Teachers' Anxiety and Students' Expectations Toward Generative AI in Education: Evidence From a Two-Wave National Survey in Japan (2024–2025)

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Abstract

Generative AI is increasingly being adopted in education for lesson preparation, instructional material development, and feedback support, while also raising concerns about academic integrity, fairness in assessment, and data protection. This study examines the structure of teachers' and students' expectations (perceived benefits) and anxieties (perceived risks) regarding pedagogical uses of generative AI, and how these perceptions changed over time. We conducted two nationwide repeated cross-sectional online surveys in Japan in March 2024 and March 2025. In both waves, ten benefit items and ten risk items were measured on five-point Likert scales, and differences between teachers and students as well as year-to-year changes were compared. Perceived benefits were generally high in both groups, but students consistently reported higher levels than teachers, with a larger increase from 2024 to 2025. In contrast, teachers reported relatively higher concerns in governance-related domains, including output accuracy and reliability, cheating and plagiarism, privacy, and the risk of being wrongly suspected of misconduct, whereas students expressed comparatively stronger concerns about face-to-face learning and the changing role of teachers. Overall, the findings suggest that the diffusion of generative AI in education is characterized by the parallel salience of perceived benefits and anxieties rather than a simple trade-off.

Keywords: generative AI, education, teachers and students, risk and benefit perception, repeated cross-sectional survey

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Introduction

The educational use of generative AI is rapidly expanding across contexts such as lesson preparation, instructional material development, feedback support, and support for exploratory learning. In recent years, general-purpose conversational AI has become available in educational settings, heightening awareness of its potential for both learner support and teacher support. At the same time, these technologies are not merely instruments for efficiency or labor-saving; they also bring to the fore issues that bear on the reliability and fairness of education, including misinformation and bias, academic misconduct, copyright, protection of personal data, and accountability.

In this regard, policy documents issued by international organizations and governments point in broadly convergent directions. UNESCO (2023) notes that while generative AI can expand possibilities for education and research, it entails risks related to learner data protection, transparency, bias, age-appropriate use, and educational institutions' capacity to validate and evaluate tools, and it emphasizes the need for institutional arrangements grounded in human-centered and rights-based principles. Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2024), in its Guidelines on the Use of Generative AI in Primary and Secondary Education (Ver. 2.0), does not advocate uniform prohibition or mandatory use; rather, it assumes appropriate use aligned with educational objectives and calls for careful attention to information security, personal data protection, copyright, and fairness in assessment. OECD (2023) likewise treats the impact of generative AI not as a matter confined to individual classrooms but as a coherent governance challenge for the education system as a whole. In addition, the U.S. Department of Education's Office of Educational Technology (2023) underscores the importance of maintaining "human in the loop" decision-making. Taken together, generative AI in education is positioned as a domain in which the realization of educational benefits and institutional responses to accompanying risks must be advanced in tandem.

This institutional attention is also driven by the expansion of actual use in educational practice. According to Pew Research Center (2025), the share of U.S. adolescents aged 13–17 who reported having used ChatGPT for schoolwork increased from 13% in 2023 to 26% in a fall 2024 survey. This indicates that generative AI is increasingly permeating educational practice as a learning-support tool. At the same time, issues such as the authenticity of submitted work, the credibility of assessment, and the incorporation of misinformation warrant further examination through policy analysis and empirical research.

A central point, therefore, is that "expectations" and "anxieties" regarding generative AI cannot be reduced to a single evaluative dimension; the two can become salient in parallel. In particular, teachers and students occupy contrasting positions and bear different responsibilities. Teachers, as key actors responsible for institutional operation, are likely to be especially sensitive to risks tied to fairness in assessment, academic integrity, information management, and accountability. Students, by contrast, may more readily experience the benefits of learning support and assistance with assignment production, while also harboring concerns that the labor-saving use of AI may weaken processes of thinking and trial-and-error that deepen understanding, leaving learning at a more superficial level, as well as concerns about AI use being regarded as misconduct. Accordingly, to design learning environments appropriately in the era of generative AI, it is necessary to capture teachers' and students' perceived benefits (expectations) and perceived risks (anxieties) within a common analytical framework.

Motivated by this problem awareness, the present study aims to provide empirical evidence, grounded in the perceptions of educational stakeholders, for debates on how educational practice and institutional design should be reconfigured in an educational environment where the diffusion of generative AI is assumed, including the integration of task design, assessment design, information management, and rules for use.

Literature Review

Recent scholarship on the pedagogical use of generative AI can be broadly classified into three strands: (1) empirical studies focusing primarily on students' perceptions and patterns of use, (2) review and conceptual work that surveys educational opportunities and challenges associated with generative AI, and (3) studies examining teachers' perspectives, including research that directly compares teachers and students. Taken together, research on generative AI in education has expanded rapidly; however, studies that simultaneously capture both stakeholder differences in perceptions and their changes over time remain limited.

First, empirical research has largely centered on students' perceptions and usage practices. Chan and Hu (2023), drawing on a survey of university students in Hong Kong, reported that students tend to evaluate generative AI positively, recognizing benefits such as learning support, writing assistance, and idea generation, while also expressing concerns about accuracy, privacy, ethics, and potential effects on self-development. Stöhr et al. (2024) similarly analyzed adoption and perceptions of AI chatbots in higher education, documenting that increased use and expectations of effectiveness coexist with concerns about impacts on learning. Ravšelj et al. (2025), based on a large-scale international online survey of 23,218 higher-education students across 109 countries and territories, found that students primarily used ChatGPT for brainstorming, summarization, and literature search, while also demonstrating awareness of limitations and issues related to ethics and regulation. Collectively, these findings suggest that, among students, generative AI is relatively strongly perceived as a useful learning-support tool, whereas among teachers, more cautious responses may be prevalent due to concerns about fairness in assessment, academic misconduct, and potential impacts on the quality of learning.

Second, review and conceptual studies locate this duality within a broader theoretical context. Kasneci et al. (2023) argue that while large language models in education may enable personalized learning support and increased learner engagement, such benefits are inseparable from challenges including output limitations and inaccuracies, bias, potential misuse, and the need for ongoing human oversight and critical thinking. Schei et al. (2024), in a scoping review of 24 empirical studies on higher-education students' use of AI chatbots, confirmed growing scholarly attention to the topic and highlighted the lack of observational studies as well as the need for sustained and more fine-grained research capable of capturing effects on learning processes and outcomes. In other words, prior work has begun to treat generative AI not merely as an object of technology acceptance, but as an issue tied to the reconfiguration of learning processes, assessment, and educational practice; nevertheless, empirical verification remains at a developing stage.

Third, studies addressing teachers' perceptions and teacher–student comparisons are increasing, but the quantitative evidence base remains relatively limited. Shata and Hartley (2025), examining higher-education faculty, identified factors associated with adoption and non-adoption of generative AI and showed that faculty attitudes and behavioral intentions are shaped not only by perceived usefulness but also by trust and social influence. This suggests that teachers' perceptions are formed within social and organizational contexts that condition

judgments about reliability, appropriateness, and institutional fit. Haroud and Saqri (2025), in a comparative study of students and teachers in Moroccan higher education, reported that acceptance and evaluation of generative AI are not uniform across groups: students tended to rate usefulness more positively, whereas teachers adopted a more cautious stance, particularly regarding potential impacts on thinking skills and interpersonal competencies that are essential for learning. However, such comparative studies often remain confined to specific countries, institutions, and higher-education contexts, limiting their generalizability across educational stages and institutional settings.

In light of the above, at least three gaps remain in the literature. First, much of the empirical evidence is student-centered, and studies that compare teachers and students within a common analytical framework remain insufficient. Second, most existing studies rely on one-time cross-sectional surveys, and few examine year-to-year changes using the same measurement instrument. Third, research has tended to focus on higher education, and evidence is still limited on how perceived benefits (expectations) and perceived risks (anxieties) can be measured simultaneously across broader educational contexts, including secondary education. Accordingly, there is clear scholarly value in research that targets both teachers and students, uses a unified question design to capture expectations and anxieties in tandem, and examines how these perceptions evolve over time. Responding to this gap, the present study aims to connect debates on generative AI in education not to abstract, generalized arguments for or against adoption, but to evidence-informed discussions of implementation and institutional design grounded in stakeholder perceptions within educational settings.

Research Concept

Drawing on the research gaps identified in the previous chapter, this study conceptualizes perceptions of the educational adoption of generative AI along two dimensions, namely perceived benefits and perceived risks, and examines differences between teachers and students as well as changes over time. The central premise is that attitudes toward generative AI should not be captured on a single pro–con continuum; rather, they are better understood as a multifaceted perceptual structure in which expectations and anxieties can coexist. In other words, as generative AI diffuses, it may heighten expectations regarding learning support and efficiency while simultaneously making salient concerns related to fairness in assessment, information management, and the quality of learning. Based on this premise, the present study positions the educational use of generative AI not merely as technology acceptance, but as a form of social transformation that implicates both educational practice and institutional governance.

To capture this perceptual structure, we conducted two waves of a nationwide repeated cross-sectional survey in Japan using an identical study design in 2024 and 2025. The first wave was administered from March 21 to March 25, 2024, and the second from March 12 to March 19, 2025. Respondents included students aged 15 and above and teachers employed across a wide range of educational institutions, including junior high schools, high schools, vocational schools, professional training colleges, universities, graduate schools, and other educational settings, thereby covering key stakeholders in education. Both waves were implemented as online surveys. To ensure data quality, responses with extremely short completion times or highly uniform response patterns were excluded. As a result, the 2024 survey yielded 6,939 valid responses out of 8,769 submissions (4,323 students and 2,616 teachers), and the 2025 survey yielded 7,231 valid responses out of 9,044 submissions (4,725 students and 2,506 teachers). In addition to securing samples in the several-thousand range in both waves,

administering the surveys in March in both years enhanced comparability across waves (see Table 1).

The analysis focuses on perceived benefits and perceived risks regarding generative AI. For perceived benefits, we used items related to expanding possibilities for education and learning, improving learning outcomes, future usefulness, and changes in learning paradigms. For perceived risks, we used items related to accuracy, cheating and plagiarism, privacy, the value of face-to-face education, and concerns about AI replacing teachers. Presenting these items on the same scale to both teachers and students enables examination within a common analytical framework of (1) differences between the two groups, (2) changes from 2024 to 2025, and (3) which domains of perceived benefits and perceived risks are more likely to change over time. A key feature of this design is that benefits and risks are not treated as separate evaluations, but are observed concurrently as perceptions that may develop in parallel.

Because this study employs a two-wave repeated cross-sectional design, interpretation should emphasize describing how stakeholders' perceptual structures are distributed and in what direction they shift during the diffusion phase of generative AI, rather than attributing changes to within-individual causal processes. Nevertheless, maintaining an identical question design across waves allows the study to indicate the direction of perceptual change, which is difficult to capture in one-time surveys. Through this design, the present study provides an empirical framework for examining structural differences between teachers' and students' perceptions and their year-to-year changes, based on two-wave comparisons that measure perceived benefits and perceived risks using the same instrument.

Table 1

Overview of the Survey

2024 / 2025	2024 Survey	2025 Survey
Respondents	Students: Aged 15 and above (equivalent to high school level) Teachers: Employed at junior high schools, high schools, vocational schools, professional training colleges, universities, graduate schools, and other educational institutions	
Method	Online questionnaire (web-based survey)	
Participants	Total respondents: 8,769 Valid responses: 6,939 • Teachers: 2,616 – Junior high school teachers: 533 – High school teachers: 730 – University/graduate school faculty: 361 – Other school teachers: 992 • Students: 4,323 – High school students: 2,184 – University/graduate school students: 1,688 – Other students: 451	Total respondents: 9,044 Valid responses: 7,231 • Teachers: 2,506 – Junior high school teachers: 481 – High school teachers: 673 – University/graduate school faculty: 396 – Other school teachers: 956 • Students: 4,725 – High school students: 2,432 – University/graduate school students: 1,724 – Other students: 569
Survey period	March 21–25, 2024	March 12–19, 2025

Results

This chapter describes the distribution and changes in perceived benefits (expectations) and perceived risks (anxieties) toward generative AI, based on the two-wave surveys conducted in 2024 and 2025. The analysis focuses on comparisons of mean scores between teachers and students, as well as year-to-year changes within each group.

Results for Perceived Benefits

We first examine perceived benefits (Q1), which asked respondents how they believe education and learning will change with the introduction of generative AI. In both 2024 and 2025, the mean scores for all ten items among both teachers and students were generally above the midpoint of the five-point Likert scale (3). This indicates that, overall, teachers and students shared a moderately positive evaluation of the educational use of generative AI. To assess group differences between teachers and students for each item, we conducted Mann–Whitney U tests (two-tailed) separately for 2024 and 2025 (see Table 2).

Item-level patterns show that the highest scores in both years were observed for "Ensuring Ethical and Proper Use of Generative AI" (Q1.9). The mean scores were 4.08 for teachers and 3.95 for students in 2024, and 4.17 for teachers and 4.30 for students in 2025; in both years, the differences were statistically significant. Statistically significant differences were also observed for items such as "Transformed Learning Paradigms via Generative AI" (Q1.8), "Transformed Daily Life" (Q1.6), and "Expanding Possibilities in Education and Learning" (Q1.1). By contrast, "Transformed Teacher–Student Dynamics" (Q1.3) and "Proactive Integration of Generative AI in Education" (Q1.10) showed statistically significant differences as well, but their mean levels were relatively lower than those of the other items (see Table 2).

Table 2

Survey Results on Perceived Benefits of Generative AI in Education

No.	Item (statement)	Year	Attribute	Mean	SD	Variance	P-value
Q1.1	Expanding possibilities in education and learning	2024	Teacher	3.42	1.02	1.04	***
			Student	3.60	1.09	1.19	
		2025	Teacher	3.50	0.94	0.87	***
			Student	3.80	0.93	0.87	
Q1.2	Improved Teaching and Learning Outcomes	2024	Teacher	3.23	0.99	0.98	***
			Student	3.45	1.11	1.23	
		2025	Teacher	3.30	0.93	0.86	***
			Student	3.58	1.03	1.05	
Q1.3	Transformed Teacher-Student Dynamics	2024	Teacher	3.22	1.00	1.01	***
			Student	3.27	1.17	1.38	
		2025	Teacher	3.22	0.98	0.95	***
			Student	3.33	1.13	1.27	
Q1.4	Enhanced cognitive abilities through usage	2024	Teacher	3.11	1.00	1.00	***
			Student	3.37	1.11	1.22	
		2025	Teacher	3.03	0.98	0.96	***
			Student	3.46	1.04	1.08	
Q1.5	Enhanced Future Career Prospects	2024	Teacher	3.35	0.99	0.98	***
			Student	3.55	1.10	1.21	
		2025	Teacher	3.39	0.98	0.97	***
			Student	3.75	0.97	0.95	

Q1.6	Transformed Daily Life	2024	Teacher	3.58	0.96	0.92	***
			Student	3.76	1.10	1.20	
		2025	Teacher	3.63	0.90	0.81	***
			Student	3.96	0.96	0.92	
Q1.7	Expectations for Evolving Generative AI	2024	Teacher	3.32	1.05	1.10	**
			Student	3.38	1.14	1.30	
		2025	Teacher	3.35	1.04	1.09	***
			Student	3.56	1.09	1.20	
Q1.8	Transformed Learning Paradigms via Generative AI	2024	Teacher	3.66	0.98	0.96	**
			Student	3.69	1.10	1.22	
		2025	Teacher	3.69	0.94	0.89	***
			Student	3.94	0.95	0.90	
Q1.9	Ensuring Ethical and Proper Use of Generative AI	2024	Teacher	4.08	1.04	1.08	***
			Student	3.95	1.15	1.32	
		2025	Teacher	4.17	0.97	0.94	***
			Student	4.30	0.93	0.87	
Q1.10	Proactive Integration of Generative AI in Education	2024	Teacher	3.08	1.04	1.09	***
			Student	3.29	1.12	1.25	
		2025	Teacher	3.11	1.02	1.05	***
			Student	3.41	1.08	1.17	

Note. ***p < .001, **p < .01, *p < .05, †p < .1, ns = not significant.

Results for Perceived Risks

Next, we examine perceived risks (Q2), which asked respondents about anxieties and concerns regarding the relationship between generative AI and education and learning. For many items, mean scores were at or above the midpoint of the scale, indicating that both teachers and students viewed generative AI not only in terms of potential benefits but also as involving nontrivial risks. Unlike perceived benefits (Q1), however, some items fell below the midpoint depending on the domain. Specifically, among teachers, the mean score for "Potential loss of in-person educational value" (Q2.3) was 2.89 in both 2024 and 2025, and the mean score for "Concerns Over AI Replacing Teachers" (Q2.4) was 2.71 in both years, suggesting relatively low levels of concern for these two items. To examine teacher–student differences for each risk item, we conducted Mann–Whitney U tests (two-tailed) separately for 2024 and 2025 (see Table 3).

By contrast, relatively high mean scores were observed for "Ensuring the accuracy and reliability of AI outputs" (Q2.7), "Concerns over AI-generated content being flagged as misconduct" (Q2.6), "Concerns Regarding Over-Reliance on Generative AI" (Q2.1), and "Concerns over Data Privacy and Institutional Security" (Q2.5). For example, in 2025, mean scores for Q2.7 were 4.02 for teachers and 4.06 for students; for Q2.6, 3.85 for teachers and 3.78 for students; and for Q2.1, 3.73 for teachers and 3.82 for students. All of these items therefore registered relatively high levels of concern (see Table 3).

Table 3

Survey Results on Perceived Risks of Generative AI in Education

No.	Item (statement)	Year	Attribute	Mean	SD	Variance	P-value
Q2.1	Concerns Regarding Over-Reliance on Generative AI	2024	Teacher	3.63	1.02	1.05	n.s.
			Student	3.62	1.13	1.28	
		2025	Teacher	3.73	0.98	0.97	***
			Student	3.82	1.06	1.13	
Q2.2	Risks of Unintentional Plagiarism or Cheating	2024	Teacher	3.53	1.05	1.10	***
			Student	3.22	1.27	1.61	
		2025	Teacher	3.63	1.02	1.05	***
			Student	3.35	1.29	1.67	
Q2.3	Potential loss of in-person educational value	2024	Teacher	2.89	1.12	1.25	***
			Student	3.06	1.26	1.60	
		2025	Teacher	2.89	1.09	1.19	***
			Student	3.02	1.29	1.66	
Q2.4	Concerns Over AI Replacing Teachers	2024	Teacher	2.71	1.11	1.24	***
			Student	3.17	1.26	1.59	
		2025	Teacher	2.71	1.07	1.15	***
			Student	3.18	1.29	1.67	
Q2.5	Concerns over Data Privacy and Institutional Security	2024	Teacher	3.57	0.99	0.97	***
			Student	3.42	1.18	1.39	
		2025	Teacher	3.64	0.96	0.92	***
			Student	3.52	1.15	1.33	
Q2.6	Concerns over AI-generated content being flagged as misconduct	2024	Teacher	3.75	1.01	1.03	***
			Student	3.57	1.16	1.35	
		2025	Teacher	3.85	0.97	0.94	n.s.
			Student	3.78	1.12	1.25	
Q2.7	Ensuring the accuracy and reliability of AI outputs	2024	Teacher	3.95	1.01	1.02	***
			Student	3.77	1.13	1.27	
		2025	Teacher	4.02	0.95	0.89	**
			Student	4.06	1.03	1.06	
Q2.8	Concerns over the use of personal input for AI training	2024	Teacher	3.18	1.01	1.03	***
			Student	3.21	1.18	1.40	
		2025	Teacher	3.25	1.00	1.00	*
			Student	3.29	1.20	1.45	
Q2.9	Concerns over the decline of interpersonal communication skills	2024	Teacher	3.45	1.08	1.17	†
			Student	3.37	1.23	1.50	
		2025	Teacher	3.50	1.05	1.11	*

			Student	3.37	1.25	1.56	
Q2.10	Concerns over the reduction of human-to-human interaction	2024	Teacher	3.38	1.11	1.22	†
			Student	3.31	1.26	1.60	
		2025	Teacher	3.45	1.07	1.14	***
			Student	3.30	1.28	1.65	

Note. ***p < .001, **p < .01, *p < .05, †p < .1, ns = not significant.

Summary of Results

In summary, first, perceived benefits (Q1) were generally above the midpoint of the five-point scale for both teachers and students, with students showing higher levels and a broader year-to-year increase. Second, perceived risks (Q2) were also at or above the midpoint for many items; however, the direction of group differences varied by item, and year-to-year changes were not uniform across domains. Third, while teachers and students differed in both average levels and patterns of change for perceived benefits and perceived risks, both groups were found to recognize generative AI in education in a balanced manner, acknowledging both potential benefits and potential risks rather than adopting a uniformly positive or negative stance.

Discussion

The findings of this study indicate that perceptions of generative AI in education are best understood not as a unidirectional relationship in which greater perceived benefits entail lower anxiety, but rather as a multifaceted structure in which perceived benefits and perceived risks coexist and can develop in parallel. As shown in Chapter 4, students consistently reported higher perceived benefits (Q1) than teachers, and all benefit items increased from 2024 to 2025 among students. By contrast, for perceived risks (Q2), teachers reported relatively higher levels on items related to cheating and plagiarism, privacy, being wrongly suspected of misconduct, and output accuracy and reliability. This pattern can be interpreted as reflecting role differences: students are primary users who can readily experience generative AI as a learning-support tool, whereas teachers function as institutional actors responsible for assessment, fairness, and accountability. The coexistence of strong perceived benefits alongside persistent concerns among students has also been documented in prior studies such as Chan and Hu (2023), Stöhr et al. (2024), and Ravšelj et al. (2025). The present study demonstrates that these patterns extend to the Japanese context when teachers and students are examined within a common analytical framework. Moreover, while the direction of teacher–student differences is broadly consistent with the pattern reported by Haroud and Saqri (2025), the two-wave comparison in this study adds novelty by indicating that such differences are not necessarily fixed and may shift as diffusion progresses.

Importantly, teachers' relatively higher perceived risks are more plausibly interpreted as rational vigilance grounded in educational governance rather than simple technology aversion. The items on which teachers reported higher levels of concern, including cheating and plagiarism (Q2.2), data privacy and institutional security (Q2.5), concerns about AI-generated content being flagged as misconduct (Q2.6), and accuracy and reliability of AI outputs (Q2.7), are directly linked to fairness in assessment and institutional operation. This is consistent with Shata and Hartley (2025), who showed that Teacher perceptions and adoption intentions are shaped not only by perceived usefulness but also by trust, barriers, and institutional context. In

addition, major policy and guidance documents, including those from the U.S. Department of Education's Office of Educational Technology (2023), the European Commission (2022), and Japan's MEXT (2024), emphasize human judgment, transparency, data protection, and appropriate governance arrangements for educational uses of AI. The concerns observed among teachers in this study align with these public frameworks. Furthermore, systematic reviews on generative AI and academic integrity identify authenticity, plagiarism, misconduct detection, and the redesign of assessment as central challenges, which is consistent with the relatively stronger salience of these issues among teachers.

Meanwhile, increases in perceived benefits were broader and more pronounced among students, with particularly large gains in items related to expanding possibilities, future usefulness, impacts on daily life, and changes in learning paradigms. This suggests that, as generative AI diffuses and usage experience accumulates, perceived benefits may shift from abstract expectations toward more concrete perceptions of utility. At the same time, several risk items also increased among students, including over-reliance (Q2.1), being wrongly suspected of misconduct (Q2.6), accuracy and reliability (Q2.7), and concerns about personal input being used for AI training (Q2.8). This underscores that rising perceived benefits do not necessarily imply declining anxiety. This ambivalent pattern is consistent with Kasneci et al. (2023), who argue that opportunities and challenges of large language models in education are inseparable. It also accords with Bender et al. (2021), who noted that language models can produce outputs that appear plausible yet are inaccurate, making heightened concern about reliability theoretically reasonable as use expands. Accordingly, the present study shows that even when students are receptive to generative AI, such receptiveness should not be reduced to simple optimism; rather, students may increasingly experience concrete benefits while continuing to hold anxieties and concerns in parallel.

Based on these findings, the scholarly contributions of this study can be summarized as follows. First, by comparing teachers and students using a common measurement instrument, the study clarifies stakeholder asymmetries rooted in their differing roles and responsibilities. Second, it provides empirical evidence, grounded in stakeholder perceptions in educational settings, that perceived benefits and perceived risks do not substitute for one another but can become salient and deepen concurrently. These contributions help shift debates on generative AI in education from abstract questions of whether to adopt the technology to implementation-oriented questions of how to combine task design, assessment design, information management, and rules for use. The central value of this paper lies in concretizing the coexistence of benefits and concerns identified in prior work through a large-scale nationwide repeated cross-sectional survey in Japan, capturing both teacher–student differences and year-to-year changes.

Conclusion

This study empirically examined teachers' and students' perceptions of the pedagogical use of generative AI from two perspectives: perceived benefits (expectations) and perceived risks (anxieties). The results show that perceived benefits were generally high among both groups, but students consistently reported higher levels, with more pronounced year-to-year increases. In contrast, perceived risks were relatively higher among teachers in domains closely related to institutional operation, including cheating and plagiarism, privacy, output accuracy, and the risk of being wrongly suspected of misconduct, whereas students expressed comparatively stronger concerns about face-to-face learning and changes in the role of teachers. These patterns suggest that perceptions of generative AI are not characterized by a simple relationship

in which increasing benefits reduce anxieties; rather, perceived benefits and anxieties can become salient in parallel. This constitutes a key contribution of the present study.

At the same time, several limitations remain. First, the analyses have yet to fully incorporate factors such as school type, frequency of use, and the extent of institutional rule development, and thus the specific conditions that amplify expectations or anxieties have not been sufficiently identified. Second, the present study primarily describes item-level trends and does not statistically validate underlying dimensions of benefit and risk perceptions, such as those related to operational systems, governance, or norm formation. These issues should be addressed in future research through more fine-grained modeling and analysis.

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