Chat GPT Wrote It: What HCI Educators Can Learn From Their Students?

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Abstract

In recent months, students, teachers, and researchers have become equally impressed by Generative AI (GenAI) tools, with ChatGPT at the top. However, numerous concerns about the GenAI-related threats to academic integrity and the validity of learning outcomes are emerging. This problem is also vivid in Human-Computer Interaction (HCI) education since students can use GenAI tools to rapidly generate ideas, user interface templates, screen graphics and mock-ups, or entire user research programmes. This paper presents the results of a small-scale survey performed with a group of HCI students regarding their experiences and expectations regarding the use of GenAI tools in their current HCI course, as well as expected GenAI-relevant university policies. Conclusions from this study can be informative for HCI teachers considering the potential use of GenAI tools in their classes and for university managers in the broader context of engineering university education, regarding computer science in particular.

Keywords: Human-Computer Interaction, User Experience, HCI education, Generative AI

1. Introduction and Motivation

The influence of Generative AI (GenAI) tools, like ChatGPT and alike, is rapidly changing how people perform their jobs, not excluding education and universities [8]. Recent research that analyses the impact of GenAI on education focuses mainly on students' attitudes to using GenAI at the university [1], [11] and providing conditions for honest and ethical use [15].

However, in technical universities in Computer Science (CS) teaching programs, the actual menace is not only the GenAI tools able to generate texts or images but primarily computer code and other software engineering concepts [7]. Main streams of research related to GenAI in CS education analyse possible impacts of GenAI on teaching practices, programmes, assessment procedures and learning outcomes [9], [12, 13] or the impact of GenAI on the future of CS education [6] in a broader educational context.

Human-Computer Interaction (HCI) is a domain essential for developing software products with a positive User Experience (UX) by conducting projects with systematic user research, frequent prototyping and user-based testing [5]. However, only a few research papers are available on the use of GenAI tolls in HCI education, which focus mostly on the evaluation of GenAI-produced outcomes within HCI-related tasks [3], [5], and preparing teachers and students for the possible use of GenAI in HCI design courses [2].

Today, many universities attempt to regulate the use of GenAI primarily to prevent cheating and unethical use by students, often following high-level guidelines such as UNESCO [16]. Such regulations address students as the main stakeholders [2], [7], so before preparing and introducing any policy regulating the permitted use of GenAI tools, students' preparedness and their expectations for using GenAI tools in specific courses (like HCI) should be considered. Their viewpoint on the type of GenAI-related policy suitable to the specific course should also be known. Teachers' viewpoint is important, too, but it remains beyond the scope of this study.

Unfortunately, the available literature does not provide universal guidelines across the CS educational field nor the HCI; these factors must be studied locally to provide GenAI policy solutions customised to local stakeholders, who need to be included. Because the author of this paper has been active in HCI teaching, this gap shaped and motivated the objective of this study,

which aimed to answer the following Research Questions (RQs):

- **RQ1**. How familiar are the HCI students with GenAI tools, based on their knowledge and experience?
- **RQ2**: What are the students' expectations regarding the use of GenAI tools in their current HCI course?
- **RQ3**. What are the students' expectations regarding the policy for using GenAI tools in the HCI courses at this specific technical university?

The next sections present methods used to collect and analyse data from an online survey, obtained results related to RQs, discussion and conclusions from this study.

2. Method

This work was intended purely as a qualitative study to serve as the first exploratory attempt to tackle the problem of using GenAI tools in the local education context, i.e. the HCI course at this specific technical university. Considering a small scale of this study, it is an example of qualitative content analysis [15], at this stage, with no intention of collecting any data for potential statistical analysis or building theories, models or hypotheses, what would make this study closer related to the grounded theory research [4].

An online survey was chosen as the cost-effective way to collect data and it was conducted in April 2024 at the Gdansk University of Technology (Poland). A Google Forms questionnaire (https://forms.gle/UHxsARRPcbgtzg4g8) was designed, containing a mix of 22 closed, open and multiple-choice questions, relevant to our Research Questions. Access was limited to the 86 students enrolled to the current HCI course in the Data Engineering track.

A convenience sampling method was employed to reach respondents based on their availability and willingness to participate in this voluntary and anonymous study. Of 86 students enrolled in the current HCI course, 22 (2 female, 20 male) students submitted valid survey responses, 26% of those invited to participate.

The data analysis was performed differently for each question type: (1) Single-choice and multiple-choice questions: The data analysis was performed by calculating the percentage of responses of a specific type and creating basic charts with the distribution of responses among specific types. (2) Open questions: After all data were collected for open questions, manual coding was used to classify respondents' textual statements into inductively created categories suitable for identifying dominating issues. Inductive, emergent coding is suitable for qualitative studies in which a model, concept or knowledge gradually emerges from collected data [15]. This approach is derived from the qualitative research concept of grounded theory [4]. Despite the well-known limitations of manual coding [10], this method was sufficient because of a very small sample size and very short phrases used by the respondents.

In this survey, there were no unfinished or incomplete responses, as questions essential for the objectives of this study were set up as mandatory in Google Forms.

3. Results

Due to the limited space of this paper, Table 1 presents only selected results relevant to research questions RQ1-3.

Regarding RQ1, collected responses show that almost all the students have some familiarity with GenAI tools, what seems to be a good premise for their potential use in the HCI class.

Regarding RQ2, to an opening question of the survey *whether a student used or considered the use of GenAI tools for the HCI course* (single choice), 59% responded Yes, and 41% Not. Brainstorming for ideas was declared as the most frequently supported activity by GenAI.

Regarding RQ3, results show that in the HCI course using GenAI tools as an option (student's choice) is most preferred, preferably within a locally regulated in-course policy presented by their teachers.

Beyond RQ1-3, one of the final questions (single choice) was *whether a student would accept if teachers used GenAI tools for reviewing and grading students' work*. Altogether, n=22 responses were collected, and the results were not conclusive: 41% were "No", 32% were "Yes", and 27% were "Maybe" (i.e. rather conditionally, perhaps in some cases or under some conditions). Nevertheless, by adding responses "Yes" (32%) and "Maybe" (27%), it turns out

that 59% of respondents seem to accept some use of GenAI by teachers for reviewing and grading students' work.

Table 1. Selected results from the survey on using GenAI tools

Research Question	Relevant items in questionnaire questions		Conclusions
RQ1: Students' familiarity with GenAI tools	***Familiarity of GenAI tools (OQ; n=22; r=28):*** 50% ChatGPT 18% Copilot 18% Other tools 11% Gemini 4% None	***GenAI familiarity context (MC, n=22; r=39):*** 28% Learning 26% Exploration, curiosity 23% Fun, Relax, Enjoyment 13% Programming 10% Text proof & refine	**1. Almost all (96%) surveyed students are familiar with GenAI tools, mainly from contexts such as learning, exploration and enjoyment.**
RQ2: Students' actual and expected use of GenAI tools in the HCI course	***Actual tasks where GenAI tools were considered or used in the HCI course (OQ, n=22; r=35):*** 34% Brainstorming ideas 17% Persona (User profile) 17% Other 14% User requirements 9% Product Vision 9% User testing scenarios, Project mgmt & planning	***Suggested HCI tasks suitable for GenAI support (O, n=22; r=22):*** 45% Brainstorming ideas 18% Text proof & refine 14% Generating templates 14% Generating content 9% Generating graphics	**2. Actual and preferred uses of GenAI in the HCI course include brainstorming for ideas and other activities that are far behind.**
RQ3: Students' expectations regarding policy for using GenAI tools	***Preferred local policy for using GenAI in the HCI course (SC, n=22; r=22)***: 9% Recommended by teacher 86% Student's choice 5% GenAI not allowed	***Preferred general policy for using GenAI (SC, n=22; r=22)***: 68% Local by a course teacher 27% General by university 5% None at all	**3. Students prefer using GenAI tools as their own choice within the HCI course and in-course policy presented by their teachers.**

Legend: *n* = No. of responses; *r*- No. of items marked/submitted; SC – single-choice, MC – multiple-choice, OQ – open question

4. Discussion and conclusions

Undoubtfully being insightful, the results of this study are not free from severe limitations: a convenience, small sample of respondents was accessed, surely not representative for sub-populations of students within very diverse fields of study at this university; all collected students' responses were declarative and are prone to misjudgements and responses from open questions were manually coded into categories, which is prone to the researcher's subjectivity bias. Despite the response rate of 26% (considerably higher than in other studies e.g. [1], [7, 8], [11], where it was usually below 10%), conclusions from this study on this HCI course cannot be extrapolated to students of other IT-related courses or programmes.

Nevertheless, some contributions were delivered from this study, such as:

1. Uncovered (with the above limitations) students' familiarity with GenAI tools and their expectations as to the use in HCI class and for establishing frames for the policy approving some use of GenAI tools; as research regarding Gen-AI in HCI education is rare [3], [5], this work sheds some light on this issue; research studies in other educational fields than CS e.g. [1], [7] have also shown that students are more familiar with using GenAI tools than their teachers might expect;
2. Findings regarding the guidelines and policy for the approved use of GenAI tools have shown that students want to have a choice and flexibility in this aspect and prefer to have these rules rather presented in-course by their teacher than by university administration; it seems to be in line with other relevant studies [2], [7] from which it is apparent that students want to be included in shaping prospective regulations which address them as problem stakeholders;
3. There is an interesting novelty in addressing students' views on possibly grading their work by teachers using GenAI tools; despite results in this aspect being inconclusive, there seems to be some asymmetry in students' interpreting their justified use of GenAI tools from the teachers'.

Last but not least, there are several tips from this study on how to reshape future HCI courses towards reasonable use of GenAI tools, mostly by modifying assignments and learning outcomes by including students' ability to use GenAI tools responsibly, as in [14].

The results of this study could also be useful for planning GenAI-related strategies

elsewhere for CS and HCI students and teachers in academic institutions, who remain the key stakeholders of the problem considered in this paper.

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