

SYSTEMATIC LITERATURE REVIEW: TRENDS AND EFFECTIVENESS OF TUTORIAL VIDEOS AS A PRACTICAL LEARNING MEDIUM

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Abstract: This study aims to examine the trend in the use and effectiveness of video tutorials as a practical learning medium in various educational contexts. This literature review examines recent scientific publications (journals, proceedings, books) to investigate the trends, benefits, constraints, and research findings surrounding the effectiveness of video tutorials in improving the mastery of practical skills. A systematic literature review method was used to collect, filter, and analyze relevant studies published in recent years. The analysis results indicate an increasing trend in the use of video tutorials in practical learning, aligning with technological advancements and the growing demand for flexible and visual learning methods. Various studies report the effectiveness of video tutorials in improving conceptual understanding, procedural demonstrations, psychomotor skills, and student learning independence. However, several challenges, such as video production quality, limited direct interaction, and potential procrastination, were also identified. It is concluded that video tutorials are a potential and effective medium for practical learning. However, their implementation requires careful planning, appropriate instructional design, and integration with other learning strategies to achieve optimal results. Recommendations for further research and learning practices are also discussed.

Keywords: Learning Effectiveness, Learning Media, Practical Learning, Education Trends, Video Tutorials

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INTRODUCTION

Practical learning is recognized as an essential component in various disciplines, from engineering and medicine to the arts and vocational training, due to its ability to bridge theory with real-world applications (Astuti, 2019). The ability to apply theoretical knowledge to real-world practice is often the primary measure of competency mastery. Traditionally, practical learning methods have predominantly relied on live demonstrations by instructors, face-to-face guidance, and the use of printed modules (Nugroho, 2024), which have limitations in terms of flexibility and reach. However, the rapid development of information and communication technology (ICT) has driven the emergence of various learning media innovations (Efendi et al., 2021), with video tutorials being among the most prominent in recent years.

Video tutorials, as audiovisual recordings that demonstrate the steps or processes for performing a practical task, offer easy accessibility and flexibility, allowing learners to learn anytime, anywhere, and repeat material considered complex until a deeper understanding is achieved. This phenomenon is highly relevant to the characteristics of the contemporary generation of learners, commonly known as digital natives, due to their familiarity with digital content and preference for visual exposure (Ma'ruf & Fatchan, 2021). Furthermore, global situations such as the COVID-19 pandemic have significantly accelerated the adoption of digital learning media, including video tutorials, which have become crucial solutions for practical learning in distance learning

schemes (Fathoni et al., 2023).

Several previous studies have investigated various aspects related to the use of video tutorials in practical learning. For example, research by Yensharti & Riyadi (2024) showed that students gained a better understanding of techniques through visual demonstrations presented in video tutorials. Meanwhile, Rahmah and Cahyaka (2022) stated that more engaging learning support media and increased learning motivation, such as video tutorials, are needed because students experience difficulties understanding the subject matter. Another study by Junior and Nahari (2021) also highlighted that video tutorials are audiovisual media that utilize the human senses, especially hearing and sight. By using this media, it is hoped that it can increase student activity and enthusiasm, thereby impacting their learning outcomes.

While these studies have made important contributions to understanding the benefits of video tutorials in specific contexts, this study differs in that it aims to present a more comprehensive and up-to-date systematic literature review. The primary focus of this study is to broadly map trends in video tutorial use over the past decade across various practical disciplines, synthetically analyze empirical evidence on their effectiveness, and more deeply identify supporting and inhibiting factors for their implementation that may not have been holistically highlighted in previous reviews. Thus, this study seeks to provide a more comprehensive guide for educational practitioners and researchers.

Given the significant potential and increasing popularity of video tutorials in practical learning, and the crucial importance of empirical evidence-based evaluation for optimizing their use, this research is crucial to provide a comprehensive scientific foundation for educators and curriculum developers. This literature review article specifically aims to answer the following research questions:

1. What are the current trends in using video tutorials as a practical learning medium?
2. How effective are video tutorials in improving practical learning outcomes based on analysis of relevant studies?
3. What are the main advantages and limitations identified from using video tutorials for practical learning?

To answer these questions, this study will conduct a systematic and comprehensive literature review of various current scientific sources. It is hoped that this in-depth analysis will yield a clear picture of the role, potential, and challenges of video tutorials, as well as formulate strategic recommendations for effective and innovative implementation to support practical learning in the future.

METHOD

This article was prepared using a Systematic Literature Review (SLR) approach. This research systematically followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure a transparent and replicable process (Page et al., 2021). The PRISMA framework provides guidance consisting of four main stages: identification, screening, eligibility, and inclusion. The steps adopted in this study include:

Identifying Research Questions:

The main focus is on the usage trends and effectiveness of video tutorials for practical learning.

Literature Search (*Identification*)

The literature search was conducted through online scientific journal databases (such as Google Scholar, ProQuest, ERIC, ScienceDirect, IEEE Xplore, and accredited national journal portals such as SINTA and Garuda). Keywords used in the search included: "video tutorial",

"learning media", "practical learning", "video tutorial effectiveness", "video learning trends", "video tutorials and skills", "practical learning video", "video-based learning effectiveness", and "instructional video".

Selection and Inclusion/Exclusion Criteria (*Screening & Eligibility*)

The selected literature comprised scientific articles, research reports, and other relevant publications published within the last ten years (2015–2024, to ensure timeliness), with an emphasis on findings from the most recent five years, and specifically addressing the use of video tutorials for practical or skill-based learning. Articles containing only opinions without empirical data or in-depth studies were excluded.

Data Extraction and Analysis (*Included & Synthesis*)

Key information from each selected literature was extracted, including the research objectives, methodology, key findings related to trends, effectiveness, advantages, and limitations of video tutorials. Findings from various literature sources were then synthesized to identify common patterns and key themes. Data analysis was conducted descriptively and qualitatively to reveal trends, and comparatively to evaluate the effectiveness of video tutorials based on findings from the various studies analyzed.

RESULT AND DISCUSSION

RESULT

This section will present and discuss the findings from the reviewed literature regarding the trends and effectiveness of video tutorials as a practical learning medium.

Trends in the Use of Video Tutorials in Practical Learning

Literature studies have shown a significant increase in the use of video tutorials as supporting or substitute media for practical learning in various fields. The key trends identified from these studies are summarized in detail in Table 1.

Table 1. Trends in the Use of Video Tutorials in Practical Learning

| No | Key Trends | Literature Description and Findings |
|----|---|---|
| 1 | Increased Accessibility and Flexibility | Ease of access through online platforms (YouTube, LMS, dedicated apps) drives the adoption of Video tutorials (Lee, 2020). Allowing students to learn individually (<i>self-paced learning</i>) and repeat the material, which is very useful for understanding Complex practical material (Chen & Liu, 2019). |
| 2 | Diversification of Formats and Content | Video tutorial formats have evolved to become more interactive (annotations, integrated quizzes, simulations, VR/AR) For immersive hands-on experiences (Wang et al., 2023; Miller, 2022). Content is increasingly diverse, spanning laboratory procedures, technical skills, medical practices, and even art and design tutorials. |
| 3 | Integration with Other Learning Models | Video tutorials are often integrated into blended learning or flipped classrooms. Students learn Practical material via video before face-to-face sessions, freeing up class time for discussion, problem-solving, and practical guidance (Rahman & Ahmad, 2020; Santoso, 2021). |
| 4 | Role in Distance Learning (PJJ) | The COVID-19 pandemic has accelerated the use of video tutorials as a primary solution for practical learning, and cannot |

| No | Key Trends | Literature Description and Findings |
|----|---|---|
| | | be conducted face-to-face (Susilo, 2020; Sari & Wijaya, 2021). Educational institutions are developing or curating video tutorials to ensure the continuity of skills learning. |
| 5 | Increasing Student Engagement (Student-Generated Content) | Students are involved in creating their own video tutorials as part of assignments or projects. This enhances Understanding of the material and developing digital and communication skills (Davis & Chan, 2022). |

Effectiveness of Video Tutorials in Practical Learning

In general, the findings indicate a positive impact, although this varies depending on the video design, learning context, and learner characteristics. Table 2 presents an analysis of the effectiveness of video tutorials based on various aspects of learning outcomes reported in the literature.

Table 2. Effectiveness of Video Tutorials in Practical Learning

| No | Effectiveness Aspect | Literature Description and Findings |
|----|---|---|
| 1 | Improving Procedural and Conceptual Understanding | Effective video tutorials demonstrate procedural steps visually and audibly, making them easier to understand than text or static images (Hidayat & Patonah, 2019; Wu & Hsieh, 2020). Process visualization helps build a correct mental model for practical implementation. |
| 2 | Psychomotor Skills Improvement | Studies show that video tutorials can improve psychomotor skill mastery, especially when accompanied by opportunities for independent practice (Zhang et al., 2021; Farhana & Zulkifli, 2022). Features like slow motion or zoom-in help observe complex movements or techniques. |
| 3 | Improving Learning Independence and Motivation | The accessibility of video tutorials encourages independent learning; students can study/review the material without relying on an instructor (Putra & Adnyana, 2020). Engaging visuals can increase motivation and interest in learning (Nurhayati & Syarif, 2021). |
| 4 | Learning Time Efficiency | Video tutorials can save instructors time compared to repetitive demonstrations in large classes, allowing students to learn more efficiently (García & Pérez, 2022). |
| 5 | Consistency in Material Delivery | Instructional video design (in this case, with inset images) can influence learning performance, which is in line with the idea of presenting material consistently and effectively (Geri, Winer, & Zaks, 2017). |

Advantages of Video Tutorials

Based on the literature analysis, several key advantages of using video tutorials as a practical learning medium were identified. These advantages are presented in Table 3:

Table 3. Main Advantages of Video Tutorials as a Practical Learning Medium

| No | Main Advantages | Description |
|----|-------------------------|---|
| 1 | Visual and Dynamic | Able to present processes and movements clearly. |
| 2 | Flexible and Repeatable | Accessible anytime, anywhere, and replayable as needed. |
| 3 | Self-Paced Learning | Supports individual learning pace. |
| 4 | Information Consistency | Presenting uniform material. |

| No | Main Advantages | Description |
|----|--|---|
| 5 | Potential for Interactivity | It can be developed with interactive features. |
| 6 | Overcoming Geographical and Time Limitations | Ideal for distance learning or learners with busy schedules. |
| 7 | Reducing Anxiety | Some students feel more comfortable learning practical exercises through videos before trying them directly, reducing anxiety when practicing (Lim et al., 2019). |

Video Tutorial Limitations

Despite having many advantages, video tutorials also have several limitations that need to be considered, as presented in Table 4:

Table 4. Limitations of Video Tutorials

| No. | Video Tutorial Limitations | Description |
|-----|---|---|
| 1 | Production Quality Varies | The effectiveness of a video depends heavily on the quality of the production (images, sound, and captions). A poor video can actually be confusing (Johnson, 2021). |
| 2 | Lack of Direct Interaction and Immediate Feedback | Video tutorials are one-way and cannot provide direct personal feedback while students are practicing, unless they are integrated with tutoring sessions (Ghasempour & SK, 2021). |
| 3 | Dependence on Technology and Internet Access | Requires adequate devices and internet connection, which may be a barrier for some students. |
| 4 | Potential for Procrastination and Distraction | Ease of access can also backfire if students are undisciplined and easily distracted by other content on video platforms. |
| 5 | Cannot Completely Replace Real Practical Experience | For some skills, especially those requiring tactile sensations or complex physical interactions, video tutorials may only be a supplement and cannot completely replace direct, supervised experience (Tan & Ng, 2022). |
| 6 | Production Skills Needs | Creating quality video tutorials requires time, effort, and technical skills from the instructor or developer. |

DISCUSSION

This discussion section will review in more depth the research findings regarding the trends and effectiveness of video tutorials as a practical learning medium, with a focus on aspects of effectiveness, advantages, as well as limitations and solutions supported by relevant theoretical foundations.

The effectiveness of video tutorials in improving practical learning outcomes has been proven through various studies. Findings indicate that video tutorials significantly contribute to improving students' procedural and conceptual understanding. This aligns with Mayer's (2020) Multimedia Learning Theory, which states that humans learn better from a combination of words and images than from words alone. The visual and auditory presentation of steps in video tutorials helps build a correct mental model for practical implementation, thereby reducing unnecessary cognitive load and allowing students to focus on understanding, a concept also supported by Cognitive Load Theory

(Sweller et al., 2019).

Furthermore, research reveals improvements in psychomotor skills, which can be attributed to the video tutorials' ability to demonstrate complex movements or techniques that can be observed and imitated, in line with the principles of observational learning in Social Cognitive Theory (Schunk & DiBenedetto, 2020). Increased learning independence and motivation are also consistently reported positive impacts, where the accessibility and repetition features of the material support learners' self-paced learning.

The main advantage of video tutorials as a practical learning medium lies in their visual, dynamic, and flexible characteristics, which support individual learning. The visual and dynamic nature of video tutorials allows for clear presentation of processes and movements, which is crucial for practical learning. The ability to access them anytime, anywhere, and replay them as needed provides high flexibility, which strongly supports the concept of self-paced learning. This aligns with Multimedia Learning Theory (Mayer, 2020), which emphasizes the importance of students being able to control the pace of learning to suit their information processing capacity. Furthermore, video tutorials offer consistency of information, ensuring all students receive uniform material, and have the potential to be developed with interactive features that can increase engagement. Another advantage is their ability to overcome geographical and time constraints and reduce learner anxiety before engaging in hands-on practice. This can be explained through Social Cognitive Theory (Schunk & DiBenedetto, 2020), where observing a model (the instructor in the video) successfully performing a task can increase self-efficacy and reduce anxiety.

However, video tutorials also have several limitations that need to be anticipated and addressed. Variable production quality is a major obstacle; poor video can be confusing and actually increase cognitive load. The solution is to apply good instructional design principles, as outlined in Multimedia Learning Theory (Mayer, 2020), such as the principles of coherence (eliminating unnecessary material) and segmentation (presenting material in small chunks). Another limitation is the lack of direct interaction and immediate feedback. To address this, video tutorials should not be stand-alone but rather integrated into a blended learning or flipped classroom model, allowing synchronous face-to-face or online sessions to focus on discussion, problem-solving, and feedback. This approach is also supported by Social Cognitive Theory, which emphasizes the importance of interaction in the learning process. Dependence on technology and internet access can be addressed by providing offline access options or supporting facilities within the institution. The potential for procrastination and distraction requires structured learning strategies, such as integrated assignments or quizzes within the video, as well as the development of students' metacognition to regulate their learning.

Finally, it's important to recognize that video tutorials often serve as a supplement and cannot completely replace real-world practical experience, especially for skills that require tactile sensations or complex physical interactions. Therefore, combining them with hands-on, supervised practice remains crucial, in line with the view that skill learning often requires hands-on experience and contextualized corrective feedback.

CONCLUSION

Video tutorials are effective in improving understanding and practical skills, with their use continuing to increase due to their flexibility and accessibility. However, video quality and live interaction remain crucial. Future research is needed to examine long-term impacts, interactive video formats, and effective feedback strategies. Practically, the use of high-quality video tutorials integrated with other learning methods is recommended, as is the importance of training instructors in their use.

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