



Exploring agency with and in participatory research on artificial intelligence in everyday information practices

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Abstract

Introduction. Artificial intelligence (AI) tools are increasingly integral to the everyday information practices of young people in digitalised societies. These tools are suggested to shape human agency; that is, human capacity to act in meaningful ways.

Method. We applied participatory research methods to study how young people construct their agency in relation to AI systems as part of everyday information practices and in their participation in the research process. The data were collected with fourteen young people (fifteen–seventeen years old) and consisted of autoethnographic notes, video recordings and feedback forms.

Analysis. We focused on the linguistic features of the descriptions of agency applying Jyrkämä's (2009) modalities of agency (*be able, must, can, feel, want* and *know-how*) as an analytical framework.

Results and discussion. The results show that the young participants were able, could and knew how to exercise their agency in various ways both when engaging with AI technologies and when participating in a research process. However, their agency was also restricted in many ways. The modalities were interpreted to characterise the ways technologies and the research setting shape possibilities for agency and, as such, are helpful in identifying ways to develop agential practices.

Introduction

Artificial intelligence (AI) systems are already an integral, but often unnoticed, part of the everyday lives of young people in digitalised societies. They are included in, for example, contemporary search engines, social media platforms, navigation and translation tools and recommender systems. Moreover, the text, video and audio content we encounter is increasingly AI-generated (see Hirvonen et al., 2023). As such, AI systems are integrated in many, if not most, of our everyday digital platforms. The use of such tools shape the practices of information seeking as they enable new ways of multimodal, quick search, encourage active scanning instead of searching and restrict access to certain content (see Hirvonen et al., 2023). As such, AI systems included in different applications and platforms enable information to be shaped to meet the anticipated needs of individual users, often in ways that do not require or enable active user participation (Haider and Sundin, 2019), potentially inviting engagement in increasingly passive practices in comparison to active search and evaluation (Jylhä et al., 2024). Overall, the increased use of AI in different sectors of society has been seen to threaten human agency (Sundar, 2020) as they can reduce human control and oversight (Pop Stefanija, 2023).

This study aims to increase our understanding of the agency of young people when engaging with AI systems and in a research process. We approach agency from a constructionist perspective, referring to it as the capacity of people to choose meaningful ways of acting rather than passively repeating existing social and cultural orders (Giddens, 1984) and ask: how do young people construct their agency 1) in relation to AI systems as part of everyday information practices and 2) as participants in a research process? We address these questions by analysing the modalities of agency (Jyrkämä, 2009), which characterise agency as a dynamic interaction produced by structures and individual factors. We focus on the ways these modalities manifest themselves in the texts and speech of the young people who participated in our study.

Research method

Previous scholarly work has highlighted the need to include the perspectives of the youth themselves in research on youth information practices (Agusto, 2019; Jylhä et al., 2024) as well as their experiences with AI (Council of Europe, 2019). We applied participatory research methods (Groundwater-Smith et al., 2015) with the aim to support young people's engagement in research and sharing their own perceptions (Meyers et al., 2007). We focused on task-centred activities (Barriage, 2018) that allow participants to communicate their ideas and opinions (James, 2001), supporting discussion on complex and abstract issues (O'Kane and Panicker, 2018).

Our research is based on data created with young people who participated in an AI Youth Ambassadors programme in the summer of 2024. Fourteen people aged fifteen-seventeen participated in the programme, working on AI-related topics at the University of Oulu, Finland. Central to data creation was notes produced by the participants following an autoethnography toolkit form (Durall, 2021) in which they examined an AI-powered application of their choice from the perspectives of mapping, describing and envisioning (see Durall, 2021). In *mapping*, they familiarised themselves with the functions of the chosen application and drew a map to illustrate their own activities and those of the application, and their relationship to each other. In *describing*, they repeated the task, describing their thoughts and feelings when using the app, and by doing so, reflected on how technologies can affect them and how they can affect technologies. In *envisioning*, they imagined a future app designed to do similar tasks that the participants experienced in mapping and describing and to reflect on the developments and consequences for individuals, communities and society. Following these steps, the participants worked in groups to compare their notes and to prepare a presentation on their key findings. Groups were able to freely choose an application they were familiar with and wanted to focus on. In addition, the groups created a research plan for studying a topic related to AI and young people. Finally, the groups presented both tasks to all the programme participants.

Analysis

We analysed the notes (n=14, a total of 98 pages) produced by the young people; the video-recorded situations in which groups presented the implementation and results of their tasks (5 h, 39 min, 12 s) and feedback forms the participants filled in (n=14, a total of 28 pages).

As our focus was on constructing agency, we analysed the linguistic features of the descriptions of agency in the data. We used the analytical framework developed by Jyrkämä (2009) as it enables analysis of the modalities of agency based on language use. This framework describes expressions of situational, contextual and experienced agency and address action and social practices (Jyrkämä, 2009), and as such was found relevant in terms of our research questions. Moreover, the framework was created in the context of elderly care, and for this reason, it fits the analysis of the agency of young people in situations when they may have limited possibilities to act. The expressions of modalities of *be able*, *must*, *can*, *feel*, *want* and *know-how* (Jyrkämä, 2009) were identified and used as main categories of our analysis. *Must* and *can* are linked to the possibilities or limitations of a system or structure that individuals are unable to influence through their actions (Jyrkämä, 2009; Kosonen et al., 2021). *Know-how* is referred to as skills and competences, whereas *be able* is related to a situational capacity and self-efficacy in a certain time and place (Keurulainen et al., 2022). *Want* is linked to the motivation of doing something; *want* and *know-how* reflect a person's autonomy and resources (Keurulainen et al., 2022). *Feel* encompasses the capacity to judge, evaluate and associate emotions with encountered things (Keurulainen et al., 2022).

Results

All six modalities of agency were identified both in terms of young people using AI systems as integrated in different applications and platforms and in relation to the research process they took part in. These modalities were interpreted to characterise the ways technologies and the research setting shape possibilities for agency (Table 1).

	Be able	Must	Can	Feel	Want	Know-how
In relation to AI technologies	I use it pretty often because with it I can find more similar things I have searched before, and it can recommend things I can find interesting. (ID 9)	Users can submit their own bots that must be approved by moderators. (ID 14)	You can add music as well, viewers can interact, can choose any others, you can highlight it. (ID 5)	It generally felt like we got even more information that we even wanted or expected [from ChatGPT]. (video)	You first type what you want to search. (ID 10)	This is how we use Instagram and we use Instagram to chat with others, share interest and find inspiration. (video)
In relation to doing research	My team created a really cool research plan. (Feedback)	We worked on this auto-ethnography toolkit where we had to pick an app and we chose Pinterest (Feedback)	I liked how freely we could work on our toolkits. (Feedback)	The process was interesting and entertaining . (Feedback)	The hardest part was choosing the topic that we wanted to base the questions upon. (Feedback)	I didn't learn that much today but it was more of your own knowledge . (Feedback)

Table 1. Examples of the modalities of agency in the participants' texts and talk.

The modalities *must* and *can* express factors that limit agency, and this is shown in instances where participants reflected on how they had to act in a certain way while using technology to achieve a desired outcome, such as seeking information, or could choose between certain predefined functions and features when using an application but could not add or remove any of its features. Similarly, in the research process, the participants had to follow instructions, but they were able to make decisions within the limits defined by the researchers. On the other hand, the conditions set by the researchers were not always met and young people chose to act in ways that were more meaningful for them.

In the data, *want* occurred in situations in which an application allowed the user to proceed as they wished, thus supporting agency (Table 1). In doing research, the note-making task was scripted by the university researchers but the young people had a say in what application they wanted to look at and how. Similarly, the research topics could be freely chosen but, the feedback indicated that the young people had difficulties in choosing a research topic for their research plan.

Know-how was not directly visible in the participants' notes. The young people did not highlight their skills or competencies when exploring the applications of their choice, likely because this know-how appeared self-evident to them. Instead, they reflected on the challenges and lack of experienced competence while doing tasks, thus demonstrating their ability to assess their skills and knowledge at different stages of the research (Table 1).

Be able was understood as self-efficacy in relation to using technology and taking part in research. In terms of technology, participants' agency was reflected in instances where they expressed what

they were able to do with the application they chose and why they used it the way they did. Being able was also evident in the feedback, where one participant wrote that '[m]y team created a really cool research plan' which showed enthusiasm for the research and well-deserved pride in their ability to complete their task according to instructions (Table 1).

In the note-making task, the young participants clearly expressed the kind of feelings the use of different applications had aroused in them (Table 1). This was not surprising due to the nature of the toolkit, in which they were asked to describe their feelings (e.g. make notes about your thoughts and feelings) while using a certain application. In relation to doing the research, however, the *feel* modality was more implicit than other modalities.

Discussion

The analysis of the modalities of agency expressed in the research material indicated that the young participants were able, could and knew how to exercise their agency in various ways both when engaging with AI systems and when participating in a research process. Yet, the ways their agency was being restricted by the tools that they used and by the research setting offered as the most interesting insights. While our aim was to support our participants' agency through the use of participatory methods, the analysis of the modalities of agency allowed us to notice ways in which we, often unintentionally, restricted the participants' agency. The modalities were interpreted to characterise the ways technologies and the research setting shape possibilities for agency and, as such, are helpful in identifying ways to develop practices that support agency. In relation to AI systems, this can mean awareness of the role of AI in applications and platforms and adapting own actions in meaningful ways. In relation to research, this can include implementing methods that allow young people to genuinely have an impact to the whole research process from planning to reporting.

We will continue the initial analysis presented in this short paper to categorise the identified modalities as enablers and barriers to better understand the relational affordances for agency in the examined settings (see also Keurulainen et al., 2022). Moreover, we are currently experimenting with a co-research approach in which participants are seen as equal partners in the research process (Kulmala et al., 2023) and will be involved in longer-term work with the possibility to carry out different stages of research, including creating research ideas, data collection and analysis and writing, without the work being pre-determined by professional researchers. This process will allow us a way to explore how we can better support young people's agency in research.

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