

Decoding Scholarcy website: A Study on its Research Summarization Efficiency

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ABSTRACT

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research efficiency,
Scholarcy

The development of artificial intelligence (AI) has revolutionized various facets of education, particularly the research domain. With the rapid growth of scholarly literature, the need for an efficient tool for summarization has become increasingly paramount. This study proposes a quantitative investigation into the efficiency of Scholarcy (www.scholarcy.com), an AI-powered summarizer used to aid researchers in summarizing academic literature. Thirty-five postgraduate students were involved in a survey research design. After five weeks of using Scholarcy, participants were asked to complete a survey questionnaire via their email addresses to give feedback on this tool. The results indicated a positive reception when postgraduates found this AI summarizer convenient and useful for reading academic papers. On the other hand, the participants identified several drawbacks when using it including concerns about summary quality, the absence of a mobile application, and high cost, along with suggestions for further application. With the highlights of both benefits and limitations, the study hopes to contribute valuable insights into the development of AI-powered summarization tools in the future.

Introduction

In the era of information and technology development, the term “Information and Communication Technology” (ICT) has become widely known. Thanks to it, there have been huge changes in people’s life. It has a major impact on every field in society including business, healthcare, and education. Quickly, ICT has been used in schools to improve students’ learning experiences and facilitate teachers’ teaching. Thanks to the advancement of technology, students are more engaging in learning activities and teachers have useful tools to design lessons, organize interesting in-class activities, diversify teaching materials, and manage classes.

Specifically, there are a variety of benefits when using ICT in classrooms (Henderson, 2020). Being integrated into lessons, technology helps students more interested in the content they are

studying because of interactive tasks, games, videos, or vivid sounds, then students can actively participate in the activities with joyfulness. Moreover, with online videos in the Learning Management System of schools, students can enhance their self-study at their own pace when they can easily review the knowledge that they are not sure about. Regarding benefits for teachers, they can make use of different apps or online resources to create attractive activities for students, score automatically, and use online assessments and students' progress management, which helps teachers have effective lessons and save time (Henderson, 2020).

Besides using ICT tools which are beneficial for teaching and learning activities in class, teachers or educational researchers need to read many articles to have a deep understanding of their field. They have to spend a huge amount of time studying research articles. Therefore, it is essential to have some intelligent tools that can summarize the articles quickly and help teachers or researchers save time in reading. Among those tools, Scholarcy, which is AI-powered, is an extremely useful tool for article summarization with various merits. This study aims to examine the benefits and drawbacks of using Scholarcy as a summarizing tool for teachers or education researchers and hopes to bring new useful information for the readers, especially those who are concerned about it.

Literature review

ICT is an abbreviation for Information and Communication Technology. This is a broad term for Information Technology (IT), which includes the Internet, wireless networks, mobile phones, computers, software, middleware, video conferencing, social networks, and other media applications and services that allow users to access, retrieve, store, transmit and edit information in a digital form. ICT has increasingly been used widely in every aspect of society, especially education. ICT is seen as an influential tool for reforming and changing education.

Adequate use of ICT can improve educational quality and link learning to real-world circumstances, according to several prior research (Lowther et al. 2008; Weert and Tatnall 2005). According to Weert and Tatnall (2005), learning is a continuous, lifelong process in which students deviate from conventional methods and alter their expectations by pursuing information. They will need to be prepared for and open to exploring new information sources as time goes on. For these students, having ICT skills would be a crucial necessity.

Jo Shan Fu (2013) indicated that using ICT in education has various benefits including assisting students in accessing digital information efficiently and effectively, supporting student-centered and self-directed learning, producing a creative learning environment, promoting collaborative learning in a distance-learning environment, offering more opportunities to develop critical thinking skills, improving teaching and learning quality, supporting teaching by facilitating access to course content. According to Bindu (2016), ICT plays a pivotal role in enhancing teaching and learning, accessibility to learning, learning environment and motivation, and academic performance.

Nearly five decades ago, science acquired a tool that could facilitate research and then started to change the way people do research. The earlier technologies were replaced by electronic digital computers. Arithmetic calculations, which were previously done with paper and pencil,

slide rules, abacuses, and mechanical calculators, were completed by researchers with computers. They offered many benefits. Larger computations could be completed more quickly, more reliably, and possibly more affordable. Unlike the large, expensive, and difficult-to-use computers in the past, nowadays, every scientist may have access to considerable computing capacity with a few thousand-dollar personal computers on their desks. Thanks to information technology, the limitations of speed, cost, and distance have been greatly reduced for researchers. It has led to improvements in research. Researchers can work on a larger volume of databases. Knowledge-gathering becomes easier, resource development is enhanced, and researchers can collaborate more widely and effectively (National Academy Press, 1989). *Information Technology and the Conduct of Research: The User's View*. National Academy Press).

Regarding the development of AI in education, various studies underscore the paramount importance of AI in providing learners with diverse learning experience. For example, AI applications can create meaningful conversations (Lu, 2018) and enhance students' speaking performance as well as reading comprehension (El Shazly, 2020; Yin et al., 2021). Moreover, AI tools enable teachers to enhance the motivation and engagement of students in learning activities related to EFL classes (Bailey et al., 2021). In addition, it is demonstrated that AI-driven tools grade student assignments on speech and writing with immediate and multidimensional feedback (Bailin, 1987; Holland et al., 1993; Nagata, 1996). By and large, the application of AI will need to be widely encouraged for education in general and higher education in the near future due to AI's benefits (Phan, 2023).

Besides class settings, AI tools become advantageous in summarization for researchers. Adwood (2023) pointed out that the increase in academic research articles offers both opportunities and challenges for researchers. While the wealth of information encourages creativity and the sharing of knowledge, it also makes it difficult to keep up with the most recent research results. To deal with that, researchers have begun to use artificial intelligence (AI) tools to summarize academic research articles for easier and faster reading comprehension, which saves researchers from having to look through unimportant information and helps them quickly grasp the main ideas.

Scholarcy is an AI-powered article summarizer, a tool that uses artificial intelligence and machine learning technologies to automatically generate content of scientific publications in the form of easy-to-understand summaries (Renn, 2021). Scholarcy enables academic researchers to keep up-to-date with the growing volume of research papers and assess, understand, and read papers faster. Besides, it can also help journalists to grasp scientific publications more quickly and to assess their relevance. This summarizer can also be used to automatically generate journalistic summaries on specific topics.

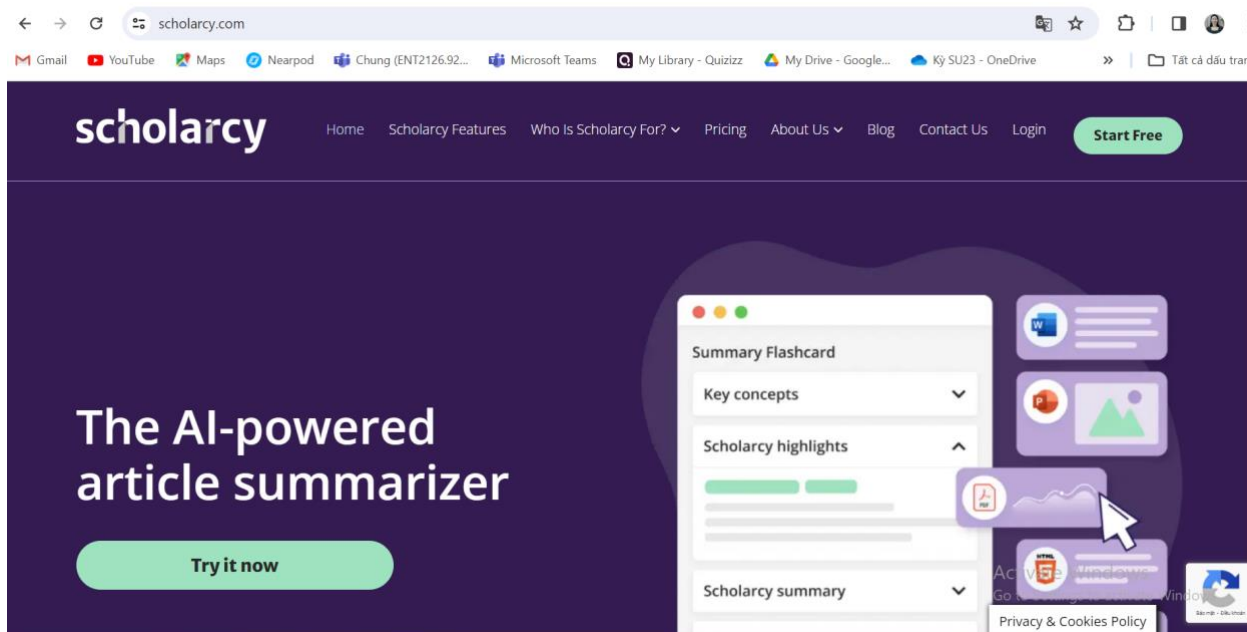


Figure 1. Scholarcy interface

Using Scholarcy to summarize articles, readers need to follow some basic steps. First, the readers join the link Scholarcy.com as they can see the interface (Figure 1). Second, they Click on “Start Free”, they can see the request to sign up by creating an account or signing up with a Google account. Next, the readers choose the function “Article Summarizer” and simply drop their documents or links into Scholarcy, then it will condense them in seconds, pulling out key information. Then, the readers can see the main concepts in the paper and a bullet point list of key findings to accelerate people’s reading (Figure 2). If the readers never search for cited sources, Scholarcy generates direct links to these for them. In summary, it can be seen that Scholarcy is a virtual research assistant, breaking articles into bite-sized chunks to give readers the key facts faster.

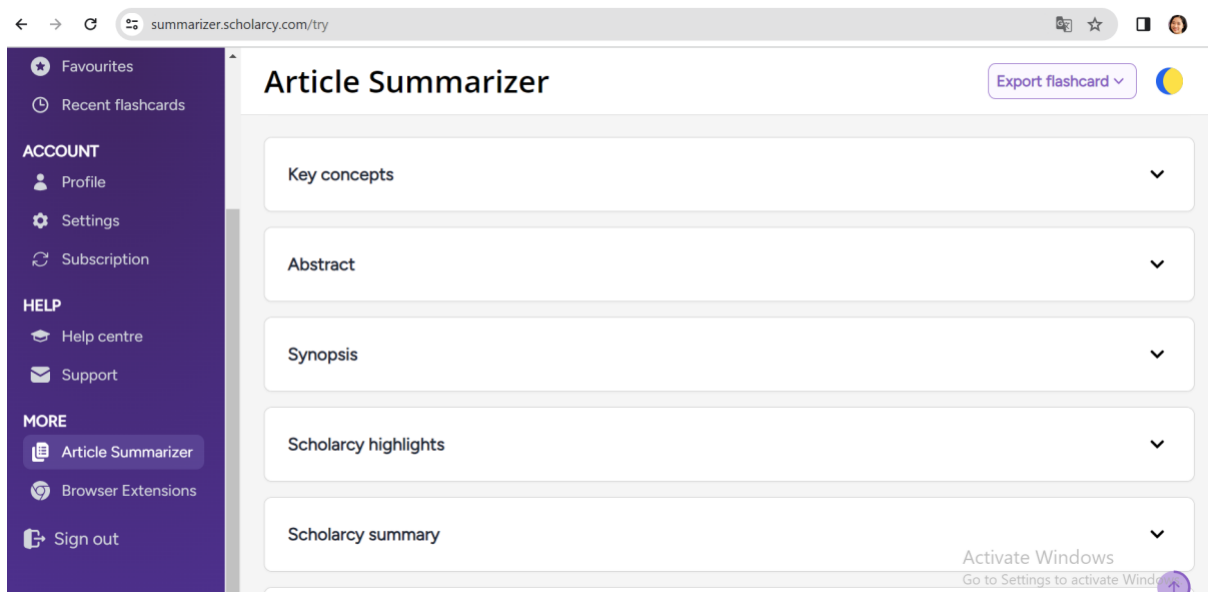


Figure 2. A bullet point list of main information

Research Questions

To achieve the objectives of this research, the following questions will be addressed:

1. How effective is Scholarcy in improving research summarization for postgraduate students?
2. What limitations do postgraduate students identify in using Scholarcy?

Methods

Pedagogical Setting & Participants

The study was conducted in a postgraduate class of thirty-five students at the University of Languages and International Studies in Hanoi, all of whom participated in this research. Among them, there were 33.3% of teachers who worked at secondary school, followed by 27.8% of primary school teachers. The number of college and university lecturers accounted for 25%, and the lowest proportion was for high school teachers with 13.9%. They were learning a Master of Science in Teaching English as a Foreign Language with about nine different subjects which required them to read a variety of research papers to develop their knowledge and complete relevant assignments.

Design of the Study

The survey research design was chosen to conduct the study because it enabled us to collect subjective feedback from participants in a time-saving way. All thirty-five participants were studying in a class which was also our class; therefore, we could gather the data conveniently. We started using Scholarcy at the beginning of the subject “Information and Communication Technology in English Language Teaching” in which we had opportunities to explore numerous tools and applications facilitating teaching. After five weeks of the subjects, we sent the survey to our classmates to get feedback from them.

Data collection & analysis

In the first lesson on Information and Communication Technology in ELT, we introduced Scholarcy to our classmates. During five weeks of using Scholarcy for different subjects, students were required to use it at least once a week to read articles and do assignments. If they had any difficulties, they contacted us for further instructions. After that period of time, we sent them an email including a survey questionnaire created in Google Forms to get their feedback and comments. The questionnaire comprised nine questions with five Likert scale questions and four open-ended questions which covered aspects of users’ satisfaction related to its interface, fee, as well as application, problems, and recommendations.

After collecting the data from the Google Form and having a Google Excel file, we classified and systematized the information in tables and charts to analyze and present accordingly, so the method of analysis was descriptive statistics.

Results/Findings and Discussion

Table 1.

Users' feedback on Scholarcy features and usability

Questions		Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
1	The interface of the website is friendly.	0	0	2.8	69.4	27.8
2	Scholarcy is a helpful summarizing tool, I will surely try it when I have to read long papers.	0	2.8	16.7	47.2	33.3
3	I am satisfied with the FREE version which provides basic functions and adequately fulfills my needs.	2.8	16.7	30.6	38.9	11.1
4	As a teacher, I see many of its applications in teaching.	2.8	11.1	36.1	36.1	13.9
5	The user's fee is reasonable.	11.1	30.6	33.3	16.7	8.3

It can be seen from Table 1 that it showed positive aspects when Scholarcy was utilized by thirty-five users. Firstly, the interface of the Scholarcy is simple and easy to use. According to the result, 69.4% of users agreed that the interface was friendly, and 27.8% of users strongly agreed with that. Secondly, the majority of respondents supported that Scholarcy was a helpful summarizing tool, so they would surely try it when they read long papers. Moreover, about 50% of users agreed that they were satisfied with the free version, which provided basic functions adequately fulfilling their needs. Similarly, 50% reported that they saw many of its applications in teaching. However, only 25% said that the user's fee was reasonable. By and large, except for the cost, factors including interface, summarizing function and its application for teaching show several advantages of this tool.

Table 2.

The most favorite features of Scholarcy

Features		Percentage
1	Quick summarizing function	62.9%
2	Ease of use	17.1%
3	User-friendly interface	14.3%
4	Others	5.7%

Regarding the features that users are interested in the most in Table 2, 62.9% said that it was the quick summarizing function since it helped them save time when reading research articles. In fact, the long and complex research will be summarized into bullet points including key concepts, abstracts, synopsis, Scholarcy highlights, and Scholarcy summary. By reading these points, it becomes easier for readers to digest the article without consuming a lot of time. Thanks to its fast summarization and highlights, researchers can make decisions on whether the text

was useful or not quickly and precisely. Moreover, people can try using it without registration, which is convenient for users.

Table 3.

Problems that users may encounter while using Scholarcy.

Problems		Percentage
1	Copy-paste quality of summarization	28.6%
2	Limited free uses per day	22.9%
3	High fee	17.1%
4	Plagiarism	5.7%
5	No problems	25.7%

On the other hand, Table 3 shows that users found some drawbacks when using Scholarcy. 28.6% of participants were concerned about the copy-paste quality of summarization. The summary is done by AI, so the quality of the summary is not always good enough. The abstract in Figure 3 is taken as an example. The figure shows that it is just the copy-paste version of the abstract shown in the research paper. The only difference is that it highlights the key phrases and provides web links for key terms. Hence, it is much better if Scholarcy can summarize intelligently instead of providing the same text with highlights only. In addition, Scholarcy allows free users to summarize three times a day, which is relatively limited. As a result, 22.9% of respondents cared about this aspect. Besides, the users need to pay 150,000 VND per month or 1,350,000 VND per year to use all functions of Scholarcy including the library, sharing with others, and deleting summaries, which hinders people from using it more frequently and widely.

The screenshot shows a web browser window with the URL summarizer.scholarcy.com/try. The page title is "Article Summarizer" and it features a sidebar with navigation options like "Recent flashcards", "ACCOUNT", "HELP", and "MORE". The main content area displays an "Abstract" with the following text: "Thanks to technological development, there has been a remarkable leap in the application of artificial intelligence, especially in education. This paper examines the effectiveness of Chatbot Mission Fluent, an AI chatbot, in improving English pronunciation among vocational students in a Hanoi college. Sixty vocational students participate in an A1 English course hosted in a quasi-experimental research design. After the course, participants were interviewed and asked to complete a survey questionnaire to collect their feedback on the AI Chatbot. The experimental group showed notably better English pronunciation than the control group. This research aims to address the knowledge gap regarding the use of AI chatbots as a tool in vocational education. Through this approach, the potential of AI chatbots in improving English pronunciation is carefully explored and emphasized among vocational students. However, this paper also noticed some difficulties in applying and monetarily supporting Missionfluent throughout the process. Overall, this study focuses on the significance of incorporating innovative technologies into language learning programs and highlights the beneficial potential of AI Chatbots' application in improving vocational". The text is highlighted in purple, and there is an "Export flashcard" button in the top right corner.

Figure 3. Example of Abstract Summary

Table 4.

Recommendations for Scholarcy.

Features		Percentage
1	More free uses per day	54.3%
2	Improving the quality of summarization	15.7 %
3	Note-taking section	5.7 %
4	Saving articles online	5.7 %
5	The mobile application	5.8 %
6	Nothing	12.8 %

When it comes to some features or changes that users would like to add to Scholarcy as shown in Table 4, the majority of participants (54.3%) in the survey offered to have more free uses per day, followed by 15.7% who expected the tool to improve the quality of summarization. Other recommendations, such as space for note taking and saving articles online for later use or the need for the mobile application on a smartphone also make a small proportion.

The finding revealed that most users (54.3%) would like to recommend Scholarcy to their colleagues and 42.9% may do it in the future (Figure 03).

9. Would you like to recommend it to your colleagues?

35 câu trả lời

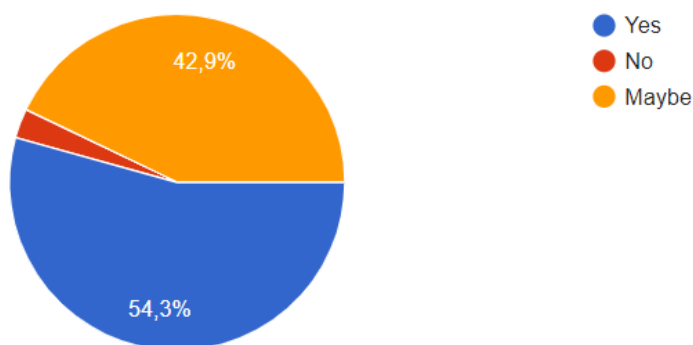


Figure 3. Possibility of recommending Scholarcy to others

Most previous articles talk about the benefits of Scholarcy that are content with the above-mentioned points. The technology helps researchers assess, understand, and read papers faster (Renn, 2021). It is also stated by Renn (2021) that it could help journalists grasp scientific publications more quickly, and people could try it without registration. However, there is almost nothing about disadvantages of Scholarcy in previous studies. Atwood (2023) mentioned that Scholarcy was an extractive summarization system that identifies and extracts key sentences or

passages from the original document to create a short, coherent, summary that preserves the original wording. However, it did not state that it is a disadvantage.

Therefore, in comparison with previous articles about Scholarcy, this study is more detailed and helps people have a bigger picture of the benefits and drawbacks of Scholarcy.

Conclusion

Overall, the study hopes to provide insights into the benefits and disadvantages of using Scholarcy as an AI-driven summarization tool. On the one hand, the majority of participants aligned with the friendly interface and usefulness of summarizing research papers. Additionally, half of respondents expressed satisfaction with the free version and its potential for use in educational settings. Notably, the most favored function was the quick summarizing function which enabled people to save time when reading research articles, particularly the long ones. Meanwhile, the key drawbacks were associated with the quality of summarization, limited free uses per day, and the relatively high cost of premium features.

It is undeniable that there are several limitations in our studies, including a small sample size and short duration. The study was conducted on thirty-five postgraduates in one class from a single university, which may not fully represent the broader population of Scholarcy users. Moreover, the research solely evaluated the short-term effectiveness of the tool because the participants used it in only five weeks; therefore, we need a longer period of time to examine the long-term usefulness. Therefore, it is advisable to involve a larger group of participants and let them use Scholarcy over a longer period of time so that we can gain a more thorough understanding of effectiveness and potential limitations.

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References

- Atwood, G. S. (2023). AI Tools for Summarizing Research Articles: Transforming Information Access. <https://scholarworks.uvm.edu/libfacpub/99>
- Bailey, D., Southam, A., & Costley, J. (2021). Digital storytelling with chatbots: mapping L2 participation and perception patterns. *Interactive Technology and Smart Education*, 18(1), pp. 85-103
- Bailin, A. (1987). Artificial intelligence and computer-assisted language instruction: A perspective. *CALICO Journal*, 5(3), 25–45.

- Bindu, C. N. (2016). Impact of ICT on teaching and learning: A literature review. *International Journal of Management and Commerce Innovations*, 4(1), 24-31.
- Cheng, W., & Warren, M. (1997). Having second thoughts: Student perceptions before and after a peer assessment exercise. *Studies in Higher Education*, 22(2), 233–239. <https://doi.org/10.1080/03075079712331381064>
- El Shazly, R. (2021). Effects of artificial intelligence on English speaking anxiety and speaking performance: A case study. *Expert Systems*, 38(3), e12667.
- Fu, J. (2013). Complexity of ICT in education: A critical literature review and its implications. *International Journal of education and Development using ICT*, 9(1), 112-125.
- Henderson, D. (2020). Benefits of ICT in Education. *IDOSR Journal of Arts and Management*, 5(1), 51-57.
- Phan, T. N. L. (2023). Students' Perceptions of the AI Technology Application in English Writing Classes. *Proceedings of the AsiaCALL International Conference*, 4, 45–62. <https://doi.org/10.54855/paic.2344>
- Lowther, D. L., Inan, F. A., Strahl, J. D., & Ross, S. M. (2008). Does technology integration work when key barriers are removed? *Educational Media International*, 45(3), 195-213.
- Lu, X. (2018). Natural language processing and Intelligent Computer Assisted Language Learning (ICALL). *The TESOL encyclopedia of English language teaching*, 1–6.
- National Academy Press. (1989). *Information Technology and the Conduct of Research: The User's View*. National Academy Press.
- Renn, O. (2021). Science communication in crisis? Can new technologies help and support?
- Weert, T. V., & Tatnall, A. (2005). *Information and Communication Technologies and Real-Life Learning: New Education for the New Knowledge Society*. Springer.

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