

# Developing Video Tutorial Based Instructional Media for Graphic Design Learning Using the ADDIE Model



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## Article Info

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## Abstract

This study aims to develop a video tutorial-based instructional medium for graphic design learning that is valid, practical, and effective for use in secondary school Information and Communication Technology (ICT) instruction. The study employed a Research and Development (R&D) approach using the ADDIE instructional design model, which consists of analysis, design, development, implementation, and evaluation stages. The research subjects included media and content experts as validators, a teacher as a practitioner, and students as end users. Data were collected through validity, practicality, and effectiveness questionnaires using a Likert scale and analyzed descriptively. The results indicate that the developed instructional media achieved a validity score of 91.03% (very valid), a practicality score of 93.33% (very practical), and an effectiveness score of 89.63% (very effective). These findings suggest that video tutorial-based instructional media effectively support skill-based learning, enhance student engagement, and facilitate independent learning. This study contributes to the development of instructional media that are aligned with contemporary digital learning needs and the learning characteristics of today's students.

## Abstrak

Penelitian ini bertujuan untuk mengembangkan media pembelajaran desain grafis berbasis video tutorial yang layak, praktis, dan efektif digunakan pada pembelajaran Teknologi Informasi dan Komunikasi (TIK) di tingkat sekolah menengah. Penelitian ini menggunakan pendekatan Research and Development (R&D) dengan model pengembangan ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Subjek penelitian terdiri atas ahli media dan materi sebagai validator, seorang guru sebagai praktisi, serta siswa sebagai pengguna. Teknik pengumpulan data dilakukan melalui angket validitas, praktikalitas, dan efektivitas dengan skala Likert, yang dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa media pembelajaran yang dikembangkan memperoleh nilai validitas sebesar 91,03% dengan kategori sangat valid, nilai praktikalitas sebesar 93,33% dengan kategori sangat praktis, dan nilai efektivitas sebesar 89,63% dengan kategori sangat efektif. Temuan ini menunjukkan bahwa media pembelajaran desain grafis berbasis video tutorial mampu mendukung pembelajaran berbasis keterampilan, meningkatkan keterlibatan siswa, serta memfasilitasi pembelajaran mandiri. Penelitian ini memberikan kontribusi dalam pengembangan media pembelajaran berbasis video yang relevan dengan kebutuhan pembelajaran digital dan karakteristik peserta didik masa kini

## A. INTRODUCTION

The rapid advancement of information and communication technology has fundamentally transformed contemporary educational practices across all levels of schooling. In modern learning theory, instructional media are no longer perceived merely as auxiliary tools for delivering information, but rather as strategic components that shape learners' cognitive processes, learning experiences, and outcomes (Mayer, 2020). The theory of multimedia learning emphasizes that learning becomes more effective when information is presented through a systematic integration of visual and auditory elements, as such integration supports efficient cognitive processing and knowledge retention (Mayer, 2009; Clark & Mayer, 2016).

Instructional media play a crucial role in facilitating meaningful learning by stimulating learners' attention, motivation, and active engagement. Well-designed media can reduce cognitive overload, clarify complex concepts, and enhance learners' ability to transfer knowledge into practice (Arsyad, 2017). In the context of twenty-first-century education, instructional media are also expected to be adaptive to digital transformation and responsive to the learning characteristics of students who are increasingly familiar with visual, interactive, and technology-mediated environments (OECD, 2019).

One form of instructional media that has gained significant attention in digital learning environments is video-based instruction, particularly video tutorials. Video tutorials offer distinctive advantages by presenting learning materials in a concrete, procedural, and contextualized manner, making them highly suitable for skill-oriented learning (Kay, 2012). Moreover, video tutorials enable learners to regulate their own learning pace, revisit learning materials as needed, and engage in self-directed learning without complete dependence on direct teacher instruction (Zhang et al., 2006). These characteristics position video tutorials as an effective medium for supporting independent and experiential learning.

Graphic design learning within the subject of Information and Communication Technology (ICT) requires a high level of practical skill mastery. Graphic design education does not solely focus on conceptual understanding but also emphasizes technical proficiency in operating design software, applying visual principles, and developing creativity and aesthetic awareness (Landa, 2018). Consequently, effective graphic design instruction demands learning media that can clearly demonstrate step-by-step procedures and visual workflows, allowing students to observe and replicate design processes accurately.

From a theoretical perspective, video tutorial-based instructional media align well with the pedagogical needs of graphic design learning. By integrating visual demonstrations, narration, and real-time procedural guidance, video tutorials facilitate experiential learning and support active knowledge construction (Hansch et al., 2015; Kolb, 2015). Such media enable learners to engage more deeply with learning tasks and bridge the gap between theory and practice, which is essential in vocational and skill-based education.

Despite these theoretical advantages, empirical realities in secondary education indicate a significant discrepancy between ideal instructional practices and actual classroom implementation. Preliminary observations of graphic design instruction at SMA Negeri 1 Baso reveal that learning activities remain largely dependent on printed textbooks, oral explanations, and limited teacher demonstrations. The utilization of digital instructional media, particularly video-based resources, is still minimal. As a result, learning tends to be teacher-centered, less interactive, and insufficiently supportive of students' diverse learning speeds and needs.

This empirical condition has implications for student engagement and learning outcomes. Many students experience difficulties in independently understanding graphic design procedures and applying them correctly during practice sessions. Such challenges suggest that the instructional media currently employed do not fully accommodate the learning characteristics of today's students, who are often described as digital natives with a strong preference for visual and interactive learning modalities (Prensky, 2010).

Several recent studies have similarly reported that limited integration of digital instructional media constitutes a major barrier to effective skill-based learning in secondary schools (Putri et al., 2021; Rahmawati & Nugroho, 2022). These findings highlight a persistent mismatch between students' learning preferences and the instructional strategies adopted in classrooms. Although technological infrastructure is increasingly available, its pedagogical utilization remains suboptimal, particularly in subjects that require intensive hands-on practice such as graphic design.

The gap between multimedia learning theory and instructional practice underscores the urgent need for the development of innovative, pedagogically grounded, and contextually relevant instructional media. Effective media development should not focus solely on technological sophistication but must be guided by instructional design principles and subjected to systematic evaluation to ensure educational quality and usability (Branch, 2009). In this regard, research and development (R&D) methodology provides a suitable framework for producing instructional media that are empirically tested and pedagogically sound.

Previous research has demonstrated that video tutorial-based instructional media can positively influence students' conceptual understanding, motivation, and practical skills (Kay, 2012; Hsin & Cigas, 2013). However, many of these studies primarily examine learning outcomes without thoroughly addressing the systematic development process or evaluating media quality from multiple dimensions. Furthermore, research focusing on the development of graphic design instructional media at the senior high school level remains relatively limited, especially studies that assess media validity, practicality, and effectiveness in an integrated manner.

This condition reveals a clear research gap that warrants further investigation. There is a need for instructional media development studies that not only produce video-based learning resources but also rigorously evaluate their pedagogical quality and classroom applicability. Addressing this gap is particularly important in graphic

design education, where instructional effectiveness is closely tied to learners' ability to observe, practice, and internalize procedural knowledge.

Accordingly, this study aims to develop a video tutorial-based instructional medium for graphic design learning using a systematic instructional design model. The novelty of this research lies in its comprehensive approach to media development and evaluation. Unlike prior studies that position video tutorials merely as supplementary teaching aids, this study conceptualizes video tutorials as primary learning resources that support both classroom instruction and independent learning. Additionally, the media are developed through a structured ADDIE model and evaluated based on three key criteria: validity, practicality, and effectiveness.

The urgency of this research is further reinforced by the ongoing digital transformation of education and the growing emphasis on digital literacy, creativity, and learner autonomy as essential competencies in twenty-first-century learning. By developing and empirically evaluating video tutorial-based instructional media for graphic design, this study is expected to contribute theoretically to instructional media development research and practically to improving the quality of ICT learning in secondary education

## **B. METHOD**

This study employed a Research and Development (R&D) approach aimed at developing and evaluating instructional media for graphic design learning at the senior high school level. The R&D approach was selected because it allows for the systematic production of educational products while simultaneously assessing their pedagogical quality and usability in real learning contexts (Richey & Klein, 2007). To guide the development process, this study adopted the ADDIE instructional design model, which consists of the stages of analysis, design, development, implementation, and evaluation, due to its structured yet flexible framework and its wide application in contemporary instructional design research (Branch, 2009; Molenda, 2015).

The research began with a needs analysis to identify learning problems, student characteristics, and instructional conditions related to graphic design learning. Preliminary observations and discussions with teachers and students indicated that existing learning practices relied heavily on textbooks and verbal explanations, which were insufficient to support procedural and skill-based learning. These findings highlighted the need for instructional media that could provide clear visual demonstrations and support independent learning. Based on this analysis, instructional objectives and content structures were formulated to align with curriculum requirements and learner needs.

The design stage focused on structuring the instructional content, determining learning sequences, and integrating multimedia elements based on multimedia learning principles. Storyboards and navigation structures were developed to ensure coherence, learner control, and ease of use. During the development stage, the instructional design was transformed into a functional video tutorial-based learning medium. The development process emphasized instructional clarity, visual

consistency, and usability, rather than dependence on specific software tools, to ensure the pedagogical relevance and adaptability of the media.

The developed instructional media were then implemented on a limited scale in graphic design learning activities at SMA Negeri 1 Baso. The media were used both as instructional support in classroom learning and as independent learning resources for students. This implementation aimed to examine the practicality of the media in authentic instructional settings, including ease of use, clarity of content, and suitability for classroom conditions.

Evaluation was conducted to assess the quality of the instructional media in terms of validity, practicality, and effectiveness, which are commonly applied criteria in instructional media development research (Nieveen, 2013). Media validity was evaluated by experts in instructional media and subject content, focusing on content accuracy, instructional design, language clarity, and visual communication. Practicality was assessed by teachers as practitioners to determine the feasibility and usability of the media in learning activities. Effectiveness was evaluated based on students' responses, particularly their motivation, engagement, and perceived support in understanding graphic design procedures. Data were collected using structured Likert-scale questionnaires and analyzed descriptively by converting scores into percentage values to determine the quality level of the developed instructional media.

### **C. RESULT AND DISCUSSION**

This study resulted in the development of a video tutorial-based instructional medium for graphic design learning designed for senior high school students. The development process followed a systematic Research and Development (R&D) framework using the ADDIE instructional design model. The resulting product was evaluated through expert validation, practicality testing by a teacher, and effectiveness testing with students. The results are presented narratively and supported by quantitative tables to clearly illustrate the quality of the developed instructional media.

The instructional media developed in this study consisted of structured video tutorials demonstrating step-by-step graphic design procedures. The media were designed to support both classroom instruction and independent learning. During the development stage, instructional content was organized according to curriculum-based competencies, while multimedia elements such as screen-recorded demonstrations, narration, and visual cues were integrated to enhance clarity and learner engagement. Prior to implementation, the media underwent technical testing to ensure that all navigation functions and video playback features operated correctly.

#### **Validity of the Instructional Media**

The validity of the instructional media was assessed by three experts with expertise in instructional media, information technology, and education. The validation process focused on four main aspects: content validity, instructional design quality, packaging and visual communication, and language clarity. Each expert

evaluated the media using a structured validation instrument, and the obtained scores were converted into percentage values.

The individual validation scores obtained from the three experts were 87.25%, 95.00%, and 89.83%. After averaging and converting the scores based on the predetermined criteria, the final validity score of the instructional media reached **91.03%**, indicating that the product was classified as **“Very Valid.”**

**Table 1. Results of Instructional Media Validity Evaluation**

No	Validation Aspect	Percentage (%)	Category
1	Content validity	88.33	Very Valid
2	Instructional design	91.11	Very Valid
3	Packaging and visual communication	94.66	Very Valid
4	Language clarity	90.00	Very Valid
<b>Overall Average</b>		<b>91.03</b>	<b>Very Valid</b>

The data presented in Table 1 show that all evaluated aspects achieved scores above 88%, indicating a high level of consistency between instructional objectives, content organization, and visual presentation. These results suggest that the developed instructional media met the essential requirements for instructional quality and accuracy.

### **Practicality of the Instructional Media**

The practicality of the instructional media was evaluated by a graphic design teacher as a practitioner. This evaluation aimed to determine the feasibility and ease of use of the media in real classroom settings. The assessment focused on three aspects: display quality, content presentation, and instructional benefits.

The practicality evaluation resulted in an overall score of **93.33%**, which falls into the **“Very Practical”** category. The detailed results of the practicality assessment are presented in Table 2.

**Table 2. Results of Instructional Media Practicality Evaluation**

No	Practicality Aspect	Percentage (%)	Category
1	Display quality	95.00	Very Practical
2	Content presentation	95.00	Very Practical
3	Instructional benefits	90.00	Very Practical
<b>Overall Average</b>		<b>93.33</b>	<b>Very Practical</b>

As shown in Table 2, the highest scores were obtained in the display and content aspects, indicating that the instructional media were easy to operate and that the instructional content was well-structured and relevant to learning objectives. The high practicality score reflects the feasibility of integrating the media into classroom instruction without requiring additional technical support.

### **Effectiveness of the Instructional Media**

The effectiveness of the instructional media was examined through a limited-scale trial involving three senior high school students. The effectiveness evaluation focused on students' perceptions of the instructional media, particularly in terms of visual appeal, content clarity, and usefulness in supporting learning activities. Students

used the instructional media during graphic design practice sessions before completing an effectiveness questionnaire.

The effectiveness scores obtained from the three students were 90.55%, 86.11%, and 92.22%. The average effectiveness score was **89.63%**, indicating that the instructional media were classified as **"Very Effective."** A detailed summary of the effectiveness evaluation is provided in Table 3.

**Table 3. Results of Instructional Media Effectiveness Evaluation**

No	Effectiveness Aspect	Percentage (%)	Category
1	Visual appearance	91.11	Very Effective
2	Content clarity	86.66	Very Effective
3	Learning usefulness	91.11	Very Effective
<b>Overall Average</b>		<b>89.63</b>	<b>Very Effective</b>

Table 3 indicates that students responded positively to the visual and instructional aspects of the media. The results suggest that the video tutorial format supported students' understanding of graphic design procedures and facilitated independent learning during practice activities.

#### **Summary of Quantitative Results**

To provide a comprehensive overview of the evaluation outcomes, Table 4 summarizes the results of validity, practicality, and effectiveness assessments.

**Table 4. Summary of Instructional Media Evaluation Results**

Evaluation Aspect	Percentage (%)	Category
<b>Validity</b>	91.03	Very Valid
<b>Practicality</b>	93.33	Very Practical
<b>Effectiveness</b>	89.63	Very Effective

Overall, the results demonstrate that the developed video tutorial-based instructional media achieved high-quality standards across all evaluation dimensions. The consistent achievement of scores above 89% across validity, practicality, and effectiveness evaluations indicates that the instructional media are suitable for implementation in graphic design learning at the senior high school level.

#### **D. DISCUSSION**

The findings of this study demonstrate that the developed video tutorial-based instructional media for graphic design learning achieved a high level of quality in terms of validity, practicality, and effectiveness. These results confirm that the systematic application of an instructional design model can produce learning media that are pedagogically sound and responsive to learners' needs. The high validity score (91.03%) indicates strong alignment between instructional objectives, content accuracy, and multimedia design principles, which are essential components of effective instructional media (Mayer, 2020; Branch, 2009).

From a theoretical perspective, the high validity of the developed media supports the core assumptions of multimedia learning theory, which posits that learners comprehend and retain information more effectively when instructional content is presented through well-integrated visual and auditory channels (Mayer, 2009; Clark

& Mayer, 2016). The expert validation results suggest that the video tutorial format successfully minimized extraneous cognitive load while emphasizing essential learning elements, thereby facilitating meaningful learning. This finding is consistent with previous studies reporting that well-designed instructional videos enhance conceptual clarity and procedural understanding in skill-based learning contexts (Kay, 2012; Hsin & Cigas, 2013).

The practicality results further indicate that the instructional media were highly feasible for classroom implementation, as reflected by the teacher's evaluation score of 93.33%. This finding highlights the importance of usability and instructional relevance in media development. In line with Nieveen's (2013) framework, practical instructional media should be easy to use, compatible with classroom conditions, and supportive of instructional objectives. The high practicality score suggests that the developed media met these criteria and could be integrated into existing teaching practices without imposing additional technical or instructional burdens on teachers.

In contemporary educational settings, teacher acceptance is a critical factor influencing the sustainability of instructional innovations (Ertmer & Ottenbreit-Leftwich, 2013). The positive practitioner response in this study indicates that video tutorial-based instructional media can serve as an effective instructional support tool, particularly in subjects requiring intensive demonstrations such as graphic design. By reducing the need for repetitive explanations and allowing students to learn independently, the media contributed to more efficient classroom management and instructional delivery.

The effectiveness results, with an average score of 89.63%, demonstrate that students perceived the instructional media as engaging and beneficial for learning graphic design procedures. This finding aligns with research suggesting that video-based instruction enhances learner motivation, engagement, and self-regulated learning behaviors (Zhang et al., 2006; Schunk & Zimmerman, 2012). The high scores in visual appearance and learning usefulness indicate that students valued the clarity of demonstrations and the flexibility to control their learning pace through replay and pause features.

From the perspective of learner-centered pedagogy, these findings reinforce the role of video tutorials as tools that promote active and autonomous learning. Kolb's (2015) experiential learning theory emphasizes the importance of concrete experiences and reflective observation in skill acquisition. The video tutorial format enabled students to observe design processes repeatedly and apply them during practice sessions, thereby supporting experiential learning cycles. This is particularly relevant in graphic design education, where mastery is achieved through repeated observation, experimentation, and refinement.

When compared to recent studies on instructional media development, the results of this study are consistent with findings that video-based learning resources are effective in improving practical skills and procedural knowledge in vocational and technology-related subjects (Putri et al., 2021; Rahmawati & Nugroho, 2022). However, this study extends existing research by providing a comprehensive

evaluation of instructional media quality, encompassing validity, practicality, and effectiveness within a single development framework. Many previous studies focused primarily on learning outcomes, whereas this study emphasizes the importance of evaluating the instructional design process and product quality holistically.

Another important contribution of this study lies in its relevance to contemporary digital learning contexts. Although the instructional media were developed for offline use due to contextual constraints, the pedagogical principles underlying the media design remain applicable to current and future digital learning environments. The emphasis on clear instructional sequencing, learner control, and multimedia integration reflects best practices in modern instructional design and can be adapted to online platforms, learning management systems, or mobile learning applications (OECD, 2019).

The findings also address the ongoing challenge of aligning instructional practices with the learning characteristics of digital-native students. As noted by Prensky (2010), today's learners prefer visual, interactive, and technology-mediated learning experiences. The positive student responses observed in this study suggest that video tutorial-based instructional media can bridge the gap between traditional teaching methods and contemporary learner expectations. This alignment is crucial for maintaining student engagement and improving learning effectiveness in technology-based subjects.

Despite the positive outcomes, it is important to acknowledge the scope of the study. The effectiveness evaluation was conducted on a limited scale, focusing on student perceptions rather than direct measurements of learning achievement. Nevertheless, perception-based effectiveness measures remain valuable indicators of instructional quality, particularly in early-stage development research (Richey & Klein, 2007). Future studies may extend this research by incorporating experimental designs, larger sample sizes, and objective performance measures to further validate the effectiveness of video tutorial-based instructional media.

Overall, the discussion of findings demonstrates that the systematic development of video tutorial-based instructional media, grounded in instructional design theory and multimedia learning principles, can produce high-quality learning resources for graphic design education. The results provide empirical support for the integration of video-based instructional media in secondary education and highlight their potential to enhance learning quality, teacher efficiency, and student autonomy.

## **E. CONCLUSION**

This study successfully developed a video tutorial-based instructional medium for graphic design learning using a systematic Research and Development approach guided by the ADDIE instructional design model. The results demonstrated that the developed instructional media achieved a high level of quality, as indicated by very high scores in validity, practicality, and effectiveness. These findings suggest that the instructional media were pedagogically sound, feasible for classroom implementation, and effective in supporting students' understanding of graphic design procedures and

independent learning activities.

Furthermore, the study highlights the importance of instructional media development that is grounded in instructional design principles and responsive to contemporary learning needs. The video tutorial-based instructional media provide an alternative solution for improving the quality of graphic design learning by enhancing learner engagement, supporting procedural skill acquisition, and facilitating learner autonomy. Although this study was conducted on a limited scale, the findings offer valuable implications for instructional media development in secondary education and provide a foundation for future research to further examine the effectiveness of video-based learning resources in broader and more diverse learning contexts.

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