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Exploring generative AI in foreign language education: Insights from a student survey

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Abstract

INTRODUCTION: Generative artificial intelligence (AI) has implications for foreign language education, necessitating careful consideration of how the technology should be addressed. This should be based on the perspectives of different stakeholders, not least the students.
OBJECTIVES: The paper explores foreign language students' use of and perspectives on generative AI in foreign language education.
METHODS: The paper employs a survey design and analyses responses from 106 students collected over a three-year period.
RESULTS: The study documents increasing, frequent and varied use of generative AI. The students' evaluation of AI output quality has grown more moderate over the years. The study suggests benefits may arise from even limited integration of the technology into language education.
CONCLUSION: The study has highlighted a need for integrating generative AI into foreign language education. We need to continue the dialogue with students to inform future pedagogical choices.

Keywords: Generative AI, foreign language education, higher education

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1. Introduction

The introduction of generative artificial intelligence (AI) may significantly change professions and educational programs of which text production forms a central part [1]. This is not least the case for foreign language education where text production has traditionally been central to both acquisition and assessment of language skills. In a situation where AI-based language technologies display a level of correctness so high that linguistic accuracy "can no longer be viewed as a synonym of learning and excellence" [2: 107], we need to revisit how we teach and assess foreign language. While we as higher education teachers want to provide students with the skills they need in the workplace, we also want to achieve the learning outcomes that are at the core of foreign language education, among other things so that students are able to critically evaluate AI output.

While generative AI applications have been accessible for several years and for example an object of interest within journalism research (referred to as robot, computational or augmented journalism [3]), the technology did not gain substantial mainstream attention until the launch of ChatGPT in November 2022. Since then, inherent issues with the technology as well as consequences for the educational sector and the job market have been massively debated. Some of the issues addressed are the tendency of large language models to hallucinate, i.e. generate plausible-sounding and fluent, but factually incorrect content, bias in generated output [4], anthropomorphism [5] and the environmental impact of AI training and deployment [6].

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In an educational context, the potential value of integrating generative AI into teaching is continuously discussed. Three categories are typically discerned: *learner-facing AI* where AI is used to support student learning (either facilitated by a teacher or as self-regulated learning), *teacher-facing AI* where AI is used to support the teacher, e.g. by reducing their workload, and *system-facing AI* which includes AI to inform decision making in managing and administrating educational institutions [7]. Most research has focused on student-facing AI, and so does the current paper. Arguments for integrating AI in the teaching of students include potential positive effects of generative AI on learning and students' preparation for the workplace. In this context, many scholars have argued that students need to acquire AI literacy to be able to "live, learn and work in our digital world through AI-driven technologies" [8]. On the other hand, scholars and educators against the integration argue that students' use of generative AI may lead to cognitive outsourcing or overreliance on technology [9], short-circuiting of actual learning, and a decline in critical thinking skills [10, 11]. Warschauer et al. point to this as a paradox for second language writers: AI tools can be an "all-too-tempting opportunity for easy assignment completion, rather than effortful learning, but at the same time their future requires a sophisticated use of AI tools" [12: 10].

The debate has also centered on the consequences for assessment where generative AI has been viewed as a serious threat to academic integrity [13, 14]. Different responses have been discussed, including ignoring the technology's consequences for assessment, banning it at exams, embracing it and rethinking assessment entirely in light of generative AI [15]. *Ignoring* the consequences for assessment is arguably a very shortsighted response considering the general uptake of generative AI. *Banning* AI is seen as an appropriate response to ensure that it is the performance of the student, not AI, that is assessed. However, this may require new forms of assessment (e.g. more oral exams) and/or (reverting to) controlled examination settings for assessment to be valid. This is not least the case since research has shown that AI detection is unreliable [16], and that AI detectors are particularly biased against non-native writers [17]. The response of *embracing* generative AI in assessment would involve having students engage with generative AI at exams, e.g. by asking them to critically reflect on AI-generated output. Arguments for such an integration of generative AI into exams include authenticity, i.e. assessment entailing tasks similar to those performed in workplace or professional settings. However, embracing generative AI has also been questioned, because standard assessment involves evaluating final products to measure learning, and the validity of this approach is called into question when students have access to generative AI [18]. Finally, *rethinking* assessment in light of generative AI would entail using AI systems to continuously evaluate students' learning, leading to a greater focus on formative assessment and maybe even render summative stop-and-test assessment superfluous [15].

Both the potentials and the concerns that generative AI brings with it necessitate that we explore how foreign language students approach the technology, since this may inform our future development and pedagogical choices in foreign language education. Therefore, this paper seeks to explore the following research questions: 1) how do higher education foreign language students use generative AI? 2) What are higher education foreign language students' perspectives on the integration of generative AI into their education and assessment? These questions have only scarcely been investigated within the field, and the study aims to address this gap.

The paper is structured as follows. In Section 2, research on AI-based language technologies in foreign language teaching is described. Next, in Section 3, the methods applied are described, before the results are presented in Section 4. Finally, we conclude the paper in Section 5, discussing the findings and their implications.

2. AI-based language technologies in foreign language teaching

Along with technological developments and uptake in society in general, there has been a parallel interest in language education in so-called computer-assisted language learning (CALL) [19, 20]. The CALL field has focused on, for example, mobile-assisted language learning, technology as a tool for communication inside or beyond the classroom and gamified language learning [9, 21]. Attention has also been paid to language generation technologies such as machine translation and, more recently, to generative AI.

Machine translation has long been carried out by means of dedicated systems such as Google Translate and is also a subtask carried out by generative AI systems. Studies on the effectiveness of machine translation for language learning have been carried out for several years (for a timeline and overview of strands in this research, see [22]. Three rather recent reviews have examined this research, and all conclude that machine translation has a positive impact on foreign language learning [23, 24, 25]. For instance, machine translation can enable students to write more fluently and with fewer errors [26, 27, 28]. However, as pointed out by e.g. [20] and [29], there is a lack of longitudinal studies exploring whether there are lasting positive effects of machine translation on language learning. Also, quality of machine translation output has increased significantly along with changing approaches to machine translation development over the years (from rule-based and statistical to neural and generative systems), leading to e.g. a noteworthy reduction in fluency errors [30, 31], which needs to be considered when interpreting the results of previous studies.

In terms of the impact of generative AI on language learning, research is also emerging. However, many publications are non-empirical contributions (e.g. [12, 32, 33, 34]). Of the empirical studies, some focus on voice interaction with AI-based chatbots. For instance, studies have found that spoken interaction with chatbots is engaging and enjoyable for learners of English [35, 36], but that students benefit differently from such interaction [37]. Also, Jeon [38] found that interaction with AI-based chatbots can promote vocabulary acquisition. Within studies focusing on writing, studies have shown that generative AI systems can assist learners in improving their writing, e.g. by providing feedback on grammar [39, 40, 41, 42].

Other studies have focused on teacher perspectives. For instance, Mohammadkarimi [10] found that higher education English teachers acknowledge the benefits of AI for students, but at the same time worry about the consequences for academic integrity. Interestingly, nearly all teachers admitted that they cannot detect the use of generative AI in student assignments. Cardon et al. [43] explored business communication instructors' perceptions of the challenges and opportunities associated with AI-assisted writing. The instructors believe that they need to change their teaching to integrate AI, but about 47% feel nervous or anxious about using it in class. At the same time, they are concerned that generative AI will lead to more plagiarism, that it will be more difficult to assess student learning, and that it will lead to less critical thinking.

While foreign language learners' use of machine translation has been explored (see e.g. [44]), research on students' use of and perspectives on generative AI is still relatively scarce. Taking this as their focus, Klimova, Pikhart and Al-Obaydi [11] found that undergraduate students studying English are positive about generative AI, but also acknowledge risks related to its use, including academic dishonesty, and the technology's potential impact on their critical thinking skills. Klitgård [45] used a pre-/post-course survey design to investigate how students perceive, use and evaluate generative AI as a tool for academic English writing when English is a second or foreign language. She for instance found that the students used generative AI tools for a wide range of tasks, and that they had mixed feelings about the quality of GAI-assisted writing and "difficulty in navigating the crossroads between using GAI and doing one's own writing" [45: 7]. Also, the pre-/post-design enabled Klitgård to demonstrate that the students became more nuanced in their understandings of generative AI during the course.

Inspired by the previous research, the present study explores the research questions outlined above.

3. Methods

The study draws on a survey design to explore students' use of and perspectives on generative AI in their education. Data has been collected in the spring semesters of 2023, 2024 and 2025 as part of an elective course at Aalborg University entitled *Technology-based language and communication work*. The course is offered to students attending the Bachelor of Arts (BA) in International Business Communication in English (IBC) and the BA and Master of Arts (MA) in English. The former focuses on business communication in English, while the latter is a more traditional English degree focusing on English language and literature.

In 2023, 2024 and 2025, 39, 53 and 24 students were enrolled in the course, respectively. The course primarily covers the use of digital technologies when solving linguistic and communicative tasks and secondarily the use of digital tools as research methods. Different language technologies such as translation memory systems, machine translation, corpus linguistics, generative AI and tools for web scraping and sentiment analysis are introduced. Among other things, the course focuses on building competences in using the tools, critically discussing the contributions and limitations and reflecting on the ethical implications of their use. The course includes 16-18 class hours which are devoted to both theoretical and practical content. Reading material was provided on Aalborg University's Learning Management System and included general introductions to the field of language technology as well as literature related to the language technologies covered.

The examination consisted of two parts: participation in at least 80% of classes and completion of a final group project and oral presentation on a self-chosen topic within the thematic scope of the course. The course was primarily taught by a lecturer with expertise in language technology (14 class hours) and a lecturer with expertise in web scraping and sentiment analysis (2 class hours). In 2023, a guest lecturer working in the language technology industry contributed a 2-hour presentation and workshop.

In relation to generative AI, the students were introduced to AI, natural language processing and natural language generation. Further, main issues with generative AI systems and output were addressed and exemplified, such as hallucinations, bias and anthropomorphism. The students also did practical exercises with generative AI systems during classes. Here, students experimented with generation of AI output based on different prompts and performed evaluation of the results. In all three years, in the final group projects and presentations, most groups of students chose to work with questions related to generative AI rather than questions related to the other language technologies covered. Thus, the topic of generative AI attracted a great deal of attention. In the spring of 2023 and 2024, the use of generative AI was generally prohibited at exams at Aalborg University. In 2025, this had been changed into a general permission. In all three years, the students were allowed to use generative AI during the course to explore the questions they were interested in. However, in 2023 and 2024, they were not allowed to use generative AI to produce their presentations.

2.1. Data collection and analysis

A digital survey was created using SurveyXact and shared via a link with all students enrolled in the course during the final class of each semester. The survey included an introductory text, which was also briefly presented orally in class. It began with a background question about the students' study programmes. Students were then asked about their use of generative AI, including how frequently they use it, for what purposes, and their assessment of the quality of AI-generated content. The following section focused on students' reflections on the learning outcome of the course and the role of generative AI within their academic programmes. Finally, students were invited to share their views on whether generative AI should be permitted or prohibited during exams, as well as their perspectives on its relevance in their future careers. It is important to note that the survey was originally written in Danish, and all questions and quotations cited in this paper have been translated into English. The survey included a mix of open-ended and closed questions.

As shown in Table 1, 38, 45 and 23 students filled out the survey in 2023, 2024 and 2025, respectively, resulting in response rates of 97.3%, 84.9% and 95.8%. In 2023, 26 (68%) of the respondents were students in the IBC programme, and 12 (32%) were students in the BA or MA in English programmes. In 2024, 28 (62%) were IBC students, and 17 (38%) BA or MA in English students. In 2025, 12 (52%) were IBC students, and 11 (48%) were BA or MA in English students. Thus, in all three years, the majority of enrolled students has come from the IBC progamme.

Table 1. Enrolled students and respondents

				Respondents	
	Number of students enrolled	Number of respondents	Response rate	IBC students	BA/MA in English
2023	39	38	97.3%	26 (68%)	12 (32%)
2024	53	45	84.9%	28 (62%)	17 (38%)
2025	24	23	95.8%	12 (52%)	11 (48%)
TOTAL	116	106	91.4%	66	40

The following section presents the results. Quantitative findings are provided in the form of descriptive statistics. Qualitative responses were analysed using thematic analysis, following the approach outlined by Braun and Clarke [46], with an inductive orientation to identify emerging patterns within the data. The analysis followed Braun and Clarke's six-phase framework. Initially, both authors independently familiarized themselves with the data through repeated readings. For each open-ended question, one author conducted the initial coding and organized the codes into potential themes. These themes were subsequently reviewed by the second author, who evaluated their alignment with the data. Minor revisions - such as adjustments to theme labels - were made during this phase and discussed collaboratively. The subsequent section provides illustrative examples corresponding to the identified themes. Direct quotes are accompanied by identifications of each respondent (with IDs 1-38 referring to respondents from 2023, IDs 39-83 to respondents from 2024, and IDs 84-106 to respondents from 2025).

4. Results

In the following, the results of the study are presented. In Section 4.1, we present results related to research question 1, and in Section 4.2, results pertaining to research question 2 will be presented.

4.1. Student use of generative AI

The students were asked whether they knew about generative AI tools before they attended the course and if so, whether they had used them. Figure 1 shows the results for the three years. As expected, the number of students without knowledge of the tools is low in all three years with 13.2% reporting this in 2023 and 0% in 2024 as well as 2025. Furthermore, it is clear from the results that the percentage of students that have used generative AI tools increases over the years (with 39.5% in 2023, 84.4% in 2024 and 91.3% in 2025), and that the percentage of students that know about the tools, but do not use them has decreased (with 47.4% in 2023, 15.6% in 2024 and 8.7% in 2025).

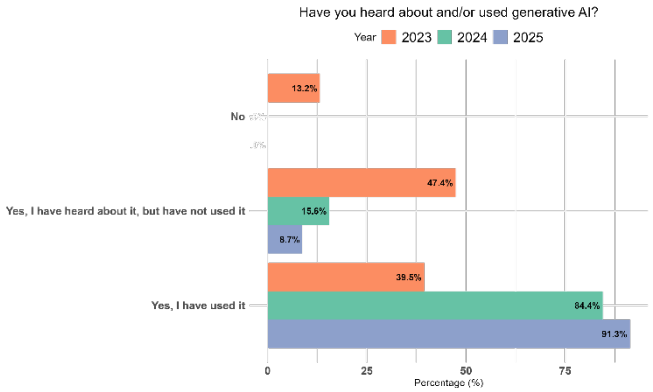

Figure 1. Students' knowledge and use of generative AI (n = 106)

When asked how frequently they use generative AI tools, most students reported using the technology every week (cf. Figure 2). This was the case for 44.7% in 2023, 48.9% in 2024 and 52.2% in 2025. Daily use increased from 7.9% in 2023 to 11.1% in 2024 and 17.4% in 2025. Thus, both categories reflect an increase in frequent use

over the years. Monthly use remains relatively stable over the years, while the group using it less often than every month decreases from 5.3% in 2023 to 0% in 2025 (however with 8.9% in 2024). The group of students reporting that they do not use generative AI decreases over the years (23.7% in 2023, 13.3% in 2024 and 13% in 2025).

The 91 students who reported using generative AI to some extent were asked to indicate the specific tools they use. Here, it was interesting to note that as much as 96% indicated that they use ChatGPT. The next most frequently mentioned tool was Quillbot (12%) which was also mentioned by the teacher in class. Only one student mentioned using Microsoft Copilot despite Aalborg University providing all students with free licenses to a version of Copilot with enterprise data protection.

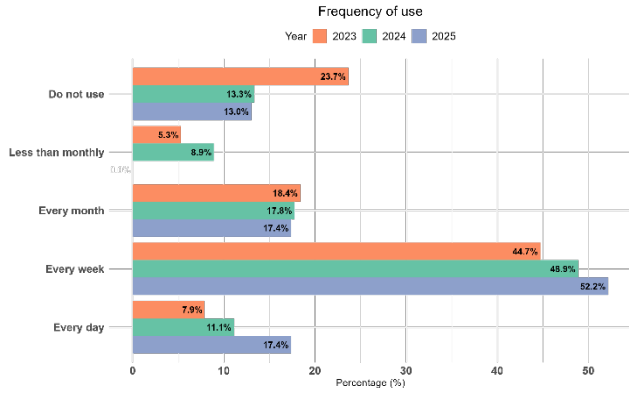

Figure 2. Frequency of use (n = 106)

Students were asked to give qualitative answers as to the purposes with which they used generative AI. The thematic analysis of this data resulted in seven main themes, i.e. *idea generation*, *summarization and explanations of scientific concepts and texts*, *text production*, *feedback on own text, translation, information search* and *spare time use*. In terms of idea generation, several students mentioned that they use generative AI to get ideas for primarily project work, but also for other text production tasks. For instance, one student answered that "I use it for many different things, including getting inspiration for different parts of project work" (ID29/2023). Another student was a bit more elaborate and stated that "I use it for project writing where I often ask it to give me ideas for sub-sections to include in the table of contents in relation to my project topic" (ID101/2025).

Several students expressed that they use generative AI to get summaries of academic texts or explanations of scientific concepts. Sometimes students added that they did this to better understand concepts and theories which are difficult to grasp. For instance, the following student stated that they used it "primarily to understand theories/texts that are hard" (ID2/2023). Several also mentioned that they use generative AI in this way to prepare for class.

Other students stated in quite general terms that they use generative AI for text production. For example, several answered that they use it to "generate text about a topic" (e.g. ID32/2023; ID49/2024; ID71/2024). Interestingly, within this theme, several students mentioned that they use generative AI in connection with their student jobs, i.e. paid work that they engage in alongside their studies. In this context, several mentioned that they use generative AI for text production tasks, e.g. for press releases and social media content. For instance, several students mentioned that they work in customer service departments and use generative AI to reply to customer enquiries. One student here added that they "use it to generate text or reply to challenging e-mails since I am employed as a student worker in a tourism organization and in customer services in a clothing company" (ID84/2025).

Several students expressed that they use generative AI for getting feedback on text that they have written themselves with the purpose of optimizing it. For instance, a student replied that "I sometimes use it for getting feedback on things that I have already written" (ID63/2024), and another that they use it to get inspiration for synonyms. Also, a student noted that they use it to "check if there is a red thread / flow in my text" (ID97/2025). Some students also specified that they use it to get feedback on grammar and punctuation. Further, a few mentioned that they use generative AI for translation tasks.

In terms of the theme "information search", some students replied that they use generative AI to ask questions and some specifically mentioned that they use it as an alternative to Google. Finally, several mentioned that they use generative AI in their spare time, e.g. for dinner inspiration and fitness tips.

The students were also asked in a more closed manner about the contexts in which they use generative AI. As shown in Figure 3, the use of generative AI to write text that a supervisor should read in connection with project supervision as well as the use of AI to produce hand-in assignments had increased significantly from 2023-2024 to 2025. While 7.9% and 15.6% had used generative AI in connection with exams in 2023 and 2024, respectively, this was the case for 13% in 2025. Since the use of generative AI at exams was generally prohibited in 2023 and 2024 and generally allowed in 2025, it is interesting to note that the use at exams does not increase between 2024 and 2025.

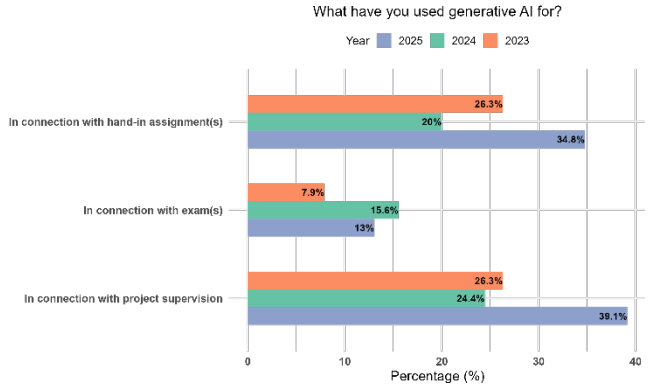

Figure 3. Context of use (n = 106)

The students were also asked to give an overall evaluation of the quality of AI-generated text. As shown in Figure 4, very few students find the quality low or very low in all three years. Interestingly, the students' evaluation of the quality appeared to be more moderate in 2024 and 2025 compared to 2023 as evidenced by the lower total percentage of students evaluating the quality as high. In all years, a rather large group of students find that the quality is neither high nor low.

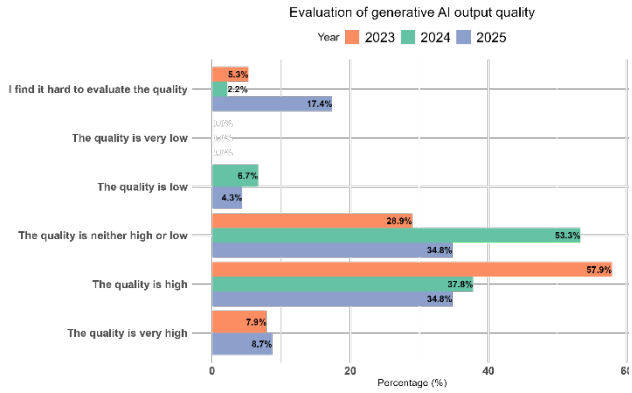

Figure 4. Evaluation of generative AI output quality (n = 106)

4.2. Student perspectives on generative AI in foreign language education

In relation to research question 2, students were asked to share their views on what they had learned during the course, whether they believed foreign language learners should be introduced to this type of technology, their opinions on banning generative AI at exams, and their thoughts on the role generative AI might play in their future careers.

Students were asked to answer in an open-text format what they learned about generative AI in the course, and whether something had surprised them. From the thematic analysis, eight overall themes emerged. One theme included students expressing that they learned a lot about *how generative AI systems work*. For instance, one student replied that "I found it interesting to learn how ChatGPT and other tools work behind the scenes. Since I knew how to use the tool, it is nice to know how it works in the engine room" (ID62/2024). Another stated that "I have learned more about the technical aspect, and how the answers are generated; that they are based on datasets and draw on information from human-produced texts" (ID102/2025).

Another theme included students stressing that they learned a lot about *bias* in AI output. Some talked about bias in general, and some mentioned gender bias specifically. Some of the students related this to the workings of generative AI systems, stressing that their learning about how the systems work had also made them realize why output may be biased. For instance, one student replied that "There can also be biases from the input the machine was fed with which also makes the output that the machine generates biased" (ID10/2023).

Other students mentioned that they had learned that AI output is not always accurate, i.e. that AI systems may *hallucinate*. Here, a student explained that "I have learned that it is important to check the generated text for mistakes. ChatGPT can give misleading information and invent references that do not exist" (ID15/2023). Many students replied that they were generally *positively surprised* by the performance of the systems. For instance, several stressed that they had been surprised by its ability to answer questions, and a student expressed that "the quality of the generated product has surprised me deeply, since I had not expected such a high quality" (ID34/2023). Another student related this specifically to learning in stating that generative AI tools can "simplify things so that I can better understand them" (ID95/2025). Other students added general statements expressing that they had learned about *limitations of and challenges surrounding* generative AI systems.

The remaining three themes included fewer statements. One theme included statements where students expressed that they had not learned a lot that they did not already know, a few mentioned that they had learned what was allowed at exams, and a few mentioned that they had learned that a lot of different AI tools exist. In relation to the latter, a student noted that "I have learned so much and have been surprised to see that so many different AI tools exist" (ID97/2025).

When asked whether they thought foreign language students should generally be introduced to this type of technology, in 2023 and 2024, 91.2% and 88.5% answered "yes", respectively. This increased to 100% in 2025. In their arguments for the introduction of generative AI, four overall themes were identified. For instance, many students argued that an introduction to generative AI technology is *necessary to prepare them for tasks in the workplace*, and generally that this technology is the future. One student e.g. noted that "It is expected that you can work with AI when you have completed your education and in our generation; therefore, it makes sense that you learn it and are also conscious of its limitations" (ID103/2025). Another argument that was often repeated in students' responses was that *students are using the technology anyway*, and that

foreign language education should teach them to use it in a constructive, ethical and critically reflective way, making them aware of the potentials and pitfalls. Other students stressed that generative AI may *aid learning* and be a good resource in the learning process. It is worth noting that several of these students added that the use of generative AI should not replace, but augment students' own learning processes. Finally, interestingly, two students argued that generative AI is useful for students that do not have people around them to help them with their studies, with one of them mentioning that generative AI can "contribute to making everyone's toolboxes equally filled" (ID35/2023). Although only mentioned by a few students, it is interesting that some highlight inclusion potentials in the sense that generative AI can support learners that were previously at a disadvantage in terms of educational support [47].

Of the few students who did not think that students should be introduced to generative AI, most argued that generative AI could impact negatively on learning processes because some would tend to outsource tasks to technology.

The students were also asked about their attitude towards prohibiting the use of generative AI at exams. Interestingly, as reflected in Figure 5, in 2023 and 2024, the students were divided on this, with 44.7% considering the use of generative AI cheating in 2023 and 55.6% considering it cheating in 2024. However, in 2025, the number had decreased to 27.3%. As stated above, in 2023 and 2024, the use of generative AI at exams was generally prohibited, and this was changed to a general permission in 2025. This permission might have led students to be more inclined to use being permitted.

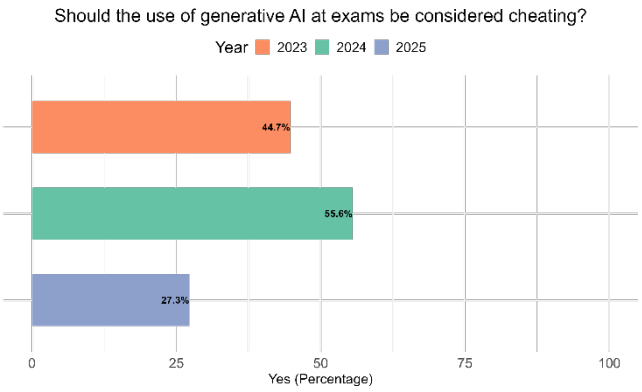

Figure 5. Student attitudes towards banning generative AI at exams (n = 106)

After answering this question, the students were asked to provide arguments for their attitude. Students arguing for banning generative AI primarily argued that allowing AI would make it impossible to measure student learning, thus questioning the validity of such assessment approaches. For instance, a student replied that "With our education, expectations are created that we have acquired disciplinary competencies and knowledge – and when the tools are used at exams the boundary between what the student knows and can do him-/herself and what the tool has done becomes invisible" (ID43/2024). This was mirrored in students' arguments that performance at exams should reflect what you can do independently. For instance, a student stated that "[when using AI] you haven't yourself come up with the answer that you indicate as your own" (ID102/2025). Another student related their argument specifically to the nature of foreign language education: "I attend a programme of which text forms a central part, so if you are not able to produce or read a text without a resource like that, it does not make sense that you pass the exams" (ID56/2024).

Students arguing for allowing the use of generative AI at exams primarily argued with the authenticity of such an assessment approach. Here, a student stated that "it already has an impact on the industry. These are tools that change the nature of working tasks. It would correspond to removing the oven from chef education. You would not necessarily get a bad chef out of it, but you would have taken away their opportunity to acquire useful skills" (ID35/2023). Another student also argued for an authentic exam situation and stated that "In real life no one would say that you cannot use a tool to solve a task more effectively, so why is this not reflected in exams? In any case, you need to critically evaluate the output, and you need to be able to prompt effectively to make it work optimally" (ID45/2024). Other students argued that generative AI should be allowed for idea generation and feedback, with some adding – as a matter of course of sorts – that students should not generate entire exam papers using generative AI. A student even argued that the institution should place trust in students in this regard: "I believe that all are wise enough and have the integrity to not take what ChatGPT has generated and put it directly into your own document. We are students who are here to learn and not cheat so I think you should have that kind of trust in students when and if they use ChatGPT" (ID95/2025).

Interestingly, the data also revealed conflicting viewpoints among students as to whether AI use can be detected. Here, some students arguing for a ban stated that the university cannot control how AI was used, while students arguing against a ban stated that university systems are able to detect this type of plagiarism. Finally, many students (both students arguing for and against a ban) had quite nuanced perspectives in their open-text answers which indicated that it was difficult to answer the question on a ban in a yes/no manner.

Finally, the students were asked whether they thought generative AI will play a large role in their future careers. Here it is a bit surprising that, as shown in Figure 6, the percentage of students answering "yes" is lower in 2025 (50%) than in both 2023 (60.5%) and 2024 (75.6%). However, the results still reflect a widespread expectation that this will be the case. It is also interesting to note that in 2025, as much as 50% are unsure.

The students answering "yes" were also asked to reflect on the work tasks in which they expected generative AI to play a role. Here, many mentioned in general terms that it

will influence and is already influencing text production tasks, and many specifically mentioned tasks related to customer service and the production of marketing texts such as social media content, newsletters and product texts. Finally, a few mentioned that it would influence a career as an upper secondary teacher.

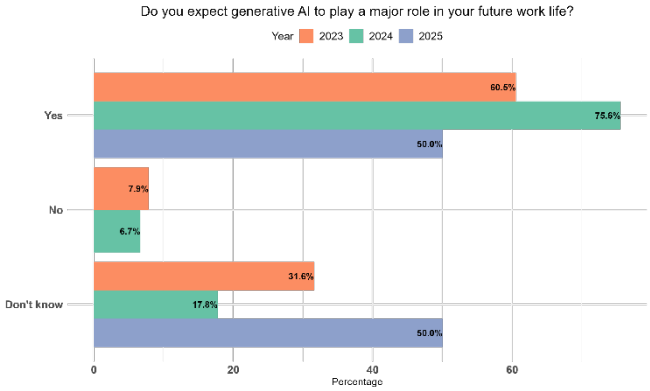

Figure 6. The anticipated role of generative AI in future careers (n = 106)

4.3. Limitations

Although the analysis has provided interesting insights into foreign language students' use of generative AI and their perspectives on its integration into foreign language education, we recognize that the study also entails a number of limitations. For instance, the study is quite small-scale and was conducted at a single university. Also, the study only included students of English. Since Danish students usually have English as their first foreign language, results may not apply to languages that are less familiar to the students. Further, many of the students' qualitative responses referred to a rather general use of generative AI that may also apply to students from other educational programmes than language studies. Thus, in retrospect, we would have preferred to ask students to relate their responses directly to their work with language-related tasks. Interestingly, Klitgård [45] notes a similar issue, namely that even though her study was conducted in the context of a foreign language course, the students made no mention of the role of generative AI in relation to their linguistic development in any way. This points to a need for more targeted questions in future studies. Also, no students reported that they use generative AI for practicing their spoken language. However, while it is interesting that such use is not reported, this might be due to too unspecific questions and the fact that in the course, focus was primarily on the use of generative AI for writing tasks. Nevertheless, it is interesting that the students do not seem to use the tools for practising speaking skills.

5. Concluding discussion

The massive uptake of generative AI necessitates careful consideration of how the technology should be addressed in foreign language education. This should be based on the perspectives of different stakeholders, not least the students who aspire to make a career in this space. To this end, this study has provided insight into how foreign language students use and perceive generative AI.

The study has documented that between 2023 and 2025, use of generative AI has increased, with around 50% of the students using the technology every week in 2024 and 2025. Daily use increased from around 10% in 2023 and 2024 to 17% in 2025. Thus, the percentage of frequent users has gone up over the years. Based on this, generative AI must be said to be an integral part of most students' practices. This serves as a compelling argument for foreign language education to address and integrate generative AI. Also, ChatGPT was the by far most frequently used tool.

When asked for the purposes with which they used generative AI, many stressed e.g. idea generation, explanations and summarizations of scientific concepts and text as well as text production and feedback on their own texts. This documents that students use generative AI for a wide range of reasons and not (only) to outsource tasks to technology as educators may fear. This is in line with studies in the context of machine translation showing that students tend to use machine translation for smaller text fragments rather than entire paragraphs or texts [44, 48]. However, students also reported that they are using it to write text that a supervisor should read in connection with project work and for hand-in assignments. The acceptability of this use arguably depends on whether students are transparent about it. Also, interestingly, approx. 15% of students reported to have used generative AI in connection with exams in both 2024 and 2025. Since the ban on use of generative AI had been changed to a general permission between 2024 and 2025, it is noteworthy that the use at exams does not increase. While the use in 2023 and 2024 might constitute academic dishonesty, the relatively stable use might indicate confusion on the part of students as to AI policies.

Interestingly, while the use of generative AI had increased between 2023 and 2025, the students' evaluation of the quality of the output appeared to be more moderate. A possible explanation for this result might be that compared to the spring of 2023 where the launch of ChatGPT was still quite recent, the hype might have decreased during the following years with greater attention being paid to issues such as hallucinations, bias etc., for instance in the media. Also, the increased interaction with the technology may have led them to become more aware of these issues.

In the three years, nearly all or all students thought that foreign language students should be introduced to the technology, and students expressed that the course had taught them about the workings of generative AI and about specific limitations of the systems. They were also sometimes able to relate these limitations to how generative AI systems are built, and several stressed that they had become aware that they needed to be critical of AI output.

It is quite interesting to note that many of the students seemed to have learned quite a lot about the technology during a few classes, and that the findings indicate that this made them approach AI output in a more critically reflective manner. This suggests that benefits may be gained from even a quite limited integration of the technology into foreign language education. However, it should be remembered here that the study was conducted in the context of an elective course which means that the respondents have actively chosen this course and thus may be more interested in language technologies than other foreign language students.

In terms of assessment, it was interesting to observe that in 2023 and 2024, roughly half of the students considered the use of generative AI at exams cheating, and in 2025, this number dropped to 27%. However, the fact that more students consider it cheating when a ban is in place does make sense. The qualitative analysis provided insight into the students' arguments which to a wide extent reflect the scholarly debate, stressing the importance of both validity and authenticity of assessment. If we relate this to the responses discussed by Ydesen et al. [15], some students favor a banning approach and highlight the validity of such an approach, whereas some students favor an embracing approach and argue for authenticity in assessment. The ignoring and rethinking responses were not reflected in the students' arguments; in terms of the ignoring response this was entirely natural since the question specifically asked students to take a stand, and in terms of the rethinking response, this is a potential future scenario dependent on AI-based assessment techniques which most students probably do not picture.

Thus, our study has documented that students are ambivalent about allowing the use of generative AI at exams, and that their arguments reflect a tension between validity and authenticity. However, arguably, our question about cheating at exams rests on the assumption that the use of generative AI may even be considered cheating on the part of students. As argued by [49], such a view locates the problem of inappropriate use of generative AI with the student rather than with the features of the assessment. Instead of cheating, they argue that focus should be on whether assessment forms are valid, i.e. whether the assessment reflects the student's own actual capability, leading them to the conclusion that "assessments that depend on students not using artificial intelligence but are incapable of preventing students from doing so, are not particularly useful for high-stakes assessment of learning" [49: 1012]. Also, our phrasing implied that the issue of generative AI use at exams is an either/or question, whereas in practice, higher education institutions should be able to apply a combination of banning generative AI in some assessment contexts and embracing them in others, striking a balance between authenticity and validity.

Taking its outset in the viewpoint that decisions regarding integration of generative AI into (foreign language) education should be based on the perspectives of different stakeholders, this study has explored students' use of and sentiments surrounding generative AI. In conclusion, the study has shown a widespread use of generative AI among foreign language students, and that they have diverse and nuanced perspectives on the integration of generative AI in foreign language education. This study has highlighted a need for ensuring that foreign language education integrates generative AI, thus acknowledging students' digital practices in this area and preparing them for the workplace. At the same time, we need to ensure that students use generative AI tools in an ethical and critically reflective way, and that they achieve the learning outcomes that are at the core of foreign language education. Also, the integration requires that teachers feel prepared to handle this change, and as evidenced by Cardon et al. [43], this is not necessarily the case. Thus, meaningful integration of generative AI into both teaching and assessment of foreign language learning requires an ongoing dialogue with both students and teachers.

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