

# Artificial Intelligence and Its Impact on Skill Development, Learning Effectiveness, and Productivity among Students and Young Professionals

Laya Girish<sup>1</sup>, Sreya AS<sup>1\*</sup> and Anna Rose Joshy<sup>2</sup>

<sup>1</sup>Student, Department of Commerce, Christ College (Autonomous) Irinjalakuda, affiliated to Calicut University

<sup>2</sup>Assistant Professor, Department of Commerce, Christ College (Autonomous), Irinjalakuda, Affiliated to Calicut University

\*Corresponding Author Email: [sreyaas655@gmail.com](mailto:sreyaas655@gmail.com)

## Abstract

*Artificial intelligence plays a crucial role in revolutionizing education and advancing professional development by offering tools that facilitate effective learning, productivity, and skill enhancement. Despite the use of AI applications such as ChatGPT, AI-driven productivity tools and various tutoring platforms are widely used, their real impact on skill development and learning outcomes remains underexplored. The study aims to analyse the influence of artificial intelligence on skill development, learning effectiveness, and productivity among students and young professionals while addressing the existing research gap in understanding AI's benefits and challenges. The research targets a total sample size of 50 respondents drawn from student and young professional categories. Primary data were collected through a survey using a structured questionnaire, focusing on AI usage, skill development, and learning and productivity outcomes. Data collected from respondents were examined and presented in pie charts to illustrate response distribution. The key findings indicate that AI positively impacts learning efficiency, skill enhancement, and productivity by providing time-saving solutions, personalized guidance, and easy access to information. Yet, participants reported concerns that overreliance on AI may diminish critical thinking and raise ethical issues. It can be concluded that, when applied appropriately, AI serves as a valuable tool for human capital development, emphasizing the significance of a balanced approach to integrating technology with conventional and professional educational practices.*

*Keywords: Artificial Intelligence, Skill Development, Learning Effectiveness, Human Capital Development*

## Introduction

One of the most important technological developments of the twenty-first century is Artificial Intelligence (AI), which has drastically changed how people work, learn, and acquire skills. Traditional learning models and workplace practices have changed as a result of the quick adoption of AI-powered tools in educational and professional settings. Personalized learning experiences, instant access to information, and increased task execution efficiency have all been made possible by technologies like intelligent tutoring systems, adaptive learning platforms, and generative AI applications. This has led to greater recognition of AI as a major force behind the development of human capital in the digital age.

AI has the potential to improve learning effectiveness in the educational sector by supporting self-directed learning, offering real-time feedback, and customizing content to each learner's unique needs. In today's context, students depend on AI tools to help them grasp difficult ideas, perform better academically, and gain useful skills that are applicable to modern jobs. In a similar vein, young professionals are leveraging AI-driven applications to increase productivity, and cultivate job-related skills. This increasing dependence on AI demonstrates how it can reduce skill disparities and promote lifelong learning in a knowledge economy that is rapidly changing.

Notwithstanding these benefits, there are major concerns about the long-term effects of AI on education and skill development. Over-reliance on AI tools may impair one's capacity for autonomous thought, creativity, and problem-solving.

Utilization of AI in the workplace and education practices remains complicated due to ethical issues surrounding data privacy, transparency, and usage. The perspectives both in favour of and against the enhancement of AI stress the need for an adequate understanding of its benefits and disadvantages. While previous studies accept the ability of AI to enhance efficiency and learning outcomes, empirical evidence on AI's overall impact on skills, learning effectiveness and productivity among students and young professionals groups is still limited. Various studies give more emphasis to functionalities rather than perceptions and experiences. Thus, we need more studies on how people perceive AI's impact on their learning, skill development and work performance.

In this regard, the present research intends to study the impact of the artificial intelligence application on the skill development and learning effectiveness, and productivity of students and young professionals. Through investigating how AI may boost learning and performance, this research contributes to a better understanding of how human-AI collaboration may supplement actual human ability and capability development in learning and performance contexts.

### **Statement of Problem**

In recent years, Artificial Intelligence (AI) has become an important factor in learning and workplace activities. Students and young professionals are using AI-based tools for educational and professional purposes. Applications like ChatGPT, other generative AI systems, adaptive learning tools, and productivity applications enhance efficiency, access to information, and receive academic and work-related support. Despite its increasing use, it lacks empirical proof of how it explicitly impacts the skill development and learning effectiveness of the user in a productive manner.

The majority of studies conducted so far concentrate on the technological capabilities of AI and its potential benefits. In contrast, there are fewer studies that focus on the real impact of these tools on people using them on a daily basis in their learning and work practices. The students and working professionals have limited awareness about their ethics, like responsible usage, privacy of data, etc. Moreover, they are not aware of the over-dependence on AI and lack of critical thinking. Therefore, due to the balanced usage and user - centered research, it is difficult to ascertain whether AI adds value to human capital development or creates new challenges. Artificial intelligence has a great impact on the skills, learning and productivity of students and youth, which needs systematic research. The aim of this study is to fill this research gap by investigating the perceptions and experiences of users through a survey-based approach. In particular, the study will shed light on the benefits and challenges of the use of AI.

### **Scope of the Study**

The present study aims to analyse the impact of artificial intelligence (AI) on skill development, learning effectiveness, and productivity among students and youth. With the help of AI applications such as intelligent tutoring systems, adaptive learning platforms, generative

AI tools, productivity software, etc., learning outcomes, skill development, and productivity in academia and early professional life are assessed. The research is limited geographically to participants mainly from Kerala, India, and temporally to the present phase of adopting AI in education and workplaces.

The study does not concern older workers, larger organizational AI usage, very long-term career outcomes, and large-scale ethical and societal issues around AI. Likewise, technical details of the AI algorithms are excluded.

Future studies can assess the impact of AI on a long-term basis. Further, they can include people of various age groups and industries. Overall, this will provide a broader understanding of AI and human capital development.

## Objectives

1. Explore the role of AI adoption in developing future-ready skills and competencies of students and youth.
2. Assess the connection between AI use and effectiveness in regards to study engagement and performance.
3. Examine the advantages and challenges of the use of AI for productivity, decision-making, and time management in academia and professions.

## Literature review

Artificial intelligence has transformed education and skill development, helping people in enhancing their skills, influencing academic development and increase productivity levels. This study investigates many ways in which AI can be used in learning environment, its benefits and challenges among students and young professionals

### 1. How AI Affects Learning and Education.

Analyzing how AI impacts the learning of students, Vieriu and Petrea (2025) explore the effects of AI on the academic development of students. The study used mixed methods including surveys and interviews. Findings show that AI tools significantly improved students' efficiency of learning. In addition, students are more engaged. For example, they claimed to understand complex content and manage academic tasks better. Nevertheless, the review

cautioned that overreliance on AI might inhibit students critical thinking skills and enhance their dependence. This findings are relevant to the aim of the current study with regard to the effect of AI on learning outcomes and skill development among students and young professionals, as they lend empirical support for further investigation of students perception of AI tools in real-world educational context.

## 2. The Future of Skill Development is AI.

Alkhawaja and colleagues (2025) investigated the correlation between AI utilization and skill development in students. The researchers disseminated the structured questionnaires among the undergraduates and found that the use of AI tools significantly helped them in competencies like self-directed learning, digital literacy, critical thinking, and problem-solving. The study advocates that AI can promote future-ready skills, which are essential for success in academic and professional contexts, and these include critical thinking. Consistent with the research project to assess how the adoption of AI leads to skill development among learners, the results offer a benchmark to compare skill-related perception to the present survey.

## 3. Learner-instructor interaction with AI.

“The Impact of Artificial Intelligence on Learner–Instructor Interaction in Online Learning” (2025) sought to comprehend the alterations in interaction between learners and instructors due to artificial intelligence as well as the influence of such change on learning. Learner engagement and understanding can raise AI tools offer personalized feedback and timely support as established through interviews and scenario analysis by the researchers. Yet, they also saw that mainstreaming AI too hastily may muddle social boundaries and throw up ethical challenges. The second objective of the present study was to assess the effect of AI on learning effectiveness and engagement. Hence, the present study justifies how AI-mediated interactions may shape learners’ educational experiences through adding context.

## 4. AI Literacy and Academic Performance Study

In Smart Learning Environments (2025), students’ AI literacy is investigated in its impact on academic performance, self-efficacy and output quality. The report states that students who are proficient in using AI tools will have better outcomes in their studies. Students who reported being more literate in AI were more confident in carrying out tasks and produced

better quality work. This insight matters for this research as it highlights the need to assess learning effectiveness and performance outcomes by understanding AI tool usage and skill proficiency rather than taking confidence or academic results survey responses at face value.

#### 5. Generative artificial intelligence and productivity.

The research paper titled “Generative AI’s Impact on Graduate Student Professional Writing Productivity and Quality” (2025) in the International Journal of Artificial Intelligence in Education studies the generative AI tool effect on writing productivity and work quality. The researchers conducted a mixed-method study to investigate the effects of AI use on student performance. The study found that AI use decreased the time spent completing tasks and aided students in quality output and better time management. The students did, however, mention preservation of independent thinking as a constraint. The research findings that are presented here give evidence for the third objective of the present research which evaluates the impact of the AI tools on productivity, decision-making, and time management in academic and professional work. The study emphasis on efficiency and quality could thus be used in analysing the productivity outcomes of the present survey.

#### In Conclusion

The reviewed studies show that AI positively affects student and youth learning by improving learning effectiveness, skills development, and productivity. They also warn that there could be some challenges like depending too much on AI, ethical issues, and much more. The introduction of this study lays the groundwork for our current research which aims to investigate users’ perceptions and experiences. Moreover, the study offers useful insights into the responsible and effective use of AI at work and at school.

#### **Data analysis and interpretation**

The analysis section takes into account the survey responses collected from 50 respondents which included students and young professionals. This analysis intends to examine the impact of AI tools on skill development, learning capabilities, productivity, and collaboration. Through an investigation of users’ perceptions and experiences, this section identifies opportunities and constraints linked by users to the use of AI in educational and professional contexts. Understanding these patterns, provide insight into objectives, and it provides insights into how AI tools are shaping learning, work efficiency, and collaboration.

Survey the four questions that were to be analysed. They were selected because they measure participants' experiences with AI in skill acquisition, capacities for the future, productivity, and teamwork. By using this structured approach allows for an interpretation of results that will highlight trends. Moreover, responses that are neutral or negative also get a mention to contemplate limitations or hesitations of users.

### 1. On a scale of 1–5, how helpful are AI tools in acquiring any new skills?

The purpose of this research is to find out how effective various AI tools are at helping people learn new skills and achieve personal development.

Consequences.

36% rated very significantly.

32 % rated significantly.

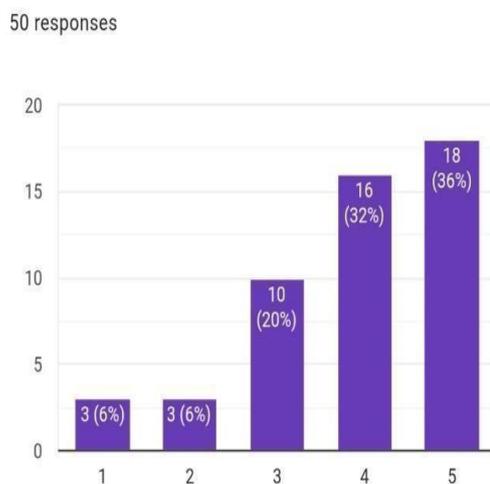
20 % rated moderately.

6 % rated slightly

6% rated not at all

Explanation.

A large majority of 68% of respondents stated that using AI made their learning easier, which shows a great perception regarding skills development. The moderate responses of 20% reflect the fact that while such answers were not common, a few of the respondents noticed improvement but did not leverage the power of AI completely. This could be because the person is unaware of this benefit or does not use advanced features. Interestingly, 12% noted a little improvement or none at all, indicating that it may be less useful for people who are not familiar with the tools or for certain tasks that need human input.



Particulars	No of response	Percentage
Strongly Agree	18	36%
Agree	16	32%
Neutral	10	20%
Disagree	3	6%
Strongly Disagree	3	6%

## 2. AI tools help me acquire skills of the future

The goal is to assess whether AI helps the development of skills useful for success in today's academic and professional world.

Results.

26% strongly agree

48% Agree

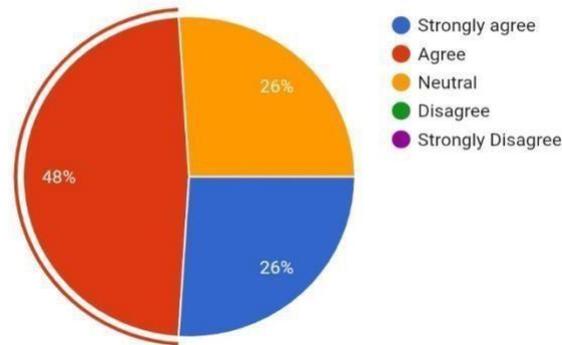
26% neutral Meaning.

According to a combined 74% of respondents, artificial intelligence can help develop 21<sup>st</sup>-century skills that include digital literacy, problem-solving, critical thinking, etc. The 26% neutrality shows a lack of confidence in AI's ability to prepare learners for future challenges. This perhaps results from lack of exposure to facilities.

The Outcome shows a Close Alignment to Objective 1. As per the Outcome, AI Enhances the Existing Skills of Learners. Thus, they can also Avail Skills Helping them in the Long Run as per the Study. Participants see AI as a tool for learning throughout life and being job ready.

Particulars	No of response	Percentage
Strongly Agree	13	26%
Agree	24	48%
Neutral	13	26%
Disagree	0	
Strongly Disagree	0	

50 responses



### 3. AI tools help me complete tasks at a faster pace.

The purpose is to evaluate the impact of AI on productivity, efficiency, and time management.

#### Outcome

Thirty-two percent unequivocally agree. 32% strongly agree

58% agree

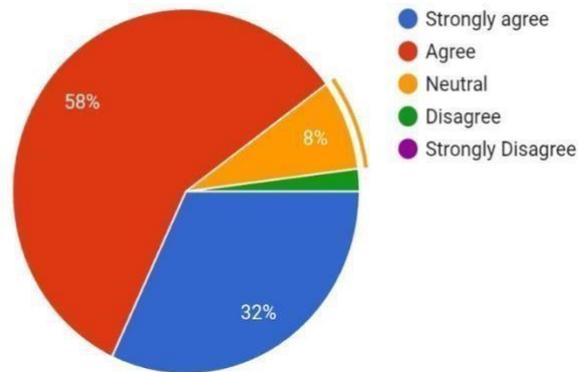
8% neutral

2% disagree Explanation.

A large majority of 90% believe tools powered by AI enhance the efficiency of completing tasks whether academic or work-related activity. AI allows people to free their time on routine or repetitive tasks and, instead, to work on problem-solving and decision-making. The 8% who answered neither agree nor disagree could not use the AI for everything or the respondents don't know how to use the advanced features. 2% disagreed probably because they think some tasks can't use the AI. Or, some AI tools cannot be used for executing certain tasks. Results that support Objective 3 show an increase in productivity when individuals used AI. In addition, the reasons are mainly because it can help save time and improve the quality of work.

Particulars	No of response	Percentage
Strongly Agree	16	32
Agree	29	58
Neutral	4	8
Disagree	1	2
Strongly Disagree		

50 responses



#### 4. AI tools make teamwork or collaboration easier.

The aim is to explore the role of AI in improving collaboration, communication and workflow efficiency.

Outcomes.

18% strongly agree.

66% agree

16% neutral

#### Interpretation

The 84% agreement marks how AI tools help awareness of teamwork and collaboration, such as joint projects, communication and tasking. Participants with little to no experience using collaborative AI features likely responded neutrally. The results indicate that AI can be utilized to enhance knowledge sharing and peer learning among teams.

The results show that through reinforcement of Objective 3 . impact of AI can does not only have an influence on an individual's productivity but further on the whole workflow.

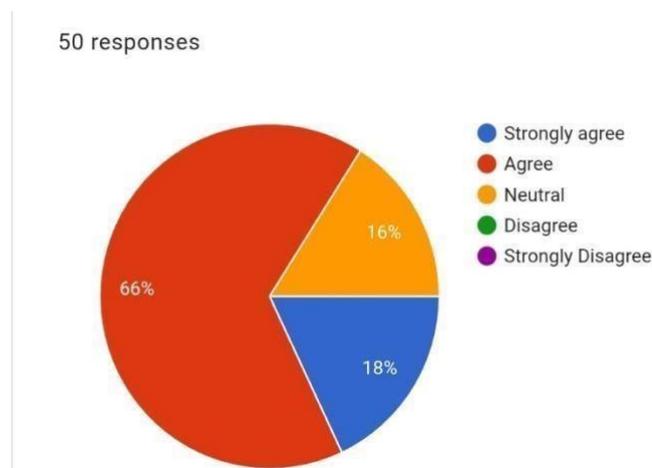
Extra Pieces of Information.

The primary effect of AI is increasing productivity and enhancing collaboration, followed by skill gaining.

Responses revealed possible lack of awareness, tool familiarity, and applicability.

The overall satisfaction and acceptance of AI by the users are indicated through minimal disagreements which justify the use of AI in every learning and work environment.

Particulars	No of response	Percentage
Strongly Agree	9	18%
Agree	33	66%
Neutral	8	16%
Disagree		
Strongly Disagree		



## Findings

Results.

Developing Skills.

68% of respondents stated that AI tools considerable aid them in learning new skills. Shows that artificial intelligence enhances personal and professional competencies.

Skills for the Future.

Seventy-four percent strongly agreed that AI supports acquiring critical thinking, problem-solving, and digital literacy.

AI helps equip learners with the skills needed for today’s education and jobs.

Effectiveness.

Ninety per cent thinks AI tools help achieve tasks more quickly, (32% strongly agree + 58% agree) according to the data.

AI to help organize and manage workflow better.

## Cooperation

Almost all (84%) agree that AI tools help in teamwork or collaboration (18% strongly and 66% agree).

AI improves teamwork and project management abilities.

Moderate/Potentially Unfavorable Replies.

The small fractions of neutral or disagree responses (2–16%) indicate areas in which various AI benefits could be enhanced, particularly for users who are less experienced.

## Suggestions.

Facilitate training workshops to enhance the users' familiarity with AI to reap maximum benefits. Incorporate AI in the right way: Use AI tools as aids along with human support to build future ready skills.

Using AI to automate a repetitive task will free up time to spend on things like creating, problem solving, and thinking.

Encourage the Responsible Use of AI: Creating awareness and educating people on the use of AI would help in mitigating over-reliance on AI systems.

Apply collaborative efforts on AI in group projects for collaboration and effective communication.

## Conclusion

The data from the survey indicates that AI tools help students and youth in acquiring a new skill, future-ready skills, enhanced productivity and collaborative efficiency. Areas for possible user training or awareness that may help increase effectiveness can be identified by neutral and negative responses. In summary, the analysis supports the study's objectives highlighting the positive role of AI in both learning and productivity

AI tools enhance learning, skill development, productivity, and teamwork among students and young professionals immensely.

Careful integration of AI in academics and jobs will prove useful for performance and employment.

Slightly negative and neutral feelings indicate demand for user training and awareness for benefit maximization.

By and large, AI adoption is practical and a great resource that aids success in academics and business.

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