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## INTRODUCTION

In the twenty-first century, not only individuals' access to digital technologies but also their ability to use these technologies consciously, ethically, and responsibly have begun to be considered among the fundamental civic skills. This necessary transformation, along with the migration of traditional understandings of citizenship to digital environments, has placed the concept of digital citizenship at the center of education and social structures. Digital citizenship is a multidimensional concept that refers to individuals who can exercise their rights in the digital environment, fulfill their online responsibilities, and act in accordance with digital security, ethics, and communication principles (Ribble, 2015). This concept is not limited to technical knowledge but encompasses a wide range of competencies, including decision-making in digital environments, critical thinking, digital footprint awareness, ethical and legal use of digital structures, and social participation. Recent research has revealed that the scope of digital citizenship is not limited to individual behaviors and competencies but is also intertwined with democratic values such as social justice, media literacy, ethics, and the defense of online rights (Cortesi et al., 2020). International documents such as UNESCO's digital competencies framework and the European Digital Competence Framework (DigCompEdu) define digital citizenship as a fundamental component of 21st-century skills, and education policies emphasize the development of individuals as responsible, productive, and critical

actors in the digital world. However, students' access to and technical ability to use digital tools does not always mean they use them ethically, safely, or with a sense of social responsibility. Therefore, digital citizenship education should be structured to include not only individuals' use of digital tools but also the behavioral, social, and cultural dimensions of their use (Öztürk, 2021). Artificial intelligence (AI) is increasingly gaining ground in education, improving and transforming learning processes. It has become particularly important for educators to understand how students perceive AI, how much they trust these technologies, and in which areas they benefit. Research shows that students generally have a positive attitude toward AI-supported applications, but are hesitant about systems that can completely replace teachers (Gocen & Aydemir, 2020). AI-based learning environments can support students' learning at their own pace and according to their needs by providing personalized educational opportunities (Chen et al., 2020). In line with these developments, AI literacy is considered a part of digital literacy, and the goal is for individuals to understand, critically evaluate, and ethically use AI technologies (Roll & Wylie, 2016). Therefore, education systems should not only utilize AI but also equip students with the knowledge and skills necessary to understand these technologies. As the use of artificial intelligence (AI) rapidly expands in educational settings, teacher candidates' attitudes, thoughts, perspectives, and perceptions regarding this technology are gaining increasing importance and emerging as a new research topic. Research indicates that teacher candidates

believe AI can benefit education, but they are not sufficiently prepared to integrate this technology into the classroom (Pokrivcakova, 2023). Another study found that while some teacher candidates believe AI can support teachers, particularly in areas such as individualized learning, student monitoring, and assessment, others are concerned about the ethical implications of AI and the potential threat it poses to the human aspects of the teaching profession (Gatlin, 2023). The integration of AI into education and teaching processes not only requires technical knowledge but also brings about a transformation in teacher identity and competencies. Studies in this context have revealed that preservice teachers' attitudes toward AI are closely linked to their trust in technology, ethical awareness, and self-efficacy levels (Zhang et al., 2023; Al Darayseh, 2023).

In a study by Guan, Zhang, and Gu, it was noted that preservice teachers mostly viewed AI as a support tool but struggled to integrate it as an active collaborator in teaching processes (Guan et al., 2025). These findings highlight the need for increased training in AI literacy, ethical awareness, and pedagogical integration skills in teacher training programs, and the need for in-depth research in these areas. The rapid transformations brought about by the digital age require individuals not only to be able to use current technologies but also to foresee the future and consciously construct their digital identities accordingly. How students construct their own futures is closely related to their development of visions regarding the purposes for which they will use technology and how they will use it (Facer, 2011). In this process, the scenario-based learning approach stands out as an effective method that enables students to imagine complex social, technological, and ethical situations and develop solutions for these situations (Adebiyi, 2023). Scenario writing allows students to rethink their digital roles at both individual and societal levels, to recognize digital dilemmas they may encounter, and to question their responsibilities in the context of digital citizenship. In this context, the aim of this study is to develop students' awareness of digital citizenship, digital ethics, and individual interaction with artificial intelligence, awareness of technology use, and social

responsibility; to analyze their own digital behaviors and, by developing future-focused scenarios, to recognize their transformations in this process.

## **MATERIALS AND METHODS**

### **Research Model**

The study utilized qualitative research methods. Qualitative research can be defined as research that utilizes qualitative data collection methods such as observation, interviews, and document analysis, and follows a qualitative process aimed at presenting perceptions and events in a realistic and holistic manner in a natural setting (Yıldırım & Şimşek, 2018). According to Kuş (2003), "The fundamental characteristic of qualitative research is revealing the perspectives and worlds of meaning of the research participants, and seeing the world through their eyes."

### **Data Collection Tool**

A semi-structured interview form was used as the qualitative data collection tool in this study, and the analyses were conducted using semi-structured interview questions. Research questions were posed based on the prepared semi-structured interviews. In-depth interviews (face-to-face), direct observation, and document analysis techniques are generally used to collect data in a qualitative research approach (Legard et al., 2003). The data for this study were obtained through the "face-to-face interview technique," which provides an in-depth understanding of participants' perspectives on the topic, which cannot be directly observed through other data collection tools. The face-to-face interview technique also allows for the discovery of many dimensions, such as the reasons, feelings, thoughts, and beliefs underlying participants' responses (Legard et al., 2003)

### **Formulation of Research Questions**

The semi-structured interview form developed for this study included five open-ended questions. To ensure internal validity, the interview form was submitted to faculty members from the Department of Educational Sciences, Faculty of Education, Near East University, for review to obtain expert opinions. Based on these opinions, the form was revised. Following this, a

pilot interview was conducted with a study group equivalent to the study group. This determined the clarity and comprehensibility of the questions and the extent to which the answers provided reflected the answers to the questions posed.

- Subsequently, during the re-interview question development process, expert opinions, educational administration experts, and Turkish linguists were consulted. The transcripts were reviewed to determine whether the questions were clear and comprehensible, covered the topic, and provided the necessary information. Data collection was initiated after the interview questions were deemed to provide the desired data. Content analysis was used to analyze and interpret the qualitative data obtained from the participants in this study. The research questions were:
- How do you define digital culture? How do you define digital citizenship?
- What characteristics align with digital citizenship? What factors prevent you from becoming a digital citizen?
- What digital skills need to be developed?
- How do you plan to use artificial intelligence and teaching together in preparation for your professional life?
- As a conscious individual in the use and planning of technology in teaching in the technological age, how would you assess your leadership and social influence skills?
- What strategies should be prioritized for quality education in higher education?

## Validity and Reliability

### A. Internal Validity:

When the relevant literature is examined, various researchers have established different criteria for the validity and reliability of qualitative research (Angen, 2000; Creswell, 2013; Merriam, 2013; Maxwell, 2012; Onwuegbuzie & Collins, 2007; Yin, 2017). Efforts to establish criteria for the quality of qualitative research have caused conceptual inflation due to the diversity of suggestions. The lack of a clearly defined method for determining what a qualitative research

strategy should be like has led to ongoing discussions in this field (Barbour, 2001; Patton, 2014; Yaşar, 2018). This study is one of these efforts and is motivated by the aim of advancing well-intentioned studies within the framework of a model.

1. Peer Review: Peer review was used in this study and refers to a comprehensive assessment by impartial colleagues regarding the research method, findings, and overall strategy. Peer review aims to eliminate criticisms of subjectivity that may arise during the analysis process (Barbour, 2001; Silverman, 2013).
2. Detailed Description: Detailed description aims to provide readers with a better understanding of the research context and process. This criterion assumes that the quality of qualitative research increases to the extent that it richly describes social life (Lincoln & Guba, 1985).
3. Audit Trail: Records kept in a study include raw data, written field notes, data reduction and analysis products, summary notes, and synthesized findings (Lincoln & Guba, 1985).

### B. External Validity (Transferability):

Transferability corresponds to generalizability in quantitative research. It refers to the extent to which findings can be applied to other contexts based on similarities (Lincoln & Guba, 1985; Merriam, 2013; Miles et al., 2014).

#### 1. Familiarity with the Research Topic

One way to increase the reliability of qualitative research is for the researcher to be familiar with the research topic, the literature, and the study population.

#### 2. Number of Interviews

The number of interviews conducted per participant is as important as the number of participants (Morse, 2000).

#### 3. Interview Duration

Interviews were conducted with participants for 30-45 minutes.

#### 4. Number of Participants

The main goal is to achieve data saturation. An optimal number of participants was reached in this study.

The reliability of the study was calculated using the formula suggested by Miles and Huberman (1994), with an average reliability of 92%. Reliability values above 70% are considered acceptable (Miles & Huberman, 1994).

### Study Group

The study was conducted in May 2025 and recruited a total of 60 volunteer participants from the Faculty of Education at the University of Kyrenia during the 2024-2025 Spring Semester. The students were third-year students, 27 male (45%) and 33 female (55%). The students were between the ages of 20 and 23. Participants were selected using a purposive random sampling method (Marshall & Rossman, 2014).

### Data Collection

Sixty participants were interviewed during the qualitative data collection process. Participants were informed about the purpose of the study and confidentiality principles. Data collection was conducted between May 1 and May 30, 2025.

### Data Analysis

Data obtained from the interview questions were analyzed using content analysis (Mohajan, 2018). Content analysis was conducted in four stages:

1. Coding the Data
2. Identifying Themes
3. Organizing and Defining the Data According to Codes and Themes
4. Interpretation of the Findings

## FINDINGS AND COMMENTS

### Definition of Digital Culture, Digital Citizenship

Definition of digital culture, definition of digital citizenship, and findings regarding factors that hinder digital citizenship are revealed. 36% (22) of participants define digital culture as the way digital technologies and the internet shape the way individuals, societies, and institutions think, communicate, produce, and interact. 30% (18) of participants define digital citizenship as the ability and awareness of individuals to act ethically, responsibly, safely, and consciously in the digital world. 20% (12) of participants state that

barriers to digital citizenship include lack of access to internet connection, digital devices, or technological infrastructure, and that individuals living in rural areas or with low incomes are deprived of technology. 14% (8) of participants stated that most digital content is in English or certain dominant languages, leading to exclusion, and that threats such as cyberbullying and theft of personal data exist.

Some participant opinions are as follows: K(45) "In my opinion, digital citizenship is the ability and awareness of individuals to act ethically, responsibly, safely, and consciously in the digital world. We can define it as individuals who know their rights and responsibilities in digital environments such as the internet, social media, digital devices, and online platforms, and who respect the rights of others." K(32) "In my opinion, the main factors that hinder digital citizenship are lack of access to internet connection, digital devices, or technological infrastructure, lack of access to technology for individuals living in rural areas or with low incomes, and the inability of individuals to use digital tools effectively, safely, and critically."

Participants also emphasized that inadequate digital citizenship education, ethical and security threats, cyberbullying, and theft of personal data can hinder individuals' digital citizenship

### Digital Skill

42% (25) of participants emphasized the importance of digital skills such as artificial intelligence and big data literacy, technological literacy, creative thinking, reliability, lifelong learning, resilience, analytical thinking, motivation, self-awareness, empathy, and active listening. 25% (15) of participants highlighted creative thinking, leadership, and empathy skills. 23% (14) stated that educational and socio-economic inequalities play a key role in unequal participation in the digital world. 10% (6) underlined the need for stronger critical thinking skills.

Participant opinions include: K(59) "I believe I have creative thinking, leadership, and empathy skills because in this constantly evolving world I can envision behaviors and transform them into something different. My empathy allows me to consider others' perspectives continuously." K(42) "Digital citizenship

does not end with access to technology. Education and socio-economic inequalities play a key role, and we must ensure equal participation in the digital world.”

Participants emphasized that skills such as AI literacy, big data awareness, creative thinking, reliability, lifelong learning, flexibility, leadership, motivation, self-awareness, empathy, and active listening should be developed.

### Use of Artificial Intelligence and Teaching

Together in Preparation for Professional Life 40% (24) of participants emphasized that AI-supported personalized learning allows content to be tailored to students' interests, needs, and pace, enabling teachers to focus on creative and guiding roles. 27% (16) stated that AI can personalize learning processes, detect deficiencies, provide tailored feedback, and support interactive learning. 18% (11) emphasized that AI enables more efficient, personalized, and creative approaches in education and supports classroom management. 15% (9) highlighted individualized learning, student performance monitoring, and AI-supported learning systems.

Participant opinions include: K(33) “Artificial intelligence personalizes learning processes, identifies shortcomings, and provides feedback, helping us learn from mistakes and track progress.”

K(12) “I plan to use artificial intelligence in teaching for individualized learning, student performance monitoring, and automated assessment.”

Participants indicated that AI strengthens teachers' professional roles by supporting personalized learning, interactive content, feedback processes, and classroom management effectiveness.

### Assessment of Leadership and Social Influence

Skills as an Individual in the Use and Planning of Technology in Teaching in the Technology Age

The Assessment of Leadership and Social Influence Skills as an Individual in the Use and Planning of Technology in Teaching in the Technology Age is presented in Table 1.

Some of the participant opinions, aimed at presenting findings related to the evaluation of

**Table 1: Findings Regarding the Assessment of Leadership and Social Influence Skills as an Individual in the Use and Planning of Technology in Teaching in the Technology Age.**

		( f )	(%)
Thoughts on the findings regarding the evaluation of leadership and social influence skills as a conscious individual in the use and planning of technology in education in the technological age, according to the opinions of stakeholders.	Leadership requires a vision to select and use technology appropriately for pedagogical purposes and to ensure that these technologies are implemented within the scope of social ethics, taking into account student well-being, equality, and data privacy.	21	35%
	Technology should not only be a means of entertainment, but also a tool that supports development. It is important to ensure knowledge sharing within the team by introducing the applications and tools that can be used.	19	31%
	Leadership skills should be developed by establishing an e-learning platform in a school project, and students should be encouraged to participate more actively in classes.	13	22%
	Students should be given digital literacy training, and they should be developed the skills to distinguish fake news and access accurate information.	7	12%

leadership and social influence skills as conscious individuals in the use and planning of technology in education during the technological age, are summarized as follows.

K(27) stated, "I take an active role in the conscious and pedagogically grounded use of technology in preschool education. I view technology not merely as a source of entertainment, but as a developmental support tool. I also guide my colleagues in integrating technology and contribute to knowledge sharing within the team by introducing practical digital applications and tools." Similarly, K(44) emphasized the importance of digital literacy training for students, noting, "In one of my lessons, I had students practice identifying fake news, which enhanced their ability to access accurate information online. This process both increased their awareness and strengthened their critical thinking skills."

According to the views of stakeholders, the conscious and planned use of technology in teaching within the technological age plays a crucial role in shaping individuals' leadership and social influence skills. Participants highlighted the necessity of considering student well-being, equity, and data

privacy when integrating technological tools into educational processes. They also underlined that artificial intelligence can support teachers in technology integration by facilitating collaboration and knowledge exchange through the introduction of effective digital tools. Furthermore, participants suggested that leadership competencies among teachers can be strengthened through the effective use of artificial intelligence. In addition, they stressed that teachers should develop skills in designing digital and online instructional materials, while students should receive enhanced digital literacy training. It was also noted that practical activities aimed at improving students' abilities to access reliable information online can contribute significantly to the development of critical digital competencies.

### Strategies should be prioritized for quality education in higher Education

Strategies that should be prioritized for quality education in higher Education are presented in Table 2.

Some of the participant opinions, in order to identify the strategies that should be prioritized for

**Table 2: Findings on which strategies should be prioritized for quality education in higher education.**

		(f)	(%)
Thoughts on the findings regarding which strategies should be prioritized for quality education in higher education, according to the views of stakeholders.	Using teaching methods that encourage active participation rather than passive knowledge transfer with a student-centered education approach, especially problem-based learning, project-based learning, and flipped classroom methods,	20	33%
	Within the scope of digital and technology integration, effective and planned use of digital tools and artificial intelligence applications in education should be ensured,	17	28%
	Within the scope of the continuous development of academic staff, continuous training opportunities should be provided to faculty members in pedagogical formation, use of technology, and current field knowledge, and within the scope of international and multiculturalism, students and academics should be provided with different perspectives through exchange programs, foreign language support, and global collaborations.	17	28%
	Continuous updating of quality assurance systems within the scope of feedback-based improvement,	6	10%

quality education in higher education, are as follows: F(47) "In my opinion, student-centered active learning methods should be expanded primarily for quality in higher education, so that students can internalize knowledge and develop critical thinking skills. Education and training should be supported with strategies such as project-based learning, critical thinking, and the case study method." F(54) "In my opinion, a system where students are active learners, not passive listeners, and where methods such as discussion, projects, and collaborative learning are used should be prioritized." Participants' opinions suggest that a student-centered education approach should be employed to determine which strategies should be prioritized for quality education in higher education, based on stakeholders' perspectives. Participants emphasized that effective and planned use of digital tools and artificial intelligence applications in education should be given significant importance. In addition, learning analytics and hybrid education models were highlighted as key priorities. Participants also stated that teachers should receive continuous professional development in pedagogical formation, technology integration, and up-to-date subject knowledge. Furthermore, new assessment methods in measurement and evaluation should be prioritized. Participants underlined the importance of ensuring equal opportunities in education within the framework of accessibility and inclusion, and the need to develop inclusive practices. Finally, they emphasized the necessity of continuously updating quality assurance systems for both students and academic staff.

### **Conclusion And Recommendations**

The aim of this study is to help students develop their digital citizenship, digital ethics, individual interaction with artificial intelligence, awareness of technology use, and awareness of social responsibility. The results obtained from the research aim to analyze students' own digital behaviors and question their transformations in this process by developing a future-oriented scenario. The results are presented below. In this context, according to the opinions of stakeholders, the definition of digital culture, the definition of digital citizenship, and the findings obtained regarding the factors that

prevent becoming a digital citizen, the participants defined digital culture as the cultural structure in which digital technologies and the internet shape the ways individuals, societies, and institutions think, communicate, produce, and interact. (Orton-Johnson, 2024; Mishra et al., 2024). In addition, the participants defined digital culture as including elements such as social media, digital art, online communities, virtual reality, digital identities, and algorithms. Participants specifically define digital culture as the ways people communicate, access information, interact, and shape their daily lives through the internet and technology. In this context, participants interpreted digital culture as encompassing the values, beliefs, and behaviors that emerge from interactions with technology, digital media consumption, online communities, and the integration of digital tools into work and personal lives. According to the participants' views, within the scope of digital citizenship, participants defined it as the ability and awareness of individuals to act ethically, responsibly, safely, and consciously in the digital world. In addition, participants defined digital citizenship as individuals who know their rights and responsibilities in digital environments such as the internet, social media, digital devices, and online platforms, and who respect the rights of others (Richardson & Milovidov, 2019). According to the participants' views, the main factors that prevent digital citizenship include lack of access to internet connection, digital devices, or technological infrastructure; the lack of technology access for individuals living in rural areas or with low incomes; the inability of individuals to use digital tools effectively, safely, and critically; inadequate digital citizenship education in schools or at the societal level; the lack of teaching of topics such as ethics, security, and copyright; the fact that most digital content is in certain languages (e.g., the prevalence of English); threats such as cyberbullying and theft of personal data can push individuals away from digital environments and easily hinder digital citizenship (Dunaway & Macharia, 2021). In order to reveal the findings regarding the digital skills that need to be acquired according to the opinions of the stakeholders, it can be said that digital skills such as artificial intelligence and big data, technological

literacy, creative thinking, reliability and lifelong learning, talent management, resilience, flexibility and agility, analytical thinking, leadership and social influence, motivation and self-awareness, empathy and active listening, service orientation and customer service, reliability and attention to timeliness should be acquired, according to the participants' opinions (Piliouras et al., 2025). In addition, according to the participants' opinions, they stated that digital skills include the ability to effectively access, organize, understand, create and disseminate information using digital devices. According to the views of the stakeholders, within the scope of revealing findings on how to use AI and teaching together in preparation for professional life, personalized learning should be used to provide content tailored to students' interests, needs, and pace. Data analysis should be used to analyze student achievement to identify areas of weakness and intervene accordingly. It can be said that teaching with AI should be improved by leaving time management and routine tasks to AI, enabling teachers to work more creatively and with a focus on guidance. It can also be said that teaching with AI should be improved by making lessons more engaging and interactive with innovative content and AI-supported materials (Wongmahesak et al., 2025; Okonji & Igwe, 2025). Participants suggested that AI is a powerful tool to accompany teaching, and that, first of all, a personalized learning path should be drawn, deficiencies should be identified, and specific repetitions should be provided. Furthermore, it is understood from the participant views that learning should be made more engaging by helping students understand complex topics from different perspectives and through interactive materials. Participants' opinions suggest that learning from mistakes and making progress should be made quickly, particularly by providing feedback, and that more efficient, personalized, and creative approaches should be developed in education by using effective ways to combine artificial intelligence and teaching in preparation for professional life (Okonji & Igwe, 2025). Participants' opinions suggest that the role of teachers should be further strengthened through artificial intelligence in preparation for professional life, and that artificial intelligence should be utilized

in ways that allow teachers to focus on more people, provide personalized education, and be more effective in classroom management. Participants stated that artificial intelligence, in particular, creates new opportunities in education and provides students with more effective, personal and innovative learning experiences, increases student success by accelerating the digital transformation in education, provides good support to teachers and is very useful in expanding global education access. Participants' opinions suggest that artificial intelligence should be used in areas such as individualized learning, student performance monitoring, and automated assessment in teaching as part of preparation for professional life (Ayeni et al., 2024).

According to stakeholders' views, leadership in the use and planning of technology in education requires a vision for selecting and using technology aligned with pedagogical purposes, while also considering student well-being, equality, and data privacy within the framework of social ethics (Charles & Papadaki, 2025). It is understood from participants' views that individuals should take an active role in the conscious and pedagogically grounded use of technology in education. Technology should not be viewed merely as a tool for entertainment, but also as a means to support development. Teachers should be guided in technology integration, and knowledge sharing within teams should be encouraged through the introduction of practical digital tools and applications. Leadership skills can be enhanced by implementing e-learning platforms within school projects and by training teachers on how to effectively use these systems (Al-Hail et al., 2024). In addition, participant opinions indicate that teachers need to develop competencies in creating online instructional materials and that students should be more actively engaged in learning processes. Digital literacy training is particularly important, and students should be supported in developing skills such as identifying misinformation and accessing reliable information online (Diehl et al., 2024).

From a broader perspective, a student-centered approach and active learning methods should be prioritized in higher education rather than passive knowledge transfer. Within the scope of digital

and technological integration, the effective and planned use of digital tools and artificial intelligence applications should be ensured (Sułkowski et al., 2025; Al-Hail et al., 2024). Participants also emphasized the importance of online platforms, learning analytics, and hybrid learning models. Continuous professional development opportunities for academic staff in pedagogical skills, technology integration, and current field knowledge are essential for improving educational quality (Aithal & Aithal, 2023). Furthermore, assessment methods should prioritize creativity, critical thinking, and real-life skills rather than rote-based evaluation approaches. In this context, tools such as automated grading systems, learning management systems, computer-based testing platforms, and gamification applications should be effectively utilized.

Finally, within the scope of internationalization and multiculturalism, students and academic staff should be supported through exchange programs, language support, and global collaborations. Ensuring equal opportunities in education and developing inclusive practices for individuals with socioeconomic or physical disadvantages are also essential. In addition, continuous improvement of quality assurance systems through regular feedback from students and academic staff is of critical importance (Adair & Díaz, 2023).

Based on the findings of this study, it is recommended that content aimed at developing AI literacy be systematically integrated into teacher education programs. Teacher candidates should receive practical training on topics such as personalized learning, automated assessment, data analysis, and digital ethics. Furthermore, innovative technology-supported projects and continuous professional development programs for faculty should be designed to foster digital pedagogical leadership skills at universities. The multidimensional skills required by the digital age (e.g., analytical thinking, empathy, social influence) should be considered within the context of higher education institutions' quality policies (Redecker & Punie, 2017).

In conclusion, this study contributes to the digital transformation process in higher education by providing an in-depth analysis of stakeholder views

on AI-supported teaching approaches. The strategy recommendations developed based on participant opinions reveal that not only individual teacher competencies but also institutional capacity must be restructured to meet the requirements of the digital age. In this respect, the study offers unique contributions that will guide teacher education policies, academic staff development processes, and quality assurance practices.

Challenges related to digital citizenship can directly impact the equitable implementation of skills development and quality objectives, while the use of artificial intelligence in education is closely linked to ethical and visionary leadership. The results highlight the need for a cohesive and human-centered educational transformation that balances technological advancements with ethical responsibility and educational goals, and prepares students to participate critically and responsibly in an increasingly digital world.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Due to ethical and confidentiality restrictions related to the interview data collected, the datasets are not publicly available.

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