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A COMPARATIVE STUDY OF INSTRUCTIONAL DESIGN MODELS: FEASIBILITY, SCALABILITY, AND IMPLEMENTATION EFFECTIVENESS

STUDI KOMPARATIF MODEL DESAIN INSTRUKSIONAL: KELAYAKAN, SKALABILITAS DAN EFEKTIVITAS IMPLEMENTASI

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Abstract

Instructional design serves as a scientific foundation for learning planning, including Arabic language instruction as a foreign language. Various instructional design models have emerged from different paradigms and contexts, resulting in their selection often being based on intuition without adequate consideration of feasibility, scalability, and implementation effectiveness. This article aims to comparatively examine four widely used instructional design models, namely ADDIE, Dick and Carey, Kemp, and ASSURE, based on these three dimensions, with particular emphasis on their relevance to Arabic language instruction. This study employs a descriptive qualitative approach using a library research method, examining scientific literature published within the last five years. The findings indicate that the ADDIE model excels in feasibility and scalability due to its simplicity and modular structure; the Dick and Carey model demonstrates strong systemic precision but has limitations in terms of scalability; the Kemp model offers greater flexibility for heterogeneous classrooms; while the ASSURE model is effective in optimizing learner engagement through the use of instructional media. These findings provide practical considerations for lecturers and Arabic language curriculum designers in selecting an instructional design model that aligns with the context, available resources, and intended.

Keywords : Instructional Design, ADDIE, Dick and Carey, Kemp, ASSURE, Feasibility, Scalability, Effectiveness, Arabic Language Learning.

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Abstrak

Desain instruksional merupakan fondasi ilmiah bagi perencanaan pembelajaran, termasuk pembelajaran bahasa Arab sebagai bahasa asing. Berbagai model desain instruksional lahir dari paradigma dan konteks yang berbeda, sehingga pemilihannya kerap dilakukan secara intuitif tanpa pertimbangan yang memadai atas kelayakan, skalabilitas, dan efektivitas implementasinya. Artikel ini bertujuan mengkaji secara komparatif empat model desain instruksional yang paling banyak digunakan, yaitu ADDIE, Dick and Carey, Kemp, dan ASSURE, ditinjau dari tiga dimensi tersebut, dengan penekanan pada relevansinya bagi pembelajaran bahasa Arab. Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan metode studi kepustakaan (library research), menelaah literatur ilmiah terbitan lima tahun terakhir. Hasil kajian menunjukkan bahwa model ADDIE unggul dalam kelayakan dan skalabilitas karena sifatnya yang sederhana dan modular, model Dick and Carey unggul dalam ketepatan sistemik namun terbatas skalabilitasnya, model Kemp unggul dalam fleksibilitas untuk kelas heterogen, sedangkan model ASSURE unggul dalam mengoptimalkan keterlibatan pebelajar melalui media. Temuan ini memberikan pertimbangan praktis bagi dosen dan perancang kurikulum bahasa Arab dalam memilih model desain instruksional yang sesuai dengan konteks, sumber daya, dan tujuan pembelajaran yang hendak dicapai.

Kata Kunci : Desain Instruksional, ADDIE, Dick and Carey, Kemp, ASSURE, Kelayakan, Skalabilitas, Efektivitas, Pembelajaran Bahasa Arab.

1. INTRODUCTION

Learning Arabic as a foreign language (al-lughah al-ajnabiyyah) faces complex challenges, ranging from the heterogeneity of student backgrounds, limited face-to-face time, to the demand for simultaneous mastery of four language skills: istima', kalam, qira'ah, and kitabah. This complexity demands systematic learning planning, not simply the spontaneous delivery of material. This is where instructional design plays a central role, as it essentially refers to the process of planning and creating meaningful and effective learning experiences for learners, by ensuring the integration of objectives, methods, materials, and assessments to achieve optimal learning outcomes.

In line with this, the world of education has recognized various instructional design models developed by experts over time, such as the ADDIE model, Dick and Carey, Kemp, ASSURE, Gagne, Gerlach and Ely, and several others. Each model arises from a different context, philosophy, and needs, so it naturally has varying characteristics, stages, advantages, and limitations.

While the diversity of these models enriches the scientific knowledge of instructional design, it also presents challenges for educators, particularly those teaching Arabic language courses, in determining the most appropriate model to implement. Ideally, the selection of an instructional design model should not be done intuitively or simply based on convention, but rather should consider three fundamental aspects: the feasibility of its application within the context of available resources, its scalability for replication from small classrooms to large-scale or online programs, and its effectiveness in improving student learning outcomes. Unfortunately, studies specifically comparing instructional design models across these three dimensions are still limited, especially those contextualized within Arabic language learning. As highlighted in a recent comparative study, research specifically analyzing the comparison between instructional design models is still relatively rare, despite the crucial role these models play in improving the quality of instructional planning. This situation urges the urgency of conducting more comprehensive comparative studies, not only highlighting structural differences between models, but also empirically evaluates the feasibility, scalability, and effectiveness of their implementation.

Based on this background, this article is written to answer three research questions: first, how feasible is the implementation of the ADDIE, Dick and Carey, Kemp, and ASSURE models in terms of resource availability and the competence of instructional designers; second, how scalable are each

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of these models when applied to different learning scales; and third, how effective is the implementation of these models, particularly in the context of Arabic language learning. This study is expected to provide theoretical contributions to the development of Arabic language learning design science, while also serving as a practical reference for lecturers, teachers, and curriculum designers in determining the instructional design model that best suits the context and learning objectives they wish to achieve.

2. RESEARCH METHOD

This study employed a qualitative approach with a descriptive-comparative library research method. Data were collected from various scientific literature sources, primarily accredited journal articles published in the last five years (2021–2026), that discussed instructional design models in general and their application in Arabic language learning specifically. The collected data were then analyzed using descriptive-qualitative analysis techniques with a comparative approach, to identify similarities, differences, and the strengths and weaknesses of each model from three analytical dimensions: feasibility, scalability, and implementation effectiveness. The results of the analysis were then synthesized to obtain a comprehensive picture that can be used as practical considerations in Arabic language learning planning.

3. RESULT AND DISCUSSION

A. Basic Concepts of Instructional Design

Conceptually, instructional design can be understood as a systematic process used to design learning so that learning objectives can be achieved effectively and efficiently. 3 This process does not stop at the planning stage, but encompasses the entire cycle, from analyzing learner needs, formulating objectives, selecting strategies and media, developing materials, and evaluating learning outcomes. Thus, instructional design serves as a scientific framework that bridges teaching and learning theory with classroom learning practices. In this study, the evaluation of instructional design models focused on three main dimensions. Feasibility refers to the extent to which a model can be realistically implemented, considering the availability of time, expertise, costs, and the competence of the instructional designer. Scalability refers to the ability of a model to be replicated and adapted at various scales of application, from a single small class to institutional or online learning programs involving many learners. Implementation effectiveness refers to the extent to which the application of a model can produce measurable improvements in learning outcomes, including cognitive, affective, and psychomotor aspects of learners.

1. ADDIE Model

The ADDIE Model is one of the most widely used generic instructional design models, consisting of five main stages: Analysis, Design, Development, Implementation, and Evaluation. These five stages are flexible and relatively simple, making this model easy to apply in various learning contexts, even by educators with little experience in the field of instructional design. The iterative nature of ADDIE, which allows evaluation to be conducted at every stage and not just at the end of the process, makes this model adaptable to changing learner needs throughout the development process.

2. Dick and Carey Model

Unlike ADDIE, the Dick and Carey model has ten more detailed and comprehensive stages, ranging from identifying learning objectives, instructional analysis, analyzing learners and contexts, formulating performance objectives, developing assessment instruments, developing learning strategies, developing and selecting instructional materials, to designing and implementing formative and summative evaluations. 5 Each stage in this model is closely interconnected and sequentially organized, resulting in a learning program that is highly integrated between objectives, strategies, materials, and evaluation. Consequently, this model requires more time, precision, and expertise from the designer than ADDIE.

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3. Kemp Model

The model developed by Jerold E. Kemp is cyclical (oval) in shape, depicting the instructional design process as a continuous process, rather than a linear process that must begin sequentially from the first stage. 6 This model consists of nine interrelated components, including identification of learning problems, learner characteristics, task analysis, learning objectives, sequence of materials, learning strategies, media and learning resources, supporting services, and Evaluation. This flexible and non-linear nature makes the Kemp model relevant for classrooms with highly heterogeneous learner characteristics, as is commonly found in beginner Arabic language classes in universities.

4. The ASSURE Model

The ASSURE Model is designed with a particular emphasis on the use of learning media and active learner involvement. It encompasses six steps: Analyze learners, State objectives, Select methods, media, and materials, Utilize media and materials, Require learner participation, and Evaluate and revise. 7 This model's orientation toward optimal media utilization makes it relevant for technology-based Arabic language learning, such as maharah istima' and kalam learning, which utilize audio-visual multimedia.

B. Feasibility Analysis of Instructional Design Models

The feasibility of an instructional design model is largely determined by the alignment of the model's stage requirements with available resources, including time, expertise, and the competency of the instructional designer. The ADDIE model demonstrates a high level of feasibility due to its concise and systematic stages, making it relatively easy to understand and implement for Arabic language lecturers and teachers, even without in-depth training in instructional design. This was confirmed in a study on the development of ADDIE-based Arabic language teaching materials for matriculation programs, which achieved expert validation results of 88% for content, 94% for media design, and 91% for language, with a feasibility level of 94% according to student assessments and 80% according to lecturers.8 These achievements indicate that the ADDIE model is quite feasible to implement even in institutions with limited development resources.

In contrast, the Dick and Carey model requires a more intermediate level of feasibility, as its ten detailed stages require more time, precision, and comprehensive data analysis of learners and learning contexts than ADDIE.9 This model is therefore more feasible for institutions with established curriculum development teams, rather than individual lecturers.

The Kemp model, meanwhile, demonstrates high feasibility due to its flexibility and lack of a rigid starting point, allowing instructional designers to adapt the design starting point to real-world conditions.10 Meanwhile, the ASSURE model is considered feasible for media-based classes, but its feasibility is highly dependent on the availability of technological devices and the digital literacy level of the educators themselves.

C. Scalability Analysis of Instructional Design Models

The scalability dimension is a crucial consideration given the increasingly diverse needs of Arabic language learning, ranging from small-scale face-to-face classes to online learning programs involving hundreds or even thousands of learners simultaneously. The ADDIE model excels in this dimension because its modular and iterative nature facilitates the replication of teaching materials from a single class to a broader learning program, including the development of online modules.11 These characteristics explain why ADDIE is a model that is the most widely adopted model in the development of technology-based and print-based Arabic language teaching materials.

In contrast, the scalability of the Dick and Carey model is relatively limited. The complexity and detail of its ten stages make it more suitable for implementation in large institutions with adequate curriculum development teams, rather than for large-scale replication on a smaller scale with limited resources. 12 The Kemp model ranks medium to high in terms of scalability, as its cycle flexibility allows for adaptation to various learning scales, although it still requires strong team coordination to ensure its nine components remain well integrated. The ASSURE model, on the other hand, has medium scalability because its effectiveness is highly dependent on the availability of media

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infrastructure at each implementation location, so its large-scale replication requires consistent technology investment.

D. Analysis of Implementation Effectiveness

The effectiveness of implementing an instructional design model is ideally measured by measurable improvements in student learning outcomes, either through comparisons of pre- and post-test results or through increased student active participation. A study on the development of an ADDIE-based deep learning design to improve Arabic speaking skills (maharah kalam) showed empirical evidence to support this, where its application to upper secondary level learners successfully increased the average score from 77 in the pre-test to 86 in the post-test, as well as increasing active student participation from 13% to 53%. 13 These findings confirm that a systematically designed learning design, even based on a relatively simple model such as ADDIE, can have a significant impact on performance achievement. language while reducing affective barriers such as language anxiety in learners.

Similar evidence of effectiveness was also found in the development of Arabic language teaching materials for matriculation programs, which reported significant improvements in students' Arabic language skills after field trials, proving the effectiveness and practicality of the teaching materials developed based on the ADDIE model.14 The predominance of empirical evidence of the ADDIE model's effectiveness in the context of Arabic language learning is due to its popularity and ease of implementation, which has led to its greater adoption and research compared to other models.

Meanwhile, the Dick and Carey model is believed to be highly effective in systematic, long-term learning programs, given its characteristic tight integration of objectives, strategies, materials, and evaluation. However, empirical evidence regarding its effectiveness specifically in Arabic language learning is still relatively limited compared to the ADDIE model, so further research empirically testing the model's effectiveness in Arabic language classes is urgently needed. The Kemp model, with its orientation toward analyzing learner characteristics, is considered effective in facilitating differentiation of learning needs, making it relevant for application in Arabic language classes with heterogeneous ability levels. The ASSURE model has proven effective in increasing active engagement and student motivation through the optimization of instructional media utilization.15

To clarify the results of the comparative analysis above, a comparison of the four instructional design models across the three dimensions of the study can be summarized in the following table.

Dimensi	ADDIE	Dick & Carey	Kemp	ASSURE
Eligibility	High; concise stages, easy to understand for Arabic language lecturers/teachers with minimal training.	Medium; ten detailed stages require time, expertise, and comprehensive learner analysis data.	High; the nine components are flexible and do not have to be linear, making them easy to adapt to the context.	High for media-based classes; requires device availability and educator digital literacy.
Scalability	High; modular and iterative nature facilitates replication from classroom scale to mass online programs.	Limited to large institutions; requires larger teams and resources for widespread replication.	Medium–high; cycle flexibility allows for easy scaling, but requires solid team coordination.	Intermediate; effective at a technology-based classroom scale, but dependent on available media infrastructure.

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Dimensi	ADDIE	Dick & Carey	Kemp	ASSURE
Implementation Effectiveness	It has been proven to improve Arabic language learning outcomes empirically in several studies of teaching materials development.	Effective in long-term systematic learning programs, although empirical evidence in the field of Arabic is still limited.	Effectively facilitates differentiation of learner needs; suitable for heterogeneous classes of Arabic language ability .	Effectively increase active involvement and motivation of learners through the use of learning media .

E. Implications for Arabic Language Learning Planning

The comparative findings above provide several practical implications for Arabic language lecturers and curriculum designers. First, the choice of instructional design model should be tailored to the context and complexity of the learning objectives to be achieved, rather than simply following convention or custom. 16 For the development of teaching materials on a limited scale and within a relatively short timeframe, such as the development of an Arabic language matriculation module for new students, the ADDIE model is the most feasible, scalable, and empirically proven effective option. Second, for the development of institutional and long-term Arabic language learning programs, such as study program curricula, the Dick and Carey model can be an appropriate choice due to its high systemic integration, provided the institution has a development team and adequate resources.

Third, in Arabic language classes with highly heterogeneous learner characteristics, both in terms of initial abilities and learning styles, the Kemp model can be considered because its cyclical flexibility allows for continuous adjustment. Fourth, in the context of Arabic language learning increasingly integrated with digital technologies, such as application-based learning, multimedia, and artificial intelligence, the ASSURE model offers a relevant framework for optimizing media utilization and active learner engagement. It should also be emphasized that these four models are not mutually exclusive or mutually exclusive. In practice, Arabic language learning designers can combine the strengths of each model, for example, using the Kemp model's framework for analyzing learner needs and characteristics, combined with the concise development structure of ADDIE, and the emphasis on media utilization of ASSURE, resulting in Arabic language learning designs that are more adaptive to current needs without neglecting the principles of sound systematic learning planning.

4. CONCLUSION

Based on the comparative study described above, it can be concluded that each instructional design model has distinct characteristics, strengths, and limitations in terms of feasibility, scalability, and implementation effectiveness. The ADDIE model excels in feasibility and scalability due to its simplicity, flexibility, and modularity, and has strong empirical evidence of effectiveness in Arabic language learning contexts. The Dick and Carey model excels in systemic precision and integration, but requires greater resource requirements, making its scalability relatively limited to institutions with adequate development capacity. The Kemp model excels in flexibility and its ability to facilitate

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differentiation of learner needs in heterogeneous classes. The ASSURE model excels in optimizing media utilization and active learner engagement, provided adequate technological infrastructure is available. Thus, no single instructional design model is absolutely superior to others in all Arabic language learning contexts. Selecting the appropriate model requires careful consideration of learning objectives, learner characteristics, resource availability, and the scale of implementation planned by the instructional designer.

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