AI Impact on Undergraduates' Education in Sri Lanka and China; Special Reference to the Visual Communication Studies Subject

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Abstract

This research has been conducted to understand the impact of AI apps on undergraduate education in Sri Lanka and China. Although Sri Lanka and China have different levels of technological development, this study aims to investigate the impact of AI apps on undergraduate education in both countries. The research objectives are to indicate the most used AI apps by undergraduates in both countries, identify their impact on the quality of in-class assignments, and identify the impact on creative thinking in the visual communication subject. This is qualitative research. The data was collected through experimental research methods. The research used a purposive sampling strategy. The sample size was 240 from China and Sri Lanka. The research was analysed through content and thematic analysis. The research findings were very interesting. The AI app usage of Chinese undergraduates was significantly higher than that of Sri Lankan undergraduates. Chinese undergraduates use references to guide their thinking through AI technology, while most Sri Lankan undergraduates rely on their human brains and emotions for thinking, even though they use AI apps. The AI usage of Chinese students is more advanced than that of Sri Lankan students. The undergraduates in both countries use different AI apps. Chinese undergraduates use DeepSeek the most, while Sri Lankan undergraduates use Google Gemini the most. Hence, it's interesting to find out that abstract and creative thinking in Chinese undergraduates is less than that of Sri Lankan undergraduates. Chinese undergraduates often use AI apps; their thinking, creative and emotional approaches in visual communication activities have been reduced. Sri Lankan undergraduates' usage of AI apps is lower. Hence, their creative and emotional approaches in visual communication activities are higher. The overall work quality of both undergraduates is mostly the same, with Sri Lankan students having more creative and emotional aspects, while Chinese students have direct approaches to solving the problem.

Keywords: AI, education, China, Sri Lanka, visual communication

Introduction

In light of the rapid expansion of AI integration in education over the past three years, this study draws upon a sample of 17 scholarly outputs from the post-pandemic era to derive meaningful insights. Although previous studies have shown that AI can generate positive outcomes for both teachers and students, there is a lack of knowledge on how AI is used in the educational process (Alexandra, 2021)

AI has been used in the education sector. Hence, this became very popular in the higher education sector in many countries. This research has been conducted to identify the impact of AI on undergraduate studies in China and Sri Lanka.

Although China is more developed than Sri Lanka, AI apps are commonly used by undergraduates in both countries. The main aim of the study is to understand the usage of AI among the undergraduates in student activities in visual communication subjects. There are three main objectives in the research.

1. Identify the AI apps used by undergraduates in China and Sri Lanka.
2. Indicate AI's impact on the quality of in-class assignments.
3. Indicate the impact of AI on creative and critical thinking in the subject.

Visual communication requires high creativity to express the message to the audience through visual elements. Hence, this subject needs high creativity to survive in future job markets. AI is being used in visual communication for brainstorming and thinking. The students in the visual communication subject are widely using AI in order to complete their given tasks. Consequently, technology plays a pivotal role in transforming human perspectives and actions toward sustainability through its ability to educate and inform individuals about their carbon footprint, thereby influencing their attitudes and behaviours (George et al., 2021; Schroder et al., 2021; Dwivedi et al., 2022).

The research addressed three main questions.

1. What are the most used AI apps in undergraduate activities?
2. What is the impact of AI on work quality?
3. Does AI have an impact on the creative thinking of the undergrads?

This research is a significant study, as it is the first comparative study of AI in Sri Lanka and China. AI has been used by undergrads in many countries, and there are pros and cons of the AI usage by students. Hence, this study was conducted to understand the students' future with AI and its direct impact on their educational development. samples from each country. The work was assigned during their visual communication undergraduate course. The students got a specific time in order to complete their task. This research was intended to indicate the impact of AI on students' thinking and their creative work during bachelors degree. The thinking of the students in the visual communication subjects leads their work to a different level, and most of the students need to develop their thinking in order to be great visual communicators. Hence, the implementation of AI and the technological development of human brain thinking with emotions and feels become less. Thus, there is an impact of this on the visual communication industry. Even though it's not clearly visible, the impact in the near future could be more due to the thinking changes of the youth. Therefore, this research has been conducted to identify the impact of AI on undergraduates' thinking and ability and its impact on the work quality.

Literature Review

The rapid advancement of Artificial Intelligence (AI) is transforming various sectors, and education is no exception. AI plays a significant role in both general and higher education, influencing students' academic development by offering a mix of opportunities and challenges (Edtech, 2020). From personalised learning experiences to intelligent tutoring systems that provide tailored guidance, support, and feedback based on individual learning patterns and knowledge levels (Hwang et al., 2020), AI has the potential to revolutionise education (Holmes et al., 2019) and address the diverse needs of learners. However, positive educational outcomes are not guaranteed solely by the adoption of advanced AI technologies (Castaneda & Selwyn, 2018; Du Boulay, 2000; Selwyn, 2016). The integration of AI in academic environments raises critical questions related to equity, accessibility, and the evolving role of traditional teaching methods. The influence of AI on education is transformative and multifaceted. AI enables personalised learning by adapting educational content to meet the unique needs of individual students (Hennekeuser et al., 2024). Studies have shown that students in personalised learning environments exhibit improved self-efficacy and a more positive attitude toward their education (Johnson & Smith, 2019). These experiences are increasingly achievable through AI-driven tools that analyse vast amounts of data to identify learning

gaps and tailor interventions accordingly (J. A. Baker, 2021). For instance, AI-powered platforms, such as adaptive learning systems, have been shown to enhance student engagement and performance by providing real-time feedback and customised learning pathways (Luckin et al., 2016; Zawacki-Richter et al., 2019).

In traditional education, students are encouraged to take an active role in their learning process by developing skills in exploration, analysis, and problem-solving. Critical thinking skills are essential for shaping students' overall learning experiences. Educators often rely on questioning techniques, collaborative activities, and assignments to enhance students' ability to evaluate information and develop independent perspectives (Facione, 2020). However, the rapid information processing and insightful responses provided by AI challenge traditional learning methods, raising questions about the distinctions between human learning and machine-based learning. For example, while AI can efficiently process and analyse data, it may lack the nuanced understanding and creativity inherent in human cognition (Luckin et al., 2016). This underscores the need for a balanced approach to AI integration, ensuring that it complements rather than replaces human interaction and the development of critical thinking skills (Wu, 2023).

Research Methodology

This is qualitative research. The research was conducted as an experimental study. Undergraduates in both countries have been assigned the same in-class activity to observe their AI for educational purposes. Therefore, the students have been given three types of visual communication activities in which they need to think and apply the thinking aspects into creativity and do a visual design. This was an individual work. The research used a purposive sampling strategy with 120 sample size of each country. The data was analysed with content and thematic analysis.

Data Analysis and Findings

The observation of the students' work indicated that students from both countries were using AI apps in order to complete their work tasks in class. Therefore, the following findings were indicated.

The Usage of different AI apps

Sri Lankan Undergraduates		Chinese undergraduates	
AI app	**Usage**	**AI app**	**Usage**
Google Gemini	33.3%	Deep Seek	40%
Chat Gpt	26.6%	Duobao	28.8%
Claude	17.5%	Kimo	12.5%
Grok	12.5%	Moonshot	11.6%
Deepseek	8.3%	Ernie Bot	7.5%

Therefore its clear that both countries the undergraduates are depending on AI apps for their creative thinking. Thus, they are using completely different AI apps that do the same duty in different domains.

The usage of an AI app in creative thinking and brainstorming
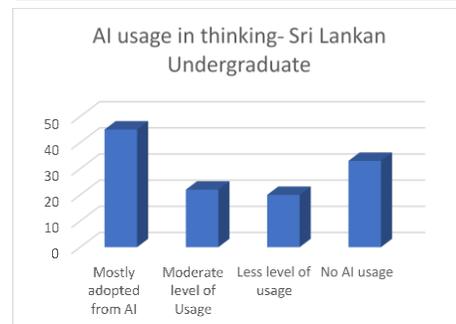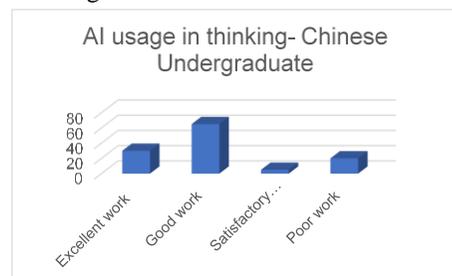
The above charts indicate the usage of AI in creative thinking and brainstorming in the visual communication sector by the undergraduates in both countries. Therefore, its clear that most of the

Chinese undergraduate depends on AI apps for their thinking, while Sri Lankan undergraduates do not highly depend on AI apps for complete thinking. The overall work quality of the students

Work Quality of Chinese undergraduates

Work Quality of Chinese undergraduates
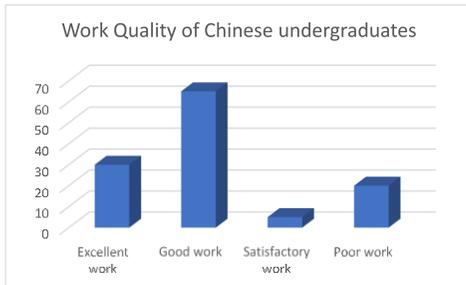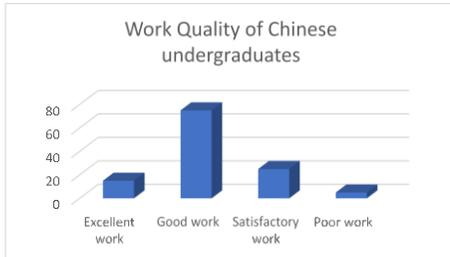
The above data analysis indicates that AI app usage will be creating more quality work, hence the less AI usage is also more or less similar to the AI usage work quality. But still its interesting to indicate that the poor work quality with AI usage is less than the less AI usage thinking.

The AI apps have been used by the undergraduates in both countries. The usage of AI apps is higher among Chinese undergraduates. Chinese undergraduates used references for their work through AI apps as a thinker. The AI usage of the Chinese students is advantageous. Sri Lankan students used the AI apps for their work in indirect ways. The work effectiveness of the Chinese students is higher than that of the Sri Lankan students. Chinese undergraduates have used AI to create ideas, while Sri Lankan students used their brains to create visual communication ideas. The ideas generated by Chinese undergrads have professional content, while Sri Lankan undergrads have more creative and emotional content.

Undergraduates in Sri Lanka and China both used ChatGPT mainly. Chinese undergraduates used some other Chinese AI apps, such as DeepSeek. It's very interesting to identify that AI has a huge impact on the work quality and work content of the undergrads in both countries. Abstract and creative thinking of Chinese undergraduates are lesser than that of Sri Lankan undergraduates. As Chinese students often use AI apps for thinking, the creative and emotional approaches of visual communication have been reduced. The Chinese students' work addresses the problem straightforwardly with fewer corrections. Sri Lankan undergraduates' usage of AI apps is significantly less than that of Chinese undergrads; hence, the abstract, creative, and emotional approaches are higher in visual communication work. The Sri Lankan undergraduates used less technical but creative approaches in order to address the problem. The overall work quality is good; it has more emotional aspects to address the problem. The overall work quality of both undergrads was on two different sides. The Chinese students' overall work had professional approaches and straightforward content, while Sri Lankan undergraduates had more emotional and humanistic approaches in content. The work effectiveness of Chinese students was higher than that of Sri Lankan students. The creative thinking approaches of the Sri Lankan students are higher than those of the Chinese students. Therefore, it's very clear that AI has impacted undergraduate education and thinking. The AI applications have been impacted in different ways on students' work. It enhances problem-solving very effectively while reducing the creative and emotional aspects of students. Therefore, it's clear that AI has a negative and a positive impact on higher education. Visual communication is a creativity-based subject where it needs a lot of creative ideas to get the attention of the audience on the visual messages. AI has influenced the creative thinking of the students. As students use the AI apps more for saving time of thinking, the thinking skills and capacities in the future could be reduced. The frequent usage of AI could negatively impact the students' capacities. Therefore, it is recommended for students to use the AI apps with good technological literacy. Unless this could be affected for their human, emotional, and abstract thinking. AI could be highly beneficial for people

who already practice human emotional abstract thinking, as they could find out the better options and solutions for the problems, unless students use more AI, which will save their time and reduce their thinking capacity.

This research has some limitations in the study scope. This research was only conducted on the visual communication subject. The study used only 240 research samples. Further, this research only used qualitative research approaches, which could be expanded in the future for mixed methodology. Further, this study uses a case study-based experimental method to collect the data. Hence, in the future, the scope, sampling strategies, sample size, and also the research methodology could be enhanced.

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