CRPE
REINVENTING PUBLIC EDUCATION

Mary Lou Fulton Teachers College
Arizona State University

AI is Evolving, but Teacher Prep is Lagging: A First Look at Teacher Preparation Program Responses to AI

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Both the pitfalls and promises of integrating AI into education are now more apparent as we start a third school year in the era of ChatGPT. While AI may provide students with personalized learning opportunities, it might also reduce their ability to socialize or think critically. Generative AI could broaden access to high-quality education and jobs—or worsen existing inequalities.

The next generation of educators must be prepared to navigate a shifting AI landscape so they can harness the technology's advantages while minimizing its harms. But are teacher preparation programs adapting to these new demands, or are they falling behind?

To address this question, the Center on Reinventing Public Education (CRPE) reached out to over 500 U.S. education school leaders to understand how they currently integrate AI into their teacher training programs. Through surveys and interviews, we sought to learn how their faculty and preservice teachers engage with AI, their perceptions of the technology's long-term impact on education, and their institution's efforts to embed AI into curricula and coursework.

While the response rate was moderate (14%), the institutions surveyed educate hundreds of soon-to-be teachers each year and have given us our first insights into the landscape of teacher preparation in the age of generative AI. The data indicate that few institutions are keeping pace with the technological advancements reshaping classrooms nationwide. Our study suggests that schools of education are not likely to move quickly or at a large enough scale to train America's future teachers in AI without a significant shift in faculty interest and capacity building.

We learned that, with few exceptions, schools of education are just now beginning to put new training, curriculum, and coursework into place. They are more focused on supporting faculty than training future teachers in AI, and they are more focused on dealing with student plagiarism than on a broader vision of how AI could transform

teaching and learning. While education school leaders are generally optimistic about the positive potential of AI in education, they expressed concern that faculty indifference or resistance could impede their ability to adapt, making it harder to prepare future K-12 teachers for the realities of AI.

These data should concern those who believe students and teachers need support to engage safely and effectively with this fast-emerging set of tools. At the end of this brief, we offer recommendations for how schools of education, policymakers, philanthropies, and researchers can help accelerate this process and better prepare America's future teachers to effectively adapt and instruct in the ever-changing AI landscape.

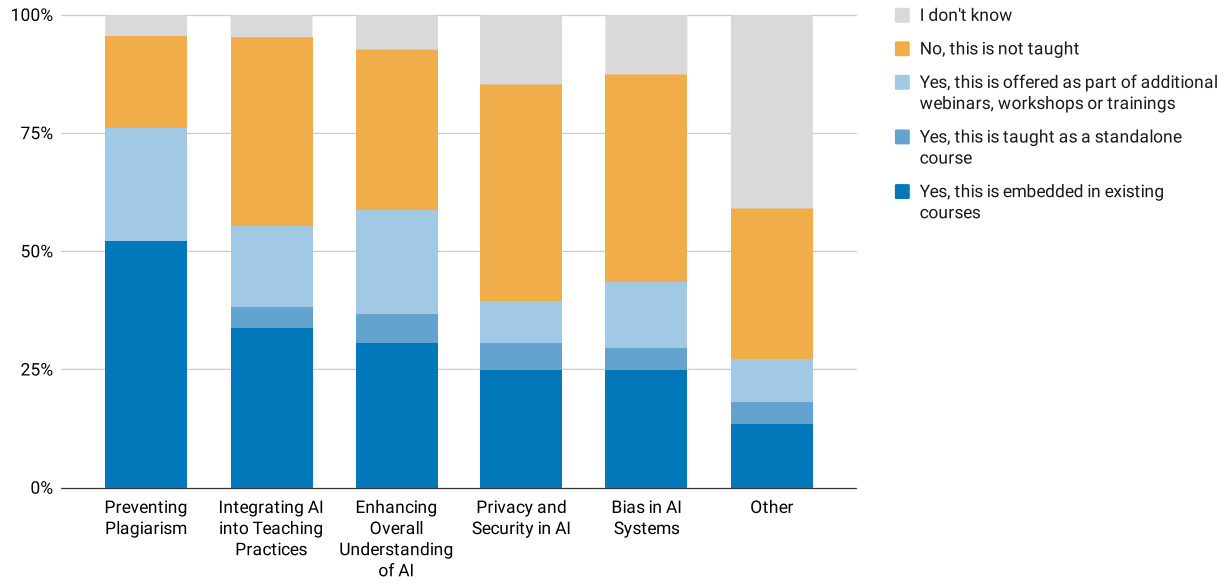
Education schools are just now starting to address AI—and with a narrow focus

Even though Open AI released ChatGPT-3.5 two years ago, many of the education school administrators we surveyed reported that they are still in the early stages of building AI training into their teacher preparation programs—or are not planning to do so at all.

While nearly two-thirds (59%) of respondents reported providing some AI-related instruction to preservice teachers, this instruction is mostly part of existing coursework and is typically geared toward helping future teachers learn to prevent plagiarism (see Figure 1). Only about 25% of programs surveyed provide training on ways that AI can support new ways of teaching (see Figure 2).

Figure 1: Two-thirds of Teacher Prep Programs Provide Instruction on AI, but Many Focus on Plagiarism Prevention

Respondents were asked: "Does your program include instruction for teachers in training on any of the following AI topics?"

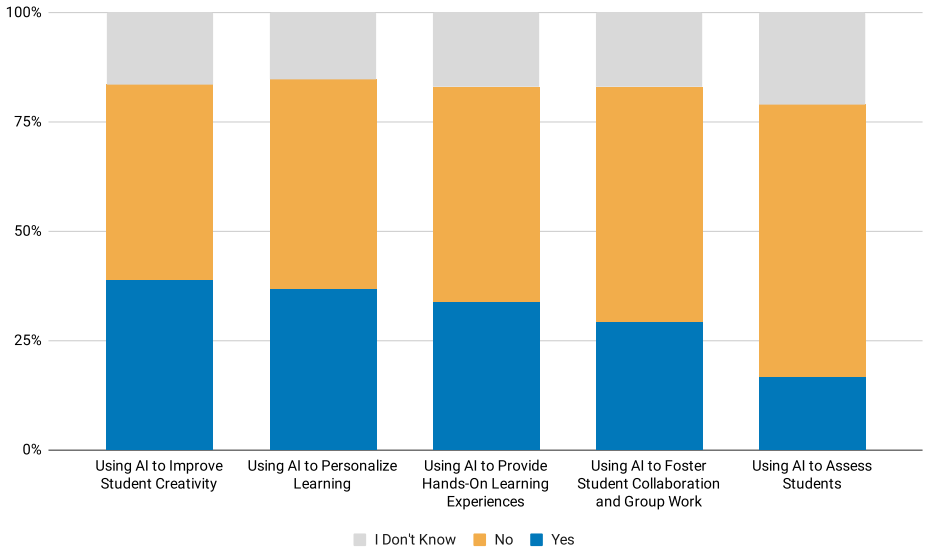


In context, the current limits of AI coursework make sense. More than two-thirds of survey respondents reported that their institutions have no policies around AI tool use, and the ones that do are, again, mainly focused on plagiarism and misrepresentation of work.

Most education school leaders have sought neither guidance nor support from outside their departments, with only about a third saying that they have formed external partnerships or brought in technical experts to support faculty or student learning around AI. As one administrator at a small, urban university said, "We're very much in the infancy stage of understanding what AI means for K-12 education and for higher ed."

Figure 2: Few Teacher Training Programs Offer Instruction on Integrating AI into Teaching Practice

Respondents were asked: "Are teachers in training in your program taught any of the following teaching practices related to AI?"

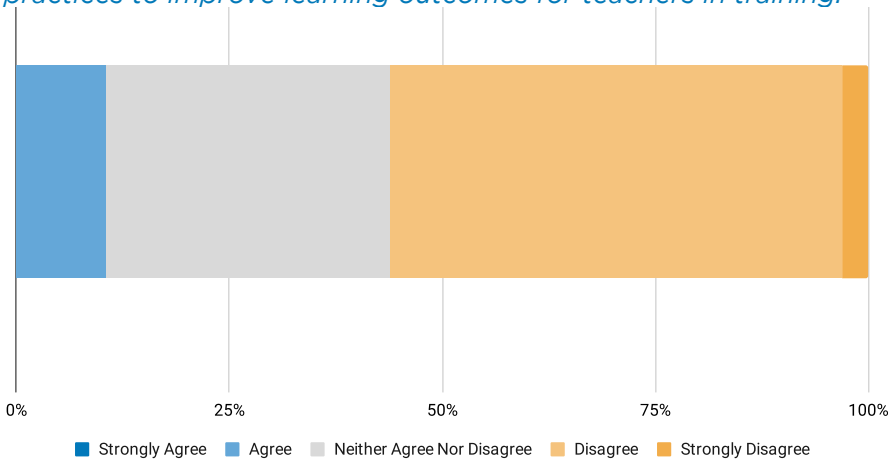


Most teaching faculty are not interested in AI—and some are actively avoiding it

For preservice teachers to be ready to bring AI into their future classrooms, education school faculty must first be prepared to train them. Unfortunately, only 10% of the education school leaders surveyed reported that their faculty members are confident in using AI, and most do not use it in their instruction. More than half of respondents indicated that faculty do not feel confident integrating AI tools and resources into their instructional practices (see Figure 3).

Figure 3: Many Faculty Members Lack Confidence in Using AI, Integrating AI into Instruction

Respondents were asked to what degree they agree with this statement: "Faculty in our program feel confident in their ability to effectively integrate AI tools and resources into their instructional practices to improve learning outcomes for teachers in training."



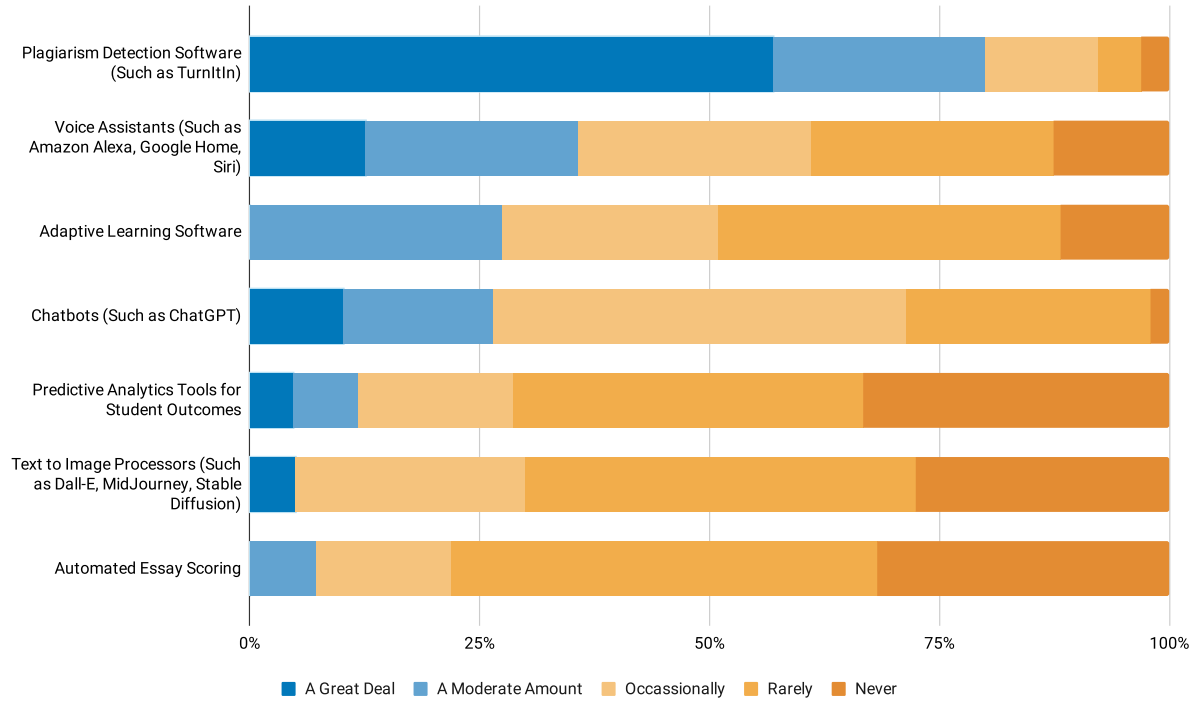
School leaders said that many faculty do not see AI integration as a priority, while others resist engaging with it due to confusion about or fear of the technology. "I would say there is some [faculty] resistance… from not understanding or being able to comprehend what it is. I think some may look at it as just a cheating tool of sorts," said one education school dean. In fact, survey respondents reported that plagiarism detection was by far the most common way for faculty to leverage AI in their classes (see Figure 4). This trend is particularly problematic given that such software has been inconsistent at best in identifying AI-generated work.

Other leaders talked about faculty concerns that AI might steal their personal data, their intellectual property, or even their jobs. One education school leader said, "I have seen a lot of faculty just be paranoid… People have them believing that these computers and stuff are literally going to replace them."

Even when faculty members are curious about AI and interested in bringing it into their teaching, most are still in the early learning phases. As one college dean said, "Those who are starting to use it are starting to understand the capabilities of it, but still are in the weeds about it and how they can… adapt the tool into their classrooms."

Figure 4: Many Faculty Do Not Often Use AI Tools in Their Teaching

Respondents were asked: "How often do your faculty use each of these tools in their teaching?"



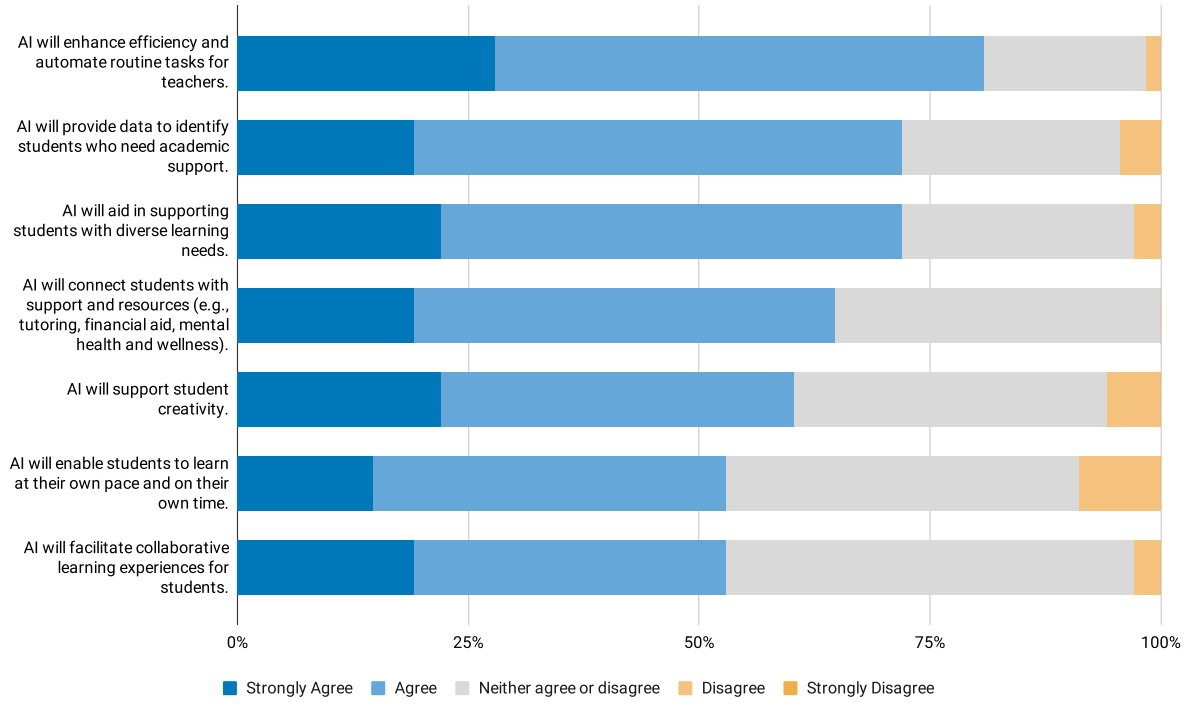
Education school administrators are optimistic about how AI can change education for the better, but acknowledge the risks and challenges

Many program administrators say they plan to expand or enhance their AI instruction and offerings and build comprehensive AI policies. Most respondents agreed or strongly agreed that AI will lead to positive changes in education, especially in teacher efficiency and using data to help students most in need (see Figure 5).

One administrator at a small, private, suburban college explained that she sees AI as a tool to further the college's commitment to equity: "For me, AI and DEI go hand in hand… AI is our first real opportunity to have a tool smart enough that can allow you to individualize or… create multiple pathways to learning for students."

Figure 5: Most Respondents Agree that AI Will Lead to Positive Changes in Education

Respondents were asked to what degree they agree with the below statements about the value of AI.



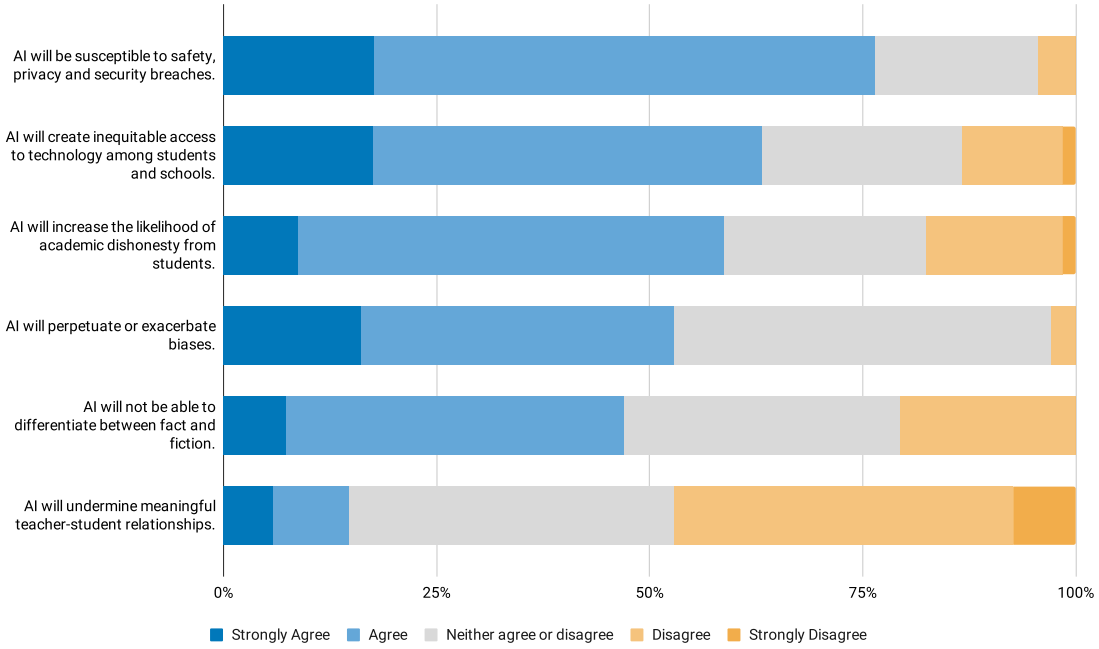
Another administrator from a small, private, urban university spoke about the potential for AI to help teachers use their time and talents more efficiently. "What I am trying to help my [teachers in training] see is that [AI can give them] more time [to build] relationships with their students and [provide] the kind of feedback that's actionable so that their students can improve with whatever learning targets that they're trying to master."

At the same time, education school leaders are also very much aware of the risks and challenges AI poses for students and teachers. Most respondents indicated that they believe AI will be susceptible to safety, privacy, and security breaches. They also worry

about equity, as well as dishonesty and plagiarism. Interestingly, they are less worried that AI will undermine meaningful teacher-student relationships (see Figure 6).

Figure 6: Most Respondents Believe AI Will Pose Certain Risks, Especially to Safety and Privacy

Respondents were asked to what degree they agree with the following statements about the risks of AI.



Despite these concerns, about 80% of the programs we surveyed say they plan to expand their AI offerings in the future. Deans and directors are receptive to any support that can help them adapt to the rapidly shifting AI landscape. However, a significant portion (nearly 1 in 5) say they do not plan to enhance AI instruction.

A few teacher training programs are meeting the moment

While most leaders did not report significant progress in integrating AI into educator preparation, a few did. While these institutions have not yet transformed their training programs, their early efforts show promise.

The Mary Lou Fulton Teachers College at Arizona State University has successfully engaged faculty through voluntary committees and outreach efforts. As a research center at ASU, CRPE co-leads one such initiative, a cross-departmental working group that is part of ASU's Learning Futures Collaborative. This working group explores AI's challenges and opportunities for higher education. Punya Mishra, Director of Innovative Learning Futures, explained, "Part of our strategy has been not to just depend on the people who jump at it first, but to create opportunities for people saying, 'Hey, you do qualitative data analysis—play with this tool and let us know what you think.'" This work

is bolstered by a larger, university-wide approach that embraces early engagement with artificial intelligence, including a partnership with OpenAI.

Similarly, a college dean at the University of Northern Iowa noted that their university provost "has a pulse on AI" and gathered stakeholders from throughout their campus and community, including representatives from a local school district, to compile resources for a university-based website on teaching with AI. The enthusiasm spread to their education college, which is currently developing curricula for an "AI for Educators" graduate certificate.

Outside of higher education, the Washington Education Association (WEA) is bringing AI into their special education teacher residency program, providing training on AI software that helps track student progress in partnership with a growing number of school districts. The WEA is part of the CIDDL Alliance, a network of higher education institutions looking to leverage technology in their programs.

Bridging the AI teacher training gap

These findings make clear that, right now, U.S. schools of education are not keeping up with the AI revolution. Few are moving quickly enough to equip the next generation of K-12 teachers with even the fundamentals of AI. Fewer still are helping future teachers grapple with larger questions, like what their students will need to know to thrive in an AI-based economy and society. The responsibility to make these changes cannot rest solely on the shoulders of individual, self-motivated educators. It requires concerted effort and strategic action from all those involved in shaping the future of education. To ensure that AI competency is a core component of teacher training, we recommend the following stakeholder actions.

- **Deans and administrators at education schools** should leverage AI experts within their institutions and the innovative work happening at other colleges and universities. This will allow them to build capacity quickly and avoid reinventing the wheel. Engaging with intermediary organizations, like CIDDL and AACTE, or starting new partnerships would help best practices spread and new ideas emerge.
- **University leaders** should incentivize faculty to engage with AI and provide training that helps them understand the opportunities, risks, and limitations associated with the technology. Administrators generally have few mechanisms for mandating faculty to adopt new practices or curricula. Apart from undertaking the arduous task of revising tenure and promotion criteria, leaders might consider offering grants, teaching awards, and other forms of recognition to "AI early adopter" faculty.
- **State policymakers** can play a more assertive role in encouraging teacher preparation programs to integrate AI by setting clear expectations for teachers' proficiency with the technology and offering incentives for teacher preparation programs to innovate. By revising teaching certification standards to include competencies in AI literacy, states could signal that new teachers must have a baseline level of engagement with the technology. Additionally, state education departments could provide targeted funding or grants for universities that prioritize the development of AI-integrated curricula or partner with industry experts to enhance their programs.

- **Funders** who want to support the effective use of AI in classrooms should consider investing in existing preservice programs already ahead of the curve, allowing those programs to build their capacity internally and offer their expertise to other colleges. Funders should also consider alternative preservice training programs, such as residencies and micro-credentialing, to ensure that teachers in training can develop basic competencies and specializations in AI.
- **Researchers** can play a valuable role in helping other stakeholders understand new teachers' needs around AI while also amplifying the promising work and emerging best practices of the teacher preparation programs attempting to address these gaps. At CRPE, we are currently gathering insights from higher education leaders with expertise in technology and innovation and those with international education experience to better understand how teacher preparation programs can effectively integrate AI.

Educational institutions have the chance to shift from reacting to technological changes to leading the way in preparing educators for the challenges and opportunities of tomorrow. The advancements brought about by generative AI and the impact those advancements are having on classrooms are occurring at such a rapid pace that schools of education must become nimbler than they have ever been. If these institutions cannot make changes faster than every three years, newly-minted teachers will be consistently underprepared for what they will experience in the classroom, leaving school districts to pick up the slack.

Acknowledgments

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About the Center on Reinventing Public Education

The Center on Reinventing Public Education (CRPE) is a nonpartisan research organization at Arizona State University's Mary Lou Fulton Teachers College. We rigorously examine and test transformative ideas, using our research to inform action. We are truth tellers who combine forward-thinking ideas with empirical rigor. Since 1993, we have been untethered to any one ideology but unwavering in a core belief: public education is a goal—to prepare every child for citizenship, economic independence, and personal fulfillment—and not a particular set of institutions. From that foundation, we work to inform meaningful changes in policy and practice that will drive the public education system to meet the needs of every student.

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