

# Exploring Infographic as a Promising Instructional Tool to Foster Student Engagement in Higher Education

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**Abstract:** *The rapid advancement of digital technology has transformed the education system, making it essential to implement innovative and technology-driven instructional tools to enhance student engagement. In today's learning environment, visualization tools have become increasingly predominant and serve as effective instructional aids for presenting complex information in a clear and comprehensible manner. Among these tools, infographics have emerged as a powerful method of visual communication, integrating data and graphic elements to support students in the learning process. This study explores the potential of infographics as a tool for fostering student engagement in higher education. A qualitative research methodology was employed, involving semi-structured interviews with ten higher education students. Thematic analysis was conducted to identify key insights and recurring themes. The findings demonstrate that infographics have strong potential to enhance student engagement in higher education. Based on the insights gathered, the study also proposes recommendations for improving the implementation of infographics to foster student engagement in higher education.*

**Keywords:** Infographics, Visualization Tools, Student Engagement

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## 1. Introduction

The rapid advancement of digital technology has brought about significant changes in the educational landscape, prompting a continuous search for innovative pedagogical strategies to enhance student engagement. Among the many challenges in contemporary education, student engagement has emerged as a crucial factor. One of the most important determinants of successful learning is student engagement (Ginting, 2021). The quality of students' learning experience is essentially shaped by the nature and quality of their engagement with the teaching and learning process (Suseno & Barus, 2022). Therefore, it is essential to explore effective strategies for promoting student engagement within the context of contemporary higher education worldwide (Li & Xue, 2023). Li and Xue (2023) emphasize, student engagement plays a significant role in promoting student learning outcomes in the higher education context.

In response to this need, the focus on student engagement has led to the development of various learning tools and practices aimed at ensuring a successful learning experience (Li & Xue, 2023). The teaching and learning process has extended beyond traditional classroom settings, taking place in diverse and increasingly digital environments. As a result, newly designed

instructional materials and learning activities have emerged, tailored to suit the demands and opportunities presented by these evolving educational contexts.

As Martin and Unsworth (2023) reveal that an educational landscape increasingly dominated by visual communication. Moreover, Meguid and Allen (2022) stated that among the pedagogy, visualization has become more vital approach in education system, which is assist educators to develop course content more effectively while promoting learner-centred instruction.

In visual communication, infographics are defined as a powerful tool to enhance students' understanding and retention in the learning process. Infographics simplify complex ideas, facilitate information processing, and promote student engagement by integrating concise text with relevant visual elements such as charts, diagrams, and icons. As Smiciklas (2012) asserts, "a picture is worth a thousand words," and infographics exemplify this by conveying ideas more efficiently than conventional text-heavy materials. Infographics have visual appeal, which not only captures students' attention but also supports cognitive processing, especially in the rapidly advancing digital technology environment.

In summary, student engagement plays a prominent role in the success of higher education, and innovative instructional tools are essential to enhance students' engagement in the learning process. As digital technology rapidly develops, infographics become increasingly prominent in fostering students' engagement. This study explores the potential of infographics as a potential tool to enhance student engagement and provides practical recommendations for their effective implementation in higher education. These insights are intended to support educators in adopting infographics more strategically to foster meaningful, and student engagement. In addition to exploring the role of infographics in enhancing student engagement and the learning process, this study also aims to propose practical recommendations for their effective implementation in higher education settings.

## **2. Problem Statement**

A number of studies have proven that infographic increasingly importance for simplifying complex content, however, integration in education settings is still limited. As noted by Nhan and Yen (2021), only a small number of studies over the years have investigated the effectiveness of infographics, including their role in promoting language learning. Moreover, while research suggests that appropriate instructional materials are crucial for stimulating student interest and participation, the existing body of literature on the pedagogical effectiveness of infographics remains limited (Ozdamli & Ozdal, 2018). Additionally, the extent to which infographics enhance student engagement in higher education is still underexplored. Therefore, this study aims to explore the role of infographics in enhancing students' engagement in higher education

## **3. Research Objectives**

- 1) To identify infographics in assisting student in learning process.
- 2) To analyse the impacts of infographic on student engagement.
- 3) To propose recommendations for improvement in implementing infographics for student engagement.

#### **4. Research Methodology**

This study employed a qualitative research methodology to explore the potential of infographics as an instructional tool for enhancing student engagement in higher education. A total of ten students were selected that they were currently studied in higher education institutions.

Semi-structured interviews were conducted, which is an effective method for obtaining rich data. This method was chosen because it allows respondents to express their opinions and perceptions in depth. During the interview session, it also enables the researcher to probe for clarification and elaboration.

The data gathered from the interviews were analysed using thematic analysis. This approach allowed for the identification of key themes and recurring patterns within the participants' responses, offering insights into the role of infographics in fostering. Thematic coding was systematically applied to interpret the qualitative data, making it possible to draw meaningful conclusions related to the research objectives.

#### **5. Findings**

The thematic analysis of interview data yielded several key insights that directly address the research objectives: (1) identifying the role of infographics in assisting students in the learning process, (2) analyzing the impact of infographics on student engagement, and (3) proposing recommendations for improvement in implementing infographics for student engagement.

##### **5.1 Infographics as Effective Learning Aids in Higher Education**

The findings revealed that infographics are widely perceived by students as valuable tools for simplifying complex concepts and making learning materials more accessible in learning process. Respondents highlighted the ability of infographics to distil large amounts of information into visually manageable and digestible formats.

Student A stated: "I personally believe that infographics can simplify a lot of complex information into very simple information, allowing us to absorb the knowledge more quickly, immediately grasp the key points, and avoid other complex elements." (LASA, 2023). This reflects how infographics breaking down intricate content into manageable visual components, which enables students to understand core ideas more efficiently. Student B supported this perspective: "Students can clearly see certain data or categories within the subject, potentially through images or various other methods." (LASB,2023). Student J mentioned, "Infographics are a great way because they have many simple icons that allow me to understand the content at a glance, adding memory points." (LASJ, 2023). This aligns with Elaldi and Çifçi's (2021) assertion that visualizing information helps make large volumes of content more accessible to learners. Furthermore, Keller and Tergan (2005) highlight that such visualization enables users to recognize relationships between pieces of information and facilitates visual searching for relevant content.

Furthermore, some students expressed a preference for visuals over text. Student H shared, "Personally, I tend to prefer using images because I'm not particularly fond of lengthy text. I enjoy visuals accompanied by brief descriptions, ideally with just a sentence or two." (LASH, 2023). Student I added, "Learning through images is also a viable method, indicating that conveying information is not limited solely to text." (LASI, 2023). These comments underscore

the importance of catering to different learning styles, especially visual learners, in instructional design.

This finding aligns with previous research, which emphasizes that visualization is a powerful tool for disseminating information quickly, effectively, and accurately across various fields such as research, education, and journalism (Islamogluet al., 2015; Nesbit & Adesope, 2006). Therefore, visual elements play a vital role in assisting students with reinforcing memory and enhancing recall. As summarized, infographics combine text and visuals in an appealing format to enhance comprehension, memory, and behavioural impact by presenting complex information in a cognitively efficient way (Traboco et al., 2022).

## **5.2 Infographics as a Tool for Enhancing Student Engagement**

Through semi-structure interviews, it was found that infographic play a crucial role in enhancing students' engagement. Respondents explained that infographic are more attractive and motivating instructional tool that traditional text-heavy rescources such as textbook. This finding aligns with Li and Xue (2023), who emphasized that student engagement is importance in shaping educational achievement within higher education. Furthermore, researchers suggested infographics supported cognitive processing, learning and knowledge retention, which can influence behavioural change (Comello et al., 2016; Traboco et al., 2022).

As Student A explained, "Infographics typically combine information with visuals. Having visuals allows us not only to read text but also to translate images into visual imprints in our minds, making it easier to absorb the content" (SESA, 2023). Student B echoed this, stating, "If the design of the infographics is well-executed, I find them appealing and believe they can have a significant impact" (SESB, 2023). Similarly, Student D emphasized the value of visual elements: "I find infographics appealing primarily because of the photos, as they provide ample content without wasting my time. Layout and design are important as well, but they come second to the visual elements" (SESD, 2023).

These responses illustrated how well-designed infographics can capture students' attention and enhance their motivation to engage with learning materials.

## **5.3 Recommendations for Effective Use of Infographics in Higher Education**

The findings reveal that the overall perception of infographics was positive, however few participants offered suggestions to improve infographic feature to enhance students' engagement efficiently.

A number of respondents believed that integration multimedia elements into infographic that more effective to enhance students' engagement. Student A suggested "Adding features like audio could make it easier for us to absorb knowledge if we listen carefully" (RSA, 2023). The audio feature, in particular, can help students absorb knowledge more easily. Similarly, Student B proposed: "Interactive animations can add an element of interest and prevent the material from being too dull" (RSB, 2023). The implementation simple animations to increase visual interest without overcomplicating the content. Student C further suggested "Having a button would be more suitable, and incorporating some GIFs would also be appropriate"(RSC, 2023). The addition of buttons and GIFs to enhance user interaction and engagement.

However, not all participants were in favour of animated or interactive features. Some expressed concern that too much animation could be distracting in learning process. Student E noted, "Animations can be distracting and make me want to watch other animations or videos"

(RSE, 2023), while Student J emphasized the value of simplicity and clarity: “I lean towards using traditional infographics because as long as they are concise and clear, they are easier for the general public to understand. Adding too many animations may confuse the audience and blur the focus, as everyone would be focused on watching the animations” (RSJ, 2023)

Furthermore, student D proposed “Add a note-taking feature to infographics, allowing users to highlight and delve deeper into content they want to understand better. This way, they can extract key points and elaborate on them as needed.” (RSD, 2023). This reflects a desire for infographics to serve not just as attention-grabbing visuals, but as comprehensive learning tools that support deeper engagement with content.

In line with previous literature that calls for thoughtful design in digital learning resources (Ozdamli & Ozdal, 2018; Meguid & Allen, 2022), these student-generated recommendations highlight the importance of user-centered design in the development of educational infographics.

## **6. Conclusion**

This study explored the role of infographics as a promising instructional tool to enhance student engagement in higher education. The findings found that infographics are effective in simplifying complex information and improving content accessibility to enhance students’ engagement. Students reported that the visual appeal and concise format of infographics made learning more engaging and less overwhelming compared to traditional text-based resources such as textbook.

As Calimeris and Kosack (2024) highlighted, infographics not only summarize and clarify complex topics through visual means but also require students to actively engage in understanding, synthesizing, and representing information—fostering both comprehension and higher-order thinking. Additionally, Chicca and Shellenbarger (2018) emphasized that Generation Z—today’s college students—are highly visual, tech-savvy learners with shorter attention spans, making infographics particularly well-suited to meet their learning preferences and needs.

Furthermore, this study revealed that integrating multimedia elements into infographics can provide additional benefits. Students recommended incorporating features such as audio, simple animations, interactive elements, and note-taking tools to make infographics more attractive to foster their engagement in learning process. However, they also emphasized the importance of maintaining clarity and avoiding excessive animation, which could cause distraction or cognitive overload. These insights underscore the need for educators to adopt a balanced when designing and implementing infographics in teaching.

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## **Conflict of Interest Statement**

The authors declare that there is no conflict of interest regarding the publication of this study.

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