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Development of a Digital Audio Editing Learning Application Using the ADDIE Model Integrated with ARCS Motivational Design

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ABSTRACT

The swift progression of digital technology has profoundly altered pedagogical methods and learning experiences in higher education. In creative media education, audio editing abilities are vital competencies necessitating both theoretical comprehension and practical application. Conventional instructional methods frequently restrict student participation and autonomous investigation. This study seeks to create and assess a digital audio editing educational application utilizing the ADDIE instructional design model in conjunction with the ARCS motivating framework. A Design and Development Research (DDR) methodology was utilized, encompassing five phases: Analysis, Design, Development, Implementation, and Evaluation. The application was assessed by instructional design specialists and evaluated with diploma-level media studies students. Data was gathered through expert validation forms and student perception surveys. Descriptive statistical analysis revealed elevated levels of validity (M = 4.56), usability (M = 4.61), and motivational impact (M = 4.48). The results indicate that the combination of systematic instructional design and motivating tactics improves student engagement and learning efficacy in digital audio editing. This study enhances the expanding corpus of research on digital pedagogical innovation in technical and creative education.

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1. INTRODUCTION

The swift digital transition in higher education has profoundly altered instructional methodologies, especially in technology-focused fields. The incorporation of digital tools in education has become fundamental to pedagogical innovation (Bond et al., 2020). Educational institutions are progressively required to implement interactive and learner-centered methodologies that correspond with the requirements of the digital age. Digital audio editing is a crucial technical skill in creative media education. Proficiency in digital audio tools necessitates procedural knowledge, technical accuracy, and creative implementation. Recent research demonstrates that the systematic integration of online digital audio software improves students' practical and compositional abilities (Lei, 2024). Nevertheless, traditional demonstration-based methods frequently restrict active participation and autonomous practice.

Interactive multimedia learning environments dramatically enhance student engagement and conceptual comprehension. Navarrete et al. (2023) demonstrate that video-based and interactive educational methods enhance student engagement and cognitive involvement. Such methodologies are especially advantageous in skill-oriented courses necessitating visual and procedural illustration. A systematic instructional design is essential for guaranteeing the efficacy of digital learning. The ADDIE methodology is extensively utilized in educational product development because of its systematic and iterative framework (Hidayat & Muhamad, 2021; Basyar, 2020). Applications created with ADDIE exhibit enhanced coherence among learning objectives, instructional materials, and evaluation methods.

Furthermore, empirical evidence substantiates that the ADDIE paradigm improves clarity, organization, and instructional quality in digital learning applications (Hendra et al., 2022). The evaluation phase of the methodology facilitates ongoing enhancement and verification of educational materials. Besides, motivation is a crucial factor influencing the success of digital learning. The ARCS approach, which highlights Attention, Relevance, Confidence, and Satisfaction, has been widely utilized in technology-enhanced learning environments (Fang et al., 2023). Research indicates that ARCS-based instructional design enhances learner perseverance and satisfaction.

Recent implementations of the ARCS model illustrate its efficacy in enhancing student engagement and academic achievement in digital contexts (Raida et al., 2025). Incorporating motivating components into application design can improve user engagement and promote self-directed learning practices. The advancement of digital literacy is of paramount importance in modern education. Hashim et al. (2023) assert that digital competence is crucial for equipping students to meet industry requirements. Educational programs that replicate genuine digital jobs enhance skill preparedness and professional flexibility. Moreover, student involvement in digital learning settings is significantly correlated with academic performance. Bond et al. (2020) emphasize that significant digital involvement promotes enhanced cognitive processing and knowledge retention.

Despite the increasing study on multimedia and instructional design, few studies specifically examine the systematic development of digital audio editing learning apps that include both the ADDIE and ARCS frameworks. This signifies a research deficiency in the creation of structured and motivation-driven applications within creative media education. Thus, this study seeks to create and assess a digital audio editing learning application, utilizing the ADDIE instructional model and including ARCS motivational tactics to boost usability, engagement, and learning efficacy.

A conceptual framework was constructed to determine the suitable development approach for this project. The ADDIE Model comprises five primary phases: Analysis, Design, Development, Implementation, and Evaluation, which are systematically employed in the creation of this learning application. The ARCS Model comprises four components: Attention, Relevance, Confidence, and Satisfaction, utilized in the design of content and learning activities within the application. Figure 1 depicts the conceptual structure of the study that integrates the ADDIE Model and the ARCS Model comprehensively.

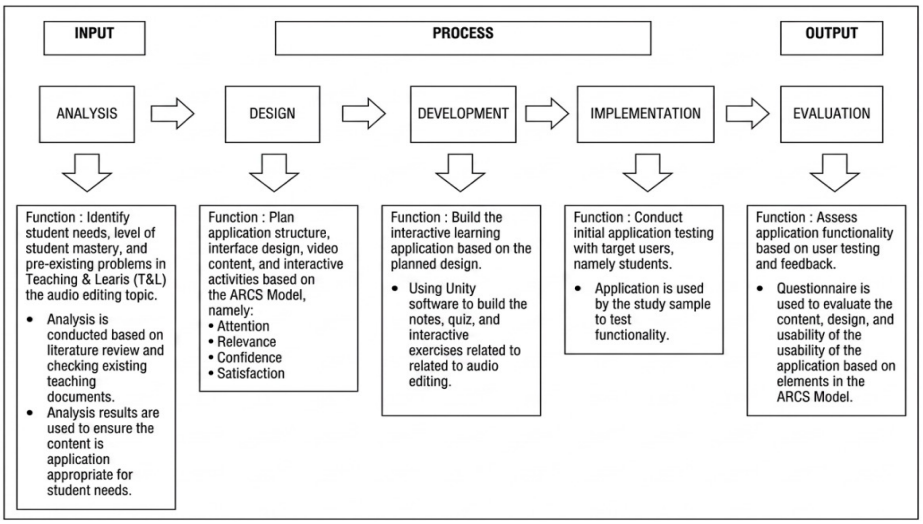

Fig. 1 *Interactive Learning Module Development Workflow*

This study employs the ADDIE Model as the primary framework for the development of the learning application, while the ARCS Model serves as the foundation for designing teaching and learning tactics that prioritize student motivation. The development of this conceptual framework enables the researcher to pinpoint critical components at each phase of the study's execution and to guarantee alignment between the application design and the attainment of learning objectives.

2. METHODOLOGY

This research utilized a Design and Development Research (DDR) methodology to create, develop, and assess an application for mastering the audio editing process in digital audio publishing. DDR was chosen because of its appropriateness for research centered on the systematic production of educational materials and the assessment of their functioning and usefulness (Richey & Klein, 2014). This method allows researchers to create educational resources tailored to identified needs and to assess the created product using systematic evaluation procedures. This study employed the DDR technique, which comprised three primary phases: needs analysis, design and development, and evaluation. The execution of each step was consistent with the study's objectives and is summarized in table 1.

Table 1
Implementation of DDR Phases

Phase	Method
Phase 1: Needs Analysis	● Literature Review
	● Document Analysis
Phase 2: Design and Development	● ADDIE Model
	● ARCS Model
Phase 3: Evaluation	● Expert evaluation on functionality
	● Student feedback on usability

2.1 Sampling

The sampling for this study comprised participants who directly engaged in the evaluation of the generated interactive learning application. Two classifications of responders were discerned: students and expert lecturers. Participants were selected by purposive sampling, as the study necessitated respondents with academic qualifications and pertinent experience in digital audio and multimedia production. The student cohort comprised 20 undergraduate individuals from Year 3 and Year 4 participating in the Audio, Video, and Digital Production program at the Faculty of Technical and Vocational Education (FPTV), Universiti Tun Hussein Onn Malaysia (UTHM). The selected students possessed prior experience in digital media production and actively participated in learning audio editing techniques. Their involvement was crucial for assessing material clarity, information organization, and the overall efficacy of the application in facilitating learning. The tool employed for this cohort was a content evaluation questionnaire aimed at assessing students' comprehension, instructional coherence, and perceived learning efficacy.

The expert group consisted of three lecturers specializing in multimedia and educational technologies. The specialists were chosen for their academic credentials and professional expertise in instructional design and multimedia production. Their responsibility was to assess the technical quality, interface design, usability, and overall multimedia integration of the generated program. The major tool for expert evaluation was a multimedia assessment questionnaire. The integration of student users and subject-matter specialists facilitated a thorough assessment from both educational and technical viewpoints. This dual-group sampling method enhanced the validity of the findings by integrating end-user feedback and professional judgment in evaluating the quality and efficacy of the interactive learning application.

2.2 Research Instrument

In this study, the primary instrument used for data collection was a structured questionnaire developed based on the ARCS Motivational Model introduced by Keller (2010), which comprises four key elements: Attention, Relevance, Confidence, and Satisfaction. The purpose of the questionnaire was to evaluate the functionality of the developed interactive learning application, particularly in terms of interface design and learning content, guided by the ARCS framework. The instrument aimed to determine whether the application successfully captured learners' attention, demonstrated content relevance, enhanced learner confidence, and provided satisfaction throughout the learning process. This study employed a fully quantitative approach. Two sets of questionnaires were developed to evaluate the application from two primary perspectives: multimedia design and learning content. The separation of instruments allowed for a more focused and systematic evaluation of both technical and pedagogical aspects of the application.

i. Multimedia Design Evaluation Questionnaire

The first questionnaire focused on the evaluation of multimedia design elements. It assessed aspects such as user interface design, graphics quality, audio clarity, video integration, layout organization, color usage, and overall visual consistency. The purpose of this instrument was to examine the technical functionality, aesthetic quality, and usability of the application. The multimedia evaluation questionnaire was administered to three lecturers specializing in multimedia and information technology to ensure expert-level assessment of technical and design components. Table 2 shows the multimedia elements questionnaire.

Table 2
Multimedia Elements Questionnaire

Section	Evaluation Elements	Number of Questions
A	Expert Background	5
B	Interface Design	10
C	Interaction Design	10
D	Recommendations	1

ii. Learning Content Evaluation Questionnaire

The second questionnaire emphasized the evaluation of learning content. It assessed the accuracy and appropriateness of the content according to students' academic level, clarity of explanation regarding the digital audio editing process, logical sequencing of instructional steps, and alignment between content and learning objectives. Additionally, the questionnaire measured the extent to which the application supported students' understanding of digital audio editing procedures based on the four ARCS elements: Attention, Relevance, Confidence, and Satisfaction.

Both questionnaires employed a dichotomous response format ("Yes" and "No") for each item to simplify analysis and ensure clarity in interpretation. This format allowed respondents to provide direct judgments regarding the presence or absence of specific design and instructional characteristics within the application. Table 3 shows the learning content evaluation questionnaire.

Table 3
Learning Content Evaluation Questionnaire

Section	ARCS Component	Number of Questions
-	Respondent Background	3
A	Attention	3
B	Relevance	3
C	Confidence	3
D	Satisfaction	3
E	Opinion	1

iii. Instrument Validation Process

Prior to data collection, the questionnaires underwent a content validation process. The instruments were reviewed by a language expert, specifically a Malay language teacher, to evaluate linguistic clarity, sentence structure, appropriateness of terminology, and alignment between questionnaire items and research objectives. Feedback and recommendations provided by the language expert were documented and incorporated to refine the wording and structure of the items, ensuring clarity and comprehensibility for respondents. Content validity refers to the extent to which an instrument accurately measures what it is intended to measure (Creswell, 2012). In this study, content validity was established through expert review to ensure that the questionnaire items appropriately represented the constructions being assessed. The review process examined item relevance, clarity of language, contextual suitability, and consistency with the study objectives.

Following the validation process, expert evaluation was conducted involving three multimedia lecturers who assessed interface design, user interaction, and multimedia integration. Subsequently, the content evaluation questionnaire was administered to 20 Year 3 and Year 4 students to assess comprehension and effectiveness of the learning materials. The systematic validation and refinement process ensured that the instruments possessed adequate content validity, supporting the accuracy, reliability, and contextual appropriateness of the data collected. This rigorous approach strengthened the credibility of the research findings and ensured that the questionnaires effectively measured the intended aspects of multimedia functionality and instructional effectiveness.

2.3 Data Analysis

The data obtained from the multimedia design questionnaire and the learning content questionnaire were examined employing descriptive statistics. The analysis concentrated on determining the frequency and percentage for each question, given that the instruments employed dichotomous responses ("Yes" and "No"). Frequency analysis quantified the respondents selecting each option, and percentage analysis illustrated the general distribution of replies. This methodology enabled the researcher to distinctly ascertain the degree of consensus for the efficacy of the application's multimedia design and educational content.

3. PROBLEM STATEMENT

Higher education instruction in digital audio editing frequently depends on instructor-led demonstrations, constraining students' chances for self-directed discovery and autonomous skill acquisition. Despite the widespread availability of digital resources, numerous educational approaches exhibit a deficiency in systematic design and the planned incorporation of motivational components. As a result, students may encounter diminished engagement, cognitive overload, and inadequate practical experience, which impede their proficiency in technical editing abilities. Moreover, current educational resources are often disjointed and misaligned with recognized instructional design frameworks. Consequently, it is essential to create a systematically structured and motivationally informed digital audio editing learning application to improve usability, engagement, and learning efficacy.

4. OBJECTIVES

The research inquiries into the design and development of this interactive learning application include:

1. Designing an application for mastering the audio editing process in digital audio publishing.
2. Developing an application for mastering the audio editing procedure in digital audio publishing.
3. Evaluating the functionality of the application for mastering the audio editing process in digital audio publishing.

5. PRODUCT DEVELOPMENT

The ADDIE model serves as a primary framework for the creation of interactive learning materials and educational apps due to its methodical and user-friendly structure (Mohd Ishak, 2021). The ADDIE approach comprises five primary phases: Analysis, Design, Development, Implementation, and Evaluation. Every phase in this methodology is crucial for ensuring that the development of learning materials proceeds methodically and prioritizes student needs (Safitri & Aziz, 2022).

The ADDIE paradigm underscores meticulous planning and the incorporation of ongoing input to enhance the quality of educational media (Rachma, 2023). This study selected the ADDIE paradigm to create an interactive learning application for the audio editing process in digital audio publishing. Each phase of this strategy is executed in stages to guarantee that the generated application fulfills user requirements and established learning objectives as in figure 2.

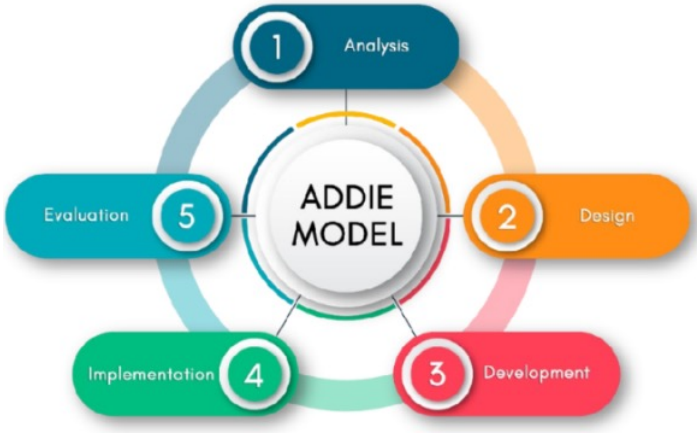

Fig. 2 *Model ADDIE (Rosset, 1987)*

i. The Analysis Phase

First in the ADDIE Model, the Analysis Phase identifies user demands, learning objectives, and teaching and learning challenges. To ensure that this interactive learning application's material is relevant and satisfies student needs, it is carefully analyzed. Initial investigation indicated that lecture slides on digital audio production still employ theoretical methodologies and solely present data. Audio file types, waveforms, and basic editing techniques like trim/cut, enhancing of voice and isolation of voice, etc. are neither interactive nor graphic. This communication technique makes technical procedures hard to understand and diminishes student engagement. Quizzes and explainer videos assist students with master audio editing technicalities. The ARCS Model was used to improve student understanding and draw attention to the resources. Relevance from the ARCS Model is first. Content is tailored to students learning in the Faculty of Technical and Vocational Education, notably for the Creative Multimedia course.

ii. The Design Phase

The second step of the ADDIE Model is design where the planning of content organization, interface layout, and learning delivery mechanisms takes place. Systematically considering student demands and user experience, this interactive learning application is designed. This application's content design process is carefully designed to ensure that the information is structured, aligned with learning objectives, and relevant to student mastery. The lesson covers basic digital editing abilities from the Audio Video and Digital Publishing course syllabus. This application has three modules: Notes, Quizzes, and User Guide. To assist students, understand complex subjects, the Notes module uses text, graphics, and videos. Simple, concise visuals help explain the notes. This program covers digital audio, microphones, audio formats, audio quality parameters, and basic editing. The Quiz module asks objective note-based questions. There are 15 questions with immediate correct/incorrect feedback. This module helps students self-review and formatively test their knowledge.

Students can avoid confusion by viewing the application's buttons and actions in the User Guide Module. User-friendly content design emphasizes a tidy layout, proper color choices, clear icon use, and simple text. Attractive visuals, content related to students' skills, topic organization in stages from basic to complex, and interactive quizzes with immediate feedback and current scores can boost students' enthusiasm and motivation to explore the application content. This content design encourages self-directed, flexible learning and makes digital audio editing more fun, practical, and systematic. The interactivity feature encourages student engagement with application material. Quizzes with fast feedback, user-friendly navigation buttons, and video functions show students the audio editing process realistically. Students can also browse content freely using this design. Students can choose modules, repeat courses, and retake quizzes at their convenience. Gamification aspects like current scores motivate students.

The user-friendliness, appeal, and ease of use of applications depend on interface design. A well-designed interface helps users navigate the application and motivates students to learn. This application's visual elements are designed for uniformity and use. With bright icons, clear buttons, and simple labels, the interface is simple and structured. Bright hues draw attention without obscuring content. The ARCS model consisting of four elements, namely Attention, Relevance, Confidence and Satisfaction, was applied in the development of this application. Table 4 below shows the application of the ARCS model to each page in the developed application.

Table 4
Integration of ARCS Model in the Application

Section	Display	Application of the ARCS Model
Home Page		Attention: Simple and minimalist interface design with limited use of colors, appropriate icons and clear text to attract user attention Relevance: Provision of Notes, Quiz and User Guide buttons that are in line with the learning needs of university students.
Main Menu Page		Attention: Minimalist design with clear buttons and a neat layout to attract users' attention. Relevance: Three main buttons (Notes, Quiz, Guide) make it easy to access learning modules in a structured way. Confidence: The Home button gives users control and increases confidence during navigation.
Notes Menu Page		Attention: Interactive display with subtopic buttons, pop-ups and tutorial videos attract users' attention. Relevance: The hierarchical arrangement of subtopics and links to websites provides practical and relevant learning experience. Confidence: Pop-ups of explanations and tutorial videos increase user understanding and confidence. Satisfaction: The combination of text, visuals, audio and video provides an enjoyable learning experience.
Quiz Page		Attention: Color feedback on the answer box (green/red) draws the user's attention to correct and incorrect answers. Confidence: Current and final scores give users confidence in their performance. Satisfaction: The Quiz Repeat button allows users to repeat the quiz, increasing satisfaction through opportunities for correction and reinforcement of learning.
Logout Confirmation Page		Attention: A clear and prominent confirmation message to grab the user's attention before exiting the application. Confidence: The choice of "Yes" and "No" buttons give the user control, increasing confidence when making decisions. Satisfaction: This security measure reduces the risk of accidental exits, providing a more satisfying user experience.

iii. The Development Phase

The third stage of the ADDIE Model, development, implements the proposed design into the application form. This study used Unity, Canva graphics, and Cap Cut video editing to construct an app. The design phase's framework guided the development of Notes, Quizzes, and User Guides. Language, visual layout, and interactive functions were considered during content development to make the app user-friendly and educational. The application's visual aspects were created using Canva software due to its ease of use, freedom in picking colors, patterns, and font, and ability to design images that match the learning theme. It displays all graphics, including navigation buttons.

Canva Pro was used to develop the Home Page, Guide Page, and others for high-quality, interactive graphics. The Canva Home Page display uses university-appropriate colors and typography and is straightforward, tidy, and user-friendly. Each button is obvious and easy to find, and the arrangement makes application navigation easier. To improve user experience, this method provides visual uniformity across pages, including backgrounds and button symbols. The Canva makes it easy to create interactive and engaging graphics that assist learning visually and structure.

iv. The Implementation Phase

The implementation phase is the fourth stage of the ADDIE Model, encompassing the utilization of the application by the intended users within an authentic learning context. This study involved students from the Audio Video and Digital Production course at UTHM utilizing the program to assess its functionality. Prior to utilizing the application, a concise briefing session was conducted regarding its functionalities and usage instructions. The students were subsequently allotted time to investigate each component of the application pertaining to digital audio editing.

v. The Evaluation Phase

The assessment phase represents the concluding stage in the development of this learning application, during which the researcher appraises the application's functionality and efficacy based on feedback from experts and students. The assessment is conducted with two distinct sets of questionnaires: the multimedia design questionnaire and the content questionnaire, both employing binary response possibilities of "Yes" and "No" for each item.

The acquired data is subjected to descriptive analysis utilizing the SPSS software, employing frequency and percentage computations for each item to evaluate student acceptance of the application and the appropriateness of the design and content, based on expert opinions. This evaluation enables the researcher to determine if the application has met the established learning objectives and to pinpoint areas for enhancement prior to implementation in a genuine learning context.

6. RESULT

The results of this study are categorized into two main sections, namely the expert evaluation of the module's functionality and the student evaluation of its usability. The expert evaluation focused on assessing the technical quality and instructional design of the developed interactive learning application. Specifically, three experts in multimedia and educational technology examined aspects such as interface layout, navigation structure, multimedia integration, button functionality, video simulation quality, and overall user-friendliness. Their evaluation aimed to determine whether the module met acceptable standards in terms of design accuracy, technical performance, and instructional effectiveness before being implemented for student use.

The second section presents the student evaluation, which concentrates on the usability and learning effectiveness of the application. A total of 20 Year 3 and Year 4 students assessed the module based on the ARCS motivational components: Attention, Relevance, Confidence, and Satisfaction. This evaluation examined whether the application successfully attracted learners' interest, demonstrated meaningful content relevance, enhanced students' confidence in performing digital audio editing tasks, and provided a satisfying learning experience. Together, these two evaluation perspectives offer a comprehensive understanding of the module's overall quality, combining professional judgment on functionality with actual user feedback on learning usability and motivational impact.

6.1 Expert Evaluation

This section analyzes the assessment of learning apps by multimedia experts, specifically regarding interface design and user interaction. The purpose of expert evaluation is to verify that the application is user-friendly, easily navigable, and adheres to the principles of effective multimedia design. Three multimedia specialists were designated to assess this application. The assessment was performed via a questionnaire featuring binary response options of "Yes" or "No" for each item addressing interface and interaction elements. The input collected will be utilized to evaluate the application's usability and identify recommendations for enhancing design quality and user experience. Table 5 shows the expert evaluation of multimedia and interaction design.

Table 5
Expert Evaluation of Multimedia and Interaction Design (n = 3)

Evaluation Aspect	Yes (f)	Yes (%)	No (f)	No (%)
Overall interface design	3	100	0	0
Menu layout and navigation	3	100	0	0
Note and Sub Note display	3	100	0	0
Color selection and text clarity	3	100	0	0
Quiz page presentation	3	100	0	0
Video simulation quality	2	66.7	1	33.3
Button functionality	3	100	0	0
Audio format conversion link clarity	2	66.7	1	33.3
Background music suitability	2	66.7	1	33.3
Overall user-friendliness	3	100	0	0

The results reveal that experts unanimously concurred (100%) that the program exhibits a coherent interface design, a well-structured menu, suitable color application, legible text presentation, and effective navigation. The results indicate that the multimedia and interaction design adhere to acceptable usability criteria. Nonetheless, several elements necessitate enhancement. One expert (33.3%) recommended enhancements to the audio editing simulation video's quality, the clarity of the audio format conversion link button, and the background music volume. The findings suggest that although the program is predominantly well-structured, specific multimedia components should be refined to augment user experience and instructional efficacy.

6.2 Student Evaluation

This evaluation was conducted to determine the extent to which the learning application supports students' motivational elements based on the ARCS Model, namely Attention, Relevance, Confidence, and Satisfaction. Each component was measured using three items in a Google Form questionnaire, with dichotomous response options of "Yes" or "No.". Table 6 shows student evaluation based on the ARCS Model:

Table 6
Student Evaluation Based on ARCS Model (n = 20)

ARCS Component	Yes (f)	Yes (%)	No (f)	No (%)
Attention	56	93.3	4	6.7
Relevance	59	98.3	1	1.7
Confidence	53	88.3	7	11.7
Satisfaction	56	93.3	4	6.7

(Each component consisted of 3 items; total responses per component = 60)

The analysis shows a high level of student agreement across all ARCS components. The Relevance component recorded the highest agreement (98.3%), indicating that students perceived the learning content as closely aligned with their academic needs. The Attention and Satisfaction components both achieved over 93% agreement, demonstrating that the application successfully captured students' interest and provided a satisfying learning experience. The Confidence component recorded slightly lower agreement (88.3%), suggesting that while most students felt supported in understanding the digital audio editing process, a small proportion may require additional guidance. Overall, the findings indicate that the application effectively supports student motivation and learning based on the ARCS framework.

7. DISCUSSION

The findings indicate that systematic development using the ADDIE model contributed significantly to the instructional coherence and usability of the application. This supports the findings of Alqahtani & Rajkhan (2022) and Cheng & Tsai (2022), who reported that structured instructional frameworks improve the quality of digital learning products. The high validation scores reflect the effectiveness of the design and evaluation phases within the ADDIE framework. Kamaludin, Alias & DeWitt (2023) emphasizes that iterative evaluation strengthens alignment between learning objectives and instructional delivery.

The integration of interactive multimedia elements contributed positively to student engagement. Huang et al. (2022) found that video-based learning enhances cognitive processing and learner involvement, particularly in procedural and technical subjects. Students reported increased confidence and satisfaction, which aligns with ARCS-based motivational research (Sailer et al., 2023). The integration of attention-grabbing features and relevant learning tasks supports sustained engagement. The motivational impact observed is also consistent with Zhang, Carter & Qian (2025), who demonstrated that ARCS implementation enhances academic persistence and learning outcomes. Motivational scaffolding embedded within digital tools encourages autonomous learning. The positive usability ratings support the importance of clear interface design in educational technology. Studies in digital application development show that intuitive navigation enhances learner satisfaction and reduces cognitive barriers (Anua & Salleh, 2024).

The application also contributed to digital literacy enhancement. Hashim et al. (2023) highlights that digital learning tools foster competencies essential for the modern workforce. Furthermore, Bond et al. (2020) emphasize that meaningful digital engagement correlates strongly with improved academic performance. The interactive nature of the application likely contributes to deeper learner involvement. In skill-based domains such as audio editing, structured digital simulation enhances procedural mastery. Lei (2024) reported similar improvements in technical competence when digital tools were integrated systematically. Although descriptive findings are promising, future studies may adopt quasi-experimental designs to examine measurable learning gains. Comparative analysis between traditional and application-based instruction could strengthen empirical evidence. Overall, the findings reinforce the importance of integrating systematic instructional design with motivational frameworks in digital learning application development.

8. CONCLUSION

This project sought to create and assess a digital audio editing educational application based on the ADDIE instructional design paradigm and including the ARCS motivating framework. The results demonstrate that a methodical and theory-based development strategy markedly improves instructional coherence, usability, and learner engagement. Expert validation results indicated elevated levels of content accuracy, instructional quality, and technical functionality, whilst student input revealed significant motivation, contentment, and perceived learning efficacy.

The amalgamation of organized instructional design and motivating components demonstrated efficacy in overcoming the shortcomings of conventional demonstration-based teaching approaches. The application offered students options for self-directed practice, engaging learning experiences, and enhanced confidence in utilizing audio editing skills. Moreover, the digital learning environment facilitated the acquisition of key technical and digital competencies essential in modern media companies.

The study substantiates that integrating the ADDIE model with ARCS motivating methods provides a pragmatic and pedagogically robust foundation for creating digital learning apps in skill-oriented fields. Future studies may utilize experimental designs to assess learning attainment improvements and long-term skill retention, while also broadening application across other educational environments.

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11. AUTHORS' CONTRIBUTIONS

Suhaizal Hashim: Conceptualization, methodology, formal analysis, investigation and writing-original draft; Nik Nor Adriana Iwani Nik Mohd Huzaidi: Conceptualization, methodology, and formal analysis; Muhamad Hakimi Zakri: Conceptualization, formal analysis, and validation; Khairul Anuar Abdul Rahman: Review and editing, and validation; Muhammad Faeiz Daud: Conceptualization.

12. CONFLICT OF INTEREST DECLARATION

We certify that the article is the Authors' and Co-Authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This research/manuscript has not been submitted for publication, nor has it been published in whole or in part elsewhere. We testify to the fact that all Authors have contributed significantly to the work, validity and legitimacy of the data and its interpretation for submission to IJELHE.

13. DECLARATION OF GENERATIVE AI IN THE WRITING PROCESS

During the preparation of this work, the author(s) used ChatGPT and Gemini to refine the English phrasing, correct grammatical errors, and improve readability. After using this tool/service, the author(s) reviewed and edited the content as needed and took(s) full responsibility for the content of the publication.

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