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## **ENHANCING LEARNING OUTCOMES THROUGH EFFECTIVE INSTRUCTIONAL DESIGN**

### **ABSTRACT**

Instructional design for learning is critical to improving learning outcomes in contemporary educational environment. With the advent of technology-supported learning worlds, as technology facilitates the teaching, the need for structured and organized instructional approaches is more acute than ever before as educational settings evolve. This article aims to investigate the extent to which concepts of instructional design improve student engagement, motivation, and academic outcomes by investigating the relationship of instructional design to student educational outcomes. This study examines the link between instructional planning and teaching methods and learning outcomes in higher education. Taking a mixed-method approach, this study presents the teachers' and students' perception of instructional design practices. Results show that solid teaching and learning frameworks, active learning, and defined learning objectives have a significant impact on student learning outcomes and satisfaction. According to the study, the design models ADDIE and backward design should be adopted as an approach to course development. The results have significant implications for teachers regarding teaching effectiveness and student learning outcomes.

**Keywords: instructional design, learning outcomes, teaching methodology, student-centered learning, higher education**

**Şəbnəm Əhmədova**

## **EFFEKTIV TƏLİM DIZAYNININ TƏTBİQİ YOLU İLƏ ÖYRƏNMƏ NƏTİCƏLƏRİNİN SƏMƏRƏLİLİYİNİN ARTIRILMASI**

### **Xülasə**

Müasir təhsil mühitində təlim nəticələrini yaxşılaşdırmaq üçün öyrənmə üçün təlim dizaynı kritik əhəmiyyətə malikdir. Texnologiya dəstəklə öyrənmə dünyalarının yaranması ilə, texnologiya tədrisi asanlaşdırdığı üçün, təhsil mühitlərinin inkişaf etməsi ilə strukturlaşdırılmış və təşkil olunmuş təlim yanaşmalarına ehtiyac hər zamankından daha kəskindir. Bu məqalə təlim dizaynı anlayışlarının tələbə cəlbini,

motivasiyasını və akademik nəticələrini nə dərəcədə yaxşılaşdırdığını, təlim dizaynının tələbə təhsil nəticələri ilə əlaqəsini araşdırmaqla öyrənməyi hədəfləyir. Bu araşdırma ali təhsildə təlim planlaması və tədris metodları ilə öyrənmə nəticələri arasındakı əlaqəni tədqiq edir. Qarışıq metod yanaşmasından istifadə edərək, bu araşdırma müəllimlərin və tələbələrin təlim dizaynı təcrübələrinə dair qavrayışlarını təqdim edir. Nəticələr göstərir ki, möhkəm tədris və öyrənmə çərçivələri, aktiv öyrənmə və müəyyən edilmiş öyrənmə məqsədləri tələbənin öyrənmə nəticələrinə və məmnuniyyətinə əhəmiyyətli təsir göstərir. Tədqiqata əsasən, kurs inkişafına yanaşma kimi ADDIE və nəticəyə əsaslanan tədris dizayn modelləri qəbul edilməlidir. Nəticələr müəllimlər üçün tədrisin effektivliyi və tələbə öyrənmə nəticələri baxımından əhəmiyyətli nəticələrə malikdir.

**Açar sözlər: təlim dizaynı, öyrənmə nəticələri, tədris metodologiyası, tələbəyönümlü öyrənmə, ali təhsil**

**Шабнам Ахмедова**

### **Повышение Результатов Обучения Посредством Эффективного Инструктивного Дизайна**

#### **Резюме**

В современной образовательной среде дизайн обучения имеет критическое значение для улучшения результатов обучения. С появлением миров обучения, поддерживаемых технологиями, по мере того как технологии облегчают преподавание, потребность в структурированных и организованных подходах к обучению становится острее, чем когда-либо, по мере развития образовательной среды. Данная статья направлена на исследование степени, в которой концепции дизайна обучения улучшают вовлеченность студентов, их мотивацию и академические результаты, изучая взаимосвязь дизайна обучения с образовательными результатами студентов. Это исследование рассматривает связь между планированием обучения и методами преподавания, а также результатами обучения в высшем образовании. Используя смешанный метод, данное исследование представляет восприятие преподавателями и студентами практик дизайна обучения. Результаты показывают, что прочные рамки преподавания и обучения, активное обучение и четко определенные цели обучения оказывают значительное влияние на результаты обучения студентов и их удовлетворенность. Согласно исследованию, модели дизайна ADDIE и модели дизайна обучения, основанные на результатах (backward design), должны быть приняты в качестве подхода к разработке курсов. Результаты имеют существенные последствия для преподавателей в отношении эффективности преподавания и результатов обучения студентов.

**Ключевые слова:** дизайн обучения, результаты обучения, методология преподавания, студентоцентрированное обучение, высшее образование

It has been known that effective teaching practices in modern educational organizations are associated with high quality instructional design. Instructional design is the systematic approach to planning, designing, developing, implementing, and evaluating the appropriate instructional materials and learning experiences in order to facilitate effective knowledge acquisition. In an era of rapid growth and change in student-centred methodology, learner-centred teaching has become increasingly apparent as one of the aspects of the student improvement process. Conventional teaching methods mainly center on teaching content, which is not favorable for learners' interaction with and thoughts about that content. However, new research on education highlights that learning activities should be tailored to foster participation, critical thinking, and problem-solving. In the realm of high-quality instructional design, it is the point of orientation for teachers when we want to align learning objectives, teaching approaches, and assessment in producing meaningful outcomes. The study examines effective instructional design in education based on this and its impact on learning outcomes. It explores how teaching design can improve student engagement—including effectiveness—by implementing structured instructional frameworks that provide learners with creative ways to use materials. Given its important role in improving the quality of teaching and learning processes, multiple instructional design research studies have thus far been undertaken and investigated across education research activities. Instructional design, as articulated in the work of Charles M. Reigeluth (2017), is one of the fields which deals with the design of learning environments enabling students to learn in an efficient and effective manner. It is an organized way in which learners' requirements are recognized so that learning objectives can be designed and learning material made appropriate; moreover, teachers should develop the best methods of instruction and then they should also measure their learning outcomes.

*The ADDIE model* of instructional design, which is one of the most widely implemented, has 5 main sections; *Analysis, Design, Development, Implementation and Evaluation*. From *the analysis stage*, teachers decide the learners' features, learning requirements, instruction targets and local context, that will change the learning. This step is important, with teachers identifying what students already know and what they need to know at this point. *The design part* is about what is necessary for the instructional program. At this point, teachers can create what a student should achieve and what a student needs to do to achieve those objectives, identify an assessment strategy, and choose appropriate instruction and learning experiences. Tightens on design so that materials and activities are appropriate for

desired learning outcomes. **The development phase** is where materials and resources like lesson plans, multimedia presentations, modules, assessments, and digital learning tools are prepared. Thus, instructional designers are theorists who transform the hypotheses they make into practice for students and real learning from practice. Next comes **the implementation phase** -- that is how the program is demonstrated. Teachers coordinate learning activities, help students access resources to learning, and follow their development. In order for this to happen, best classroom management strategies, communication and teaching strategies that provide flexibility to enable the students to engage in the instruction in various ways are fundamental to successful implementation. Finally, **the evaluation** reflects the quality of the instructional design. Formative evaluation is when you do feedback on the learning process that you could use to implement something better if you do a more refined assessment, and summative evaluation is when you know that you have overall successful implementation of the instruction once it's been conducted. Following a systematic review, the teachers will reflect on what went well and what did not in terms of their lesson delivery strategies and what they may also apply to improve. ADDIE supports the structure for how these educational experiences form. In other words to make a structured way for both teachers and the creator of instructional courses to design courses that enable substantial learning, thereby enhancing effectiveness, to facilitate meaningful learning, which leads to better performance.

Another influential approach that has been used in instructional planning is **backward design** (Grant Wiggins and Jay McTighe, 2005). **Backward design is to approach from the beginning when planning the learning process with learning outcomes rather than teaching activities or coverage of content.** The model includes teachers figuring out what part of the task, content, know-how that students need to know and what students need to absorb at the end of a lesson or course. Teachers who are careful to define desired learning goals, starting as early as possible, can ensure that the entire process of learning leads to those goals. The backward design paradigm incorporates three overarching components. First you look for what you want out of a lesson, and determine learning goals (or real insights) that students will obtain. These results generally reflect curricular expectations, course objectives or overall pedagogical skills. Stage 2 is to identify what constitutes acceptable evidence of learning. At this stage, teachers will be creating assessments to gauge success with which pupils can demonstrate how well they have met the course goals to their individual level. These evaluations may be exam, project, presentation, portfolio, or performance. When an assessment standard is set early in the process of planning, teachers are then taking steps to ensure that the criteria for evaluation will be representative of skill or what type of content knowledge has been assessed with particular focus on skill or knowledge that is

being taught. Planning for the third phase is the planning for the education and learning activities. We create lessons, assignments, teaching methods for objectives and assessment that will then implement and learn from the design of the lesson that addresses these objectives. They may include group discussions, problem solving, case studies, or interactivity or group work. A strength is that backward layout encourages tight coupling of learning intentions, assessment methods, and teaching methods. Instead of randomly selecting activities, teachers are not passively selecting activities; on the contrary, they select strategies that reflect what they are doing. Thus instruction becomes more purposeful, integrated, and powerful. Backward design also allows teachers to focus on the deeper learning in addition to the shallow learning. The identification of authentic assignment tasks and the implementation of assessments that reinforce such tasks, which helps in building critical thinking skills, problem-solving practices, and enduring knowledge by demonstrating progress through authentic steps for practical progress at different phases can help students in the longer time span and enhance learning. For this reason, backward design emerged as an emerging approach to developing curriculum and education in educational institutions and colleges and as a common framework for developing curriculum of secondary and tertiary programs.

**Active learning strategies** are also identified as being relevant for designing instruction. *Active learning methods yield improved student performance rather than lecture-based instruction, according to Scott Freeman et al.* (2014) That broad meta-analysis of its research findings found students whose learning environment is active are more likely to have good academic performance and greater understanding of the subject matter than those who solely engage in passive listening techniques during the time that students are heard in front of lectures. Therefore, these results suggest that instruction design features elements that allow students to engage more with content and learn more, instead of simply passively having it happen or receive the attention of the instructor. Active learning transfers the emphasis of learning from the teacher to student-centered learning. In such learning communities, students are encouraged to explore ideas, process, troubleshoot, and connect their new knowledge to real-world problems. Such a process reinforces critical thinking and also develops deeper cognitive skills within the learner. Active learning is some types of instruction that is usually thought of as activities that encourage students to learn new knowledge. One of the most common techniques is collaborating, or “learning through group work”, in which students work together in groups to collaboratively complete tasks, to talk about ideas and point of view, as students see things from the perspective of and view of others. Active participation in teamwork contributes to the construction of communication, collaboration and deep understanding through meaningful participation which emerges from the context of learning which allows viewing of new ideas and reasoning systems and experiences from perspectives and

beliefs based on learning. A similar strategy is problem-based learning (PBL), where students are exposed to challenging, real-world problems and are encouraged to ask the questions, explore, respond, discuss and analyze how responses can be developed to address problems. This type of framework encourages independent learning and encourages understanding and utilization of analytical/decision-making in academics and practice, in particular. Likewise, project-based learning consists of activities that prompt students to use knowledge and acquire specific skills to produce a final product (a final product). By trying a project-based learning approach for projects: Inquiry, planning, teamwork and reflection is also necessary for the students, as it builds on the students' abilities to connect theory learned in class to practice in life. Making the students engage in the process of learning would promote their motivation, retention and ability to apply critical thinking and problem-solving in class.

Furthermore, **digital technologies have massively impacted instructional design in modern education.** The rise of digital environments is allowing teachers to produce tools and concepts to plan, deliver, and evaluate a curriculum at an accelerating rate. Technological innovations support and enable teachers' mobility outside of the classroom and a multi-modal approach in addressing individual student needs. Digital learning platforms (e.g., Moodle, Google Classroom, ChatGPT) give teachers the ability to organize instructional content, assign assignments, monitor student learning, and facilitate communications between teachers and learners. These apps cater to synchronous and asynchronous learning styles, making it more convenient for students to access learning material at their own rhythm and preference. Multimedia tools are also required to present teaching and learning materials in the modern classroom design process. It is possible to offer information in different formats to suit different learning styles for trainers by video, animation, infographic, and interactive information systems. The additional advantages and effectiveness offered by multimedia in an improved education also feed into our concept of student participation and understanding of difficult material being achieved through the fusion of visual, auditory, and text elements. More interesting is the participation and feedback in real-time that come from interactive educational technology. Tools such as Kahoot! and Quizlet allow teachers to build quizzes, games, and exercises that promote interaction, competition, and cement learning. Moreover, this not only supports a student participation perspective but additionally supports instructors in assessing real-time student learning progress. Even more important is that digital technologies enable personalized learning opportunities. Adaptive learning systems, personalized instructional design with adaptive learning systems, allow teachers to monitor students' progress

and modify the teaching and learning materials to meet the needs of individual students through data analytic tools.

A result of this is that students receive personalized support and exercises aimed at lifting learning rates and increasing academic performance. Innovative instructional design in teaching and learning has been widely used today. Within the digital revolution, this has opened up teaching and learning technologies. To integrate these new technologies into good pedagogies teachers can create immersive spaces for learning that drive engagement, co-creation and the creation of meaningful content.

In recent educational contexts, good instructional design is an important contributor to effective learning. Good instructional planning in contemporary educational contexts is increasingly relevant as learners are required to acquire more than knowledge but also learn, apply critical thinking, collaborate with others, and solve problems. By effectively coordinating their objectives, teaching methodologies, and assessment strategies educators are able to create educational experiences that resonate with students' needs while also being purposeful and coherent. By recognizing that every component of teaching serves a singular purpose to accomplishing specific educational objectives. Good instructional design too helps to provide educators with the necessary structure to arrange learning resources in the right order and help students understand hard concepts and helps students retain the concept easier to learn throughout the teaching process and this also helps students learn. More students engaged, and less discouraged, and more active in their learning is possible if we systematically plan what they will learn and how that relates to their academic achievement. Such a method does not only enhance academic excellence, but also builds independent learning capability, required to enhance lifelong learning. This work stressed that the integration of active learning strategies with teaching strategies should not be an isolated phenomenon but should merge with methodological learning design paradigm and framework.

The ADDIE model and the Backward Design are both organized examples of instructional planning frameworks for schooling that foster in teachers a systematic approach to how instruction can be planned, carried out, and assessed. Such models enable instructors to focus on results in learning, assessment development, and instructional practice which in turn results in greater depth in learning. Additionally, the extent to which active learning strategies (such as collaborative learning, problem-based learning, and project-based learning) are employed (in their common and integrated versions) could influence the students' involvement. Students learn more through discussion, problem-solving, and collaboration, leading to a deeper conceptual understanding of content and higher order thinking skills.

These findings will influence what should be the focus of future research and specifically what to identify, investigate, and target with research, how these

emerging technologies, pedagogical practices, and instructional methods may positively influence the system of instruction and support students in achieving success. Innovations in technology, including AI, adaptive learning systems, and immersive digital environments create additional possibilities to tailor and adapt learning experiences for learners. Investigating strategies by which the technologies might usefully be applied in instructional design paradigms can provide for more dynamic and learner-centered instructional environments.

Finally, the fundamental building block to quality education is effective design. Using systems principles, active learning, and technology—the design elements all play a role in teacher efforts to shape challenging, exciting, motivating learning environments from which there can be the overall success of learners in school and on the job. One of the few things that will ensure that teaching methods will remain significant in students' learning through the twenty-first century is to investigate and develop this area.

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