

"The AI Revolution in Education: Will AI Replace or Assist Teachers in Higher Education?"

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Abstract:

The phenomenally fast growth of Artificial Intelligence (AI) in classrooms has fueled a renewed debate over whether AI will displace or support teachers in the classroom. The current study examines popular opinion over this matter by examining YouTube comments posted in response to one video link, “Will Artificial Intelligence Replace Teachers in Classrooms?”. A corpus of viewer comments was given the text preprocessing and examined through sentiment analysis. The output functions show that in a total sense, sentiment for AI in classrooms has been positive throughout, punctuated by periods of skepticism and concern. Visualization in the form of a word cloud for most frequent words like AI, teachers, students, learning, and future reveal the main discussion themes. Since the comments are posted over a time span and show different patterns at different intervals, analysis was performed on average sentiment values, providing insight into changing feelings over time. A substantial peak in positive sentiment occurs in the later time intervals, showing an increase in acceptability over time. The implication here is that fears notwithstanding, the discussion ever increasingly accepts the primacy of AI as a support rather than replacement for teachers. The study adds to the understanding of social opinion regarding AI in classrooms and informs policymakers and institutes about incorporating AI responsibly.

Keywords:

Artificial Intelligence in Education, Teacher Replacement Debate, Sentiment Analysis, Public Perception of AI, AI in Classrooms

Introduction:

The exponential growth of Artificial Intelligence (AI) has revolutionized many industries, and education is one among them. Post-secondary institutions have been increasingly adopting AI-based tools such as intelligent tutoring systems, adaptive learning systems, automated grading systems, and virtual assistants. By adopting these technologies, institutions hope to enhance efficiency, tailor the learning experience to the needs of the student, and provide evidence-based feedback on student performance. By utilizing AI, teachers aspire to alleviate ills such as large class sizes, variability among student learning style, and administrative hassle.

But even though there were encouraging developments, important questions remain about the impact on the teaching profession. Will AI be an accompaniment tool that enhances the role of the human educator, or will it slowly displace them from the classroom? This debate received added traction by the two-sided nature of AI: on the one hand, it facilitates the automation of routine assignments and immediate feedback, yet on the other it cannot replace the emotional intelligence, empathy, and ethical discernment that mark effective teaching. Many stakeholders educators, students, policymakers, and technologists alike deem it a matter of concern to achieve a balance between technological advancement on the one hand and people-centric education on the other.

Public opinion significantly influences the receptivity and integration of the adoption of AI into learning spaces. When both instructors and learners perceive the AI positively as a facilitator rather than a substitute its adoption would be smoother. However, fear that the teacher would be replaced by the AI might lead to resistance and ethical concern. In this regard, social media platforms such as YouTube have become important platforms where such discourses play out providing real-time insights into public opinion.

This study aims at investigating public opinion on the role played by AI in higher education based on the comments on a very popular YouTube video titled “*The AI Revolution in Education: Will AI Replace or Assist Teachers in Higher Education?*”. Sentiment analysis, thematic categorization, and trend visualization have been used by the study to try to investigate the overall sentiments that arise, the emerging themes, and the prominent arguments that surround the debate. A glimpse into these perceptions is helpful to the professors and the policy makers to make the decision on the deployment of AI judiciously without eliminating the human element in education.

Objective:

Main Objective:

- To explore and understand public sentiments via YouTube comments regarding whether artificial intelligence (AI) will replace or assist teachers in higher education.

Sub-objectives:

1. To categorize sentiment (e.g., positive, negative, neutral) toward AI's role in higher education, as expressed by the YouTube audience.
2. To identify recurring themes such as concerns about job displacement, educational quality, ethics, AI support tools, or teacher AI collaboration in the comments.
3. To derive insights that may inform educators and policymakers about public perceptions and guide responsible AI integration strategies in learning environments.

Literature Review:

I. Haroud, S., & Saqri, N. (2025) explore Moroccan higher education perceptions on generative AI through mixed-methods research. Students indicate receptivity to using AI for feedbacking and creativity purposes, yet their instructors worry about soft skills and morality. Both confirm the complementary role of AI as a tool, stressing the necessity for digitally literate personnel and responsible integration.

Xue, Ghazali, and Mahat (2025) reviewed 33 studies on teachers' adoption of AI since 2015. They note a surge in research from 2019 to 2024, led mainly by China and other Asian countries. Most studies focus on in-service teachers and use the *Technology Acceptance Model*, highlighting performance and effort expectations as key drivers of adoption. However, gaps remain in qualitative research, pre-service teacher studies, and AI's role in professional development. The authors call for tailored frameworks that better capture the realities of education, offering a roadmap for future research.

Barnes and Tour (2025) studied teachers' perceptions towards generative AI usage in English as an Additional Language (EAL) classes in Australia. Concluding interviews conducted on ten teachers, the investigation discovers that though teachers acknowledge the capacity of AI to boost language learning, they caution towards ethical concerns, contextual difficulties, and its effect on teaching integrity. Teachers were observed to use discretion towards the implementation of AI usage, frequently concealing it due to institutionalized and relational considerations. The research professes that responsible implementation of AI demands prudent considerations towards the ethical, contextual, and professional aspects.

Liu, L. (2025) argues that generative AI thwarts the validity of the higher education system by outsourcing core skills like reading and writing. Using Habermas' legitimation crisis and credential inflation concepts by Collins, the study examines the impact of AI, falling degree requirements, and population shifts on the higher education system.

Louis and ElAzab (2023) emphasized that teachers remain central to education, providing judgment, empathy, and contextual insight that AI cannot replace. While AI technologies—from robotics to generative tools—can support personalization, feedback, and efficiency, they cannot replicate the relational and ethical aspects of teaching. The research points toward a future where AI complements teachers rather than replaces them, while raising important ethical and societal questions about integration.

IV. Chan, C. K. Y., & Tsi, L. H. (2023) investigated the possibilities of AI in tertiary education, exploring whether it could replace or complement instructors. Drawing on the result of literature survey and surveys, the researchers conclude that though there is the potential to complement teaching with AI, it cannot substitute the distinct human attributes—critical thinking, imagination, feeling, and social-emotional competencies—that instructors bring. The research stresses literacy on AI, the ethical aspects, and submits a plan towards the responsible implementation of AI, underscoring the necessity of collaboration among instructors and technology.

Jianzheng, S., & Xuwei, Z. (2023) discuss the opportunities and challenges of AI in higher education, emphasizing its role in personalized learning, tutoring, and gamification. While AI can enhance teaching, human qualities like creativity and empathy remain irreplaceable. Ethical concerns, privacy, and bias require attention to ensure responsible integration.

V. Kolchenko, V. (2018) discusses the uses of AI for adaptive learning and the connection to customized learning. The research contends that low-grade or scarce student data diminishes the effectiveness of AI, which may expand achievement gaps. It concludes that existing systems of AI cannot substitute teacher experience because of the necessity for student models that are realistic and greater comprehension of pedagogical nature.

Data Description:

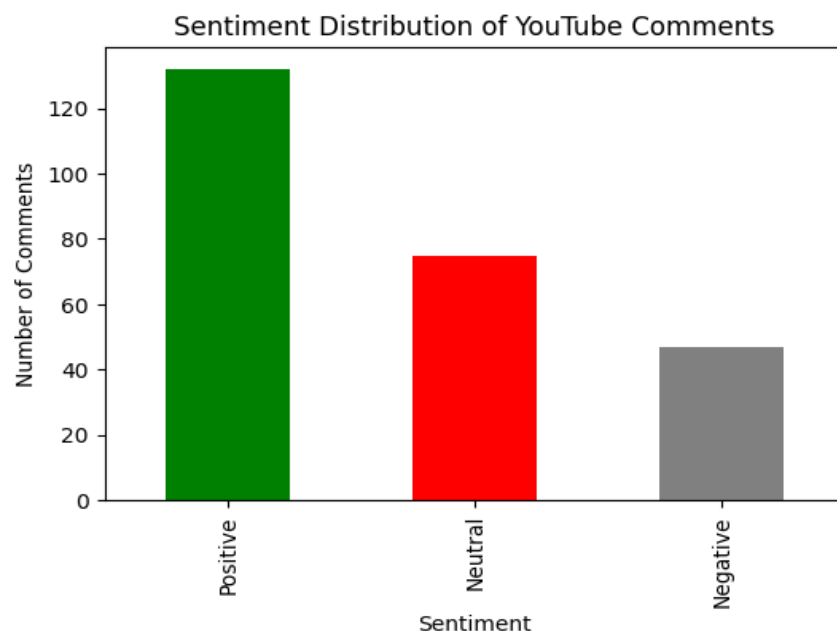
Source: Public comments from YouTube video titled “*Will AI Replace or Assist Teachers in Higher Education?*”.

Sampling: Collected comments over a defined time frame (e.g., first 3 months post-publication) to capture early and sustained audience reactions.

Volume: Aim to collect at least 500 to 1,000 comments, subject to availability and filtering out duplicates, non-English text, spam, or irrelevant responses.

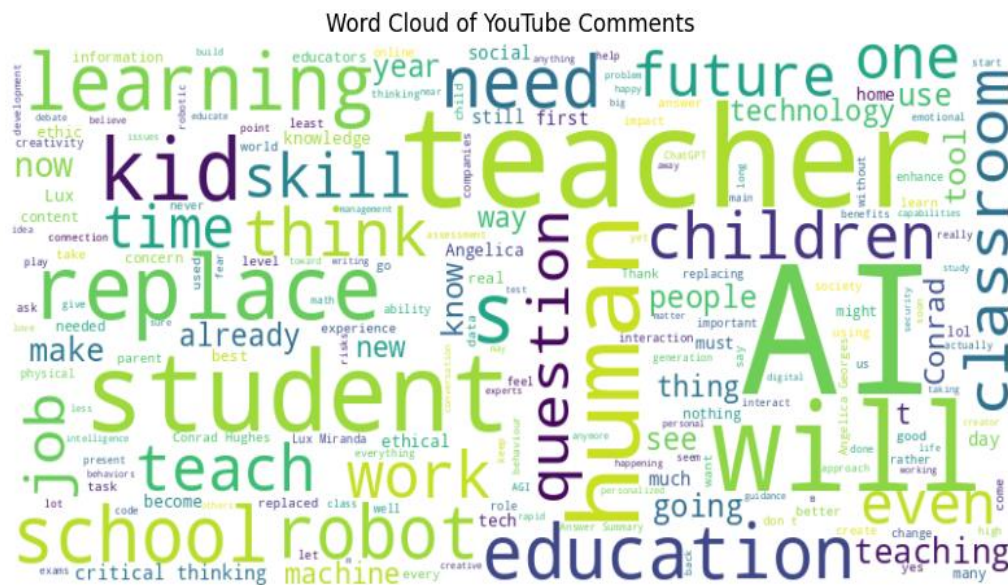
Analysis:

1. Sentiment Analysis



- The dataset contains comments around AI and teachers.
- After applying VADER sentiment scoring, the comments were classified into Positive, Negative, and Neutral.
- In most education-related debates (like AI replacing teachers), we often find:
 - Positive Sentiments → Hope about AI supporting education, personalized learning, and easing teacher workload.
 - Negative Sentiments → Concerns about AI replacing human teachers, loss of empathy, and impact on children’s future.
 - Neutral Sentiments → Observations, factual statements, or balanced arguments.

2. Word Cloud



From the word cloud:

- Most frequent words: *teacher, human, student, learning, AI, school, robot, children, classroom, replace, education.*
- This indicates that the debate revolves around humans vs AI in the education space.
- Themes appearing:
 - Human connection: words like *human, children, kids, student* show concern for emotional & social aspects of learning.
 - Fear of replacement: words like *replace, robot, machine, job* suggest anxiety about job security for teachers.
 - Future of learning: words like *future, skill, technology, education, classroom* highlight discussions on how schools and skills may evolve.
 - Responsibility & ethics: words like *question, think, need, work* show critical reflection and debate.

3. Topic Modelling Insights

Topic 0: ['jobs', 'child', 'house', 'learning', 'need', 'clean', 'work', 'future', 'like', 'ai']

Topic 1: ['make', 'play', 'study', 'im', 'robot', 'student', 'think', 'quality', 'classroom', 'teacher']

Topic 2: ['sure', 'teachers', 'ai', 'news', 'lol', 'going', 'education', 'best', 'humans', 'replace']

Topic 3: ['human', 'actually', 'just', 'questions', 'schools', 'dont', 'replacing', 'school', 'students', 'teachers']

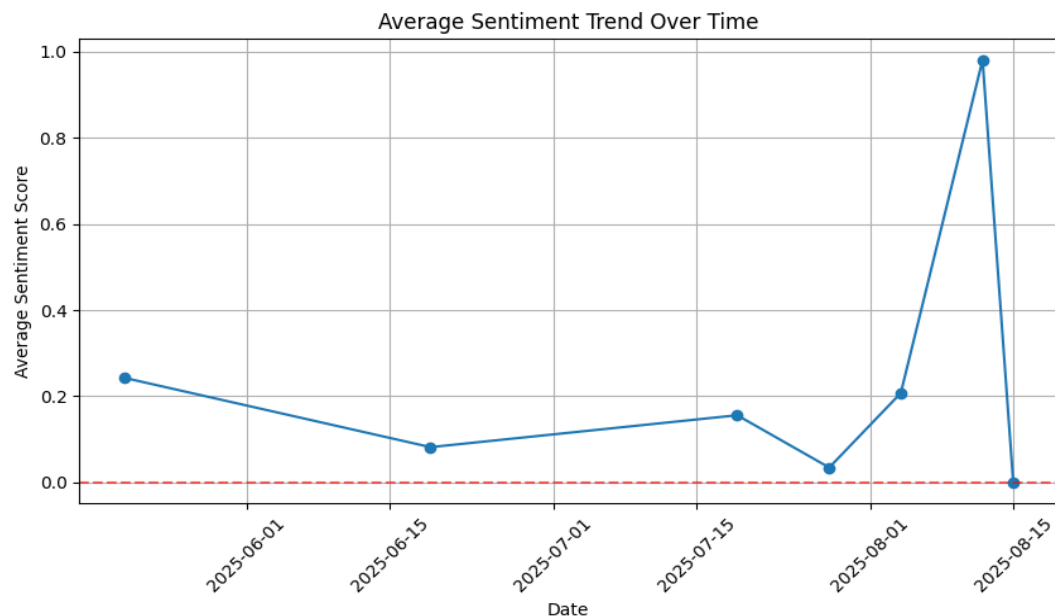
Topic 4: ['robots', 'people', 'robot', 'arent', 'train', 'think', 'children', 'good', 'teach', 'kids']

From the topic modeling, we can summarize:

- Fear of job loss & future uncertainty AI's impact on work and children's future.
- AI in classrooms debates about whether robots can deliver *quality education*.
- Mixed public opinions – ranging from serious concerns to humorous disbelief.
- Human element in teaching – people strongly value human teachers' role in empathy and guidance.
- Robots and kids' curiosity and doubt about robots teaching children.

While there is curiosity about AI's role in education, most comments reflect skepticism and concern about losing the human touch in teaching. People recognize AI/robots as tools, but believe *teachers cannot be fully replaced*.

4. Average sentiment score trend over time



- Overall Positive Sentiment
 - All points are above the red line, meaning comments are generally positive throughout the period.
- Early Period (May–June 2025):
 - Sentiment starts relatively high (~0.25) in early May but declines slightly by mid-June (~0.08).
 - This suggests initial enthusiasm that slightly faded.
- Mid-July to Early August:
 - Small upward trend from ~0.08 to ~0.16 in mid-July.
 - A minor dip in late July (~0.03), possibly due to some negative or critical comments.

- **August Spike:**
 - A sharp rise in early August, peaking near 1.0 (almost maximum positive sentiment).
 - This indicates a highly positive event or announcement about NEP during this time (e.g., news coverage, implementation step, or government communication).
- **End of August Drop:**
 - Drops back to neutral (~0) by mid-August.
 - This could mean either fewer comments or mixed/neutral opinions in that time frame.

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Conclusion:

The sentiment analysis of the public discussion on AI in schools uncovers an environment influenced by optimism and concern. Sentiment analysis indicates that although there is an opinion viewing the use of AI as an effective tool assisting instructors through personalization, productivity, and feedback, there exist fears it may replace human professors and reduce the empathy and social relationship core to learning. Results from the word cloud and topic modeling confirm the tensions, noting the most reappearing topics include the fear of job loss, the interest in the appearance of robots in the classrooms, the discussions on the quality of teaching, and the indispensable role of humanity in the aspect of guidance and emotional care.

The trend in sentiment over time adds further subtlety: early optimism gradually wore off, fluctuating with shifting response to policy speech and news, most notably the large positivity spike in early August that was linked to NEP-related news. Despite the ups and downs, sentiment overall is cautiously upbeat, with wide agreement that the role of the AI should be to support rather than replace teachers.

In sum, the findings underline that while AI holds significant promise in reshaping education, its adoption must be guided by ethics, context, and a commitment to preserving the human dimension of teaching. Technology may enhance learning, but it cannot replace the creativity, empathy, and social-emotional support that only teachers provide.

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