Comparative Analysis of ADDIE and ASSURE Models in Designing Learning Media Applications

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Abstract

Learning media is an important part of producing quality learning. Therefore, learning media development is needed that supports the learning objectives. Several models can be used in designing learning media, such as the ADDIE and ASSURE models. The ADDIE model has the following development steps: (1) Analysis, (2) Design, (3) Development, (4) Implementation, and (5) Evaluation. While the ASSURE model has the following development steps: (1) Analyzing learners, (2) Stating learning objectives, (3) Selecting media and methods, (4) Utilizing media and methods, (5) Requiring learner response, (6) Evaluating. The purpose of this study is to compare the use of the ADDIE model and ASSURE model according to the learning objectives. The research was conducted using the literature review method from 36 articles and books that discuss the making of learning media with ADDIE and ASSURE design models. The literature review references were taken from Google Scholar with publication years between 2012 - 2022. The results of this study show that the use of the ADDIE design model is more effective in designing learning media applications because it focuses on material content and application feasibility so that students can use it optimally to achieve goals. Meanwhile, the ASSURE model is more effective for designing learning systems or teaching materials because itfocuses on the application of learning media design models that can attract student interest to generate learning motivation.

Keywords: Design Model, Learning Media, ADDIE, ASSURE

Abstrak

Media pembelajaran menjadi bagian penting dalam menghasilkan kualitas pembelajaran. Maka diperlukan model desain pengembangan yang sesuai dengan tujuan pembelajarannya. Beberapa model dapat digunakan dalam mendesain media pembelajaran, seperti model ADDIE dan ASSURE. Model ADDIE memiliki langkah pengembangan sebagai berikut. (1) Analisis, (2) Desain, (3) Pengembangan, (4) Implementasi, dan (5) Evaluasi. Sedangkan model ASSURE memiliki langkah pengembangan sebagai berikut. (1) Menganalisis peserta didik, (2) Menyebutkan tujuan pembelajaran, (3) Memilih media dan metode, (4) Memanfaatkan media dan metode, (5) Memerlukan respon peserta didik, (6) Mengevaluasi. Tujuan penelitian ini adalah untuk membandingkan penggunaan model ADDIE dan model ASSURE menurut tujuan pembelajarannya. Penelitian dilakukan dengan metode tinjauan literatur dari 36 artikel dan buku yang memiliki pembahasan mengenai pembuatan media pembelajaran dengan model desain ADDIE dan ASSURE. Referensi tinjauan literatur diambil dari Google Scholar dengan tahun terbit antara 2012 – 2022. Hasil penelitian ini merekomendasikan penggunaan model desain ADDIE lebih efektif dalam merancang aplikasi media pembelajaran karena fokus pada isi materi dan kelayakan aplikasi sehingga siswa dapat menggunakannya secara optimal untuk mencapai tujuan. Sedangkan model ASSURE lebih efektif untuk merancang sistem pembelajaran atau bahan ajar karena model ASSURE berfokus pada penerapan model desain media pembelajaran yang dapat menarik minat siswa sehingga menimbulkan motivasi belajar.

Kata Kunci: *Model Desain, Media Pembelajaran, ADDIE, ASSURE*

Introduction

Efficient and effective learning can be supported through various forms and types of learning media. Teachers can become a source of knowledge for students[1]. The success of using media in the learning process cannot be separated

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[1] Gufron Amirullah dan Restu Hardinata, "Pengembangan Mobile Learning Bagi Pembelajaran," *JKKP (Jurnal Kesejahteraan Keluarga dan Pendidikan)*, 4.02

from how the media is designed. Good media should be able to attract the attention of learning participants and is able to convey messages effectively and efficiently [2] . Therefore, it is necessary to design learning resources for students in the form of learning media by adapting to the latest technological developments. Technology can improve quality and reach if it is used wisely for education and training and contributes to the welfare of society[3]. To support the development of students' knowledge and experience, various types of learning media have been developed. One of them is supported by the use of a smartphone called mobile learning. In its implementation, an efficient design model is needed to produce effective learning outcomes. Before implementing technology into education, instructors need to ensure that technology is appropriate to the abilities and characteristics of students. This step involves examining the instructional design model before the design is built. After that, technology can be selected based on one of the instructional design models, such as ADDIE and ASSURE[4].

The ADDIE model stands for Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model is generic and simple with a systematically structured implementation, besides that the ADDIE model provides an opportunity to evaluate and revise

continuously at every stage[5]. The ADDIE model can be implemented in a curriculum that teaches knowledge, skills or attitudes [6] . The mobile learning model should be linked to the instructional design model. The ADDIE model is the most suitable although it still lacks personalization for children with special learning needs[7].

In research on developing edugames based on mobile learning to improve students' digital literacy, it was found that edugames based on mobile learning were effectively applied to high school students, because they can increase students' digital literacy, especially in critical reading. It also improves cognitive aspects, for example increasing students' higher-thinking skills [8] . The drawback of this research is that mobile learning has not yet developed the design and video tutorial features. This can be a reference in developing a comparison model for making the features contained in the application based on the desired goals.

Ping et al, have explained in his research on mobile learning models that are suitable for students with special learning needs, the ADDIE development model still lacks personalization when used on children with special needs, but using a modified model from ADDIE, namely APIE, it was found that this model offers a design and development iteration that create the best way to personalize for children with

(2017),   97–101 <https://doi.org/10.21009/JKKP.042.07>.

[2] Nurfidah Dwitiyanti, Siti Ayu Kumala, dan Fita Widiyatun, "Using the ADDIE model in development of physics unit convertion application based on Android as learning media," *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 10.2 (2020), 125–132 <https://doi.org/10.30998/formatif.v10i2.5933>.

[3] Haris Budiman, "Peran Teknologi Informasi Dan Komunikasi Dalam Pendidikan," *Al-Tadzkiyyah: Jurnal Pendidikan Islam*, 8.1 (2017), 31–43 <https://doi.org/10.24042/atjpi.v8i1.2095>.

[4] Sameer Mosa Alnajdi, "The Effectiveness of Designing and Using a Practical Interactive Lesson based on ADDIE Model to Enhance Students' Learning Performances in University of Tabuk," *Journal of Education and Learning*, 7.6 (2018), 212–221 <https://doi.org/10.5539/jel.v7n6p212>.

[5] Lu'um, "Learning Media Of Applications Design Based Android Mobile Smartphone," *International Journal of Applied Engineering Research*, 12.17 (2017), 6576–6585.

[6] WRS Nurwidodo, "Developing Learning Model Assure Based Competence For Improve Retention And Material Mastery Training Participants," *Jurnal TEKPEN*, 1.2 (2016), 396–423 <https://journal.unesa.ac.id/index.php/jtp/article/view/1167>.

[7] Tan Ping Ping et al., "Mobile Learning Model for Children with Special Learning Needs," *European Journal of Teaching and Education*, 4.3 (2022), 1–12 <https://doi.org/10.33422/ejte.v4i3.815>.

[8] Ferlita Kale, Risya Pramana Situmorang, dan Susanti Pudji Hastuti, "Development of Mobile Learning-based Edugame on Respiratory System Material to Improve Students' Digital Literacy," *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 11.2 (2021), 151–160 <https://doi.org/10.30998/formatif.v11i2.6237>.

different levels of learning difficulty. From this study, one of the shortcomings of the ADDIE model was that it could be used as research material and a comparison of other models by considering the characteristics of students[9].

Preliminary studies from Firdawati. et al, on the development of the Appy Pie application, the ADDIE model can combine text, video/animation, and images in one learning media so that it can make it easier for high school students to understand learning about Newton's laws. In this study, the development process was applied with product validation to physics experts and teachers, while the research respondents were teachers and students. This can be used as a reference in the comparison of the validation stages carried out in the development process[10].

The ASSURE model stands for Analyze learner; State learning objectives; Select media and methods; Utilize media and methods; Require learner response; Evaluate. The learning design using the ASSURE model is a reference for educators in learning activities that are planned and arranged systematically by integrating technology and media so that learning becomes more effective and meaningful[11]. The ASSURE model is practical and implemented for individual and classical learning activities[12].

Darlis et al, revealed that the successful development of the ASSURE model learning design in an integrated thematic category was very good because it started with several very complex design stages, such that effective results

were obtained in elementary student learning[13]. This is also in line with the findings of Utami et al. (2018), which examined the effect of using the ASSURE model on increasing the learning achievement of Special Needs School students. They showed the ASSURE model could increase learning achievement. From the results of this study, the characteristics of students who are successful in using the ASSURE model can be further developed[14].

Djafar et al, have explained about the development of animated media using the ASSURE model in social studies class VIII MTS Nurul Bahri. They carried out the study according to stages in order to meet the quality criteria of learning media, namely, valid, practical, and effective. In the development process, the validation stage was carried out for lecturers and teachers. The analysis consisted of several types of validation, namely validation of animation media, learning media, and the practicality of learning media. In the development of learning media this time, we can learn more about the features of the application and the steps required in product development[15].

Both these models have advantages and disadvantages in the design of instructional media. The ADDIE model has the disadvantage of taking a long time to develop and has the advantage of being easy to learn and developing a

[9] Ping et al.

[10] Renny Firdawati, Maison Maison, dan Nazarudin Nazarudin, "Development of Mobile Learning Media on Newton's Laws Using the Appy Pie Application," *Jurnal Penelitian Pendidikan IPA*, 7.2 (2021), 202–6 <https://doi.org/10.29303/jppipa.v7i2.599>.

[11] Heri Achmadi, Suharno, dan Nunuk Suryani, "Penerapan Model Assure Dengan Menggunakan Media Power Point Dalam Pembelajaran Bahasa Inggris Sebagai Usaha Peningkatan Motivasi Dan Prestasi Belajar Siswa Kelas X MAN Sukoharjo Tahun Pelajaran 2012/2013," *Jurnal Teknologi Pendidikan Dan Pembelajaran*, 2.1 (2014), 35–48.

[12] Nurwidodo.

[13] Neneng Darllis, Farida, dan Yalvema Miaz, "Pengembangan Desain Pembelajaran Model Assure Berbasis Problem Based Learning Menggunakan Komik di Sekolah Dasar," *Jurnal Basicedu*, 5.1 (2020), 334–342 <https://doi.org/10.31004/basicedu.v5i1.689>.

[14] Destri Wahyu Utami, Mohammad Anwar, dan Hermawan Hermawan, "Pengaruh Penggunaan Model Pembelajaran Assure Terhadap Peningkatan Prestasi Belajar Ipa Anak Tunalaras Kelas IV di SLB E Bhina Putera Surakarta Tahun Ajaran 2017/2018," *JPI (Jurnal Pendidikan Inklusi)*, 2.1 (2018), 5–14 <https://doi.org/10.26740/inklusi.v2n1.p5-14>.

[15] Yustrin Djafar, Syarwani Canon, dan Arfan Arsyad, "Pengembangan Media Animasi Pada Mata Pelajaran IPS Kelas VIII MTS Nurul Bahri Kabila Bone Menggunakan Model Assure," *Normalita (Jurnal Pendidikan)*, 9.1 (2021), 39–50 <http://ejurnal.pps.ung.ac.id/index.php/JN/article/view/601/484>.

systematic sequential structure [16]. Whereas the ASSURE model has the disadvantage of having relatively many components and has the advantage of a more detailed development process [17] [18]. For this reason, it is necessary to compare based on visual representation, structure, and assessment to see the level of effectiveness and efficiency of these two models. Which of them would produce a model that is more effective and efficient in designing mobile learning? Technical measurements are carried out using data analysis techniques using a Likert Scale, namely changing qualitative to quantitative data[19]

In this study, an analysis was carried out to compare the usefulness of the ADDIE and ASSURE design models so that a more effective design model can be identified for developing learning media in the form of applications. An analysis system is needed to support the literature review method which is carried out to compare design models from several existing articles.

Methods

This research consists of a literature review. The literature review is vital because the central ideas and methods regarding the main topic can emerge from such an undertaking. The literature review is important because it is used as the basis for further research[20].

Data is retrieved by searching literature on databases such as Google Scholar. Searches included "ADDIE Model Based Learning Media Development" with a total of 16,800 articles and "ASSURE Model Based Learning Media Development" with a total of 3,830 articles available.

This data collection is important for conducting content analysis. The main method for this research is to conduct a systematic literature review. After formulating the problem, we select the data that will be used in the research. The next step is to determine the unit of analysis and to classify the data that will be followed by identifying, assessing, and interpreting all research evidence. After that, the data will be analyzed and conclusions drawn[21].

The research article uses quantitative data taken from the results of experiments with research topics with the ADDIE and ASSURE model designs used to increase learning effectiveness. The research subjects studied were kindergarten, elementary, junior high, high school students, university students, and the general public with a publication year between 2012 - 2022. The research was written in Indonesian, English and Malay. Research published in reputable Indonesian journals Sinta 1 – Sinta 5 and reputable international journals Q1 – Q4.

The main purpose of this study is to analyze articles related to ADDIE and ASSURE to produce models that are more effective and more often used in making learning media applications. Developing design models that have the goal of making learning media will have different goals[22].

The two comparison models used are the ADDIE model (analysis, design, development, implementation, and evaluations) and the

[16] Rafi Eka Wijaya, Mustaji Mustaji, dan Hari Sugiharto, "Development of Mobile Learning in Learning Media to Improve Digital Literacy and Student Learning Outcomes in Physics Subjects: Systematic Literature Review," *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4.2 (2021), 3087–3098 <https://doi.org/10.33258/birci.v4i2.2027>.

[17] Nurwidodo.

[18] Karmila Rafiqah M. Rafiq et al., "Developing a MOOC for Communicative English: A Battle of Instructional Designs," *International Journal of Innovation, Creativity and Change*, 7.7 (2019), 29–39.

[19] Andi Rustandi, Haeruddin, dan Darmansyah, "Penerapan Model ASSURE Dalam Mengembangkan Media Pembelajaran di SMKN 3 Penajam Paser Utara," *Utile: Jurnal Kependidikan*, 8.1 (2022), 6–18 <https://www.jurnal.ummi.ac.id/index.php/JUT/article/view/1594/873>.

[20] Muannif Ridwan et al., "Pentingnya Penerapan Literature Review pada Penelitian Ilmiah," *Jurnal Masohi*, 2.1 (2020), 42–51

<https://journal.fdi.or.id/index.php/jmas/article/view/427>.

[21] Bayu Indra Pratama et al., *Metode Analisis Isi (Metode Penelitian Populer Ilmu-ilmu Sosial)* (Malang: UNISMA PRESS, 2021).

[22] Bintari Kartika Sari, "Desain Pembelajaran Model ADDIE dan Implementasinya dengan Teknik Jigsaw," in *Prosiding Seminar Nasional Pendidikan*, 2017, hal. 87–102 <http://eprints.umsida.ac.id/432/>.

ASSURE model (analyze learner, state learning objectives, select media and method, utilize media and method, require learner response, evaluate). The assessment parameters to be compared depend on several characteristics of the case studies in the literature, including the level of education, the mental state of the students, and the purpose of the formation of learning media.

Result and Discussion

The results of the literature review found 36 articles that met the criteria for the ADDIE model and the ASSURE model. There are 18 articles that will be presented as data from the ADDIE model. The results can be seen in the table below.

Table 1. Characteristics Study

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
(Pramuditya et al., 2022)[23]	Designing math teaching materials using Canva.	The products made are digital teaching materials using Canva.	The solution offered is not much different from the previous situation. Future research can examine the development of digital teaching materials in two directions.
(Ganefri et al., 2020)[24]	Application of the ADDIE model in Project-Based Learning (BPBL) learning.	Procurement of the BPBL system is considered effective in facilitating students in learning.	Subsequent research can carry out the steps to test the results of the material and content to students whether the system created is effective for improving student learning outcomes.

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
(Baharuddin, 2018)[25]	Making interactive learning media using the ADDIE model.	This study resulted in the conclusion that interactive media learning systems can improve student learning outcomes.	The technology used in this study can still be developed in further research by creating an information system that can be accessed digitally.
(Stapa & Mohammad, 2019)[26]	Designing e-learning called Vocational Learning (Voc-Learning) using the ADDIE model.	The results of this study are Voc-Learning applications developed using Web 2.0 technology.	Future research can develop similar applications that can be accessed via a smartphone application so there is no need to access via a browser.
(Khalid et al., 2015)[27]	Development of a mobile learning application prototype with the name "Jamak Qasar Apps" using the ADDIE model.	The application is made in the form of 2D animation to learn both *qasr* and *jamak* techniques.	The new development was implemented in prototype form. Future research can use this plan for product development and evaluation so they can decide whether revisions are needed.
(Nurhayati et al., 2021)[28]	Designing android-based	The Android-Based	Future research can use this article to develop

[23] Surya Amami Pramuditya, Tri Nopriana, dan Oktaviani Mega Yolanda, *Mudah Membuat Bahan Ajar Matematika menggunakan Canva* (Banten: Media Sains Indonesia, 2022).

[24] Ganefri et al., "Using ADDIE Instructional Model to Design Blended Project-Based Learning based on Production Approach," *International Journal of Advanced Science and Technology*, 29.06 (2020), 1899–1909.

[25] B Baharuddin, "ADDIE Model Application Promoting Interactive Multimedia," *IOP Conference Series: Materials Science and Engineering*, 306 (2018), 012020 <https://doi.org/10.1088/1757-899X/306/1/012020>.

[26] Muhamad Azhar Stapa dan Nazeri Mohammad, "The Use of Addie Model for Designing Blended Learning Application at Vocational Colleges in Malaysia," *Asia-Pacific Journal of Information Technology & Multimedia*, 08.01 (2019), 49–62 <https://doi.org/10.17576/apjitm-2019-0801-05>.

[27] Nurkaliza Khalid, Hailruddin Jaafar, dan Rafiza Kasbun, "Developing a Mobile Learning Application Framework of 'Jamak Qasar Apps' using ADDIE Approach," *Australian Journal of Basic and Applied Sciences*, 9.19 (2015), 40–44.

[28] Nurhayati, Yuliawati Yunus, dan Astri Indah Juwita, "Perancangan dan Pembuatan Aplikasi Media

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
	learning media applications for creative and entrepreneurial product subjects using the ADDIE model.	Learning Media Application as a learning medium has been tested for feasibility, and excellence, and can be used in the learning process.	applications so they do not only use Android-based Microsoft Office PowerPoint.
(Muslim & Mustika, 2017)[29]	Development of smartphone-based applications as learning media using the ADDIE model.	The creation of a smartphone-based application that is the result of the development of Moodle site-based e-Learning which is packaged in the form of an application that runs on a smartphone.	In this study, the evaluation of application testing is only used as an application feasibility test to ensure that the facilities in the application function properly and are used as learning media.
(Indarti & Laraswati, 2021)[30]	Designing a digital game-based learning to guess the names of fruits and vegetables in English using the	The creation of digital game-based learning with four learning features that can be used by children aged 6 - 11 years.	Future research can consider the appearance of the user interface to make it more attractive for children aged 6 - 11 years.

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
			ADDIE model.
(Samala et al., 2019)[31]	Development of Mobile Learning-based ICT guidance learning media using the Moodle Mobile App using the ADDIE model.	Learning media are created using the Moodle Mobile App with files inside that can be accessed without the internet, provided that it has been downloaded at least once.	The design of an ICT guidance application and its features can be an idea for developing similar applications that can be operated outside of Moodle.
(Aminah, 2018)[32]	This research applies the ADDIE model to multimedia English learning in the form of games.	The result of this research is a multimedia-based puzzle game using Adobe CS6.	There needs to be validation of the feasibility of puzzle games before being used by students.
(Amirullah & Hardinata, 2017)[33]	The research aims to produce Android-based mobile learning media using the ADDIE model.	This development product is named "Moledu". This learning media contains material content, practice questions, a color blind test and a	In subsequent studies, more interesting content was added, such as learning videos, GIFs (moving animations) so that the application became more interesting for students to study biology.

Pembelajaran Berbasis Android pada Mata Pelajaran Produk Kreatif dan Kewirausahaan," *Jurnal PTI (Pendidikan Dan Teknologi Informasi) Fakultas Keguruan Ilmu Pendidikan Universita Putra Indonesia "YPTK" Padang*, 8.1 (2021), 45–56 <https://doi.org/10.35134/jpti.v8i1.38>.

[29] Nur Mustika dan Muslim, "Developing of Learning Media Applications Based on Mobile Android Smartphones in the E-Learning System of PPs UNM," in *Proceeding of The International Conference on Science and Advanced Technology (ICSAT)*, 2017, hal. 148–154.

[30] Indarti dan Dewi Laraswati, "Digital Game Based Learning Tebak Nama Buah dan Sayuran Dalam Bahasa Inggris Dengan Model Addie," *Jurnal Teknik Komputer AMIK BSI*, 7.1 (2021), 45–50.

[31] Agariadne Dwinggo Samala, Bayu Ramadhani Fajri, dan Fadhli Ranuharja, "Desain Dan Implementasi Media Pembelajaran Berbasis Mobile Learning Menggunakan Moodle Mobile App," *Jurnal Teknologi Informasi dan Pendidikan*, 12.2 (2019), 13–19 <https://doi.org/10.24036/tip.v12i2.221>.

[32] Siti Aminah, "Implementasi Model Addie Pada Education Game Pembelajaran Bahasa Inggris (Studi Kasus Pada SMP Negeri 8 Pagaralam)," *Jurnal Ilmiah Betrik*, 9.03 (2018), 152–162 <http://ejournal.lppmsttpagaralam.ac.id/index.php/betrik/article/view/41>.

[33] Amirullah dan Hardinata.

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
		dictionary that can be accessed with an Android-based smartphone	
(Dwitiyanti et al., 2020)[34]	Development of applications on the Android system that can assist in unit conversions.	The resulting product is an android application "physics unit conversion".	As the name implies, the application can be developed with the feature of changing two languages, namely Indonesian and English. In conclusion, student responses are outlined, but the real percentage of these statements is not explained.
(Firdawati et al., 2021)[35]	This study aims to develop mobile learning media using the Appy Pie application for high school students.	The results of the teacher's response obtained a percentage of 90% in the very good category, and the results of student responses in the one-on-one trial obtained 91.56% in the very good category.	Further research can be equipped with quiz features or learning features that enable two-way communication.
(Kale et al., 2021)[36]	To develop Edugame mobile-based learning in terms of product feasibility	It was found that the mobile learning-based edugame developed was considered	Future research can modify learning media to make it more interactive by displaying two-way features and video displays.

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
	and effectiveness testing in increasing student digital literacy.	valid, effective, and had good value in the system feasibility category.	
(Lu'mu, 2017)[37]	Smartphone-based learning media application design.	The results of the research conducted are the creation of mobile learning that is integrated with Moodle. The tests carried out are tests/trial results from learning media applications	Research is focused on feasibility testing and ensuring that the facilities in this application can run properly. For further research, it is possible to observe the effectiveness of using mobile learning and whether it is efficient as a learning medium.
(Ping et al., 2022)[38]	Development of mobile learning for children with special learning needs using the ADDIE model.	Learning application that can be used as a medium to help reading cues by displaying letter sounds.	In future research, we can develop the content contained in the application because dyslexia do not only occur in young children but can reach adults.
(Basyir, 2016)[39]	Designing an android application for interactive learning media for Arabic vocabulary using the ADDIE	The results of the evaluation of the application stated that this application was able to improve students'	Future research can develop applications in terms of content so that they are not only focused on the 2009 curriculum, and application development so that the display

[34] Dwitiyanti, Kumala, dan Widiyatun.
[35] Firdawati, Maison, dan Nazarudin.
[36] Kale, Situmorang, dan Hastuti.

[37] Lu'um.
[38] Ping et al.
[39] Ramlah Basyir, "Rancang Bangun Aplikasi Android Media Pembelajaran Kosa Kata Bahasa Arab Bergambar Dengan Menggunakan Model Pendekatan ADDIE," *Edutic - Scientific Journal of Informatics Education*, 3.1 (2017), 1–9 <https://doi.org/10.21107/edutic.v3i1.2599>.

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
	model.	memorization of Arabic vocabulary.	can be flexible in each different smartphone screen resolution.
(Rasvani & Wulandari, 2021)[40]	Analysis of the development of MaCa application learning media (Fraction Material) oriented to the Ausubel Learning Theory of mathematical content using the ADDIE model.	Learning media for the application of MaCa (Fraction Material) oriented to Ausubel's Learning Theory, the mathematical content is stated to be very good and feasible to be used in the learning process.	The design can be implemented in other materials so that more than one material receives good learning media.

The development of learning media has led to products that are expected to improve student learning outcomes. For instance, the *Jamak Qasr* Apps is used to make it easier for students to understand *Jamak Qasr* material[41]. However, the ADDIE model also makes it possible to produce products other than applications, namely teaching materials with Canva and Microsoft Powerpoint.

The application of learning design models has aligned goals, which are, among others, to make learning more practical, efficient, and effective. To be able to convey lessons effectively and efficiently, teachers need to be familiar with various types of learning strategies so they can choose which strategy is most appropriate for teaching a particular field of study. The ADDIE model is used as the basis for the development of infrastructure and tools that are effective, dynamic, and support the performance of the

training itself[42]. In line with the findings from the 18 articles described above, the ADDIE model is more often used to design learning media applications, because the steps in the ADDIE model support the process of making learning media so that they can be used properly.

In addition, there are 18 articles that will be presented as data from the ASSURE model. The results can be seen in the table below.

Table 2. Characteristics Study

Researcher	Article Purpose	Conclusion	Suggestions/Weaknesses
(Zanthy et al., 2019)[43]	This study aims to determine the increase in problem-solving abilities and independence using the ASSURE design model.	It was concluded that the ASSURE model is suitable for all types of student learning styles (auditory, visual, and kinesthetic).	Future research can develop an information system for each type of student learning style and test system results related to student learning outcomes.
(Ariefiani et al., 2016)[44]	This research is used to develop modules with Project-Based learning and the ASSURE model	Learning modules with Project-Based and ASSURE are designed to improve student competence from cognitive, psychomotor, affective and teamwork aspects in	Future research can apply the module development flow that has been described as an information system for learning materials and get test results for students in

[40] Ni Luh Rasvani dan I Gusti Agung Wulandari, "Pengembangan Media Pembelajaran Aplikasi MaCa Materi Pecahan Berorientasi Teori Belajar Ausubel Muatan Matematika," *MIMBAR PGSD Undiksha*, 9.1 (2021), 74–81 <https://doi.org/10.23887/jjpgsd.v9i1.32032>.

[41] Nurkaliza Khalid, Hailruddin Jaafar, dan Rafiza Kasbun

[42] Nawang Wulandari, "Pengembangan Buku Saku Intensifikasi Bahasa Arab di IAIN Metro dengan Menggunakan Model ADDIE," *Al-Fathin: Jurnal Bahasa dan Sastra Arab*, 1.2 (2019), 165–178 <https://doi.org/10.32332/al-fathin.v1i2.1272>.

[43] L S Zanthy, S Chotimah, dan I P Sari, "The use of ASSURE learning design to improve mathematical problem solving ability and self-determination of junior high school students," *Journal of Physics: Conference Series*, 1315.1 (2019), 012090 <https://doi.org/10.1088/1742-6596/1315/1/012090>.

[44] Zuhrita Ariefiani, Djoko Kustono, dan Syaad Pathmantara, "Module development with project-based learning approach and assure development model," in *AIP Conference Proceedings*, 2016, hal. 030036 <https://doi.org/10.1063/1.4965770>.

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
		projects.	improving learning outcomes.
(Maulana et al., 2021)[45]	The application of the ASSURE model to the development of learning Arabic with online learning	It was concluded that online learning with the flipped classroom model of subjects was quite effective in increasing student learning outcomes.	There has been no Access to history checking system from students. There is no control over the use of media in the asynchronous learning process.
(Achmadi, 2014)[46]	The application of the ASSURE model and PowerPoint media in English lessons as an effort to increase the motivation and learning achievement of high school students.	There are differences in the learning methods used in cycles I, II and cycle III. Each cycle has an increase in learning outcomes.	In further research, learning methods can be focused on cycle III with direct involvement between teachers and students to get significant results.
(Darlis et al., 2021)[47]	This study aims to produce a valid, practical, and effective ASSURE model learning design in elementary school integrated thematic learning.	The product of this research is the creation of a Learning Implementation Plan. From the results of the data analysis, it was obtained that the teacher's response to lesson plans was considered	In this study, product practicality was only measured through the implementation of lesson plans in the learning process.

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
		practical.	
(Darlis & Movitaria, 2021)[48]	To improve integrated thematic learning outcomes for fifth-grade elementary school students using the ASSURE model.	The application of the ASSURE model affects the learning cycle, which is carried out in two cycles. The factor that hinders the course of learning activities for students is the readiness factor. Learning outcomes are proven to increase.	Future research should discuss learning media with the latest technology to help integrate thematic learning to make it more interesting.
(Iskandar & Farida, 2020)[49]	Developing learning designs with the implementation of the ASSURE model using integrated thematic learning concepts.	The results of the thematic learning design development products are in the form of learning implementation plans. Learning Implementation Plans is designed to increase the learning activities of students in class V elementary school.	This research focuses on explaining the steps taken to develop learning media so that elementary school student achievement increases, but there is no validation test to determine whether the steps described would be effective in increasing student achievement.
(Kharisma & Arviant	To develop educational	The results of the assessment by language	Further research should be

[45] Irfan Maulana, M. Givi Efgivia, dan Yanuardi, *Pengembangan Pembelajaran Online Learning Dengan Desain Assure Dan Pedati* (Bandung: Penerbit Widina Bhakti Persada, 2021).

[46] Achmadi, Suharno, dan Suryani.

[47] Darllis, Farida, dan Miaz.

[48] Neneng Darlis dan Mega Adyna Movitaria, "Penggunaan Model Assure untuk Meningkatkan Hasil Belajar Tematik Terpadu di Sekolah Dasar," *Jurnal Basicedu*, 5.4 (2021), 2363–2369 <https://doi.org/10.31004/basicedu.v5i4.1185>.

[49] Rozi Iskandar dan Farida, "Implementasi Model ASSURE untuk Mengembangkan Desain Pembelajaran di Sekolah Dasar," *Jurnal Basicedu*, 4.4 (2020), 1052–1065 <https://doi.org/10.31004/basicedu.v4i4.468>.

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
o, 2019)[50]	games and Android application products based on the local culture of East Nusa Tenggara to develop the reading skills of elementary school students by applying the ASSURE model.	learning experts, learning media experts, and practitioners state that the developed application product was feasible to implement because it obtained a score percentage of more than 75%.	carried out to develop Android applications with more diverse or general content so that they are not focused on just one local culture.
(Muzakki et al., 2021)[51]	The purpose of writing this article is to achieve an effective and efficient al-Qur'an and Hadith learning design through the ASSURE learning model.	The result of this research is to find a learning design that is considered effective for the subject of al-Qur'an and Hadith.	Future research can implement the results of this research into products that can be analyzed for their feasibility in supporting learning.
(Sejati & Koeswanti, 2020)[52]	This study aims to develop a PC game learning media	PC game produced using laptop technology. The results of the validation	It is also necessary to conduct research on the effectiveness

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
	model to improve problem-solving skills in flat shape materials using the ASSURE method.	of learning materials show a percentage of 80% in the valid category.	of products made for research subjects because they can be used as evaluations in product manufacture. Products made for elementary school children should have audio and visual content that is adapted to the needs of children according to their age.
(Sundayana et al., 2017)[53]	Implementation of the ASSURE model learning design in developing mathematical communication skills.	The research was conducted with a total of 303 students divided into three groups. There is a significant difference in the mean MCS comparison between students who received A-DL and those who received K-PB/DL.	Future research is expected to develop a more diverse topic of discussion from this study which used only three topics.
(Suharni, 2019)[54]	This study aims to produce an ASSURE model learning design for elementary school students' integrated thematic	The product results are in the form of Learning Implementation Plans. Has a practicality level of 91.67%.	Further research should explain in more detail what learning media are used to implement the Learning Implementation Plan to support teaching and

    [50] Giri Indra Kharisma dan Faizal Arvianto, "Pengembangan aplikasi android berbentuk education games berbasis budaya lokal untuk keterampilan membaca permulaan bagi siswa kelas 1 SD/MI," *Premiere Educandum : Jurnal Pendidikan Dasar dan Pembelajaran*, 9.2 (2019), 203–212 <https://doi.org/10.25273/pe.v9i2.5234>.
    [51] Ahmad Muzakki et al., "Desain Pembelajaran Model ASSURE Berbasis Multimedia pada Mata Pelajaran Al-Qur'an Hadits," *Edukasi Islami: Jurnal Pendidikan Islam*, 10.01 (2021), 149–162 <https://doi.org/10.30868/ei.v10i01.1169>.
    [52] Krisma Ayu Putri Sejati dan Henny Dewi Koeswanti, "Pengembangan Model Media Pembelajaran Berbasis PC Game Untuk Meningkatkan Kemampuan Pemecahan Masalah Materi Bangun Datar," *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 4.2 (2020), 602–614 <https://doi.org/10.31004/cendekia.v4i2.279>.

    [53] Rostina Sundayana et al., "Using ASSURE learning design to develop students' mathematical communication ability," *World Transactions on Engineering and Technology Education*, 15.3 (2017), 245–249.
    [54] Leli Tuti Suharni, "Pengembangan Desain Pembelajaran dengan Model Assure pada Pembelajaran Tematik Terpadu di Sekolah Dasar," *Jurnal Basicedu*, 3.3 (2019), 978–982.

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
	learning that is valid, practical, and effective.		learning activities.
(Maclinton & Andrian, 2022)[55]	The aim is to develop Macromedia Flash learning media for junior high school students in Ujung Batu using the ASSURE design model.	The developed Macromedia Flash has animation features that attract students' attention. Experts and practitioners assess Macromedia Flash learning media in the valid category with an average value of 83.67%.	In future research, applications can be developed for other learning materials.
(Santoso, 2019)[56]	Aims to create interactive learning media to present "Electrical Measuring Instruments" material using the ASSURE model.	Learning media is made using Microsoft Powerpoint software to present "Electrical Measuring Instruments" material in the form of interactive media.	Further application research can develop "Electrical Measuring Instruments" learning media using software that can be accessed via the internet.
(Rustandi, 2022)[57]	Developing mobile educational software with the application of the	The results of the development resulted in learning media products based on	Future research can develop the type of material included in the application so

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
	ASSURE model for material types of equipment and functions.	Android which were developed using Construct 2 software. Application feasibility tests were carried out on several types of smartphones.	that each subject matter does not use a different application.
(Hamzah et al., 2017)[58]	To develop an Android application for learning digital graphic design which contains an introduction to Photoshop work tools, color selection.	The result of this development is an Android application developed using Adobe Flash, Adobe Photoshop, and Camtasia Studio 8 software.	Future research can conduct further research on the effects of using color and application user interfaces such as reviews from experts.
(Ab Wahab et al., 2015)[59]	Development of the M-Learning application of Malay proverbs with reference to the standard elementary school curriculum.	This application is built with the ASSURE model created on the Android operating system. This application was made using Adobe Flash, CS6 and Adobe Illustrator and Audacity software.	The application produced in this study is an application that operates on Android only.
(Djafar et al., 2021)[60]	Aims to develop animated media	The result of this study is the display of material on	Future research can apply this animation

[55] David Maclinton dan Dedek Andrian, "Pengembangan Media Pembelajaran Prisma Berbasis Macromedia Flash Dengan Desain Pembelajaran Assure," *INOMATIKA*, 4.1 (2022), 83–97 <https://doi.org/10.35438/inomatika.v4i1.323>.

[56] Puguh Santoso, "Pengembangan Media Interaktif Menggunakan Model ASSURE Untuk Membantu Guru Dalam Pembelajaran Fisika Tentang Alat Ukur Listrik," *Briliant: Jurnal Riset dan Konseptual*, 4.2 (2019), 235–248 <https://doi.org/10.28926/briliant.v4i2.319>.

[57] Andi Rustandi dan Rismayanti, "Penerapan Model ADDIE dalam Pengembangan Media Pembelajaran di SMPN 22 Kota Samarinda," *JURNAL FASILKOM*, 11.2 (2021), 57–60 <https://doi.org/10.37859/jf.v11i2.2546>.

[58] Hamzah Norhasyimah et al., "Pembangunan Aplikasi Android Pembelajaranreka Bentuk Grafik Digital," *Online Journal for TVET Practitioners*, 2.2 (2017), 1–7.

[59] Azhar Ab Wahab, Amirah Ahmad, dan Siti Aishah Md Arif, "Pembangunan aplikasi M-Pembelajaran peribahasa Melayu menggunakan model ASSURE," in *Symposium of International Language & Knowledge (SILK)*, 2015.

[60] Djafar, Canon, dan Arsyad.

Researcher	Article Purpose	Conclusion	Suggestions/ Weaknesses
	using the ASSURE model on social studies subjects.	animated video media. This animated media can improve student learning outcomes in social studies subjects.	media design to other subjects that have the same characteristics.

The ADDIE model offers learning media products in the form of modules or teaching materials that are adapted to students' conditions. The product can be in the form of a Learning Implementation Plan which is used to improve student learning outcomes [61] . The ASSURE model is also suitable for use in learning cycle research for students because ASSURE specifically examines student characteristics[62].

In the 18 articles that have been reviewed, the ASSURE model is rarely used in making applications. Usually, the ASSURE model is used to develop existing materials so that the delivery is more attractive. This model is also often used in the preparation of Learning Implementation Plans. The process of the ASSURE development design model requires a lot of students in the process. The ASSURE model with these steps is more effectively used to design learning systems and teaching media that increase students' learning motivation.

The ASSURE learning model has properties that optimize learning by utilizing media that make students more enthusiastic about learning. The media used in this study is designed according to the material being taught, using media images, videos, and concrete objects that can attract children's interest and make it easier for them to learn [63] . The ASSURE model is intended as a procedural guide for planning and implementing learning media. This model is

expected to help teachers achieve learning objectives smoothly and effectively[64].

Conclusion

The 36 articles that meet the criteria can be used to view the differences between the ADDIE model and the ASSURE model. Eighteen articles have been reviewed that deal with the topic of ASSURE model learning design. The ASSURE learning design model includes the design of a Learning Implementation Plan which is expected to improve student learning outcomes for the better. In the article regarding the ASSURE model, only a few studies were found that used the ASSURE model to create an Android application as a learning medium. In contrast, in articles that deal with the topic of ADDIE learning design, eighteen articles were found that deal with the topic of application design using the ADDIE model that fit the criteria for developing effective learning. From the description above, it can be concluded that the ADDIE model is more effective in designing mobile learning media applications because it focuses more on the contents of the material and the appropriateness of the application. Thus, it can be used by students to the maximum to achieve the goal, while the ASSURE model is more effective for the design of the learning system or teaching material that will be used for carrying out learning because the ASSURE model is more focused on the application of a design model that attracts students' interest in the learning media. This increases their motivation to learn.

This research is expected to be a reference for further research. This research can be used as material for selecting a learning design model tailored to the needs of each student. From the literature review that has been carried out, the development team is advised to (1) use learning media to support the Learning Implementation Plan, (2) use the latest technology in making learning media, (3) pay attention to the operating system that can reach all users when an

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[61] Darllis, Farida, dan Miaz

[62] Achmadi, Suharno, dan Suryani.

[63] Poppy Anggraeni dan Aulia Akbar, "Kesesuaian Rencana Pelaksanaan Pembelajaran Dan Proses Pembelajaran," *Jurnal Pesona Dasar*, 6.2 (2018), 55–65 <https://doi.org/10.24815/pear.v6i2.12197>.

[64] Maulana, Efgivia, dan Yanuardi.

application-based learning media is used, (4) carry out a feasibility test for the use and testing of the effectiveness of the learning media.

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