

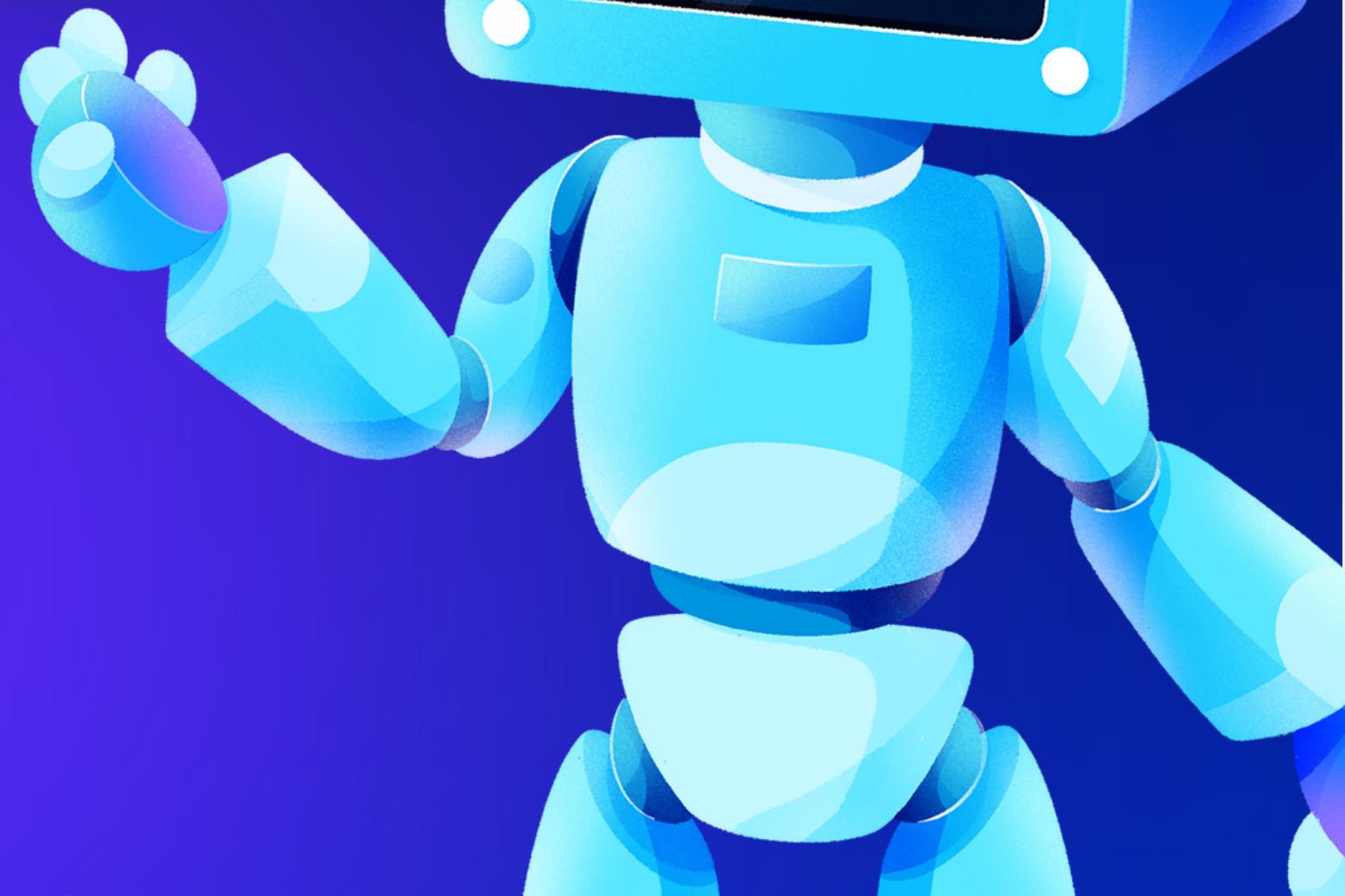
# DIGITAL TRANSFORMATION

KAVYA SRINIVAS MURTHY



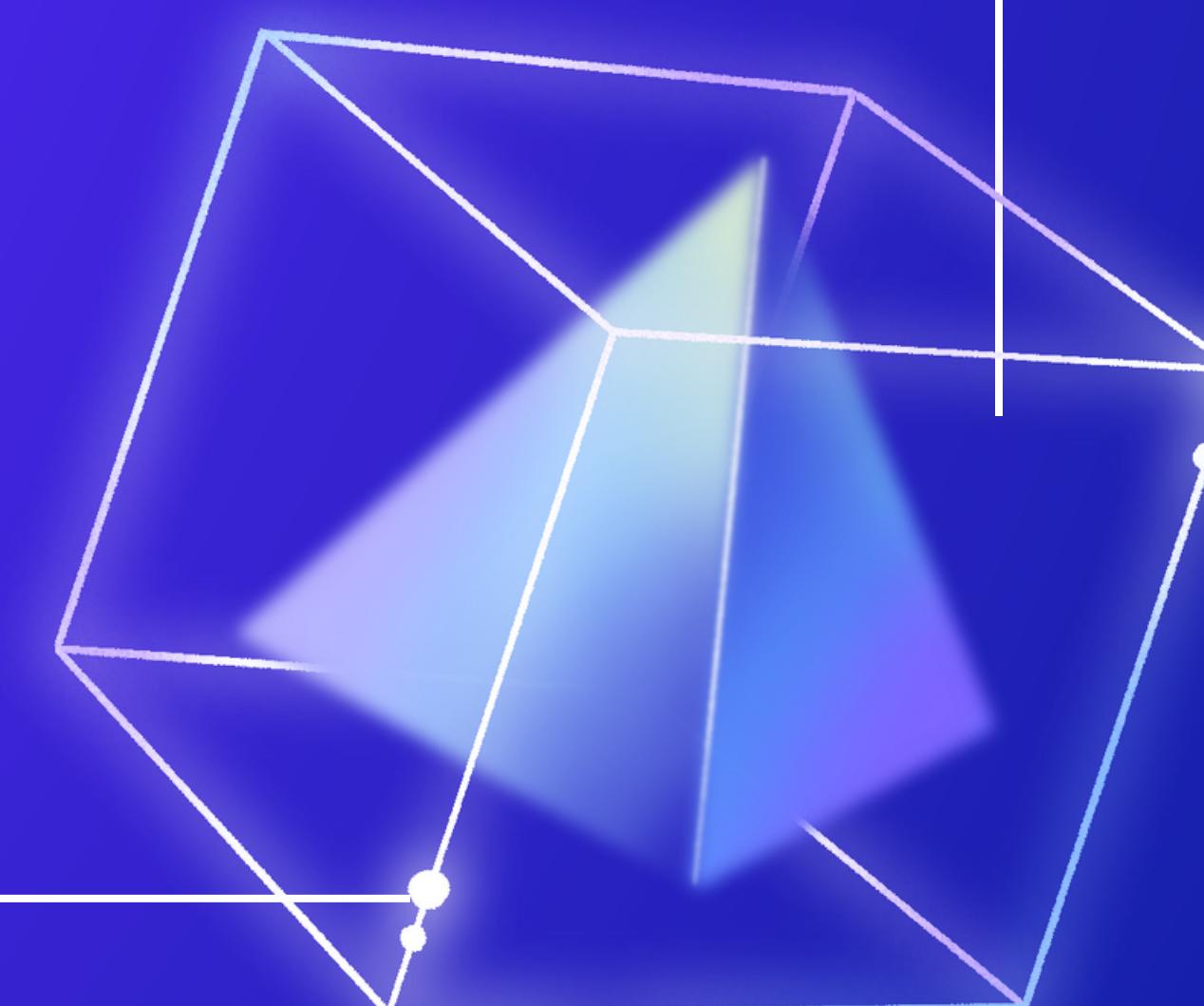
# ARTIFICIAL INTELLIGENCE

HOW DOES THE GENERAL-PURPOSE TECHNOLOGY (GPT) ASPECT OF ARTIFICIAL INTELLIGENCE (AI) INFLUENCE THE EDUCATION INDUSTRY, PARTICULARLY IN PERSONALIZED LEARNING, ASSESSMENT AND EVALUATION, AND STUDENT SUPPORT AND ENGAGEMENT?





# TABLE OF CONTENTS



- Introduction to GPT Nature of AI
- Impact of AI on Education Industry
- AI-powered Personalized Learning
- AI-powered Assessment And Evaluation
- AI-powered Student Support And Engagement
- Ethical Considerations and Challenges
- Conclusion
  - Future Of AI In Education And Its Potential Impact
- Research and supporting documents
- References

# ARTIFICIAL INTELLIGENCE - SYSTEMS THAT WORK AND REACT LIKE HUMANS

## AI AS A GPT:



## ADAPTABILITY

AI can adapt and learn from data experiences, and feedback, making them highly flexible and capable of handling complex tasks in dynamic environments.

## AUTOMATION

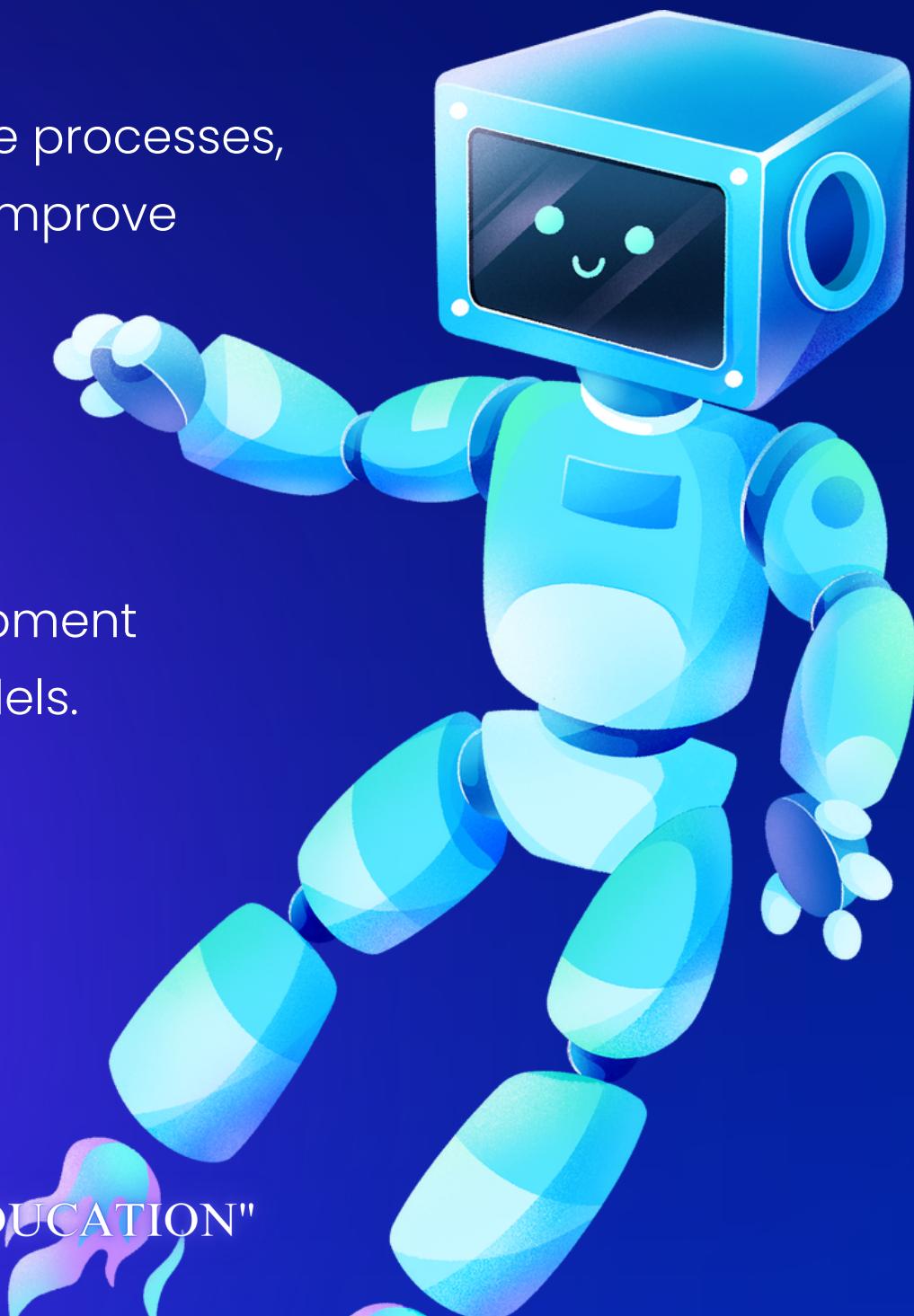
AI-powered automation can streamline processes, increase efficiency, reduce costs, and improve accuracy.

## INNOVATION

AI fosters innovation by enabling the development of new products, services, and business models.

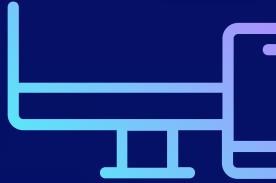
## INTEGRATION

AI can complement and augment human capabilities, leading to improved outcomes and experiences.

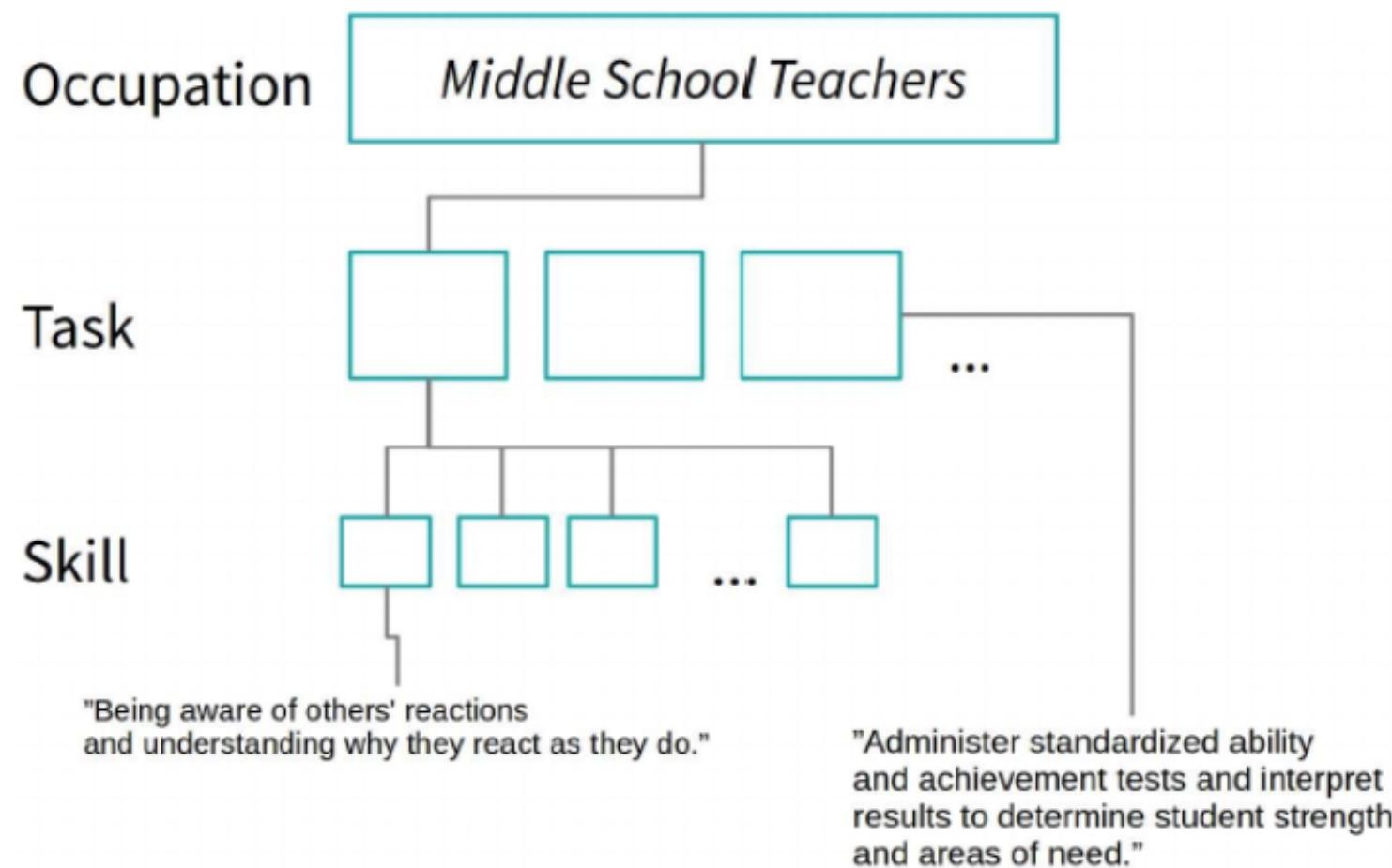




# SKILL-BIASED AND TASK-BIASED MODELS OF TECHNOLOGY IMPACT



**Figure 4:** O\*NET task and skill structure for Middle School teacher occupation

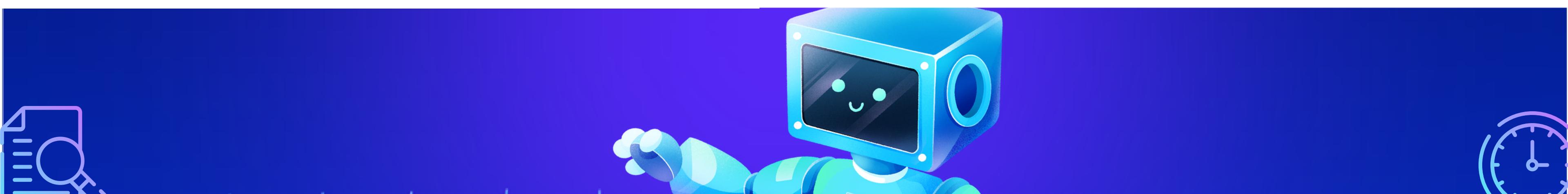


Source: Based on O\*NET ([www.onetonline.org](http://www.onetonline.org))

**Table 1:** Potential impact, middle-school teacher tasks

Task	AI impact
1 Adapt teaching methods and instructional materials to meet students' varying needs and interests	High
2 Establish and enforce rules for behaviour and procedures for maintaining order among students	?
3 Confer with parents or guardians, other teachers, counsellors, and administrators to resolve students' behavioural and academic problems	Low
4 Maintain, accurate, complete, and correct students records as required by laws, district policies, and administrative regulations	High
5 Prepare, administer, and grade tests and assignments to evaluate student's progress	High
6 Prepare material and classrooms for class activities	Medium
7 Instruct through lectures, discussions, and demonstrations in one or more subjects, such as English, mathematics, or social studies	Medium
8 Establish clear objectives for all lessons, units, and projects, and communicate these objectives to students	Medium
9 Assist students who need extra help, such as by tutoring, and preparing and implementing remedial programs	High
10 Assign lessons and correct homework	High
11 Enforce all administration policies and rules governing students	Medium
...	
15 Meet or correspond with parents or guardians to discuss children's progress and to determine priorities and resource needs	Medium

Source: I. Tuomi's estimate



# IMPACT OF AI ON EDUCATION INDUSTRY



## PERSONALIZED LEARNING

AI facilitates customized lesson plans and assessments for each student, based on their unique learning abilities and needs. This ensures that students receive an optimized learning experience, leading to increased engagement and better performance.



## ACCESSIBILITY FOR SPECIAL NEEDS

AI-powered intelligent tutoring systems offer personalized support, ensuring students with special needs receive tailored guidance to effectively keep pace with their peers, promoting inclusivity in education.



## REAL-TIME PROBLEM-SOLVING ASSESSMENT

AI enables teachers to monitor individual student progress in real-time, allowing for timely intervention and tailored solutions to address learning gaps, thus enhancing comprehension and mastery of concepts.



## TRANSFORMATIONAL IMPACT

Overall, AI revolutionizes teaching and learning methodologies, offering diverse opportunities for learners worldwide regardless of their circumstances, thereby reshaping the educational landscape.

# AI POWERED PERSONALISED LEARNING

- 
- 1. Personalized Learning Methods:** AI can capture, aggregate, and analyze data to build student learning profiles. By analyzing the data of each individual's learning preferences, strengths, and weaknesses, AI can suggest personalized learning methods and provide additional tutoring when needed.
  - 2. Data-Driven Decision-making:** AI analysis can also enable better-informed decisions for educators and administrators. Through the collection of large amounts of student data from grading patterns to test scores presented in user-friendly dashboards or reports by AI platforms, educators can gain insight into critical areas that need improvement such as tracking student progress effectively over time,
  - 3. Equitable Access to Resources:** AI underscores the importance of providing equal access to educational resources, mitigating disparities among learners from diverse backgrounds and income levels.
  - 4. Enhanced Engagement and Motivation:** AI-driven personalized learning fosters increased student engagement and motivation while aiding educators in making informed decisions, promoting an inclusive learning environment.



# AI-POWERED ASSESSMENT AND EVALUATION - GAME CHANGER

- 1. Enhanced Accuracy and Efficiency:** AI improves assessment accuracy, efficiency, and fairness, facilitating individualized learning processes.
- 2. Automation of Administrative Tasks:** AI automates grading, saving teachers time, providing instant feedback, and enhancing the learning process.
- 3. Bias Mitigation:** AI minimizes bias by evaluating students solely on merit, promoting a fairer assessment system based on skills.
- 4. Ethical Considerations:** Europe's proposed legal framework highlights the need for strict ethical guidelines in AI adoption to ensure fairness and transparency in evaluations.

# AI-POWERED STUDENT SUPPORT AND ENGAGEMENT

- **AI-Powered Chatbots:** Chatbots offer personalized and interactive learning experiences, providing 24/7 support and assisting instructors in managing large class sizes.
- **Data Analytics:** AI technology provides educators with insights into student progress, engagement, and well-being, enabling tailored lessons and identifying areas requiring additional assistance.
- **Digital Readiness:** Introducing AI concepts early helps students prepare for future academic success and understand the ethical use of AI in various fields.
- **Enhanced Engagement and Support:** AI tools, such as chatbots and data analytics, enhance student engagement and support by building personal connections and providing tailored assistance.
- **Optimal Learning Outcomes:** AI technology, through personalized interactions and advanced data analysis, contributes to achieving optimal learning outcomes in today's classrooms.

# Sana Labs

<https://www.sanalabs.com>

## SANA RAISES \$34M FOR ITS AI-BASED KNOWLEDGE MANAGEMENT AND LEARNING PLATFORM FOR WORKPLACES AND STUDENTS.

SANA LABS — WHICH PROVIDES AN AI-BASED PLATFORM TO HELP PEOPLE MANAGE INFORMATION AT WORK, AND SUBSEQUENTLY TO USE THAT DATA AS A RESOURCE FOR E-LEARNING WITHIN THE ORGANIZATIONS — HAS CLOSED A ROUND OF \$34 MILLION AFTER SEEING ARR GROW SEVEN-FOLD IN THE LAST YEAR.

MENLO VENTURES, THE U.S. VC FIRM, IS LEADING THE ROUND FOR STOCKHOLM-BASED SANA, WITH EQT VENTURES AND A WHOPPING 25 ANGELS AND FOUNDER/OPERATOR INDIVIDUALS ALSO PARTICIPATING. THIS IS A SERIES B THAT VALUES SANA AT \$180 MILLION POST-MONEY.

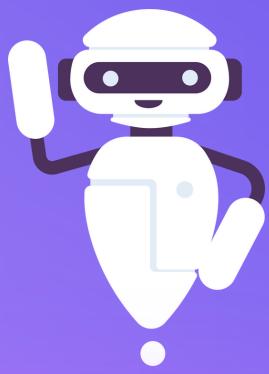
THE CRUX OF SANA IS A PLATFORM AND AI ENGINE THAT CONNECTS TO ALL OF THE DIFFERENT APPS THAT AN ORGANIZATION USES IN THE WORKPLACE — SALESFORCE, E-MAIL, NOTION, GITHUB, SLACK, TRELLO, ASANA AND WHATEVER ELSE YOU MIGHT HAVE TO CAPTURE, SOURCE OR STORE INFORMATION AND COMMUNICATE WITH OTHERS.

# One home for all your learning

Create, host, and manage all of your company's knowledge on Sana. Built on AI, designed to engage—it's the end-to-end learning platform that scales with your teams and raises everyone's ambitions.

[Book an intro](#)[Find your plan](#)

# ETHICAL CONSIDERATIONS AND CHALLENGES AND SOLUTIONS



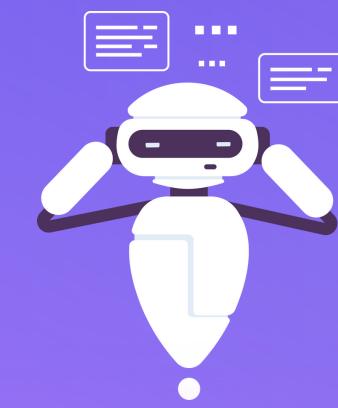
## ETHICAL CONSIDERATIONS

Ethical considerations in AI education encompass privacy protection and surveillance concerns, along with addressing biases and discrimination inherent in AI algorithms. Collaboration among stakeholders is vital to develop robust policies ensuring responsible AI usage while fostering equitable and quality learning experiences for all students.



## CHALLENGES

Challenges in AI education include privacy breaches, biases in algorithms, and the need for ethical policy frameworks.



## SOLUTIONS

Solutions to AI education challenges involve implementing robust privacy measures by adopting two factor authentication and facial recognition, addressing biases through algorithm transparency, and establishing ethical guidelines for responsible AI usage in educational settings.

# FUTURE OF AI IN EDUCATION AND ITS POTENTIAL IMPACT

- With the **AI**, education market projected to reach **\$20 billion by 2027**.
- AI's potential to reduce teacher workload and enhance administrative efficiency is a key benefit in education.
- Personalized learning, automated grading, and intelligent tutoring system.
- By automating routine tasks, teachers have more time for one-on-one interactions with students or to focus on more creative aspects of teaching.
- AI has immense potential to unleash productivity and potential in the field of education.
- The projected growth of the AI education market underscores its significant role in shaping the future of classrooms worldwide.

Source: <https://keymakr.com/blog/how-ai-is-impacting-on-the-education-system/>

## SUPPORTING DOCUMENTS

# AI is breaking link between college degrees and knowledge: Nadella

Shilpa Phadnis & Sujit John

Ten years ago, when he was appointed CEO of Microsoft, Satya Nadella made a big bet on cloud computing, and pulled the legendary company out of the morass it had fallen into after it lost out on mobile and search revolutions. Now, he's making



**TOI INTERVIEW | P 12**

an equally big bet on AI, which markets love—his ambitious wager has taken Microsoft past Apple and made it world's most valuable company with a \$3 trillion market cap.

On a three-day visit to India last week, Nadella spoke exclusively to **TOI**. AI, he pointed out, is breaking the link between college degrees and knowledge.

"This tech will give India the ability to turn more of its people more productive, with better wages, in more industries," he said.

a says the ministry of IT's sponsorship of the multilingual creation of incredible innovations like allowing stu



**solutions for its unique requirements.**

I think the government in India has always had a pretty enlightened view. As I said, India is leading the world in some sense with these digital public goods. That's why I was so impressed with the fact that the ministry of information technology was the one behind Bhashini. They sponsored the speech-to-text and text-to-speech stack, so that it's truly democratised and available for any application in India to always be multilingual. And now you can daisy chain that with, let's say, the latest model like a GPT-4 Turbo and you can have a startup that can offer in any Indian language, some very sophisticated AI capability. And that is the magic—sovereignty's success absolutely comes from being able to tap into what I'll call a commodity that is available and then add unique value to it, use it intensely and reduce the barriers to adoption. That's the way to development—development doesn't come by reinventing the wheel. The development comes from making sure that you're not dependent on any one person or any one company, like even Microsoft. Our goal as a platform company is to invest in India, whether it's capital,

id you see that even in our government centre, where we are, we have unbelievable talent—they're all contributing. Something I said in Microsoft, what's product; I said everything is not a single layer of the hat is not touched by AI. And we people here contributing entirely of what we're doing. an exciting time.

**India build its own sovereign structure? There are those who say this is necessary for India to build**

6 One of the things I always say is that there's a thin line between confidence and hubris. You should have confidence that you can learn from mistakes, but you can't have hubris that you are somehow God's gift.

whether its data centres, which are like the modern factories. We are making in India the compute utilities, so it's also sovereign, because it's on Indian soil.

6 There's not a South Asian you're going to meet anywhere in the world who doesn't love cricket and I love it as much as the next person.

**Any one suggestion to the government, something they should be thinking more about?**

6 One thing I know the government cares deeply about is, how is all technology ultimately benefiting Indian citizen, and how is it. Those are two things that matter. Therefore, it's important to continue having a rich dialogue with the private sector—participants like us and then be able to come up with right set of guidelines and norms. And, ultimately, regulations. There are regulations in food, automotive, in finance. There's reason why it should be different tech, especially tech applied in healthcare, applied in finance—the key suggestion would be to really make sure that you're getting the benefits, and the unintended consequences are the ones mitigating, as opposed to stall overall progress.

**You've been a part of four tech shifts. Do you think the disrupting the labour market is going to be profound with AI?**

# REFERENCES

- 1) THE IMPACT OF ARTIFICIAL INTELLIGENCE ON EDUCATION: THE ROLE OF ADAPTIVE LEARNING ENVIRONMENTS" (RESEARCH PAPER)
- 2) "AI IN EDUCATION: A LANDSCAPE ANALYSIS" (INDUSTRY REPORT)
- 3)"CASE STUDIES IN PERSONALIZED LEARNING: IMPLEMENTING AI-DRIVEN SOLUTIONS IN SCHOOLS" (EDUCATIONAL TOOLKIT)
- 4)"ETHICAL GUIDELINES FOR AI IN EDUCATION" (POLICY DOCUMENT)
- 5)TESTIMONIALS FROM EDUCATORS, STUDENTS, AND ADMINISTRATORS USING AI-POWERED EDUCATIONAL TECHNOLOGIES.

THANK YOU!

