

The Effectiveness of Instructional Design Training Workshop to Enhance Teachers' Skills and Improve their Competencies of Teaching

**فاعلية ورشة تدريبية حول التصميم التعليمي
في تعزيز مهارات المعلمين وتحسين كفاءاتهم في التدريس**

إعداد

د/ سمير بن موسى النجدي

أستاذ تكنولوجيا التعليم المشارك، قسم تقنيات التعليم،

كلية التربية والآداب، جامعة تبوك،

تبوك، المملكة العربية السعودية

**الدراسات التربوية والانسانية. كلية التربية. جامعة دمنهور. مجلة
المجلد الرابع عشر - العدد الرابع - الجزء الرابع - ب - لسنة 2022**

فاعلية ورشة تدريبية حول التصميم التعليمي في تعزيز مهارات المعلمين وتحسين كفاءاتهم في التدريس

د/ سمير بن موسى النجدي¹

الملخص:

هدف هذا البحث إلى تقييم مدى فاعلية تضمين ورشة تدريبية حول التصميم التعليمي للمعلمين في برنامج التدريب الصيفي في أدائهم التدريسي. استخدمت الدراسة أساليب مختلطة، مثل مجموعات التركيز، وملاحظة المشاركين، وتحليل البيانات، لقياس تأثير البرنامج على كفاءة المعلمين في تحقيق نتائج التعلم وتحسين العملية التعليمية. شارك في الدراسة ستون معلمًا، حضروا ورشة العمل التي استمرت ثلاثة أيام لمدة خمس ساعات يوميًا، والتي تم تقديمها عدة مرات خلال صيف عام 2019. وتم جمع تعليقات المشاركين أثناء وبعد الانتهاء من الدورة وبعد فصل دراسي كامل من التدريس لتقييمها التطبيق العملي لتعاليم الورشة. وأظهرت النتائج أنه في ورشة التدريب على التصميم التعليمي، لوحظت فروق ذات دلالة إحصائية في جميع مراحل ADDIE بعد التقييم. تراوحت قيم اختبار T من -9.78 إلى -11.34، مع قيم p أقل من 0.01. كان المتوسط الإجمالي لجميع مراحل ADDIE هو -9.87 عند $p < 0.0$ ، وقد أدى ذلك إلى تعزيز مهارات المعلمين وكفاءاتهم بشكل كبير وعزز اهتمامهم بمزيد من التطوير المهني. وتوصي الدراسة بأن تركز برامج تدريب المعلمين على تعزيز مهارات التصميم التعليمي والتطوير المهني المستمر لاطلاع المعلمين على أحدث ممارسات وتقنيات التدريس.

الكلمات المفتاحية: التصميم التعليمي، مهارات المعلمين، الكفايات التدريسية، تدريب المعلمين، التطوير المهني

(1) أستاذ تكنولوجيا التعليم المشارك، قسم تقنيات التعليم، كلية التربية والآداب، جامعة تبوك، تبوك، المملكة العربية السعودية.

The Effectiveness of Instructional Design Training Workshop to Enhance Teachers' Skills and Improve their Competencies of Teaching

Dr. Sameer Mosa AlNajdi²

Abstract

This research aimed to evaluate the effectiveness of including an instructional design training workshop for teachers in the summer training program in their teaching performances. The study utilized mixed methods, such as focus groups, participant observation, and data analysis, to measure the program's impact on teachers' competency in achieving learning outcomes and improving the educational process. Sixty teachers participated in the study, attending the three-day workshop for five hours daily, which was presented multiple times during the summer of 2019. The participants' feedback was collected during and after completing the course and after an entire semester of teaching to assess the practical application of the workshop's teachings. The results showed that in the instructional design training workshop, statistically significant variances were observed in all stages of ADDIE post-evaluation. T-values ranged from -9.78 to -11.34, with p-values less than 0.01. The overall mean score for all phases of ADDIE was -9.87 at $p < 0.01$, and it significantly enhanced the teachers' skills and competencies and fostered their interest in further professional development. The study recommends that teacher training programs focus on enhancing instructional design skills and ongoing professional development to inform educators about the latest teaching practices and techniques.

Keywords: Instructional Design, Teachers Skills, Teaching Competencies, Teachers Training, Professional Development

² Associate Professor of Education Technology, Education Technology Department, Faculty of Education and Arts, University of Tabuk, Tabuk, Saudi Arabia

INTRODUCTION

Instructional Design (ID) is a system to build and rebuild the education system and the courses for the active learning of the learners. Instruction is not only the teaching, by the growth of new technology, performance, and representation of realism or information alteration. For that, the role of teachers is more critical than ever before. It is imperative to employ highly trained teachers to meet society's and policymakers' increasing demands and standards (Harder, 2008). However, researchers and education analysts have deemed professional development programs ineffective (Bayar, 2014). While several factors contribute to this inefficiency, Guskey (2002) identified two critical factors that most interventions fail to consider: what motivates teachers to participate in professional development and how teachers typically improve.

According to Bayar (2014), a successful professional development program must consider the needs of teachers and schools, involve teachers in planning and executing the events, offer incentives for active participation, and ensure long-term commitment and quality trainers. Various studies (Guskey, 2002; Bayar, 2014; Wati, 2011; Ma et al., 2018) have emphasized the importance of providing experiences to teachers with a unique integration of high-level content knowledge. Given teachers' daily challenges, it is crucial to equip them with the necessary skills to handle these challenges. According to Harder (2008), one of the fundamental skills teachers need to learn is designing their instruction which is strongly linked to cognitive and metacognitive processes, including analyzing and representation, reasoning, information gathering, assessment, solutions development, decision-making, preparation, reflection, and evaluation.

Thus, flexibility, adaptableness, and availability of possessions, instructional materials choice criteria are significant concerns for the evocative learning of the scholars. From the diverse approach, scholars should look at multiple alternates for the learning environment to match content level with appropriate materials, policies, and theories (Larson & Lockee, 2019). Education is a procedure for changing behavior; teaching is another perception that includes instructional happenings. While

instructors teach their content acquaintance, they should trail developing erudition techniques, doings, and technological developments to sustain their teachings.

The Instructional Design (ID) principles, such as ADDIE and ASSURE models, can be used as a cognitive organizational framework for teachers' development and planning. The current study aims to investigate the effectiveness of the ADDIE instructional design as a model training program to improve teachers' performances and skills in designing their lessons.

ADDIE has five phases, these phasis are:

1. Analyze
2. Design
3. Development
4. Implement
5. Evaluation

According to Smith and Ragan (2004), these five phases are comprised of, the initial phase of educational design is the analysis phase, which is crucial to all subsequent phases. During this stage, the instructional designer identifies the problem, the needs, the causes, and the potential solutions. The needs analysis, audience analysis, context analysis, and task analysis are all part of this phase, providing essential information for determining the goals and possible solutions.

The next phase is design, which involves translating the analysis into actionable steps and creating a roadmap for the educational product. This includes designing educational aims, learning sequences, instructional strategies, technology, and assessment tools.

The development phase involves transforming the design into an actual product by manufacturing prototypes, piloting, and finalizing the product.

In the implementation phase, the product is used in a natural environment, such as an educational setting. This phase includes collecting evaluation data, monitoring effectiveness, providing technical support, and managing and publishing the product.

Finally, in the evaluation phase, the data collected during implementation are used to assess the efficiency and effectiveness of the

design. The instructional designer can then suggest a development plan if necessary.

The ADDIE model is a widely recognized instructional design model that applies to different age groups, settings, skills, and content domains. It involves investigating and exploring content, theory, and process related to the project. This systematic design model can help teachers solve educational problems and develop professional products that meet joint needs. Coaching teachers on ADDIE skills can provide them with systemic knowledge and awareness to help find systemic solutions for educational problems.

RESEARCH PROBLEM

Most teachers have relied on outdated teaching methods, such as lectures and PowerPoint presentations. This approach disregards the unique learning needs of individual students and is ultimately ineffective. The Ministry of Education (MOE) in Saudi Arabia has acknowledged this issue and identified a lack of understanding among teachers regarding instructional design. To address this problem and ensure that educators have access to the latest technology and active learning strategies, the MOE has established the National Institute for Educational Professional Development (NIEPD). This government agency is committed to enhancing the quality of education by providing professional development opportunities for teachers. The NIEPD offers summer workshops with a section focused on Education Technology and Instructional Design, which is just one way they are working to improve the quality of education in Saudi Arabia (MOE, 2022).

According to Whitfield (2020), teachers need continuous training on how to apply instructional design processes to ensure effective learning environments and deliver quality education. This is why the NIEPD focuses on professional development topics that help teachers build and design their courses correctly. While the ADDIE instructional design model has been studied in designing educational courses and software, little attention has been given to how it can be used for teacher professional development.

The aims of this study are to fill this gap by utilizing the ADDIE model to improve teachers' professional skills and determine the effectiveness

of the workshops on the participants. I will evaluate how their skills and competencies have affected their ability to teach students and achieve learning outcomes.

RESEARCH OBJECTIVE

This research aims to examine how Instructional Design models can improve teachers' abilities and expertise in achieving desired learning outcomes and enhancing the teaching process. This will involve training them to comprehend and implement ID models in their lesson design and selecting appropriate strategies to deliver these lessons to their students effectively. The study will also assess their perceptions of the effectiveness of ID.

RESEARCH QUESTION

1. Do teachers exhibit positive perceptions about Instructional Design?
2. Does the instructional design training program enhance teachers' skills and competencies in achieving the learning and teaching process?

LITERATURE REVIEW

Instructional design mentions the process applied in creating instructional material. Its application lies in identifying gaps in acquaintance, skills, and approaches of students or workforces, analyzing learning requirements, and emerging learning material to close them. The instructional design gives meaningful and operative instructions to apprentices in a technique that will make erudition and building their lessons more practical and convenient (Smith & Ragan, 2004). Instructional design is not a one-person task limited to a sole undertaking. Several disciplines are engaged in it, with the instructional designer supposing a series of characters to complete the work.

Instructional design roles in improving the learning process.

The learning process is whereby the learner acquires knowledge from a professional. Instructional designs are applied in teaching as they improve students' learning capabilities, enhancing the learning process. The role of instructional design in the learning process is to ensure that the students acquire new learning strategies to improve the outcomes at

the end of the program (Lee et al., 2017). There are several ways that material flows from one source to another. It occurs daily as people dialogue, read, listens to radio programs, watch TV, or video clips on YouTube. There is a vast, free information interchange by linking it with technology. The disadvantage is that the manner of information is understood solely by the receiver. If the goal is to explain something new, such as working methods, best practices, systems, workplace performance, intelligence, and cultural ethics, leaving data open to clarification is a hazardous business, especially when incentives are high with the subject while training.

The function of the instructional designer is to yield the most important information about a specific topic and present it in an approach that will engage the intended audience and make the information noteworthy. This is accomplished using the values and available tools provided by the organization. There must also be spot checks – exercises through the essential subjects and learning ideas, an evaluation, and possibly a certificate upon successful completion. This will determine whether the course has met the designated learning aims and overall purpose. If not, the instructional designer will adapt the course content to improve outcomes (Ertmer et al., 2019).

Instructional designers are involved in many education-related activities, from designing exercise materials to create comprehensive courses or even entire curricula to consuming various media capitals to enhance learning surroundings, including working job-aid resources, pamphlets, online class guides, and collaborative multimedia skills. While some creators work separately, others effort in collaborative teams that include specialists in certain kinds of subject matter, such as departmental staff or field-specific specialists, the cohesion in each state is that the emphasis is always on cultivating content, increasing convenience and comprehension, and cultivating learning results. In addition, instructional designs can offer valued insight and support with virtually all features of course design, whether it be generating a new course (virtual, face-to-face, or a mixture combining both), reshaping an existing one, scheduling teaching practices and strategies (Morrison et al., 2019). They can also aid with course enhancement through alternative valuation techniques or

the application of new skills. Whatever the precise educative needs, the tactic that instructional designers gross to create more active learning experiences are strappingly grounded in both exploration and theory.

According to Smith & Ragan (2004), Regardless of the project size, instructional designs typically rely on various design models, such as ADDIE or ASSURE, to guide the process. This approach provides clear instructions for each step and offers a comprehensive overview of the entire course design. Essentially, these models ensure that all necessary elements are included to meet the desired objectives and align with the rationale behind the chosen strategies, resources, and materials.

Models have a dual purpose in the realm of education. On the one hand, they serve a descriptive function; on the other, they provide a rigid framework for crafting a precise instructional design. The process of instructional scheme design involves creating a well-structured system of resources that includes goals, relevant training strategies, systematic feedback, and evaluation. Essentially, this is the science of developing detailed conditions for designing, developing, evaluating, and maintaining teaching materials that facilitate learning and performance. To aid designers in comprehending the variables associated with learning or redesigning, expanding, evaluating, and supporting an instructional design model is a systematic tool at their disposal.

Using Instructional Design to strengthen the role of learning Active Learning Strategies.

Active learning strategies are models that improve the learning process in schools where the learners and tutors meet the learning outcomes as expected. Strengthening these strategies can be backed up using instructional design models. Instructional designs play a significant role in ensuring that the learning strategies are enhanced appropriately, thus meeting the set objective. Using transitory get-acquainted opener activities and/or subject substance preparations - Students are more likely to become enthusiastic about, as fine as participating energetically in, a class in which they recognize other students. In detail, when asked why vast numbers of students characteristically do not pose the queries, they have about complex development content to their instructors and why moderately few students essentially participate during in-class

assemblage discussions, students usually concede their indecision to speak and perhaps embarrass themselves in the facade of a group of outsiders. Thus, the recurrent use of social introductions at the twitch of each new period, as well as the sporadic use of course-relevant short-term warm-up actions in the opening minutes of class meetings, can have a boundless positive influence on reducing this problematic obstacle to the in-class conversation (Apino & Retnawati, 2017).

Students often complete reading projects without ever individually wondering about (or being requested to replicate) the spring of the info they are learning. Supplementary, many of today's scholars incorrectly undertake that each of the conspicuous individuals conferred or cited in textbooks are white men. One technique to arouse student attention and curiosity about progression content is to have students study the lives of the many remarkable individuals whose effort has contributed meaningfully to topics stated in their textbook and/or discovered in the course. Thus, scholars can make short demonstrations addressing the theme. For added significance, in addition to briefly providing some outdated biographical highlights, scholars could also examine what this prominent supplier to the field was corresponding to when he or she was an apprentice student.

According to Branch (2014), Using simulations and games in the instructional toolkit can stretch a deeper look at the impression of learning and validate how students can create and experiment with erudite concepts. These plans also offer them a gamble to practice their relational skills in a quickly acquainted atmosphere. The opportunity to imagine, model, or role-play in vibrant situations promotes interest, investigation, and problem-solving. It can assist students in working near a superior understanding of the material. The different ways students demonstrate the knowledge they have acquired outside writing and oral description, the better their understanding and recall of the info will be. In mathematics and science arenas, for example, scholars can experiment with replicated projects that would else be problematic or cost-prohibitive to do in actual settings. Samples include:

- Planning a model of a wave coaster to understand hills, angles, and speed.

- Expending a hard-boiled egg to validate Newton's Law of Motion.
- Constructing a model volcano to comprehend what makes them explode.

Instructional designers make and deliver educational and training resources to learners from all walks of life in diverse ways. Their effort can be understood in elementary and subordinate walks of life in diverse dining amenities. They also established outside the academic segment in various productions, including health care, marketing, and army services (Lee et al., 2017).

Understanding the importance of instructional design is crucial. An instructional designer is responsible for systematically gathering, processing, and analyzing data to determine if teachers have been adequately trained on new topics and if they need further assistance. They are also responsible for revising the curriculum to ensure students can effectively comprehend the subjects. This process ensures that the education system operates efficiently and utilizes its resources effectively. Instructional designers often work as part of a team, but their significant role must be acknowledged. For example, in developing an eLearning course, an instructional designer collaborates with a program designer, an e-learning designer, and a quality assurance specialist. Despite being one of several contributors, research suggests that the instructional designer is responsible for 30 to 40 percent of the project's success (Seel et al., 2017).

To excel in instructional design, it is crucial to comprehend the distinction between instructional design strategies. In this field, presenting a topic involves no universal approach. Even if instructional designers have identical content and resources, they may use different methods and procedures. The key to instructional design is determining the most effective strategy for a specific audience and learning environment. Also, several standard instructional design methods in learning include storytelling and guided learning, scenario-based learning, and learning through exploration and discovery. The strategy chosen depends on the content, audience, and learning environment. For instance, learners can be guided through each step of a recommended learning process using avatars or simulations, making it ideal for

software or development exercises that require learners to complete a specific task (Gustafson & Branch, 2002).

The relation between Instructional design and achieving Learning outcomes.

To ensure students achieve the desired learning outcomes, educators must set clear aims and employ effective instructional design strategies that help develop students' minds and enhance their practical learning skills. The primary objective of both instructional design and achieving learning outcomes is to ensure students attain their goals and complete all required coursework. However, achieving learning outcomes can be challenging as educators must ensure that all students understand and work towards achieving the goals. The main similarity between these concepts is their shared focus on goal realization (Gagne et al., 2005).

Based on Thurlings & den Brok (2017), Instructional design goes beyond just assisting with learning; it involves identifying the targeted audience's skills, knowledge, and attitude gaps and creating learning experiences that bridge them. The main objective of instructional design is to enhance the efficiency and effectiveness of the learning process. Learning is a continuous process influenced by positive and negative experiences. However, with the abundance of information available, it is easy to miss out on essential details. This is where instructional designers ensure that all necessary information is covered. In addition, creating a positive learning environment is vital for teachers. It involves selecting appropriate activities and assisting students in practicing what they have learned. Reinforcement and consequences play a significant role in ensuring that students learn and remember the material. Professional development can offer many advantages to teachers, such as helping their students learn more effectively, expanding their knowledge, and enhancing their lives.

Instructional designers use various prototypes to develop instructional materials for effective student learning. These prototypes are designed to enhance instructional effectiveness and student learning outcomes. Although there are many different design models, they all follow the same vital phases of instructional design: analysis, design, development, implementation, and evaluation. Instructional design aims to determine

instructional goals, develop policies, and evaluate and revise instructional resources. In a global context, there are different perspectives on education theories and the application of instructional design. Behaviorism, for instance, emphasizes a step-by-step approach to learning by defining clear objectives in a personalized context. This individualized approach allows mastery learning in an independent and self-paced environment (Smith & Ragan, 2004).

Instructional design can be utilized by setting goals, analyzing resources, and evaluating systematically within the framework of behaviorism. Furthermore, from a cognitive perspective, design models are addressed by an educational process that involves knowledge encoding and retrieval by integrating new information with previous knowledge. This indicates that instructional design can be effectively implemented based on the principles of information processing theory to facilitate learning. That revenues instructional design can be used by setting purposes, analyzing possessions, and evaluating in a planned way within behaviorism. In addition, from the cognitive standpoint, design replicas are addressed by a constituent education process, such as knowledge coding and recovery, by integrating new information with previous info. That denotes instructional design can be realistic from the perspective of data processing theory to necessitate learning.

The effectiveness of applying a workshop to train teachers about Instructional design.

Attending workshops and training sessions can equip educators and trainers with the practical knowledge necessary for their teaching profession. Effective teaching involves understanding instructional design strategies and training correctly to impart knowledge to students. Workshops help trainers learn how to teach and employ methods that enhance learning, such as introducing new ideas, inspiring participants to explore independently, or demonstrating and endorsing actual process preparation. They offer a productive way to gain hands-on experience and allow learners to try new methods in a safe environment.

Attending workshops can provide numerous benefits to professionals. In addition to gaining new skills, they can also establish connections with individuals who share similar interests and potentially identify new

clients and vendors. Attending as many workshops as possible is recommended to stay up to date with the latest trends and remain competitive in the field. Also, can offer several valuable benefits to professionals. Besides developing new skills, they can build new relationships and establish connections with like-minded individuals, even identifying potential clients and vendors on a more personal level. Attending as many workshops as possible is always a good idea to stay abreast of the latest trends and remain competitive in the field (Lucas et al., 2017). Ahmadigol (2015) states that the studies trained using the ADDIE model have higher mean scores than students learning the traditional skills approach.

Constructing new relationships and meeting new influences are significant to personal growth. A workshop offers professionals the best opportunity to network with others with the same interests. It is always a pleasure to encounter someone with the same enthusiasm that an individual possesses. Attending a workshop is a great way to meet others in the area with shared interests. It may not guarantee a blossoming relationship, but it certainly does not hurt to try. One will at least be able to find an acquaintance and somebody who knows matters regarding the work. Teacher-specialized learning is of growing interest as a critical manner to support the progressively complex skills scholars need to acquire to thrive in the 21st century.

According to Darling-Hammond et al. (2017), having a well-crafted coaching approach is crucial to foster essential skills like content mastery, critical thinking, problem-solving, communication, and self-direction in students. Active professional development (PD) is vital in assisting educators to learn and enhance the instructional strategies for effectively teaching these skills. Studies have revealed that certain professional development practices have more effectively supported teacher practices and student learning outcomes. Effective PD is a tailored professional learning experience that improves teacher performance and student learning outcomes.

In addition, Learning is a lifelong journey, and I acquire new knowledge daily as engage with education in different settings. The design of instructional methods is essential in enhancing the quality of education in

our schools and achieving the set objectives in the curriculum. While several approaches can enhance teaching effectiveness, workshops are the most prevalent and advantageous for professionals who attend them. Therefore, institutions should organize workshops for professionals to improve their instructional models and enhance their effectiveness in teaching.

METHODOLOGY

Participants

In this workshop, 60 participants were registered and attended the training. NIEPD divided them into three groups; each group attended three days a week. Each group took the same training program, and the instruments were applied during and after the program. Before the training program began, I explained the procedures to the participants and obtained their consent. Participants were informed that numbers would replace their names during the data analysis. Participants will receive a survey about what they know, learned, and found at each workshop's beginning and end.

Study participants

From the data shown in Table 1, diversity in the study sample is different because these workshops provided by NIEPD were optional for teachers to apply, and there were two more different workshops at the same time. The results of this study show that most participants who attended the workshop had never participated in any ID training program before, a Bachelor holder who taught the Arabic language in the elementary grade and had between five to 10 years of experience. This shows that teachers with five to 10 years of experience feel the importance of the workshop to help them improve their abilities to design and deliver their lessons to their students in an effective way.

Table 1. The Demographic Data.

Demographic data	Percentage	Frequency	Percentage
Teachers' qualifications	Bachelor's Degree	52	85.00
	Master's Degree	7	13.33
	Doctorate's Degree	1	1.67
Total		60	100
	Arabic Language	14	23.33

Teachers' discipline	Islamic Studies	13	21.67
	English Language	9	15
	Special Education	7	11.67
	Sciences	6	10
	Mathematics	6	10
	Computer Science	5	8.33
Total	Total	60	100
Teaching experience (years)	Less than 5	20	33.33
	5 to 10	28	46.67
	>10	12	20
Total		60	100
Grade taught	Elementary	25	41.67
	Intermediate	20	33.33
	High school	15	25
Total	Total	60	100
Attended ID training program before	Yes	3	5
	No	57	95
Total		60	100

Applying the workshop

In 2019, NIEPD identified the training sections in the summer training, which included the education technology section, and asked faculty members in the Saudi universities to raise workshop titles with a brief of the workshops in each section for review. After that, NIEPD nominated the workshops adopted into the program. The workshop was submitted and was nominated to present to teachers in Tabuk. Its title was Instructional Design and Active Teaching; this workshop was 15 training hours. Workshops are designed based on the needs of the participants provided by NIEPD and the participants' characters. This workshop has three topics presented in three days; these topics are:

1. Instructional design; concept, theories, and skills.
2. Models and levels of Instructional Design.
3. Active learning concepts and strategies.

A trainee's package was provided to each trainee on the first day, so they could apply and do the activities in the workshop and follow up.

Study procedures

The training program was divided into two parts. In the theoretical part, the trainer introduced and explained the main concepts of each phase of ADDIE and its skills. The practical part involved teachers selecting a

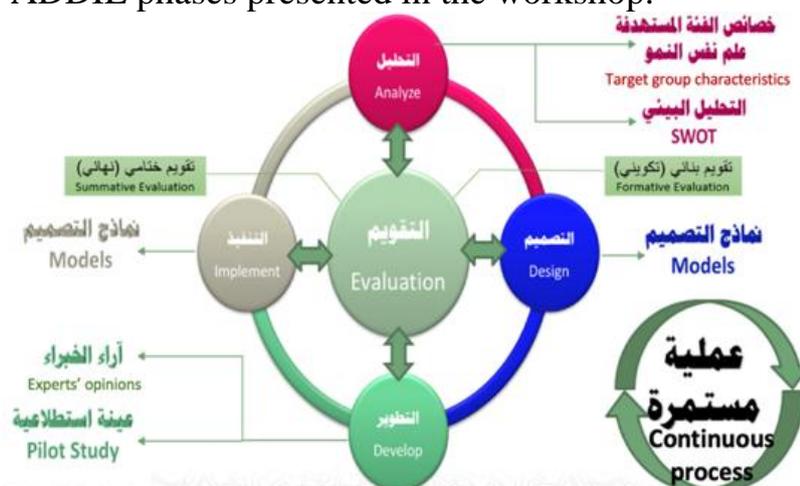
lesson from their subject and designing it using ADDIE. At the end of each phase, groups presented their work to other groups and received feedback from both the trainer and peers.

The workshop program has five sections: an introduction, three main topics, and a conclusion. In the introduction and conclusion, participants were requested to present and summarize each day's content with their peers and interact on the three main topics. They were divided into groups based on their subject to deal with the same concepts and work together on the lesson; the content will be designed. In addition, at the end of each day, teachers summarize and explain what they learned from this day, then refresh their minds by remembering what they learned at the beginning of each day as an opening for the next day.

On the first day of the workshop, a pre-evaluation was applied to the participant's knowledge of Instructional Design. Then, it was started by identifying the main goals of the workshop. What they will learn from this workshop began by explaining the meaning of ID and its history, entrance to Instructional Design, principles, skills, characteristics, importance, and theoretical roots of instructional design.

On the second day, Participants started by brainstorming their opinion on the role and impact of implementing Instructional Design models in improving education by applying Instructional Design. Then, based on their response, the second section of the workshop presented instructional Design models, levels of applying ID, and misconceptions about ID. Then, some ID models were presented, such as ADDIE, ASSURE, Smith and Reagan, and Dick and Carey. Also, the workshop included how to use the ARCS and SMART models to support the design. In the second half of this day, after presenting the phases and the leading role for each phase of ADDIE, see fig. 1.

Figure 1. ADDIE phases presented in the workshop.



In addition, following the explanation of ADDIE phases, each phase has been explained in detail, and the standard instructional design procedures are organized by ADDIE, as shown in fig.2.

	Analyze	Design	Develop	Implement	Evaluate
Concept	Identify the probable causes for a performance gap	Verify the desired performances and appropriate testing methods	Generate and validate the learning resources	Prepare the learning environment and engage the students	Assess the quality of the instructional products and processes, both before and after implementation
Common Procedures	<ol style="list-style-type: none"> 1. Validate the performance gap 2. Determine instructional goals 3. Confirm the intended audience 4. Identify required resources 5. Determine potential delivery systems (including cost estimate) 6. Compose a project management plan 	<ol style="list-style-type: none"> 7. Conduct a task inventory 8. Compose performance objectives 9. Generate testing strategies 10. Calculate return on investment 	<ol style="list-style-type: none"> 11. Generate content 12. Select or develop supporting media 13. Develop guidance for the student 14. Develop guidance for the teacher 15. Conduct formative revisions 16. Conduct a Pilot Test 	<ol style="list-style-type: none"> 17. Prepare the teacher 18. Prepare the student 	<ol style="list-style-type: none"> 19. Determine evaluation criteria 20. Select evaluation tools 21. Conduct evaluations
	Analysis Summary	Design Brief	Learning Resources	Implementation Strategy	Evaluation Plan

Figure 2. Common instructional design procedures organized by ADDIE (Branch, 2014).

In the last section of the second day, after teachers learned the ID models and ADDIE in detail, participants started in groups to utilize the ADDIE model in a lesson on a chosen curriculum they teach, see fig 3.



Figure 3. Teachers' planning and designing their instruction.

Then, participants were asked to start using ID to create a plan for designing a lesson based on ADDIE phases on a chosen lesson's content. Then, they presented their techniques for analyzing, designing, developing, implementing, and evaluating the selected lesson. After they finished presenting their design plans to their peers, see fig 3.

After completing the presentation, the groups started to discuss each plan and find the issues and the developing points that needed to improve; at this stage, I became a facilitator.

Figure 4. Teachers' presentation of designing their lesson



The third day was divided into two sections; the first was about reviewing active learning strategies, such as problem-solving, learning cycles, projects, dialogue, discussion, and discovery learning. Afterward, participants were asked to find a way to use and choose the related strategy to their design. However, the last section was a practical section on designing a lesson based on the ADDIE model with implementing an active learning strategy based on ARCS and SMART models.

During the three days, the participants have been prompted to keep records of their performance in each chunk at the practice stage, as they will be provided with ongoing and regular feedback. I facilitated them during the practical section by initiating instruction, monitoring progress, collecting all materials then discussing the processes together. They will assess performance informally after each chunk and formally through an evaluation administered at the end of the instructional module. This assessment will be used as the official record of whether learners have reached the required level of competence and achieved the desired outcome of the lesson.

DATA COLLECTION

To address the study's inquiries and collect data, I carried out pre- and post-evaluations surveys and held focus groups at the conclusion of each day.

INSTRUMENTS

To assess participants' perceptions and aid in formulating the study's questions, four types of evaluations were conducted, including:

1. An initial questionnaire was conducted before the workshop, divided into two sections. The first section gathered demographic information about the participants, such as their specialization, years of experience, teaching grades, and knowledge of Instructional Design—the second section aimed to determine participants' expectations and goals for attending the workshop.
1. Daily surveys were administered to participants at the end of each day to evaluate training, identify areas that require improvement or further explanation, and determine what they learned.
2. An evaluation survey was conducted at the end of the training program to determine the teachers' attitudes toward the program.
3. After completing the training, A follow-up survey was sent to teachers as a final evaluation at the end of the following semester.

RESULTS

This study aimed to uncover teachers' comprehension, anticipations, and perspectives concerning the Instructional Design training course. Despite the variation in the participants' areas of expertise and the grade levels they teach, there were no significant difficulties in using ID to structure their lessons. All participants were actively involved during the workshop and expressed favorable reactions upon completion and throughout the pandemic. The teachers' qualifications and past attendance in ID training programs enabled them to facilitate discussions, encourage involvement, and support their colleagues.

This section will delve into the research questions and analyze the findings.

To answer the question, I gathered data through open-ended questionnaires distributed to teachers on the first day of the training

program. I used a coding approach based on the principles of thematic analysis to analyze the qualitative data collected. The data was organized into two main themes: the reasons for attending the training program and the expected benefits.

The findings showed that teachers attended the program for various reasons, with many indicating a desire to learn about the new topic. Our self-assessment questionnaire also revealed that only three out of 60 teachers had attended a similar program, demonstrating a lack of knowledge about ADDIE skills and their application.

First research question: Do teachers exhibit positive perceptions about Instructional Design?

First, A questionnaire examined the teachers' responses before and after the workshop about their knowledge and use of ID phases. The questionnaire consists of 24 statements, these statements cover the five phases of ADDIE, and the study sample's responses were obtained using a five-point Likert scale. The scale measures degrees of approval, ranging from strongly agree to strongly disagree. To quantify the responses, each statement is assigned a degree: Strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). To analyze the findings and provide results, First, to determine the length of a five-point Likert scale, calculate the range by subtracting the lowest value from the highest ($5-1 = 4$). Next, divide the range by the most significant value in the scale ($4 \div 5 = 0.80$) and add this value to the lowest value in the scale (1). Refer to Table 2 for a breakdown of the five-point Likert scale's division and corresponding response averages.

Table 2. Classification of the five-Likert scale

Category	The length of the category	
	From	To
Strongly Agree	4.21	5.00
Agree	3.41	4.20
Neutral	2.61	3.40
Disagree	1.81	2.60
Strongly Disagree	1.00	1.80

This was assessed using the skills' means and standard deviation and paired-samples t-test to compare the mean of the pre- and post-self-assessment questionnaire scores. The results are presented in Table 3.

Table 3. Means and Standard Deviations for ADDIE Skill

	ADDIE's Skills	Pre		Post	
		M	SD	M	SD
1	I analyze students' characteristics , needs, and individual differences that may impact their learning	2.02	.65	4.58	.78
2	I analyze the educational environment and its designs to make it stable and aligned with students' needs and teaching processes.	2.23	.79	4.56	.89
3	I analyze my students' educational backgrounds to identify gaps in their learning related to the subject matter I will teach.	2.09	.77	4.15	.87
4	I categorize the primary elements of the educational material before starting to build my lesson.	2.54	.67	4.55	.76
5	I used the SWOT analysis to set up all the strengths, weaknesses, opportunities, and threats.	2.64	.71	4.52	.74
	Analyzing phases	2.30	.72	4.47	.81
6	I create a detailed educational plan that outlines comprehensive actions required for its success.	2.43	.76	4.56	.91
7	I create measurable behavior objectives for the content.	2.12	.78	4.54	.75
8	I use the principles of teaching and active learning strategies in the design process.	2.08	.74	4.43	.88
9	I rearrange and organize educational content appropriately to achieve the lesson goals.	2.30	.77	4.38	.81
10	I select suitable technology kits to accomplish the objectives of the material.	2.56	.81	4.51	.85
	Designing phases	2.30	.77	4.48	.84
11	I start development the teaching plan that has been meticulously crafted with the use of formative evaluation	1.96	.74	4.34	.79
12	I provide clear instructions for educational content, accompanying activities, and assignments.	2.44	.65	4.41	.91
13	I used formative evaluation to develop the teaching process and help students to engage.	2.99	.70	4.44	.79
14	I create various assessment methods tailored to fit the content, and goals of the subject matter.	3.43	.81	4.45	.86
15	I encourage my peers to implement instructional design techniques and inspire them to integrate them into lesson planning.	1.10	.76	4.23	.91
	Development phases	2.38	.73	4.37	.85
16	I motivate students to engage in both the activities and the learning process.	3.10	.63	4.42	.80

17	I implement the teaching plan; the strategies and technologies.	3.23	.82	4.42	.79
18	I work to persuade fellow teachers to implement ID interventions and offer support and encouragement throughout the process.	1.45	.75	4.58	.71
19	I can differentiate between the two concepts of assessment and evaluation.	2.32	.77	4.56	.77
	Implementing phases	2.53	.74	4.50	.77
20	I document and analyze the formative evaluation results to assist in developing the comprehensive plan.	1.76	.82	4.55	.79
21	I offer students continuance feedback based on their evaluations results.	3.10	.76	4.52	.92
22	I used my students' and colleagues' feedback to develop my teaching performance.	2.98	.69	4.56	.87
23	I create a comprehensive rubric that clearly defines the assessment criteria.	1.78	.69	4.45	.81
24	I evaluate everything during and after the learning process to ensure its quality	1.76	.71	4.54	.85
	Evaluation phases	2.28	.73	4.52	.85
	The overall average for the whole phrases	2.35	.74	4.47	.83

Based on Table 3, it can be concluded that the participants in the study strongly agreed that the training workshop was important after attending it, as indicated by an overall mean score of 4.47 and a standard deviation of .83 on the Likert scale. However, prior to attending the workshop, they disagreed about its benefits based on the Likert scale, with a mean score of 2.35 and a standard deviation of .74, even though some of them had attended ID training before, but they were only 5% of the sample. These results agreed with (Alsaleh, 2020; Alodail, 2018; Madden & Hardré, 2016; Harder, 2008).

The results showed considerable disparities between teachers' perceptions of the benefits of an Instructional Design Training Workshop before and after evaluation. These differences were statistically significant for all phases of the ADDIE modeling favorite of the post-evaluation, with t-values ranging from -9.78 to -11.34 for each phase and p-values less than 0.01. The overall mean score for all phases of ADDIE was -9.87 at $p < 0.01$. In the Analyzing phase, the participant scored -9.88 with a p-value of 0.00, the Designing phase scored -9.78 at $p < 0.01$, and the Development phase scored -10.45 at $p < 0.01$. The Implementing phase scored -10.95 at $p < 0.01$, and the Evaluation phase scored -11.34 at $p < 0.01$. These scores indicate a significant difference between the mean

scores of pre-evaluations and post-evaluations, demonstrating the benefits of the Instructional Design training workshop in enhancing teachers' skills and improving the competencies of the teaching process, as shown in Table 4.

Table 4. Results of T-Test for pre- and post-evaluation of the ADDIE phases

		M	SD	MD	T-test	df	Sig.
Analyzing phases	Pre	2.30	.72				
	Post	4.47	.81	-2.17	-9.88	59	.01**
Designing phases	Pre	2.30	.77				
	Post	4.48	.84	-2.18	-9.78	59	.01**
Development phases	Pre	2.38	.73				
	Post	4.37	.85	-1.99	1-0.45	59	.01**
Implementing phases	Pre	2.53	.74				
	Post	4.50	.77	-1.97	-10.95	59	.01**
Evaluation phases	Pre	2.28	.73				
	Post	4.52	.85	-2.24	-11.34	59	.01**
The overall mean for the whole phrases	Pre	2.35	.74				
	Post	4.47	.83	-2.12	-9.87	59	.01**

** $\alpha \leq .01$

In addition, to get detailed answers to the first research question, which focuses on teachers' expectations regarding the data were collected from the open-ended questionnaire. A coding approach using thematic analysis principles was employed to analyze the qualitative data gathered from open-ended questionnaires. The data were collected, reviewed, organized, and sorted into three groups based on their responses.

The first group comprised participants already familiar with Instructional Design and had experience with its models and steps.

They provided clear objectives for attending the workshop. For instance, Participant 1, who teaches the Arabic language in intermediate schools, expressed their expectations.

"I have been eager to attend the workshop after I heard about it and read its description. I had issues delivering the content to my students; they live in a small village and only consider getting their certificates to apply to the military. However, I want to teach them the content to help them daily."

Participant 2, a computer science teacher with less than five years of experience, shared that,

"I obtained a master's degree in education technology before becoming a teacher. Despite their previous experience with instructional design (ID), I attended the workshop to gain practical training in using ID to design effective and engaging lessons for their students. While my students have some prior knowledge of the course material, they must develop their skills further. In addition, I hope to find the most effective ID models to enhance their lessons and make the learning experience more enjoyable for their students."

The second group of attendees aimed to enhance their competency and acquire new skills in Instructional Design. One of the participants, identified as Participant 3, holds a doctorate in mathematics and serves as an educational supervisor in Tabuk's educational administration. When asked about his reason for attending the workshop, he shared that,

"I had prior knowledge, but without practicing in ID but desired to update and refresh my skills to impart them to the new teachers under my supervision effectively."

Participant 4, an Islamic studies teacher in elementary schools, said,

"Before, I was unfamiliar with the concept of Instructional Design. However, I became excited to learn more about it and how it could assist me in teaching my students, especially with such an intriguing title."

Furthermore, some teachers shared that their motivation for attending the workshop was to enhance their understanding on ID and gain a more comprehensive perspective.

In the third and final group, concerning teachers' expectations of the ID training program, it was observed that many teachers are still uncertain about what the program entails, despite having read the workshop description. One of the participants shared their perspective:

"I had no prior knowledge about ID and hadn't read the workshop description. However, I signed up for it to add credit to my career development record. It is a three-day event exploring something new, and I hope it will be an engaging workshop."

Some participants anticipated learning to use design applications like Photoshop and other technical tools. At the beginning of the program, discussed their assumptions and prior knowledge of ID and educational technology. It became apparent that some had misconceptions about these topics. They were surprised to learn that the program did not involve the use of computer software. Here are some of the expectations that the teachers had before attending the workshop:

"I am interested in learning to design visual graphs and create infographics using Photoshop."

"Can you provide tips on effectively using PowerPoint and Excel in the classroom?"

"I'm looking to learn how to design educational programs, like Scratch."

"I want to improve my proficiency in integrating technology into teaching and learning."

The first day of the workshop focused on defining ID and its models and theories through lectures. At the end of the day, trainees were asked to evaluate their understanding, and their feedback was positive. They better understood how ID works and how it can help them with their students.

To evaluate the participants' progress, two methods were used. Firstly, a short survey was conducted at the end of each training day to gather their perceptions, what they learned, and areas that needed further improvement. Secondly, each day started with a review of the previous day's knowledge, which included explaining any misunderstood areas and discussing the answers with peers.

During the practice stages, participants were provided with activities that included applying ID in a lesson to check their mastery level. They were evaluated after each chunk of instruction, and a formal evaluation of their performance was conducted at the end of the module to ensure they achieved the desired outcomes.

The participants expressed satisfaction and engagement with the workshop, responding positively and working together as teams to design lessons based on the ADDIE model. On the last day, they were asked to respond to a second survey that measured the workshop's value in improving their design and teaching skills.

The participants agreed that the workshop allowed them to collaborate and share ideas and resources with their peers, improving communication and collaboration within their school or district. It also helped them develop their assessment and evaluation skills, learn about different assessment methods, design practical assessments, and use assessment data to improve their teaching practice.

According to Harder (2008), ID can aid teachers in creating lesson plans that utilize the cognitive organization to enhance their skills and connect new teaching strategies with existing ones.

The findings of Madden & Hardré (2016) align with this study's results. Before receiving instruction in instructional design (ID), participants did not view their teaching effectiveness and ability as closely linked. They did not associate their perceived teacher competence with their teaching ability. However, after attending the workshop, there was a significant and threefold increase in the correlation between teaching efficacy and perceived competence. This trend was consistent with the views of most teachers who attended the workshop. However, some teachers were unaware of the workshop's main objective despite clearly stating it in the description.

Second research question: Does the instructional design training program enhance teachers' skills and competencies in achieving learning outcomes and improving the teaching process?

Following the completion of the course, a WhatsApp group was established to assist trainees and address any questions they may have had when implementing the ID in their teaching. Additionally, trainees were sent a follow-up evaluation after the first semester of teaching post-workshop to assess their progress.

During the first semester of 2020, a group of trainees engaged in chat conversations and posed various questions. These questions primarily concerned three key areas: analysis, design, and evaluation. Many of the

trainees sought advice on effectively implementing SWOT analysis, including managing weaknesses and threats, and leveraging strengths and opportunities. One notable aspect of the chat group was that trainees supported one another, offering suggestions and guidance to their peers. As the facilitator, I provided additional assistance where needed. In the design section, trainees were particularly interested in creating motivational processes encouraging student engagement and participation. I reminded them of the ARCS model, a motivational model teachers can use to shift from a teacher-centered approach to a student-centered one and ensure their students remain attentive and involved in the lesson, see fig. 5.

During the developmental phase, the teachers collaborated to review and enhance their lesson plans. Every participant in this workshop acted as an expert, assistance their colleagues and maintaining a positive and constructive dialogue. As a result, my role in the group was simply that of a moderator.

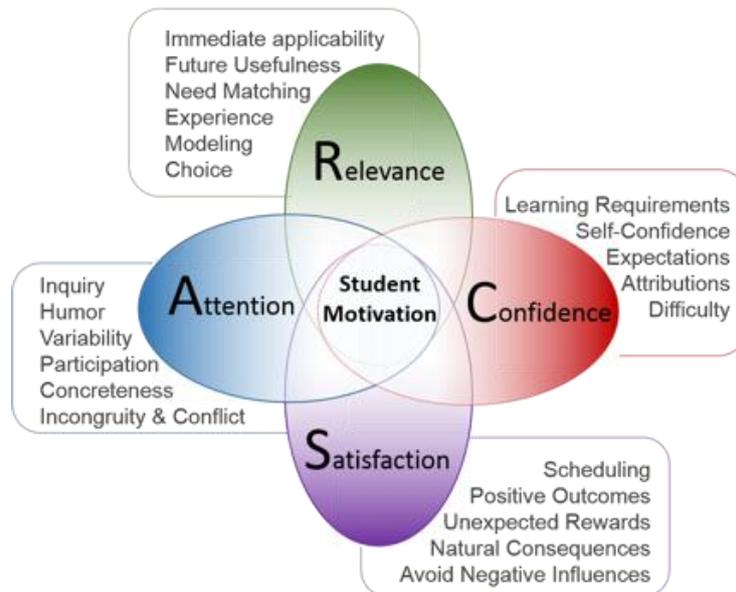


Figure 5. Keller's model of motivation (Kurt, 2022)

While writing and finalizing my paper, the Coronavirus pandemic emerged, and teaching shifted to remote learning. To gather more

information, I contacted teachers who attended the workshop and asked them a few questions regarding their approach to lesson planning. The questions I asked were:

1. Have you been impacted by the pandemic in your teaching?
2. How have you adjusted to teaching remotely?
3. In what ways did the workshop assist you in transitioning to remote education?
4. Have you encountered any challenges in keeping your students engaged?

The responses to these inquiries consistently highlighted the value of the course taken and the significance of instructional design in facilitating a smooth transition to remote learning.

Participant 1 stated,

"The pandemic had a significant impact on the education system but attending the ID workshop proved to be helpful in managing and minimizing its effects on my teaching and students. To ensure the best possible outcomes for my students, I designed my lessons based on the ADDIE model. When the pandemic hit, I utilized the SWOT analysis to mitigate its impact and leverage opportunities to support my students. Additionally, I employed the ARCS model to increase my students' engagement and motivation. Although schools in Saudi Arabia were only closed for three weeks, I dedicated this time to redesigning my lesson plans. When students returned to school, some struggled to stay engaged through remote learning. However, implementing the steps of the ARCS model successfully engaged my students."

Participant 2 reported that,

"The ID workshops taught me the knowledge, abilities, and skills to design impactful online instruction, produce captivating content, and lead online discussions and activities that foster active learning and student participation."

Participant 5 said,

“Attending the ID workshops taught me about implementing a student-centered approach, which is the primary approach in remote learning. This approach is crucial for achieving effective distance education. I was taught how to create instructional materials that cater to the unique needs of each student, allowing for active engagement and interaction. This approach increases motivation and encourages my students to become more involved in their learning.”

Participant 10 stated,

“Through the ID workshop, I gained a wealth of knowledge on ID models and how to apply them to create effective lesson plans. The ARCS model proved particularly helpful in capturing my students' attention during the pandemic, as it allowed me to design engaging, relevant, and motivating instruction. By tailoring my instruction to their interests and goals, building their confidence, and providing opportunities for satisfaction and achievement, I created positive learning experiences that promote long-term retention of knowledge and skills for my students.”

It can be challenging to achieve learning outcomes and improve teaching processes through traditional teaching methods. However, instructional design can assist teachers in enhancing their skills and competencies in several ways to shift to a student-centered approach.

Firstly, it helps establish clear goals and objectives, allowing teachers to design effective and engaging instruction. This, in turn, increases their confidence in their abilities as educators.

Secondly, the instructional design provides a structured approach to organizing thoughts and ideas, ensuring that all necessary content is covered. This structured approach can alleviate anxiety and uncertainty about designing effective instruction, further enhancing teachers' confidence.

Thirdly, instructional design emphasizes the importance of assessment and evaluation in teaching. By designing assessments that measure student learning, teachers can better understand their students' strengths

and weaknesses, which can inform their instruction and increase their confidence in their ability to deliver effective instruction.

Finally, the instructional design encourages teacher collaboration, allowing for shared ideas, feedback, and experiences. This collaboration can build teachers' confidence in their abilities and support their growth and development in instructional design skills. Overall, instructional design provides teachers with highly effective tools and strategies to design instruction that meets the needs of their students, ultimately leading to positive learning outcomes.

DISCUSSION AND CONCLUSION

The study's results demonstrate the significant impact of including instructional design training in teacher training programs. The training workshop participants displayed impressive improvements in their understanding of instructional design principles, ability to develop instructional objectives and selection of teaching strategies. Moreover, they exhibited better aptitude in understanding their students' learning needs, motivating them, and evaluating instructional effectiveness, which was agreed with (Alsaleh, 2020; Alodail, 2018; Madden & Hardré, 2016; Harder, 2008).

The study concludes that a three-day instructional design training workshop is a highly effective way to enhance teachers' pedagogical skills and promote effective teaching practices. The findings emphasize the importance of providing ongoing professional development opportunities for teachers to stay updated with the latest teaching practices and techniques. This finding aligns with (Alsaleh, 2020; Ahmadigol, 2015), of founding that providing ADDIE skills coaching to teachers can improve their skills.

In summary, adopting instructional design training workshops has proven to be highly beneficial for teachers, equipping them with the necessary knowledge and skills to design effective and engaging learning experiences, resulting in improved learning outcomes, which else consistent with Alsaleh (2020) of teachers' attitudes towards ADDIE were positive and supportive, indicating a desire to include this training in future professional development programs. The training program enhances teachers' skills and competencies in achieving learning

outcomes and improving the teaching process. It empowers them to apply various learning theories, design assessments that measure student learning, integrate digital resources into instruction, and collaborate with other teachers. The training provides teachers with the necessary tools and knowledge to design instruction tailored to their students' needs, as found in Bayar's (2014) research. This results in a more effective teaching process and a more engaging and interactive learning environment.

Harder (2005) stated that integrating ID can significantly benefit the organization of cognitive processes, ultimately improving teaching proficiency. This approach maximizes the utilization of current teaching and learning skills while providing a pathway for acquiring new ones.

According to researchers such as (Alsaleh, 2020; Bayar, 2014; Harder, 2008) and trainees' feedback, attending instructional design training workshops can greatly benefit teachers by improving their skills and abilities to achieve learning outcomes and enhance the teaching process.

Some key findings include:

- Improved instructional design skills: Teachers reported an improved ability to design compelling learning experiences that engage students and promote learning.
- Increased confidence: Teachers reported feeling more confident in designing and delivering instruction, assessing student learning, and providing feedback for improvement.
- Integration of technology: The workshop helps teachers integrate technology into their teaching practice, resulting in more engaging and interactive learning experiences for students.
- Collaborative learning: The workshop encourages collaboration and communication among teachers, leading to improved teaching practices and increased student engagement.
- Improved student outcomes: Teachers reported enhanced student outcomes, including higher levels of engagement, increased retention of information, and better academic performance.

Overall, instructional design training workshops can improve teachers' skills and competencies to achieve better learning outcomes and a more effective teaching process. Teachers can design more engaging, efficient,

and effective student learning experiences by incorporating instructional design principles. Educational institutions and teacher training programs should recognize the value of instructional design and provide opportunities for teachers to learn and apply these principles in their teaching practices to impact the overall teaching and learning experience positively.

REFERENCES

1. Abidin, N., Tho, S. (2018). The Development of an Innovative Resonance Experiment Using Smartphones with Free Mobile Software Applications for Tertiary Education. *International Journal of Education and Development using Information and Communication Technology* 14(1):164-176.
2. Ahmadigol, J. (2015). A Survey of the Effectiveness of Instructional Design ADDIE and Multimedia on Learning Key Skills of Futsal. *Journal of Educational and Management Studies* 5(3):180-186.
3. Alodail, A. K. (2018). The effectiveness of designing interactive educational software to develop instructional design skills among students teachers at Al Baha University. *Journal of the College of Education in Ismailia*, 41(1), 309–334. <https://doi.org/10.21608/jfes.2018.87329>
4. Alsaleh, N. (2020). The effectiveness of an instructional design training program to enhance teachers' perceived skills in solving educational problems. *Educational Research and Reviews*. 5(12), 751-763
5. Apino, E., & Retnawati, H. (2017, February). Developing instructional design to improve mathematical higher order thinking skills of students. In *Journal of Physics: Conference Series* (Vol. 812, No. 1, p. 012100). IOP Publishing.
6. Bayar, A. (2014). The Components of Effective Professional Development Activities in terms of Teachers' Perspective. *International Online Journal of Educational Sciences* 6(2):319-327.
7. Branch, R. M. (2014). *Instructional design: The ADDIE approach*. New York: Springer. doi:10.1007/978-0-387-09506-6
8. Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute.
9. Ertmer, P. A., Quinn, J. A., & Glazewski, K. D. (Eds.). (2019). *The ID casebook: Case studies in instructional design*. Routledge.
10. Gagne, R. M., Wager, W. W., Golas, K. C., Keller, J. M., & Russell, J. D. (2005). *Principles of instructional design*.

11. Guskey, T. (2002). Professional Development and Teacher Change. *Teachers and Teaching: Theory and Practice* 8(3/4):381-391.
12. Gustafson, K., Branch R (2002). What is instructional design? In RA Reiser and JV Dempsey (Eds.), *Trends and issues in instructional design and technology*. New York, NY: Prentice-Hall.
13. Harder P (2005). Instructional Design as a Professional Development Tool-of-Choice for Graduate Teaching Assistants. *Innovative Higher Education* 30(3):163-175.
14. Harder, P. (2008). The effects of instructional design training on university teaching assistants. *Performance Improvement Quarterly* 16(4):23-39.
15. Howard, C. D., & Baaki, J. W. (2021). Chopped ID and bicycle repair: Contrasting values in synchronous graduate instructional designs for design learning. *International Journal of Designs for Learning*, 12(2), 111–126. <https://doi.org/10.14434/ijdl.v12i2.30001>
16. Kurt, D. S. (2022, Oct.17). Model of motivation: ARCS instructional design. *Education Library*. Retrieved Nov. 3, 2022.
17. Larson, M. B., & Lockee, B. B. (2019). *Streamlined ID: A practical guide to instructional design*. Routledge.
18. Lee, J., Lim, C., & Kim, H. (2017). Development of an instructional design model for flipped learning in higher education. *Educational Technology Research and Development*, 65(2), 427-453.
19. Lucas, R. I., Promentilla, M. A., Ubando, A., Tan, R. G., Aviso, K., & Yu, K. D. (2017). An AHP-based evaluation method for teacher training workshop on information and communication technology. *Evaluation and program planning*, 63, 93-100.
20. Ma, N, Xin, S, Du, J. (2018). A Peer Coaching-based Professional Development Approach to Improving the Learning Participation and Learning Design Skills of In-Service Teachers. *Educational Technology and Society* 21(2):291-304.
21. Madden, J.S., & Hardré, P. (2016). Effects of Online Instructional Design Training on TA's Perceptions of Efficacy, Competence,

- and Knowledge Satisfaction. *Journal of Education and Training*, 3(2), 64-89.
- 22.MOE (Ed.). (2020). The establishment of the National Institute for Educational Professional Development. <https://moe.gov.sa/ar/mediacenter/MOEnews/Pages/j-1441-874.aspx>
- 23.Morrison, G. R., Ross, S. J., Morrison, J. R., & Kalman, H. K. (2019). *Designing effective instruction*. John Wiley & Sons.
- 24.Rahman MJ, Ismail MA, Nasir M (2014). Development and Evaluation of the Effectiveness of Computer Assisted Physics Instruction“. *International Education Studies* 7(13):14–22.
- 25.Seel, N. M., Lehmann, T., Blumschein, P., & Podolskiy, O. A. (2017). *Instructional design for learning: Theoretical foundations*. Springer.
- 26.Smith, P. L., & Ragan, T. J. (2004). *Instructional design*. John Wiley & Sons.
- 27.Thurlings, M., & den Brok, P. (2017). Learning outcomes of teacher professional development activities: a meta-study. *Educational review*, 69(5), 554-576.
- 28.Wati, H (2011). The effectiveness of Indonesian English Teachers Training Programs in Improving Confidence and Motivation. *International Journal of Instruction* 4(1):79-104.
- 29.Whitfield, J. M. (2020). *Instructional design and blended learning pedagogy among secondary mathematics teachers: a qualitative case study*. [Doctorate's dissertation, University of Phoenix].