

## **Artificial Intelligence (AI) In Education: Pros and Cons Among Secondary School Teachers in Malang, Indonesia**

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**Abstract.** Artificial Intelligence (AI) became a concern of many scholars including Educators. Some educators believed that AI can be a very sophisticated tool to support teaching and learning processes, but others believed otherwise. Discussion on Implementation of AI in the field of education always stimulates the appearance of pros and cons. This study tries to explore secondary school teacher perspectives on the use of Artificial Intelligence in the field of education. This study explores 15 teachers of secondary school in Malang. In-depth interview was taken to get comprehensive data. The result of this study showed that there are 5 AI tools which became frequently used by teachers, those are: ChatGPT, Grammarly, Canva, Gamma, and Class point. Interestingly, 42% of the informants are using AI for professional purposes like supporting their teaching and learning process. Besides, 33% of the informants are using it for academic purposes like writing the article, news, or other tasks which are able to improve their academic competences. There were also 25% of the informants were used AI for personal purposes which is not correlated to their profession as teachers, like for having fun, trial and error, or out of curiosity. Moreover, the use of Artificial Intelligence in the field of education created two-side of perspectives: pro and con. The pro argued that AI can be fully adapted in secondary school for its numerous benefits for both teacher and student, while the con argued that AI would have many problems if it was implemented. There are four arguments behind the pros: the use of AI in education proved that teachers are adaptive towards newest technology, it is also able to improve teacher skills and competencies, it also can support teacher's administrative tasks, and students need to be introduced to the latest technology for their future. On the other side, there are three arguments behind the cons: ethical issues, lack of learning process, and technology dependencies and loss of human interaction.

**Keywords:** Artificial Intelligence; Education; Secondary School; Teacher Perspective

### **A. INTRODUCTION**

There has been growing interest in the Artificial Intelligence (AI) application in the field of Education. Scholars agreed that AI has its pros and cons (Borisov & Stoyanova, 2024; Chaushi et al., 2024; Karthikeyan, 2023; Pisica et al., 2023). The pros mainly focused on many advantages of AI like improving teacher digital competencies, adaptive teacher to the newest update, administrative cost efficiency (Pisica et al., 2023). In the other hand, the cons are mainly focused on ethical issues in the implementation of AI, less of human interaction (Chaushi et al., 2024), unfamiliar with the main function of AI (Borisov & Stoyanova, 2024), and the absence of critical thinking (Karthikeyan, 2023). These pros and cons effect the misguiding and confusing use of AI in the field of education.

Ideally, Artificial Intelligence which defines as “computing systems that are able to engage in human-like processes such as learning, adapting, synthesizing, self-correcting and use of data for complex processing tasks (Heeg & Avraamidou, 2023)” believed as an effective tool to support education. As human intelligence, AI is also considered as the ability of machines to perform tasks that typically require human intelligence (Gignac & Szodorai, 2024). By the above simple definition, the existence of AI is aimed to support the tasks of humans in daily activity. Furthermore, AI by its definition actually fits to the field of education. Teachers and students will be helpful by the existence of AI because it will support their teaching and learning process. The scholars do not stop their exploration by just knowing the aim of this technology. They tried to correlate between the real aims of AI and the reality faced by teachers and students in their field.

In response to scholar’s exploration and the pros and cons of AI in the field of education, scholars identified student and teacher’s perspective on the use of AI in their teaching and learning process. Some scholars focusing on exploring student’s perspective and perception (Farhi et al., 2023; Idroes et al., 2023; Marrone et al., 2022; Yilmaz et al., 2023) and the others focused on exploring teacher’s perspectives (Al Darayseh, 2023; Sangapu, 2019). In the perspective of students, AI is seen as a very supportive factor in supporting their education and seen positively rather than its negative impact. Students stated that AI can access many information more efficiently (Marrone et al., 2022), provides constant feedback and virtual assistant support (Idroes et al., 2023), but some also worried about the negative impact of AI regarding the right ethic of utilizing it but the positive impact considered more (Farhi et al., 2023). On the other hand, teachers are also having argument on the utilization of AI in the teaching and learning process. In their perspective, AI considered a useful tool in helping teachers with good digital literacy because it can integrate between technology and learning (Al Darayseh, 2023). Another teacher’s perspective suggested AI as a good friend but must be combined with good pedagogical knowledge (Sumakul et al., 2022). The above researches are mostly focusing on student’s perspective to deal with AI, however few of the studies explored the teacher’s perspectives. This study tries to complement the exploration of Artificial Intelligence in the eyes of teachers and in the context of Indonesian secondary school.

In the context of Indonesia, Indonesian teachers still have homework to develop and elaborate their ICT (Information and Communication Technology) capability (Hastungkara & Triastuti, 2020). Disparities in technology access in Indonesia are considered a warm topic to be fixed before fully adopting the newest technology, and teacher skills related to artificial intelligence need to be updated (Rakuasa et al., 2024). With these various reasons, exploring the perspective of teacher in seeing the utilization of AI in education will be extremely crucial. Teacher experience with different conditions in different schools will also become interesting in analyzing the pros and cons among Indonesian teachers.

## **B. METHODS**

This is a qualitative approach which aims to explore teacher’s perspective of AI utilization in their teaching and learning process, including; familiar AI tools, utilization goal, and pros and cons of its utilization. The study examined 15 secondary teachers in Malang, Indonesia from various type of schools; State School, Private School, and International School. Among those teachers, there are 4 teachers of International Schools, 7 from Private School, and 4 from State School. In-depth interview was taken to get comprehensive data. Data analysis Used Miles and Huberman’s data collection, data display, data condensation, and conclusion drawing.

## **C. RESULT & DISCUSSION**

The result of this study will be classified into three subchapters; Teacher’s Familiar AI Tools, Teacher Purpose of Using AI, and Pros and Cons on AI Utilization in Secondary School.

## Teacher's Familiar AI Tools

Among 15 informants of this study, there are 12 informants who are familiar with AI tools. Surprisingly, there are 3 informants who have never heard the term AI. Among those 12 informants, there were 2 who stated that they heard of it but had never used it. Among 10 informants who stated that there were used several AI tools in their daily those are: ChatGPT used by 10 of the informants, while Grammarly use by 8 informants. in the other side, Canva were used by 6 informants and 3 informants are using Class Point and Gamma.

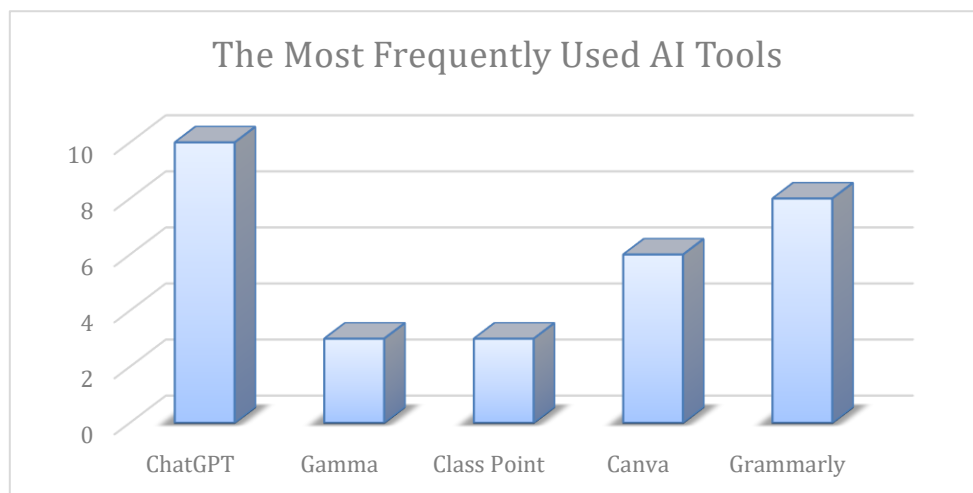


Figure 1: The Most Frequently Used AI Tools  
Source: Author's work

Most of the informants are using ChatGPT for numerous reasons. The interesting reason stated by the informants that this tool is mostly heard and beneficial in the field of education. This reason is also supported by some research which considers ChatGPT as a tool used by many teachers and students (Farhi et al., 2023; Yilmaz et al., 2023; Yu, 2023). Following this tool, Grammarly is the second tool used by most of the teacher in this study, this is also in line with some research which explain the beneficial of this tool to be used and implemented in the field of education especially in writing skill (Miranty et al., 2022; Thi & Nikolov, 2022). Canva is also seen as beneficial in the teaching and learning process (Wijayanti, 2022).

The use of AI among teachers in secondary school also varies, 42% of the informants are using AI for professional purposes like supporting their teaching and learning process. Besides, 33% of the informants are using it for academic purposes like writing the article, news, or other tasks which are able to improve their academic competences. There were also 25% of the informants who used AI for personal purposes which is not correlated to their profession as teacher like having fun, trial and error, or out of curiosity.

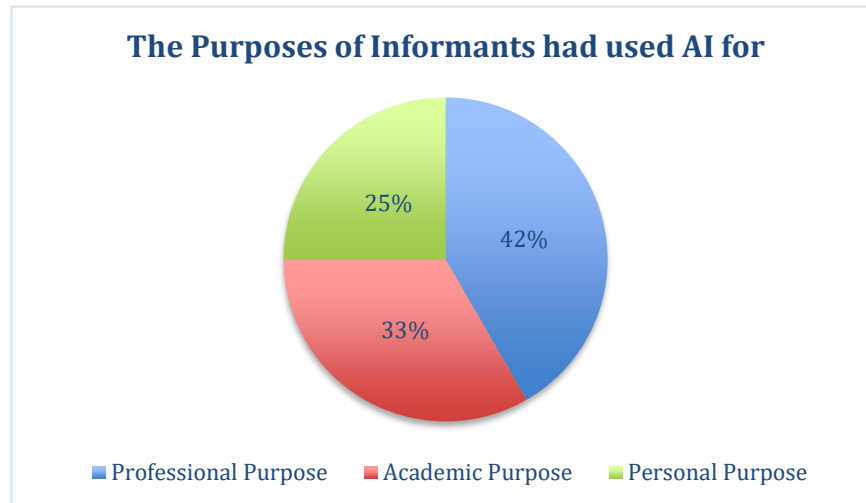


Figure 2: The Purpose of Informants had Used AI for  
Source: Author's work

There was a relatively high percentage for teachers in secondary school to use these technologies for personal support only. This shows that there are still quite a lot of teachers who do not want or at least do not want to adapt yet to this technology for educational purposes. This also can be concluded that many teachers are already adaptive toward the latest technology they faced in this digital era. There was a task for academics to make teachers at least familiar with the latest technology and consider it to be beneficial in supporting the educational realm.

### ***Teacher Pros and Cons on AI Utilization in Secondary School***

The use of Artificial Intelligence in Education offers two kinds of perspectives; pros and cons. The pros mostly see the positive considerations in responding to the use of AI in the field of education, while the con's side explore the negative ones. In the perspective of Secondary school teachers, the pros are focusing on exploring the beneficial use of AI on teacher's side, while the cons are focusing on the student's side. Almost all the informants agreed that teachers should understand and know the development of technology, but several stated that teachers shouldn't depend on it.

### ***Pros of AI Utilization in Secondary School***

The pros are focusing on four issues regarding the utilization of AI in secondary school. According to the pro side, teachers who utilized AI in their learning activities mean that they are the adaptive teacher toward technology. AI is also considered as a tool which can improve teacher skills and competencies. On the other side, AI can effectively support the administrative efficiency of teachers and students should know the benefit of AI for their future.

### ***Adaptive Teacher toward the Newest Technology***

The first argument in the pro side stated that teachers who adapted AI in their learning are positively good teachers. They were considered to be good teachers because of their willingness to see and adapt the newest technology that existed in the world and applied it in their field. The newest technology is believed as a tool which can fulfill student's needs because it's already designed based on the newest condition. This statement is also in line with research stated that AI has already been designed and updated based on the newest condition (Pisica et al., 2023). The teacher's awareness of the latest technology like AI can prove the willingness to be an adaptive

teacher.

#### *Improving Teacher Skills and Competencies*

The second argument stated that AI can be very helpful to support and improve teacher skills and competencies. By the existence of AI, teachers can develop their skill in digital competence. Mastering AI for teachers means they can enhance their skill which can innovate their teaching and learning process. Besides, AI is also provided many alternatives for teachers who want to develop many new accessible learning strategies. Many alternatives provided by AI tools are also believed as a strong method to create student engagement, a more adaptive and responsive learning environment, and also introduce interactive approaches in education realm (Chaushi et al., 2024). This sophisticated advantage of AI in education can surely improve teacher's skills in teaching and learning.

#### *Administrative efficiency*

The third argument stated that AI can reduce administrative complexity. As most of the informants stated that the administrative task of teachers, sometimes, takes more time than teaching. The existence of AI can fully reduce this complexity which drives to administrative efficiency. Informant also stated that AI can process a great amount of data automatically. Teachers can be focusing on improving their skills rather than manually analyzing that great amount of data. Another researcher also stated that AI significantly improves efficiency in the field of education such as, automated grading system, administrative process, and data analysis (Chaushi et al., 2024; Pisica et al., 2023). Furthermore, some informants augment the function of Grammarly which can automatically contribute in giving an automatic feedback to student's writing tasks. Teachers can reduce long correction time toward direct automatic correction which can provide more beneficial and effective meetings.

#### *Introducing Technology to Students with Careful Guidance*

The pro sides also underline the importance of introducing AI to students in secondary school. The informants argued that students in secondary school need to understand the technology they encounter every day. The informants stated that one of the teacher tasks is to improve student's skills including digital skills. This statement also in line with many researches stated the same statement (Borisov & Stoyanova, 2024; Chaushi et al., 2024; Karthikeyan, 2023; Pisica et al., 2023). The technological evolution also needs to be understood by students. But, the task of teacher does not stop at just introducing AI, but it needs to be accompanied with very careful guidance. A teacher's guidance is fully needed in controlling the use of AI among students in secondary schools. The introduction to newest technology hopefully able to create digitally literate students so that later can be wise in using technology.

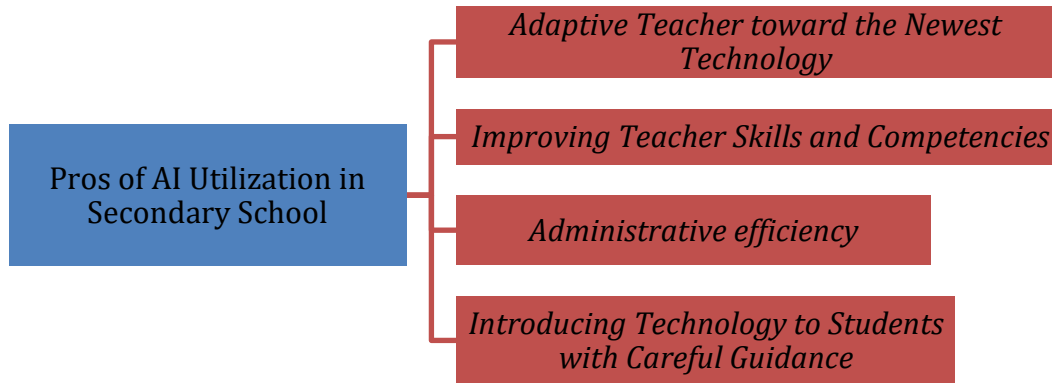


Figure 2: Pros of AI Utilization in Secondary School  
Source: Author's work

### ***Cons of AI Utilization in Secondary School***

The cons are focusing on three issues regarding the utilization of AI in secondary school. According to the con side, the first concern is aimed at ethical issues. The next concern was learning process denial and technology dependencies. These considerations led the informants to deny the use of AI in secondary school.

#### ***Ethical Issues***

Ethical issues became the first reason for denying AI in secondary school. Based on informants' perspectives, most of secondary students are having bad decision making regarding their use of AI. Asking the answer to AI tools will be considered as cheating. Furthermore, the bad decision making for secondary students will lead to irresponsible attitudes toward the use of technology. In many researches, ethical issues also became disadvantage of the implementation of AI in education. Some researchers believed that students in many levels of education have ethical issues in implementing this new technology like cheating during tests and exams (Heeg & Avraamidou, 2023; Zhai et al., 2021). Students in secondary school need to be taught firstly on ethical use of technology rather than directly implementing AI in their level of education. In higher education like universities, implementing AI will be considerably important.

#### ***AI will deny the learning process***

The second argument in con side is the learning process denial of AI utilization at secondary school level. The informants stated that AI led to many temptations which can deny learning process like writing the assignment. Whereas, learning process is more important than the result of learning. AI in the perspective of teachers in secondary school will drive the instant result without considering the learning process, the process of thinking, the process of understanding many skills of competences that students need in their future. Some informants gave the example of Grammarly used in writing class or ChatGPT used in any subject of learning. Grammarly used in writing class will deny students' understanding of important theory in language writing. The process of understanding the theory needs to be taught at secondary level rather than instantly asking AI how to write the essay. On the other hand, ChatGPT will also deny the thinking process or critical thinking process by providing the instant answer of students' unknown questions.

### *Technology Dependencies and the Loss of Human Interaction*

The last argument of the cons considered the technology dependencies of AI implementation in secondary school which can drive to the loss of human interaction. Similar to the previous anxieties, AI will lead the students to technology dependencies rather than individual skills. This dependency will also lead to the loss of human interaction. If that were the case, schools will lose their important function to be the place of socialization, teacher-student idea exchange, and other functions of school. On the other side, one skill of students can be decreased because of AI implementation of AI in early secondary school which is social skill. Informants on the contrary or the cons are believed that Social skills of students are strongly needed to face their future.

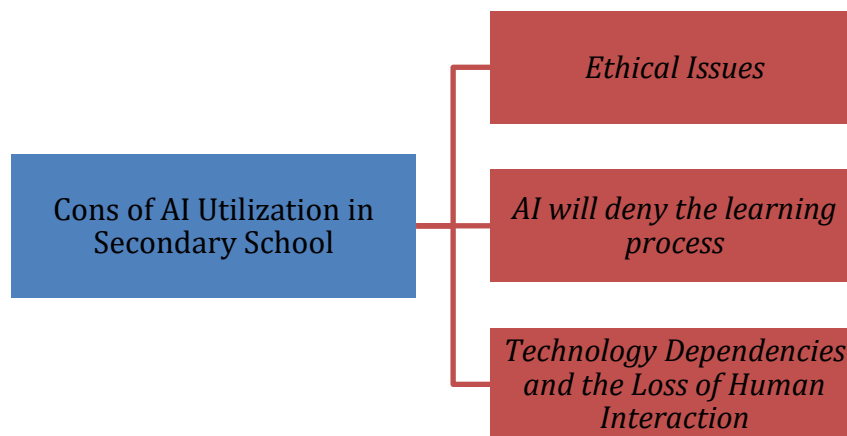


Figure 4: Cons of AI Utilization in Secondary School  
Source: Author's work

## **D. CONCLUSION**

In conclusion, the use of Artificial Intelligence in the field of education created two-side of perspectives: pro and con. The pro argued that AI can be fully adapted in secondary school for its numerous benefits for both teacher and student, while the con argued that AI would have many problems if it was implemented. There are four arguments behind the pros, those are: the use of AI in education proves that teachers are adaptive towards newest technology, it is also able to improve teacher skills and competencies, it also can support teacher's administrative tasks, and students need to be introduced to the latest technology for their future. On the other side, there are three arguments behind the cons, those are: ethical issues, lack of learning process, and technology dependencies and loss of human interaction.

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