obtained the Position of Academic Professor by the Government of the Republic of Indonesia. Since 2004 until now he has often been given the opportunity by various educational institutions as a resource person in various educational activities in Bali and outside Bali. As a PNS Professor, he has received many research schemes from the Ministry of Research, Technology and Higher Education, namely Fundamental Research, HB, Stranas, Competency Grants, and Postgraduate Grants. <i>Email: santyasa@yahoo.com</i></p>