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Embracing Change and Navigating Challenges*

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The Influence of Electronic Devices on Academic Achievement in Social Science Subjects Among Senior Secondary Students

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Abstract

This research examines the impact of electronic devices on academic achievement in social science subjects among senior secondary students, drawing on a comprehensive review of existing literature. With the increasing prevalence of technology in classrooms and at home, devices such as smartphones, tablets, and laptops have become integral to students' learning experiences. This study examines the use of electronic devices in History, Geography, and Civics, analysing the benefits, challenges, and prior research to recommend effective integration in social science education. The literature reviewed highlights both positive and negative effects: while some findings suggest that electronic devices enhance learning through access to digital resources and interactive platforms, others point to reduced academic focus, distractions, and dependency. To analyse the reviewed materials, content analysis was employed to extract insights from quantitative studies, while thematic analysis was utilised for qualitative research. The findings underscore the importance of guided and purposeful use of electronic devices to ensure they support rather than hinder academic success. Overall, the study emphasises the role of digital literacy, teacher supervision, and curriculum alignment in optimising the educational benefits of technology for social science subjects at the senior secondary level.

Keywords: Electronic devices, academic achievement, social science education, senior secondary students, influence

Introduction

The rapid growth of digital technology has transformed education in numerous ways, particularly with the widespread use of electronic devices, including smartphones, tablets, laptops, and desktop computers. These devices have become important tools for both classroom learning and studying on your own [COMMENT: Consider replacing with 'independent study' for a more academic tone.]. They give students quick access to a wide variety of information and digital resources. In senior secondary education, especially in social science subjects such as History, Geography, and Civics, these devices are often used for research, watching videos, participating in online discussions, and completing assessments.

Although electronic devices can make learning more engaging and flexible, they also raise some concerns. Students may become distracted, lose focus, or struggle to grasp topics thoroughly. The influence of electronic devices on learning depends on factors such as the type of device, whether it's used for schoolwork or entertainment, and the level of guidance provided by teachers. This research examines the impact of electronic devices on students' performance in social science subjects in senior secondary school. By reviewing studies from around the world, the goal is to understand both the benefits and drawbacks of using these devices in the classroom and suggest practical ideas for teachers and education planners.

Research Background

Electronic devices have significantly altered the way senior secondary students learn, particularly in social science subjects such as History, Geography, and Civics. These devices help students access up-to-date information and use interactive tools that make learning more interesting and valuable. Social science teaches important skills, such as critical thinking and understanding society, and with proper guidance, electronic devices can support these goals.

However, using devices too much or for the wrong reasons, like social media or games: Consider changing to 'non-academic purposes such as social media or gaming' for clarity.] can distract students and hurt their performance. Because the results of using devices in education are mixed, this research looks at past studies to better understand both the good and bad effects. The goal is to help teachers and decision-makers use this information to make smart choices about using technology in the classroom.

Research Problem

This research looks at how electronic devices affect how well senior secondary students do in social science subjects. These tools can help learning by giving students flexible access to study materials, but they can also cause distractions and make it harder to focus. Previous studies show mixed results—some say devices help students do better, while others show problems like students relying too much on them and getting lower grades. Even though more people are studying this topic, not much research has looked closely at how devices affect social science subjects like History, Geography, and Civics. Because of that, this study reviews past research to find common trends, challenges, and useful ways to use electronic devices more effectively in social science classrooms.

Objectives

1. To examine how electronic devices are used in the learning of History, Geography, and Civics at the senior secondary level.
2. To identify the positive effects of electronic device usage on students' academic achievement in social science subjects.
3. To explore the negative impacts and challenges associated with electronic device use in social science education.
4. To analyze existing research findings on electronic devices in social science education through content analysis and thematic analysis.
5. To propose recommendations for the effective integration of electronic devices in teaching and learning social science subjects.

Literature Review

Overview of Electronic Devices in Education

Electronic devices have changed learning by making lessons easier to access, more interactive, and flexible. Smartphones, tablets, laptops, and desktop computers give students digital textbooks, online resources, apps, and videos. Ertmer and Ottenbreit-Leftwich (2010) point out that technology helps personalize learning and keeps students interested, while Selwyn (2016) says it lets students learn at their own pace and style. In senior secondary school, these devices are important for getting students ready for college and jobs by meeting different learning needs and building important digital skills (Lei & Zhao, 2007). But using good teaching methods and having the right equipment are key to getting the most out of these tools (Tondeur et al., 2017).

Influence of Electronic Devices on Academic Achievement

Research shows that electronic devices can have both good and bad effects on how well students do in school. On the positive side, they make it easier to access learning materials, help students work together, and boost motivation (Batdi, Aslan, & Zhu, 2018). Liu et al. (2020) found that using tablets and laptops helped students understand and remember difficult ideas better. But using devices too much or the wrong way can cause distractions, reduce study time, and lead to lower grades (Lepp, Barkley, & Karpinski, 2015). Rosen et al. (2013) showed that trying to do many things on devices at once lowers focus and learning. How much devices help also depends on

students' ability to control their use and their digital skills—students who manage their devices well tend to do better (Junco & Cotten, 2012).

Electronic Devices and Learning in Social Science Subjects

Electronic devices have become important tools in social science education, giving new ways to help students learn subjects like History, Geography, and Civics. These subjects often need students to study complicated information, understand different viewpoints, and link past or geographical facts to today's issues. Digital tools like interactive maps, videos, and online archives make learning easier and help students understand difficult ideas better (Hattie & Yates, 2013).

Research by King (2017) showed that students who used tablets and laptops in social science classes improved their critical thinking and were more excited about learning. Similarly, Park and Kim (2021) found that digital storytelling and virtual simulations in Civics helped students better understand how democracy works and their role as citizens. However, how well electronic devices work in social science depends on how teachers use them in lessons and guide students. Without good planning, devices can become distractions instead of helping students learn (Wang & Reeves, 2020). So, while technology has great potential in social science education, it needs to be used carefully to get the best results.

Positive Effects of Electronic Devices on Learning

Electronic devices have many benefits that help students learn by making lessons more interesting, easier to access, and suited to each student's needs. They give quick access to things like e-books, videos, and simulations, which help students understand and remember better (Ching & Hsu, 2017). Studies show that tablets and laptops encourage students to be active learners and work together more (Shin & Kim, 2018). Cheung and Slavin (2013) found that students who used computer programs did better on tests compared to those who learned in traditional classrooms. Digital tools also help teachers adjust lessons for different students and let students learn at their own pace (Tomlinson, 2017). In social science classes, tools like virtual field trips help motivate students and improve their understanding (Mayer, 2019).

Negative Effects and Challenges of Electronic Device Usage

Although electronic devices help with learning, research points out some big challenges. Students often get distracted by social media, games, or messaging when they should be studying, which lowers their focus and grades (Junco, 2012; Ophir, Nass, & Wagner, 2009). Spending too much time looking at screens is linked to shorter attention spans and feeling mentally tired, making it harder to understand and remember information (Rosen et al., 2013). Relying too much on devices can also stop students from developing critical thinking and problem-solving skills because they look for quick answers instead (Carr, 2010). In social science classes, using devices without rules can lead to shallow learning (Wang & Reeves, 2020), and differences in access to technology and skills cause unfair learning gaps (Van Dijk, 2020). To avoid these problems, clear rules and balanced use of devices are very important.

Factors Influencing the Effectiveness of Electronic Devices in Education

The effect of electronic devices on learning depends on things like how lessons are planned, how ready teachers are, students' digital skills, and their social and economic situations. Research shows that just having technology isn't enough to improve learning; what really matters is how well it's used in teaching (Hew & Brush, 2007). Teachers who feel confident and know how to use digital tools tend to create more interesting lessons, but if teachers don't get enough training, technology won't work as well (Tondeur et al., 2017). Students who are good with technology can use devices better for learning, but those who aren't might have more trouble and get distracted more easily (van Deursen & van Dijk, 2014). Also, having reliable internet, enough devices, and a good place to study at home makes a big difference in learning outcomes (Wang, Myers, & Sundaram, 2013).

Future Research and Gaps

Even though a lot of research has been done on electronic devices in education, there are still important gaps when it comes to how they affect senior secondary students' achievement in social science subjects. Most studies focus on general education or science and technology subjects, with less attention given to History, Geography, and Civics (Ali et al., 2024; Park & Kim, 2021). There are also a few long-term studies and little focus on how regional, language, and cultural differences affect the use of technology (Wang & Reeves, 2020). Different ways of measuring device use make it hard to compare results between studies. Also, not many studies give clear advice on how to use devices effectively in social science classes. This research aims to look at existing studies to find better ways to use electronic devices in these subjects.

Methodology

This research is based on a thorough review of existing studies to understand how electronic devices affect academic achievement in social science subjects for senior secondary students. The study looked at both numbers-based (quantitative) and opinion-based (qualitative) research articles from trusted academic sources and journals. For the quantitative data, content analysis was used to find and summarize important statistics about how using electronic devices relates to academic performance. This helped find clear patterns and measurable effects across different studies. For the qualitative data, thematic analysis was done to find common ideas, themes, and views about how electronic devices are used and their impact on social science education. This helped gain a better understanding of the different situations that affect how devices are used.

Findings

The studies reviewed show that electronic devices have both good and bad effects on how well senior secondary students do in social science subjects. On the positive side, these devices help learning by giving students access to digital resources, simulations, and interactive tools that improve understanding and performance when used in moderation (King, 2017; Liu et al., 2020). However, using devices too much or for non-school activities can lower attention and the quality of learning (Junco, 2012). Also, not all students have the same access to technology or the same digital skills, which makes it harder for some to benefit (Van Dijk, 2020). How well students do with electronic devices depends mostly on how prepared teachers are, how well students can manage their own use of devices, and whether the devices are used in a balanced way. Overall, electronic devices can make a big difference in learning, but their effect depends on many different teaching and learning conditions.

Conclusion

This research shows that electronic devices can help senior secondary students do better in social science subjects when they are used properly with good support from teachers. Devices can make learning more interesting, improve understanding, and give access to useful digital tools. However, if students use them excessively or without guidelines, it can lead to distractions, reduced focus, and unfair learning disparities. The effectiveness of devices depends on the readiness of teachers, the skill level of students with technology, and whether all students have equal access to them. To maximise the benefits of technology and minimise problems, teachers should establish clear rules and balanced plans for device usage in the classroom. This will help students learn more effectively and develop strong digital skills for the future.

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