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Assessment of an In-Service Training Activity Transformed into an E-Learning Environment Using the Kirkpatrick Model

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Article Info

ABSTRACT

The aim of this study is to evaluate an in-service training program transformed into an e-learning environment using the Kirkpatrick evaluation model. A single-group experimental design was employed in the research. Thirty teachers who participated in the in-service training program were included in the study. The program was adapted to the e-learning platform and presented to the participants. Data were collected through surveys. 90% of the participants expressed satisfaction with the program, finding the e-learning format beneficial, and liking the content and presentation of the program, stating that it helped reinforce their knowledge. They mentioned a more flexible and comfortable learning experience compared to face-to-face training and acquired the targeted knowledge and skills by the end of the program. The findings indicate that an in-service training program delivered face-to-face can be successfully transformed into an e-learning environment and evaluated using the Kirkpatrick evaluation model. The e-learning format provided participants with a more flexible and comfortable learning experience. The program significantly improved participants' knowledge, skills, and behaviors. Adapting the program to similar professional groups can offer various benefits, such as enhancing professional skills, increasing workplace productivity, and improving professional satisfaction.

INTRODUCTION

The effective, successful, and efficient implementation of e-learning is influenced by key factors such as students, teachers, content, technology selection, design, and interaction (Hara, 2000; Simonson, Schlosser & Orellana, 2011). In the student dimension, factors like technological literacy, attitudes toward technology, and self-efficacy in technology use play a role, while in the teacher dimension, attitudes toward e-learning are additional considerations. Quality instructional design processes for course content, the quality of the environment used in technology, and ensuring student-student, student-teacher, and student-content interactions are crucial in the content, technology, and interaction dimensions, respectively (Garrison, 2003; Moore, 1989). All these variables collectively contribute to student satisfaction, commitment, and motivation (Pintrich & Zusho, 2002).

Learning environments can be defined as places that enable individuals to construct meaningful knowledge by making various inferences from various learning sources (human or non-human) (Jonassen & Rohrer-Murphy, 1999). In other words, the learning environment is where learning takes place, with the learner/student at its center. The components of learning environments facilitate communication among themselves through the learner. When it comes to e-learning environments, the general structure is similar, with a significant difference being the interconnectedness of all dynamic elements (Salmon, 2002).

Increasing learners' sense of belonging and commitment to learning environments is essential for them to continue learning activities and focus on the process of constructing meaningful knowledge, despite obstacles and challenges (Wenger, 1998). The more connected the learner is to the learning environment, the greater the acquisition of knowledge in that direction (Pintrich & Zusho, 2002). Encouraging collaboration and facilitating interaction is one of the best ways to increase learner connection to the learning environment (Dillenbourg, 1999), leading to motivation for participation in learning activities. Motivation, in turn, plays a significant role in the effectiveness and efficiency of the learning process (Deci & Ryan, 2000). The purpose of interaction can be expressed as a better understanding of course content or an increase in the levels of achieving predetermined goals (Moore, 1989). Many researchers have studied interaction, and Moore (1989) categorized it into three types: learner-learner, learner-instructor, and learner-content. Although these three types of interactions are widely accepted in most distance education environments, with advancing technologies, a fourth interaction area called learner-interface interaction has emerged (Oliver & Herrington, 2000).

Learner-learner interaction involves students sharing knowledge and ideas with each other through communication tools such as chat rooms and forum pages (Gunawardena, 1995). Learner-instructor interaction is a type of interaction that occurs for feedback and motivation (Rovai, 2002). The most requested type of interaction is considered learner-instructor interaction. Learner-content interaction is the interaction that occurs in obtaining information from materials related to the subject. Interface interaction refers to the communication between the learner and the technological environment.

Moore, in developing his theory, began to focus on the problems encountered in distance education and sought solutions, exploring what hindered learning. Further deepening his studies on learner autonomy, he extended his focus to the concept of transaction in Dewey's work, laying the foundations for the theory of transactional distance in the context of distance education (Moore, 1993). Transaction, fundamentally, entails the creation of new meaning by influencing each other's behaviors and environments. From this perspective, Moore emphasized misconceptions about distance in distance education and the distance emphasis that leads to psychological gaps. Another type of interaction, as mentioned above, is interaction that occurs by observing others. When learning takes place by observing friends and their dialogues with the teacher, the type of interaction that emerges is transaction (Moore, 1997).

In the interaction where friends and the teacher are observed, the student is at the center of the environment. The student is self-engaged when moving away from the center, and we can say that interactive learning occurs as the center approaches transactional learning. In other words, the fewer interactions the student has with a minimal number of elements, the more transaction increases; conversely, interaction increases if there are more elements. Thus, if the student's needs are met with very little communication, transaction is considered to be high. In e-learning environments, the concept causing participants to not influence each other accurately is defined as transactional distance (Moore, 1993).

In e-learning environments, structure corresponds to course design. Learning objectives, content presentation, materials, and tests constitute the structure. This structure must be flexible in meeting student needs. It should support individual differences because the more structured it is, the less it will respond to individual preferences (Keegan, 1996). The characteristics of a flexible e-learning environment can be expressed based on dialogues, i.e., interactions, and whether it is structured or not. While structure corresponds to elements such as instructional program, guidance, material selection, and arrangement of the environment, dialogue/communication corresponds to the existence of interaction types mentioned. In this context, attention is thought to be necessary in the design of e-learning environments to the following aspects (Anderson, 2003):

- Sharing learning content at the beginning of the process or weekly [allowing the student to start or not start whenever they want and providing more interaction opportunities]

- Determining whether visual and auditory interaction tools are selected by the student

- Simultaneous and asynchronous nature of learning [only during online times / anytime, anywhere]

- Freedom or strictness of navigation options between contents

- Assigning individual or collaborative-cooperative learning tasks

Ultimately, design and interaction are not entirely independent of each other. In this context, transactional distance is a structure that changes with design and interaction. Considering this situation in every instructional design process is deemed highly important for ensuring the adaptation of students' individual differences to the system to be selected or developed.

With the profound impact of developments and transformations affecting human activities, educational activities have gained more significance for institutions. It is considered crucial to question the effectiveness and efficiency of these training activities organized before, during, or after service. In the process of evaluating the training, measurements and assessments are generally made on aspects such as reactions, satisfaction, and the level of learning (Kirkpatrick, 1994). The purpose of evaluating education is to analyze the impact of the given training within the framework of individual performance effects and its effect on institutional performance, with the aim of making necessary improvements through the value determination process (Brinkerhoff, 2006).

While evaluating educational activities, some key questions that need to be addressed may include: Has a meaningful change occurred as a result of the provided education? If there is a change, has it occurred through the means of education? Has this change contributed to achieving the goals of the institution? Can similar changes be observed when the same education is applied to different groups? In this context, the evaluation of education is often described as a dynamic and systematic process from start to finish.

Evaluations guide education strategies and even policies. One commonly used method in educational evaluations is the Kirkpatrick training evaluation model. The Kirkpatrick model is frequently preferred in educational evaluations due to its ease of meeting corporate requirements, easy applicability,

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flexible structure, systematic nature, and the cause-and-effect relationship between its stages (Kirkpatrick, 1994). The model consists of four stages and has been used since the 1960s to assess the effectiveness and efficiency of educational programs. The model allows for a rough classification, making it possible to delve deeper, thereby facilitating the evaluation process (Alliger & Tannenbaum, 2006). The Kirkpatrick model includes the stages of reaction, learning, behavior, and results. Although not all stages are considered in every educational evaluation, Kirkpatrick emphasizes the importance and effectiveness of each stage for the next one. Each subsequent stage provides detail for the evaluation process, and the process becomes more complex and spreads over longer periods. However, the acquired information becomes more valuable (Kirkpatrick, 1994).

The design process of e-learning, if analyzed incorrectly or inadequately, can result in discrepancies between planning and implementation, failure to achieve interaction, low participation or dropout rates, and challenges in the transfer of education (Hara, 2000). The effectiveness and efficiency of e-learning are crucially linked to determining user satisfaction, which is a significant factor in predicting system success (Cahapay, 2021; Alsalamah & Callinan, 2021).

In this context, the main problem of the research is to determine the effectiveness and efficiency of the training to be provided along with the transformation of an in-person in-service training program into an e-learning environment, and the functionality of the e-learning environment in terms of usability.

Kirkpatrick Evaluation Model

The Kirkpatrick evaluation model consists of four stages. In the first stage, the Reaction stage, the assessment measures individuals' overall satisfaction and commitment to the training program. In other words, the satisfaction levels of individuals participating in the training are measured (Alliger & Tannenbaum, 2006). The second stage, Learning evaluation, determines the levels of knowledge, skills, and attitudes targeted to be acquired. Changes in attitudes and the acquisition of specific knowledge and skills are examined. Essentially, learning is defined as a permanent, observable change in behavior (Thorndike, 1913). Consequently, an increase in knowledge and skills and a change in behavior after the provided training indicate that learning has occurred (Gagné, 1985). In the third stage, Behavior Change, the evaluation reveals what changes occurred in individuals' behaviors as a result of participating in the training program (Kirkpatrick, 1994). This stage is more detailed and challenging than the first two (Brinkerhoff, 2006). Because people can only change behavior under appropriate conditions, and it is not possible to predict when a permanent change in behavior will occur (Bandura, 1977). The expectation at this stage is for individuals to express that they like the new behaviors and can use them in their lives (Prochaska & DiClemente, 1983). The final stage, Results, emerges through the evaluation of individuals. It encompasses questions such as whether quality is improving, whether there is a decrease in costs, and positive answers are expected (Parry, 1997). Such results are crucial for assessing the effectiveness of the provided training (Phillips, 2003).

Research Aim and Significance

This study aims to design and evaluate a new online in-service training program that conducted online to enhance the functionality of the e-learning environment in the process of transforming an in-person in-service training program, previously offered by a public institution, into an online format. The evaluation conducted in two dimensions: structural condition/design and instructional quality.

The Kirkpatrick training evaluation model is commonly used in educational evaluations. The quality of instruction evaluated using the Kirkpatrick model, while the evaluation of the e-learning environment in terms of structural condition and design conducted through the usability method. In this context, the main problem of the research is to determine the effectiveness and efficiency of the training to be provided along with the transformation of an in-person in-service training program into an e-learning environment, and the functionality of the e-learning environment in terms of usability. The research will seek answers to the following questions:

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1. What is the level of participant satisfaction with the training program? (Kirkpatrick, Reaction)

2. Has the previously defined learning objectives been achieved as a result of the training program? (Kirkpatrick, Learning)

3. Has the transfer of acquired knowledge or skills to the work environment occurred? (Kirkpatrick, Behavior)

4. To what extent does the output resulting from the acquired knowledge/skills reflect the quality of the training? (Kirkpatrick, Results)

The research is expected to contribute to identifying strengths and weaknesses in the transformation of in-service training to online learning, taking necessary measures, implementing appropriate instructional design processes, and ensuring that selected or developed e-learning environments are user-friendly (suitable for user needs, expectations, etc.) for institutions, instructional designers, practitioners, and particularly researchers.

METHOD

This study was designed using a before-and-after study design. Also referred to as a before-and-after design, this approach is used to measure changes in a subject or situation. It is the most appropriate research design for assessing the effectiveness of a training process. In studies using this design, data is collected from the same group at two different points in time to understand changes in the variables. The changes between these two sets of data are examined, and the results are interpreted as contributions to the effectiveness of the training (Kumar, 2011). Measurement forms suitable for each level of the Kirkpatrick evaluation model were developed. The independent variable of the study is the e-learning environment where the in-service training program delivered. The dependent variables of the research include general satisfaction, academic achievement, evaluation of transfer to the work environment, and product quality.
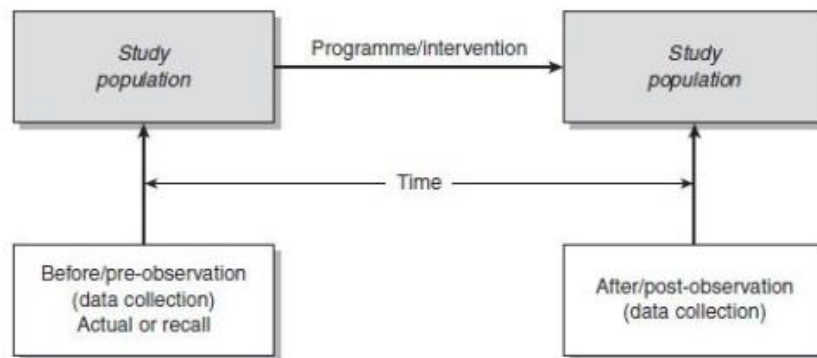

Figure 1. *The before-and-after study design (Kumar, 2011)*

Population and Sample

The employees of the public institution at various levels, who will receive in-service training through e-learning, constitute the universe of the study. This training is important for all employees. The sample of the study consists of employees selected through stratified purposive sampling, representing the universe at all levels. This approach aims to reveal the quality of the in-service training program through e-learning for employees working at different levels. Accordingly, the population for this study was defined as school administrators working in Sakarya province. The sample selected from this population consists of 137 individuals, including 93 male and 44 female administrators. All participants are between the ages of 27 and 56. Twenty-seven participants hold a master's degree, while all other participants are graduates of a faculty of education with a bachelor's degree.

Research design/process

The ADDIE instructional design model was used in the research. Every instruction involves the instructional design process. This process is carried out through instructional designers, divided into various branches based on instructional design models. Our model is based on the ADDIE design model, which is accepted as the core model of instructional design (Reiser & Dempsey, 2012; Smith & Ragan, 2005). Following a specific model in converting traditionally delivered lessons to distance education will maximize benefits while minimizing time and resource losses (Dziuban, Moskal & Thompson, 2004; Simonson, Smaldino & Zvacek, 2011).

In this context, the process represented graphically above is constructed by the researcher based on the ADDIE model. The process starts with a process analysis (Dick, Carey & Carey, 2009). However, even if a lesson delivered through traditional methods is to be transformed into distance education, determining the teams involved in the design process is important to prevent time, energy, and resource loss due to the complex nature of this process. In this regard, it is deemed appropriate to start with two separate teams in the design process: the development team and the control and improvement team (Richey, Klein & Tracey, 2010).

Among the developers, there should be subject matter experts and instructional systems designers, as well as web, graphic, and animation designers, and multimedia producers. In the control and improvement team, measurement and evaluation experts, trainers, and technical support staff are expected to be included (Seels & Richey, 1994). The research was designed and tested in a group with similar characteristics to the main working group according to the ADDIE instructional design model (Gustafson & Branch, 2002). The steps related to this are presented in the diagram below.
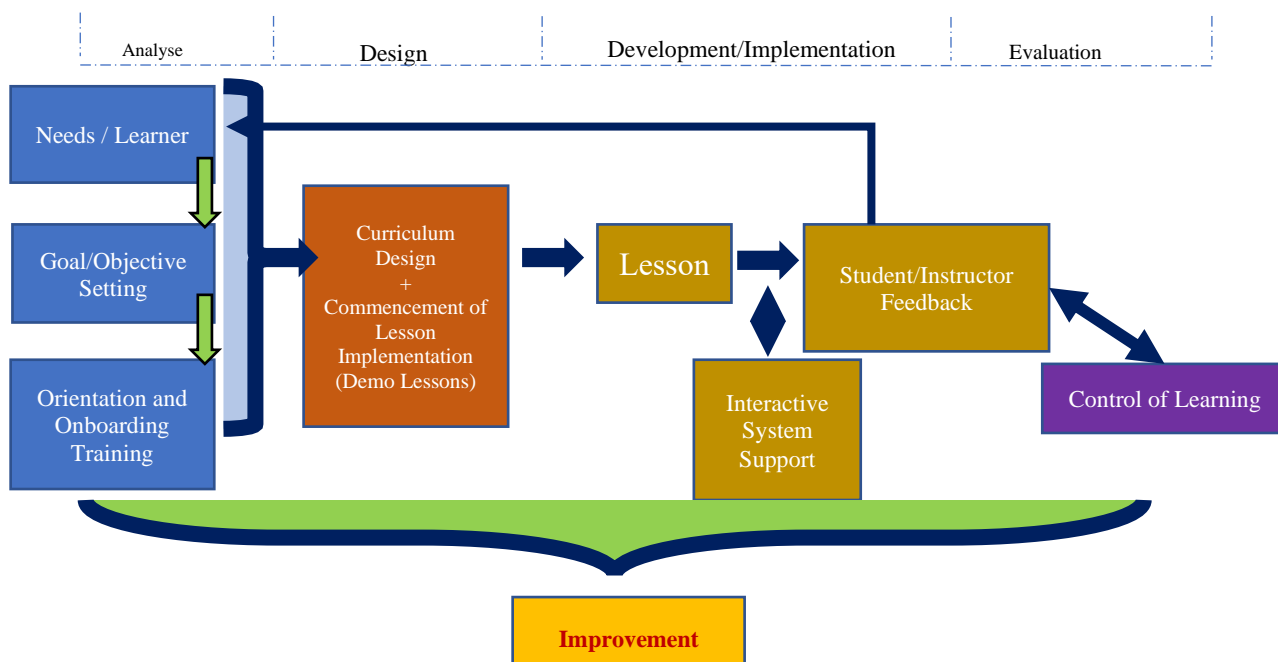

Figure 2. *The used ADDIE instructional design model (Peterson, 2003)*

Analysis Phase

A system approach to instructional design revolves around a mechanism consisting of input, process, and output (Reeves, 2000; Smith & Ragan, 2005). Therefore, the existence of a mechanism involving input-process-output will facilitate the progression of the design with the correct steps. At this point, the requirements of the current situation should be examined in a multidimensional way, and the possibilities should be accurately presented. At the center of the design should be the analysis of learner needs and the analysis of the course to be transformed into distance education. Learners' cognitive, affective, social, physical, etc., general characteristics can be described in these analyses (Driscoll, 2005). In-depth

investigations are crucial in terms of student characteristics such as digital literacy, levels of technology use, attitudes and beliefs about learning, tendencies toward collaborative learning, interests, abilities, etc. Additionally, it should be well-analyzed whether the distance education method is the best solution for the presentation of the identified course.

Learner analysis alone will not be sufficient. The analysis of the content to be presented should also be performed, and goals/objectives should be expressed. In this analysis, the expectations and requirements of the teacher who will teach the course, along with the goals and objectives of the course, should be determined (Dick, Carey & Carey, 2009; Gustafson & Branch, 2002). If the teacher has documents related to the content, they can be requested. Document reviews, comments by subject matter experts, along with learning tasks to be assigned, books to be read (depending on the structure of the course), and project assignments should be planned.

With the analysis phase, the distance education process should essentially be initiated. Following the analysis of learners, content, requirements, etc., students who are introduced to the new environment through distance education should be provided with adaptation and orientation training.

Design Phase

This stage involves deciding on measurement and evaluation tools, lesson plans, and media and material selection or development (Popham, 2009; Stiggins, 2005). The instructional design principles must be adhered to in the selection or development of course materials (Horton, 2011; Smith & Ragan, 2005). A learning management system can be used for course tracking. Interactive discussion areas are used. Courses are initiated synchronously, and the first implementation takes place. For more effective learning, fundamental question-answer, discussion, and review topics related to the content should be identified. The experiences of subject matter experts effective in determining question-answer, discussion, and review contents (Clark & Mayer, 2011).

Development/Implementation Phase

This phase involves translating the processes carried out in the design stage into implementation. The selected materials are processed or produced. Pilot course applications are carried out by the development team within the framework of the selected environment/platform (Smith & Ragan, 2005). Pilot course applications involve evaluating feedback from teachers and students. Based on this feedback, an interactive system support mechanism, thought to be correct and effective, is activated. If situations arise that have not been identified previously, based on teacher and student feedback, these data should be sent to the analysis stage, and situations that will affect the process should be reevaluated.

A learning management system can be taken as the basis for the control and monitoring of the distance education process. It enables the asynchronous delivery of courses (Horton, 2011). Course contents, documents, assessment tools, etc., can be included. For processes that conducted synchronously, an appropriate environment should be selected based on the pilot applications and the courses should be conducted.

Reflection reports requested from students based on annual and daily plans for the pilot courses. Suggestions and feedback from students, as well as teacher feedback, should be evaluated.

During this phase, any unforeseen issues or challenges that arise during the pilot course implementations should be carefully analyzed, and adjustments should be made to ensure the effectiveness and efficiency of the distance education program. Continuous communication and collaboration between teachers, students, and the development team are essential for refining the course content and delivery methods.

After the completion of the implemented course design, the assessment of learning should take place. At this point, the usability of the system needs to be tested (Clark & Mayer, 2011). Usability can be tested in terms of ease and effectiveness. Usability measurements for both the learning management system and the selected synchronous learning environment should be conducted for students. The findings obtained should be compared with student/teacher feedback, and the process should be subjected to a continuous cycle.

In addition to usability evaluation, the effectiveness of the provided education can be assessed using the Kirkpatrick evaluation model, which involves a four-stage evaluation: reaction, learning, behavior, and results (Kirkpatrick, 1994).

This is a crucial step to be taken at every stage of the process, including the evaluation of demo (pilot) courses and design. If improvements are identified during the evaluation, they should be addressed. Even in the analysis stage, improvements should be sought. As a result of these improvements, the final version of the course design becomes ready for implementation.

Data Collection and Analysis

Following the Kirkpatrick evaluation model stages, various forms were used to measure the general satisfaction and engagement of employees in the program and system usage, the level of learning, the transfer of acquired knowledge to the work environment, and changes in behavior. Forms were used to determine the reactions/satisfaction levels of employees. These forms were designed by the researchers to find out about the planning of the education, the content of the courses, the education process, and the instructors; as well as the aesthetic features of the e-learning environment design and the learning difficulties, physical and psychological conditions during usage. Expert opinions were consulted and refined accordingly. A knowledge test prepared by subject experts was used to measure the pre-experimental knowledge levels of employees. After the training program, the same test was used again to measure knowledge levels. The behavior and job transfer level of employees measured as a product evaluation before and after training. In this context, employees were asked to develop a product related to the content of the training program during the training process. A grading key was created based on expert opinions. The projects presented by employees were evaluated by the researcher and at least one expert. The quality scores of the products created by employees were carried out similarly to the product evaluation process. The researcher and at least one subject expert evaluated the products using a graded scoring key.

The collected data analyzed using appropriate statistical methods, and the results interpreted to draw conclusions regarding the effectiveness of the e-learning program for in-service training in the public institution. The feedback obtained from employees and experts crucial in refining the training design and making necessary adjustments for future implementations.

FINDINGS AND INTERPRETATİON

In this section, the research aim and data collection tools are used to convert the collected data into findings and to make sense of them. Evaluation has been conducted in four fundamental stages as anticipated in the Kirkpatrick Model, reactions/Satisfaction, learning, behavior/Job Transfer and results/Organizational Impact. Explanations regarding the stages forming the model and evaluations made for measurement and assessment forms applied at each stage are provided below.

Findings on Participant Satisfaction Level for the Training Program (Reaction)

Overall Satisfaction Level: According to the survey results, the overall satisfaction level was found to be quite high. The majority of respondents, who exhibited positive emotional reactions regarding the planning, content, and process of the training program, expressed their overall satisfaction. The overall satisfaction situation is given in bullet points and evaluated under four main themes:

- o Compared to face-to-face training, they mentioned a more flexible and comfortable learning experience.
- o They liked the program's content and presentation, stating that it helped reinforce their knowledge.

> **L15:** *"Prof, online classes felt more flexible and comfortable to me compared to face-to-face. That's how it seems to me, I really liked it."*

> **L23:** *"Really liked the content of the program and how it was explained."*

> **L95:** *"Felt more freedom and comfort with online learning.*

> **L98:** *"Honestly, it was much better, really awesome, in my opinion."*

Course Content and Planning: The vast majority of individuals have positive opinions about the planning and content of the training program. Frequently expressed views about the clarity and appeal of the training content indicate that participants actively engaged in the learning process. All of them mentioned that interactive elements and visual materials made the program interesting. They also appreciated various learning activities catering to different learning styles. It was observed that examples and case studies provided helped them understand the practical application of the training.

Instructor Performance: Survey results indicate high overall satisfaction with the instructor or instructors. Traineesprovided positive feedback on the instructors' knowledge level, communication skills, and ability to engage with the audience.

Aesthetic Features of the E-Learning Environment: Regarding the design of the e-learning environment, participants generally made positive evaluations of aesthetic features. User-friendly interface and content organisation positively affected the e-learning experience.

System Usage (Learning Difficulties and Psychological States): Feedback was provided on technical problems or learning difficulties encountered during the training programme. However, these problems did not significantly affect the overall satisfaction level and most participants were able to overcome these difficulties.

Results Regarding Achievement of Learning Objectives after the Training Program (Kirkpatrick, Learning)

Findings related to the learning stage assess how effective the training program provided learners with a learning experience and whether the targeted knowledge, skills, or behavior changes have occurred. The obtained findings can be summarized under the following main headings:

Knowledge and Skill Acquisition: The knowledge and skills acquired after the training programme were evaluated. The findings related to the measured learning objectives reflect the effectiveness of the learning phase.

- o Participants stated that they acquired the targeted knowledge and skills by the end of the program.
- o They expressed that the content of the program was current and applicable to professional practice.
- o Mentioned they could apply the acquired knowledge and skills in the workplace.
- o They stated that regular review and application opportunities would enhance the retention of knowledge.
- o Highlighted that the provided resource materials facilitated easy access to information.

> **L1:** *"Got the targeted knowledge and skills by the end of the program, made*

me really happy."

L33: *"Just what I was looking for, the content was current and relevant to my job."*

L42: *"Think I can use the knowledge and skills at work, found it really useful."*

L43: *"Feel that if I regularly review and practice, the knowledge will stick better."*

L101: *"Resources provided made it easy to access information, really helped me a lot."*

Application and Practical Skills: In order to evaluate the success of the training programme, the application skills of the learned knowledge and skills were observed. Their success in the application phase and their capacity to use this knowledge and skills in practical life after the training were measured..

o They stated that there was a change in their workplace behaviours after the programme.

o They stated that they were able to fulfil their duties more effectively and efficiently by using the knowledge and skills they learnt.

o They stated that the programme contributed to their professional development.

L8: *"Noticed I did, that my workplace behaviors changed after the program."*

L71: *"Could fulfill my duties more effectively and efficiently, using the knowledge and skills I learned."*

L137: *"Think I do, that the program contributed to my professional development."*

Findings Regarding the Transfer of Acquired Knowledge or Skills to the Work Environment (Kirkpatrick, Behavior)

The findings related to the behavioural phase assess how the training programme influences and how the learned skills are integrated into daily work behaviours. The key findings related to the behavioural phase are the following:

Application of Learned Information: Volunteers evaluated how effectively they could apply the information learned in the training program to their daily work tasks. Feedback regarding the practical utility of the skills and knowledge acquired during the training was gathered.

o It was expressed that they were willing to apply the knowledge and skills learned in the programme in the workplace. They stated that the program helped them perform their duties better in the workplace.

o However, they stated that they could contribute to the overall development in the workplace by sharing the knowledge and skills they have acquired.

L121: *"Expressed I did, that I was willing to apply the knowledge and skills learned in the program in the workplace. Helped me perform my duties better in the workplace, it did."*

L133: *"However, stated I did, that I could contribute to the overall development in the workplace by sharing the knowledge and skills I have acquired."*

Team Collaboration and Communication Skills: Topics such as teamwork and effective communication skills emphasized in the program were specifically addressed with special questions to evaluate **respondents**'behavioral changes in these areas. The impact of the training on these skills and the

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positive experiences these skills would bring to daily work life were determined.

Innovation and Problem-Solving Abilities: The innovative and problem solving skills targeted by the training programme were evaluated in terms of their reflection on the participants' daily work practices. Behavioural changes related to the adoption of new approaches after the training were discussed.

Resistance to Change and Acceptance Rates: The impact of the programme on organisational changes was evaluated in terms of resistance to change and post-training acceptance rates. It was stated that the necessary support was provided for the implementation of the programme in the workplace. They expressed that their managers and colleagues were aware of the program and encouraged its implementation.

o   It was stated that the necessary resources and tools were provided to implement the programme.

o   They stated that they may encounter some obstacles in the implementation of the programme in the workplace. They indicated that barriers such as lack of time, technological infrastructure, and increased workload could limit the effectiveness of the program.

o   Trainees suggested that necessary steps should be taken to overcome these barriers.

L2: *"Stated it was, that the necessary resources and tools were provided to implement the program."*

L21: *"Encounter some obstacles I might, in the implementation of the program in the workplace. Indicated I did, that barriers such as lack of time, technological infrastructure, and increased workload could limit the effectiveness of the program."*

L40: *"Suggested I did, that necessary steps should be taken to overcome these barriers."*

These findings are a crucial source of information for understanding the behavioral effects of the training program and evaluating its contribution to organizational objectives. This evaluation plays a critical role in understanding the impact of the training program on business world practices.

Reflection of the Quality of Education Based on the Outcome of Acquired Knowledge/Skills (Kirkpatrick, Results)

Findings related to the results stage focus on evaluating the impact of the training program on organizational objectives and overall success. This stage aims to assess how the training program contributes to the strategic goals of the organization.

Development of Targeted Competencies: The impact on the development of competencies targeted through the training program has been addressed. These findings are considered crucial for understanding how participants apply the skills they gained and the targeted competencies after the training.

Alignment with Objectives: The alignment of the training program with objectives has also been examined. The findings measured the success of better alignment with strategic objectives after the training, expressing the positive contribution of the training program to these objectives.

Participant Feedback: In the results phase, the feedback received was analysed. This feedback provides an important insight in assessing the overall impact of the programme and satisfaction.

o   It was explain that the content and presentation of the programme could be adapted for other professional groups. They expressed that the program's fundamental principles and teaching methods are applicable in different professional fields.

o   All of them emphasized the need to consider the profession's group and requirements in adapting the program.

> **L52:** *"Explained it was, that the content and presentation of the program could be adapted for other professional groups. Expressed I did, that the program's fundamental principles and teaching methods are applicable in different professional fields."*

> **L79:** *"Emphasized all of them did, the need to consider the profession's group and requirements in adapting the program."*

This study has demonstrated success at every stage according to the Kirkpatrick evaluation model. Adapting the program to similar professional groups could provide numerous benefits, such as enhancing professional skills, increasing workplace productivity, and improving professional satisfaction.

DISCUSSION AND CONCLUSION

The study has demonstrated success at every stage of the Kirkpatrick evaluation model. Findings indicate that the program was well-received by everbody, offering a significant learning experience. All of them expressed high overall satisfaction, finding the e-learning format beneficial. They noted the flexibility and comfort of online learning compared to face-to-face sessions. Positive sentiments were also shared about the program's content and presentation. A similar study with employees in professional development reported that 90% were satisfied with the program and found e-learning beneficial (Aydin & Taşçı, 2023). Research by Hudak (2013) on teachers' professional development showed an increase in beliefs, attitudes, and preferences. Another study in East Asian culture revealed improvements in teachers' self-confidence and self-efficacy (Soprano & Yang, 2012). Positive evaluations at this stage, according to Kirkpatrick's model, are suggested to trigger positive reflections in the following two stages (learning and behavior) (Kirkpatrick & Kirkpatrick, 2006).

The findings of this study indicate that teacher characteristics and expertise significantly influence teacher satisfaction with education. Thus, the high satisfaction levels of participating teachers are believed to stem from well-designed training that meets their needs, rich content, and the competence of the instructor. This aligns with a frequently observed result in the literature associating satisfaction levels with the quality and content of training. Participants demonstrated the acquisition of targeted knowledge and skills by the end of the program. They expressed that the program's content was up-to-date and suitable for professional application, affirming their ability to apply gained knowledge and skills in the workplace. A study by Ergün and Kurnaz (2019) found recalling a significant portion of the learned information even three months after the program, suggesting potential similar results in this study. Literature suggests that high satisfaction correlates with increased levels of knowledge and skill acquisition (Zhetpisbayeva et al., 2020; Malik & Asghar, 2020).

Engagers stated that they were able to apply the knowledge and skills they learnt to perform their work more effectively and efficiently. They believe that the programme contributed to their professional development and enabled them to perform better. They reported that the programme provided the necessary support to implement the outcomes. Similarly, Mankan (2019) concluded that the knowledge and skills acquired in a study can be highly applied in their lives and transformed into behaviour. Contributors emphasised the universality of the principles and teaching methods of the programme and suggested that the content and presentation of the programme can be adapted for other professional groups. They underscored the importance of considering the specific needs and requirements of the relevant professional group when adapting the program. This study has demonstrated that a face-to-face, in-service training program can be successfully transformed into an e-learning environment. E-öğrenme formatı daha esnek ve rahat bir öğrenme deneyimi sunmuştur. Program bilgi, beceri ve davranışlarda önemli ölçüde iyileşme sağlamıştır. Adapting the program for similar professional groups could offer numerous benefits, including enhancing professional skills, increasing workplace productivity, and improving professional satisfaction (Kirkpatrick, 1994).

Finally, in the study conducted by Akbaş (2023), the differences between backward design, forward design and central design are emphasized by introducing learning outcome-oriented education and backward design approaches in the context of curriculum design. The stages and framework of backward design are detailed to provide practical implementation guidance. The study also compares retrospective design to Tyler's approach to scientific program development and design, identifying both similarities and differences. In the result-oriented education approach, emphasis is placed on what students should know and be able to do at the end of their learning experience. In contrast, backward design focuses on evidence of learning based on desired outcomes and structures the design to convey knowledge through authentic tasks. At this point, considering all the designed stages of the training program evaluated with the Kirkpatrick evaluation model with the backward design model in future research will undoubtedly add a different dimension.

REFERENCES

Akbaş, O. (2023). Planning curriculum with backward design: Understanding by design and learning outcome-based design. *Gazi University Journal of Gazi Educational Faculty*, 43(3), 1931- 1962.

Alliger, G. M., Tannenbaum, S. I., Bennett, W., Traver, H. & Shotland, A. (1997). A meta-analysis of the relations among training criteria, *Personnel Psychology, 50, 1997.*

Alsalamah, A. & Callinan, C. (2021). Adaptation of Kirkpatrick's four-level model of training criteria to evaluate training programmes for head teachers. *Education Sciences*, 11(3), 116.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice Hall.

Brinkerhoff, R. O. (2006). Increasing impact of training investments: an evaluation strategy for building organizational learning capability. *Industrial and Commercial Training,* 38(6), 302-307. https://doi.org/10.1108/00197850610685824

Cahapay, M. (2021). Kirkpatrick model: Its limitations as used in higher education evaluation. *International Journal of Assessment Tools in Education*, 8(1), 135-144.

Clark, R. C. & Mayer, R. E. (2011). *E-learning and the science of instruction (3rd ed.).* San Francisco: Pfeiffer.

Deci, E. L. & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry,* 11, 227-268. https://psycnet.apa.org/doi/10.1207/S15327965PLI1104_01

Dick, W., Carey, L. & Carey, J. O. (2009). *The systematic design of instruction (7th ed.).* New York: Pearson.

Dillenbourg, P. (1999). What do you mean by collaborative learning? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and computational approaches* (pp. 1-19). Oxford, UK: Elsevier.

Driscoll, M. P. (2005). *Psychology of learning for instruction (4th ed.).* Boston: Allyn & Bacon.

Dziuban, C. D., Hartman, J.L. & Moskal, P. D. (2004). Blended learning. EDUCAUSE Central for Applied Research, 2004(7).

Ergün, E. & Kurnaz, F. B. (2019). Investigating the relationship between learning styles and academic achievement in e-learning environments. *Journal of Theoretical Educational Science,* 12(2), 532-549. https://doi.org/10.30831/akukeg.407029

Gagné, R. M. (1985). *The conditions of learning (4th ed.).* New York: Holt, Rinehart & Winston.

Garrison, D. R. (2003). *E-learning in the 21st century: A framework for research and practice.* London: RoutledgeFalmer.

Gunawardena, C. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications,* 1(2–3), 147–166. https://www.learntechlib.org/primary/p/15156/

Gustafson, K. L. & Branch, R. M. (2002). *Survey of instructional development models (4th Edition).* Syracuse, NY: ERIC Clearinghouse on Information & Technology.

Hara, N. (2000). Students' distress with a web-based distance education course: An exploratory study. *Computers & Education,* 35(2), 129-148. http://dx.doi.org/10.1080/13691180010002297

Herrington, J. & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development,* 48(3), 23–48. https://doi.org/10.1007/BF02319856

Horton, W. K. (2011). *E-learning by design (2nd ed.).* San Francisco: Pfeiffer.

Hudak, M. (2013). *Professional development plus: rethinking professional learning*. Doctoral dissertation, Arizona State University, Arizona.

Jonassen, D. H. & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development, 47*(1), 61–79.

Keegan, D. (1996). *Foundations of distance education (3rd ed.).* London: Routledge.

Kirkpatrick, D. & Kirkpatrick, J. (2006). *Evaluating training programs: The four levels.* Berrett-Koehler Publishers, California.

Kirkpatrick, D. L. (1994). *Evaluating training programs: The four levels.* San Francisco, CA: Berrett-Koehler.
Kumar, R. (2011) *Research Methodology: A Step-by-Step Guide for Beginners*. 3rd Edition. Sage, New Delhi.

Malik, S. & Asghar, M. Z. (2020). In-service early childhood education teachers' training program evaluation through kirkpatrick model. *Journal of Research and Reflections in Education,* 14(2), 259-270.

Mankan, T. (2019). *Evaluation of hand hygiene education given to nursing students supported by hand hygiene products according to the Kirkpatrick model*. Doctoral dissertation, İnönü University, Türkiye.

Moore, M. G. & Anderson, W. G. (2003). *Handbook of distance education.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Moore, M. G. (1989). Three types of interaction. *American Journal of Distance Education,* 3(2), 1-6.

Moore, M. G. (1993). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22-38). London: Routledge.

Moore, M. G. (1997). *Distance education: A system view.* Belmont, CA: Wadsworth Publishing Company.

Parry, S. B. (1997). *Evaluating the impact of training.* Association for Talent Development; 1st edition (September 1, 1997).

Paul, T. (2012). The impact of age and education on the level of satisfaction and motivation among employees. *The IUP Journal of Management Research*, 11, 1, 29-37.

Peterson, C. (2003). Bringing ADDIE to life: Instructional design at its best. *Journal of Educational Multimedia and Hypermedia*, 12(3), 227–241.

Phillips, P. P. (2003). *Training evaluation in the public sector*. Doctoral dissertation, The University of Southern Mississippi, USA.

Pintrich, P. R. & Zusho, A. (2002). The development of academic self-regulation: The role of cognitive and motivational factors. In A. Wigfield & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 249--284). San Diego, CA: Academic Press.

Popham, W. J. (2009). *Classroom assessment: What teachers need to know (5th ed.).* Boston: Allyn & Bacon.

Prochaska, J. O. & DiClemente, C. C. (1983). Stages and processes of self-change. In P. C. Kendall & S. D. Hollon (Eds.), *Cognitive-behavioral interventions: Theory, research, and procedures* (pp. 315-342). New York: Academic Press.

Reeves, T. C. (2000). Enhancing the worth of instructional technology research through "design experiments" and other development research strategies. *Paper presented on April 27, 2000 at Session 41.29, "International Perspectives on Instructional Technology Research for the 21st Century,", New Orleans, LA, USA.*

Reiser, R. A. & Dempsey, J. V. (2012). *Trends and issues in instructional design and technology (3rd ed.).* New York: Pearson.

Richey, R.C., Klein, J.D. & Tracey, M.W. (2010). *The instructional design knowledge base: Theory, research, and practice (1st ed.).* Routledge.

Robertson, R.F. (1996). Develop a performance-focused organization. *Hdrocarbon Processing Dec.*, 75, 12, 81-86.

Rovai, A. P. (2002). Development of an instrument to measure classroom community. *Internet and Higher Education, 5* 197-211.

Salmon G. (2002). *E-tivities: The key to active online learning.* London; Sterling, VA: Kogan Page Limited.

Seels, B. B. & Richey, R. C. (1994). *Instructional design models and learning theory.* In C. M. Reigeluth (Ed.), *Instructional design theories and models: An overview of their current status* (pp. 19-39). Hillsdale, NJ: Erlbaum.

Simonson, M., Schlosser, C. & Orellana, A. (2011). Distance education research: A review of the literature. *Journal of Computing in Higher Education*, 23(2), 124-142. https://psycnet.apa.org/doi/10.1007/s12528-011-9045-8

Simonson, M., Smaldino, S. E. & Zvacek, S. M. (2011). *Teaching and learning at a distance: Foundations of distance education (6th ed.).* New York: Pearson.

Smith, P. L. & Ragan, T. J. (2005). *Instructional design (3rd ed.).* New York: John Wiley & Sons.

Soprano, K. & Yang, L-L. (2012). Inquiring into my science teaching through action research: A case study on one pre-service teacher's inquiry-based science teaching and self-efficacy. *International Journal of Science and Mathematics Education, December 2012*. http://dx.doi.org/10.1007/s10763-012-9380-x

Stiggins, R. J. (2005). *Classroom assessment for learning: A handbook for educators (2nd ed.).* New York: Pearson.

Thorndike, E. L. (1913). *Educational psychology.* New York: Teachers College, Columbia University.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity.* Cambridge, UK: Cambridge University Press.

Yardibi, N. (2018). The Effect of Teachers' Satisfaction Levels with Administrators on Their Job Performance. *Mersin University Journal of Faculty of Education*, 14(1), 426-435. https://doi.org/10.17860/mersinefd.401087

Zhetpisbayeva, B., Sarzhanova, G. & Seilkhanova, A. (2020). Using the Kirkpatrick evaluation model for pre-service teacher education course. *Collection of Scientific Works,* 68-73. http://dx.doi.org/10.36074/11.12.2020.v4.24