TECHNOLOGY LEARNING AND JUSTICE-IMPACTED COMMUNITIES

ANNALISE BAINES, HANNAH BRITTON, HYUNJIN SEO, DARCEY ALTSCHWAGER

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Annalise Baines, Hannah Britton, Hyunjin Seo, Darcey Altschwager

University of Zurich, University of Kansas, University of Kansas, University of Kansas

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Abstract

This study, guided by the unified theory of acceptance and use of technology (UTAUT), assesses how a technology education program affects technology adoption, use, and digital literacy for women transitioning from incarceration. Results highlight social influence (impact of instructors) and facilitating conditions (devices and access to lessons) as crucial factors in technology adoption. Most of the women stated their success and use of technology communication was enhanced through the support instructors and peer mentors provided. The research carries scholarly and policy implications for addressing technology education and information literacy within underrepresented justice-impacted communities in digital inclusion efforts.

Introduction

As individuals rely heavily on communication technologies for various aspects of their lives, there has been increased emphasis on technology learning (Connaway et al., 2017; Foley, 2017). In particular, the ability to critically evaluate information available online (i.e., information literacy) has gained prominence due to the proliferation of misinformation and disinformation on digital platforms (Anderson & Rainie, 2017). Despite the availability of diverse resources on technology learning and information literacy, significant disparities persist in these domains. For instance, previous research has shown that there is considerable gender and racial inequity in the

**Please send correspondence about this article to Annalise Baines, Department of Communication and Media Research (IKMZ), University of Zurich, Andreasstrasse 15, 8050 Zurich, Switzerland. E-mail: a.baines@ikmz.uzh.ch*

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use of digital technologies for entrepreneurial, educational, and digital activities (Jennings & Brush, 2013; Rajahonka & Villman, 2019; Robinson et al., 2015). This inequity results in disparity in building social capital, employment opportunities, and educational attainment (Chen et al., 2015; Witte & Mannon, 2010).

It is crucial to recognize that justice-impacted communities face even greater challenges in technology learning. Correctional facilities often struggle to provide adequate technology resources, including digital devices and internet access (Davis & Ostini, 2019). Within justice-impacted communities, women transitioning from incarceration face additional challenges in terms of technology learning (Blomberg et al., 2021). Despite the increasing number of women incarcerated in the United States, reentry programs tailored specifically for women remain limited (Harris, 2018). With this lack of tailored reentry programs for women, women transitioning from incarceration have fewer opportunities to gain digital skills compared with similarily situated men (Miller, 2021). Gender-based digital exclusion is compounded by barriers such as limited access, affordability, education (or lack thereof), gendered skillsets, content production patterns, technology literacy, and gender-related labor market dynamics associated with technology-related jobs, all of which contribute to digital gender divides (Brimacombe & Skuse, 2013). Moreover, as compared with men with criminal justice involvement, women are less likely to gain employment and more likely experience additional factors of precarity, which increases their vulnerability and risk of exploitation (Seo et al., 2022).

For women transitioning from incarceration, technology serves as a double-edged sword; it offers opportunities for education, employment, and social connection, but also presents barriers that can hinder their reintegration process. To bridge this digital gap and support women's reentry into society, there is a pressing need to explore their experiences, perceptions, and needs regarding technology education programs. This study examines how women recently released from jail or prison decide to participate in a technology learning program and what facilitating conditions contribute to their technology adoption and use.

This study contributes to the field of public interest communications by highlighting the unique challenges faced by women transitioning from incarceration in accessing and adopting technology. Empirical research on the marginalized population's experiences and needs regarding technology education programs fills a crucial gap in existing literature, offering valuable insights as to how digital inclusion efforts might serve public interest (i.e., supporting justice-impacted individuals' reintegration into society and thus reducing recidivism). By uncovering barriers and facilitators influencing participation in these education programs, the study informs the development of targeted communication strategies that promote inclusivity, reduce gender-based digital divides, and enhance more equitable opportunities for education, employment, and social connection (Seo et al., 2017). Ultimately, this research supports the broader goal of public interest communications by fostering an inclusive and informed society (Chernin et al., 2023), specifically addressing challenges faced by women transitioning from incarceration.

Literature review

Digital divide among marginalized women

Over the past decade, the rapid expansion of information and communication technologies has had a profound impact on various aspects of society and increasingly played a critical role in economic, social, and political realms (Robinson et al., 2015). People increasingly integrate online practices with traditional methods to achieve diverse goals, such as accessing relevant information, communicating with friends and contacts, completing transactions online, and participating in entertainment pursuits (Vilhelmson et al., 2017; Wang et al., 2016). However, research has shown that not all individuals benefit equally from the access and use of digital technologies and programs. A reason for this inequality is the digital divide, a phenomenon highlighting those who can and those who cannot effectively access or use communication technologies (DiMaggio & Hargittai, 2001). Factors contributing to this inequality include age (Loges & Jung, 2001), digital skills (Hargittai, 2002), and user familiarity (Merkel, 2004).

Additionally, the divide has exposed social disparities, particularly affecting women, racial/ethnic minorities, individuals with low income, those with lower education levels, and rural residents (Goedhart et al., 2019). Women transitioning from incarceration experience marginality at the intersection of gender, race/ethnicity, and socioeconomic status (Seo et al., 2022). However, there is little research on this population's technology learning experiences. By focusing on women transitioning from incarceration in the context of digital skills training, our research contributes to narrowing the gap in the literature and offers new perspectives on marginalization and digital inequality.

Digital disconnection and reintegration challenges among formerly incarcerated women

To contextualize the digital challenges faced by women transitioning from incarceration and the impact of the COVID-19 pandemic on this already disadvantaged group, it is essential to acknowledge the broader backdrop of the U.S. criminal justice system. The United States has one of the highest incarceration rates in the world with nearly 2.1 million individuals behind bars as of the end of 2019 (Gramlich, 2021). Recent reports suggest that women have become the fastest growing segment of incarcerated population since 2009 (Sawyer, 2018). Compared to men, most incarcerated women are serving time for non-violent offenses, often related to mandatory sentencing for drug-related crimes (Foster & Sanford, 2006; Ryder, 2020). While approximately 1.9 million women leave prisons or jails each year in the United States (Sawyer, 2018), the pandemic and subsequent recession have compounded the challenges women face when reentering society. Besides struggling to meet the demands in their new lives such as stable housing, food, jobs, and health care, they also face significant challenges in digital access and use because they had limited opportunities to utilize technologies while incarcerated (Blomberg et al., 2021; Craigie & Grawert, 2021). Reports indicate that women in transition often have poor

employment histories, low levels of literacy, low exposure to technology education, and very limited preparation for engagement in economic opportunities due to past criminal justice involvement (Blomberg et al., 2021; Duwe & Henry-Nickie, 2021). This digital disconnect is especially prevalent among those who have been incarcerated for several years (Reisdorf & DeCook, 2022). While security measures regarding Internet connection within correctional facilities are necessary, the limited opportunities create challenges when women leave prison and reenter an increasingly digital world.

The effects of a digital disconnect are far-reaching and can place women-in-transition into deeper social isolation. This in turn may inhibit their ability to socially and economically reintegrate into society. However, studies have shown that when digital literacy training is provided, either through correctional facilities or after their release, they not only feel better prepared for release but are also better equipped to reintegrate into society, therein possibly averting the negative impacts of the digital disconnect (Castek et al., 2015; Reisdorf & DeCook, 2022).

Educational technology as a learning tool

Technology-enhanced instruction is an effective tool to increase digital competence and skills for underserved populations, including high-poverty urban groups and people transitioning from incarceration (Blanchard et al., 2016). It improves digital literacy, access to information, and employment prospects (Smith, 2015). Community-based technology programs have demonstrated numerous benefits for these populations, which in turn affects both their lives and the lives of their children. For instance, Rivera and Francis (2015) studied the impact of an intervention technology program designed to assist Spanish-speaking low-income families in learning and using technology. They found that participants reported positive attitudes on what skills they learned through the program and could help assist their children with school-related activities at home and their involvement in the classroom. Overall, their pre-post survey data suggests that the program positively influenced marginalized groups' digital literacy skills (Rivera & Francis, 2015).

Further, studies have shown that digital literacy training for adult learners promotes autonomy, confidence, self-efficacy, competence, and self-regulation (Castek et al., 2015). For instance, Castek and colleagues reported on a program that operates on a ten-week, reentry-focused digital literacy curriculum in a prison setting. Each year, 700-900 people in prison complete the program. The curriculum focuses on Internet navigation, creating and sending resumes, creating email accounts, and how to effectively perform online searches for information. Over a period of three years, they found a 47% decrease in recidivism after the program started. The authors emphasize the importance of teaching advanced skills, including touchscreen technology, digital collaboration sites, Microsoft suite program, and social media use (Reisdorf & Jewkes, 2016).

When it comes to people's adoption and use of the Internet and social media, several factors, including education, age, geography, income, and race affect Internet use (Perrin & Atske, 2021). In a recently published study, the researchers examined how information literacy education positively influences participants' information assessments. Specifically, the study examined how low-income older Black adults assess the credibility of online information (Seo et al., 2021). The older adults in this study were the least likely to use the Internet if they had less than a high school degree. Those participants who had higher education attainments were more likely to accurately assess the credibility of information presented to them during a survey.

Specific to formerly incarcerated people, recent studies have found that they not only use technology for education but also engage in online spaces to reflect on their previous actions, engage in supportive relationships, and perform prosocial identities within the group (Hinck et al., 2022). These online spaces and the affordances they offer may provide vulnerable groups the support they need after being released from jail or prison.

Offering digital skills and information literacy education to digitally disadvantaged groups is an important step in their reentry to society, which may also reduce recidivism. By providing the essential educational skills, vulnerable populations, including formerly incarcerated women, can gain confidence in their online pursuits, enhance their information literacy, improve employment opportunities, and reconnect with society, especially during challenging times like the COVID-19 pandemic.

Theoretical framework: Technology acceptance and use

Understanding why individuals adopt or refuse certain communication technologies is key to developing educational programs and community engagement strategies aimed at reducing digital divide. Unified theory of acceptance and use of technology (UTAUT) offers a helpful guidance for our research study, as UTAUT considers social influence and facilitating conditions in accounting for access, adoption, and use of technology (Venkatesh et al., 2003). In addition, UTAUT is comprehensive with its incorporation of different models and has been widely used in research on technology and education or innovation adoption (Williams et al., 2015).

According to UTAUT, individuals develop diverse beliefs, perceptions, and attitudes concerning a particular piece of technology, which "in turn, have an impact on their intentions to use the technology, and, therefore, affect their actual use of the technology" (Garfield, 2005, p. 25). In particular, *performance expectancy*, *effort expectancy*, *social influence*, and *facilitating conditions* are considered as direct determinants of an individual's intention and behavior related to technology. Performance expectancy refers to the extent to which the individual believes a particular technological device or program will support them in achieving benefits (Venkatesh et al., 2003; Venkatesh & Davis, 2000). Effort expectancy is related to how much additional effort is anticipated (or how easy it would be) to adopt or use a particular piece of technology. Social influence concerns the individual's perception regarding how important others believe it to be that the individual should adopt or use a technological device or program. Finally, facilitating

conditions refers to the individual's belief about availability of technological support or training needed for their adoption or use of a digital device or software program.

These four constructs are particularly relevant to our research, which focuses on technology adoption among marginalized women who have traditionally been disadvantaged in technology access and use (Blomberg et al., 2021). Previous studies with such individuals have shown that perceptions of beneficial gains from technology use and anticipated efforts required to learn or use technology influence these individuals' decisions to adopt or use technology (Dobransky & Hargittai, 2006; Seo et al., 2019). Moreover, peer influence (social influence) and community support (facilitating conditions) can play significant roles in this.

Based on the above literature and guided by the UTAUT theoretical framework, this study poses the following research questions:

RQ1: What performance expectations did recently incarcerated women have that affect their participation in a technology education program?

RQ2: How do recently incarcerated women evaluate their effort using digital devices that affect their participation in a technology education program?

RQ3: How do recently incarcerated women find support through a technology education program?

RQ4: What facilitating conditions contribute to recently incarcerated women's adoption of technology and participation in a technology education program?

Methods

Interview research and sampling

To answer the research questions, we conducted semi-structured interviews with women transitioning from incarceration who participated in technology education. Qualitative interviews were deemed most appropriate due to their capacity to elicit rich, in-depth data that enabled participants to share their narratives organically, while also allowing researchers to probe specific areas of interest (Creswell & Poth, 2016; Merriam & Grenier, 2019). The immersive nature of qualitative interviews was important for capturing the context-specific dynamics of the participants' engagement with the technology education program.

We conducted interviews with 40 women recently released from jail or prison in two neighboring states in the U.S. Midwest. Participants for the interview were recruited through a technology education program provided by a university research team and funded by a federal grant. The program uses an online Learning Management Site and has been operating online

since 2020. The program is free of cost and provided for women who have been recently released from jail or prison. The program teaches a range of computer skills that are important for job participation and career advancement. To qualify, participants must identify as female, be above the age of 18, have served time in jail or prison, and live in a specified midwestern state. Once participants complete a phase (consisting of several lessons), they receive a technology stipend ($50) and a certificate of completion that they can add to their resume.

For this study, recruitment emails were sent to technology education program participants who had completed at least one lesson (not necessarily an entire phase) within the program. The recruitment emails stated that participants would receive an incentive of $10 for their time. Those who expressed willingness to participate in this interview research were asked to read and verbally agree to an information consent form before the interview took place.[1] The interviews were conducted by Ph.D. research assistants in the field of media and communication who closely collaborated with most interviewees through the technology education program. To ensure transparency and mitigate potential biases, the interview questions underwent thorough examination by faculty researchers prior to the interviews to avoid and revise leading questions. To further address the inherent challenges posed by the close relationship, multiple authors and research assistants reviewed and coded the data of this study separately. Using the peer debriefing method, the research team then compared and discussed their findings to determine points of continuity and key themes (Collins et al., 2013).

Using a semi-structured interview method, each interview session covered a set of open-ended questions on participants' motivation to enroll in the technology education program, their overall experiences with the program, the influence of the program on their technology access and use, and areas of improvement for future program offerings. In total, the interview guide had 19 open-ended and three follow-up questions that followed a consistent interview protocol. The interviews consisted of two parts: a structured interview and a close-ended questionnaire. The questionnaire mainly asked demographic questions. The open-ended interview questions were developed based on a review of previous research in this area (Blomberg et al., 2021; Seo et al., 2019), and they relate to constructs within UTAUT (Venkatesh et al., 2003; Venkatesh & Davis, 2000). For example, to measure *performance expectancy*, one of the questions asked what motivated them to want to enroll in the program. Regarding *effort expectancy*, one of the questions asked if the participant was motivated to seek other education opportunities in technology or employment after being involved in the program. Regarding *social influence*, one of the questions in this study was if the instructors of the program were helpful and available. Finally, one of the questions covering *facilitating conditions* asked what type of device they used to access the program and what challenges they may have faced. The selection of interview questions was carefully curated to encompass a comprehensive range of topics relevant to the study objectives, including participants' experiences with technology and their perceptions of

[1] All research protocols for this study were approved by the Institutional Review Board (IRB) of the authors' university.

barriers and facilitators to technology adoption. The question development process involved a collaborative effort among the research team, drawing on insights from existing literature and expertise in the field of technology education and public interest communications (Blomberg et al., 2021; Seo et al., 2019).

Procedure and coding

The interviews took place between April and November 2022, and on average each interview lasted for about 30 minutes. Following COVID-19 safety guidelines, the interviews were conducted via phone and recorded on Zoom. The consent form was read aloud before the start of each interview session. Once participants gave their oral consent, each interview was audio-recorded, transcribed, and loaded to Dedoose 9.0., a qualitative data analysis platform, to analyze interview transcripts. We conducted two rounds of coding (Hesse-Biber & Leavy, 2010; Rubin & Rubin, 2011; Strauss & Corbin, 1994). The first involved open coding to identify broad patterns and themes (Berg, 2018) across the interviews, which informed multiple empirical projects within the larger research program. The second round was focused coding (Saldaña, 2018), guided by the UTAUT framework and concepts. We systematically analyzed the transcripts to identify patterns and themes related to the four UTAUT concepts (performance expectancy, effort expectancy, social influence, and facilitating conditions), as well as technology experience, usage barriers, and other emerging themes.

Results

In total, 40 women who have recently been released from incarceration participated in the study. A summary of key demographic characteristics of the interviewees is shown in Table 1.

Table 1

Demographics of Interviewees

Variable	Value	Count	Percent (%)
Age	18-29	4	10 %
	30-39	12	30 %
	40-49	16	40 %
	50-59	8	20 %
	Total	**40**	**100%**
Race	Black or African-American	7	17.5%
	Hispanic or Latino	2	5%
	White or Caucasian	25	62.5%
	Other	6	15%
	Total	**40**	**100%**
Education	Some high school, no diploma	4	10%
	High school graduate, diploma or equivalent	9	22.5%
	Some college, no diploma	19	47.5%
	Trade/technical/vocational training	6	15%
	Associate degree	1	2.5%
	Bachelor's degree	1	2.5%
	Total	**40**	**100%**
Employment status	Working at a regular job	15	37.5%
	Working part-time	6	15%
	Working on and off	1	2.5%
	Unemployed and looking for work	8	20%
	Unemployed and not looking for work	2	5%
	Self-employed	1	2.5%
	Disabled, not able to work	4	10%
	Other	3	7.5%
	Total	**40**	**100%**

Perceptions of beneficial gains (*RQ1*)

Participants expressed a range of reasons they joined the program and completed lessons. Many responses were related to a desire to improve their life situation, their career prospects, or their educational opportunities. As one 50-year-old participant stated, "better pay so I can help with my grand babies and my daughter…and pay my own bills, and not have to worry about anything."

Eighteen participants aimed to improve basic Internet and technology usage. Most had specific technological goals, such as mastering software programs (Excel, PowerPoint, MS Word), social media, online security, Internet navigation, and email, and working with PDFs. For

example, one of the participants mentioned that she uses Google Excel to create "monthly budgets." While she only uses these newly acquired skills in her personal life, she plans to implement them in her "next job." Three participants indicated that they wanted to understand the technology their children were using and to help them navigate email, PDFs, and their schoolwork. Given that the program occurred during the COVID-19 pandemic, participants' children were engaged in remote learning for the first time.

Many joined the program to enhance job prospects, develop occupational skills, and advance their careers. This included using software programs for employment, improving resumes, job-seeking online, and leveraging social media for job searches. Other entrepreneurial skills, like branding, website development, coding, marketing, doing payroll, developing flyers, creating business cards, designing slide shows, and communicating professionally were also motivating factors. One 33-year-old participant discussed that she was interested in learning web design as a business:

> I wanted to take the web design one because I want to use it to be able to build web pages and web… like business pages for people…And I feel like if I have at least the knowledge that was given in that course…to do so, it would make it easier.

An additional factor that five participants mentioned was that the course and program were free. As one 53-year-old participant stated, "I don't have to go into debt getting my education." Many stated that since the course was free, they had nothing to lose by participating. Another 32-year-old participant stated the course helped her "fill my time in the process of getting my life together." Another aspect that many participants felt was helpful was the online, self-paced structure of the program. One 50-year-old woman stated, "You're able to do it at your own pace…and able to ask as many questions as possible…And get them answered in, you know, in a timely manner."

This program gave many participants the flexibility their lives demanded, at no cost, and with supportive instructors. In contrast, others indicated that in-person classes would have been the ideal environment for motivation and completion, had the COVID-19 pandemic not interrupted them.

Six participants mentioned they were motivated to join the program because they had been away from the technological world during their incarceration, that they felt like this was a continuation of the computer training they had received during incarceration, or because this program was specifically designed for women transitioning out of incarceration. As one 33-year-old participant stated, this was a door opening, rather than shutting, because of her background:

> Honestly, I primarily, I think just the fact that I was asked to the fact that there was like an opportunity for me, I was really excited about. So. And there's, there's, there's something about being invited to do something because of my circumstances instead of being rejected [laughs]. Because of my circumstances, that was like really heartwarming. I think like, instead of being like, "No, you can't have this job, because you have felony drug charges." They're like, [laughs] "Oh, you've been to jail? Let's help you out! [laughs] Let's bring you in to do something!" [laughs].

Another 45-year-old participant, who already had advanced technological skills, discussed how she wants to use the program to improve her digital storytelling about her life and experiences:

> Well, right now I have a TikTok platform, and I have Instagram and things like that. But I also blog. And, so, when I was in prison, my brother came to me, and it's like, "you have a really interesting story. You should write about it." So, I would type everything up, send it to him, and he would publish it for me. But I would, and so, while I was away, he published like 50 blogs for me. Well, I have a ton more I need to publish. And I would like to expand on that to be able to do more things to tell my story. And, so, I just feel like this is such a great opportunity and with the resources and people to be in contact with. I just feel like it's extremely helpful.

The interview responses collectively reveal the diverse expectations and motivations that influenced their engagement with the program, shedding light on the multifaceted nature of their aspirations and the ways in which they anticipated improvements into their lives, career prospects, and personal fulfillment through technology education.

Effort expectancy (*RQ2*)

In UTAUT literature, effort expectancy is vital for technology adoption, considering the anticipated effort of ease of use. In our interviews, we coded participants' expected and actual effort in the program. Participants often had a variety of beliefs about learning new technology that ranged from a learning growth mindset to more cautious or anxious mindsets. In terms of the effort required to complete the technology education program, there were a range of context factors that made this program challenging for our population. One 53-year-old participant said that this program turned her from being technology adverse to having more confidence:

> Well, it's given me education and self-esteem, I think. And I've met a lot of people...There's so many ways that it has benefited me. I can't even tell you…Because you wouldn't catch me near a computer. I was always too afraid I would break something or mess someone's work up on the computer, you know. You made me comfortable with, you know, getting on there and, and you know, if something gets messed up, I can bring it to you guys [laughs].

This learning growth mindset was beneficial for women who were looking for new educational opportunities. Additionally, the program encouraged many participants to pursue other educational opportunities: "It inspired me, gave me more confidence…the fact that you guys are working with us—women that have a hard time—says a lot, you know" (49-year-old participant). Another 42-year-old participant stated the program encouraged her to enter into higher education, stating, "It definitely encouraged me, and gave me the confidence to pursue it. It was a thought that I had like, 'hmm maybe I want to go back to school.' It definitely gave me the confidence to say, 'yeah, I can do this,' you know."

Other participants did not have an increase in their confidence. A few participants stated that the program, learning management system, and online lessons required more effort or more

background knowledge than they had. As one 47-year-old woman stated, "Phase Two was just—it was really like creating the website and doing all that. It was just way too much." Another 38-year-old participant stated, "Vocabulary is not very fluent when it comes to technology, so so, any type of software format, whenever word that was used, I wouldn't know what to do just because I didn't, wouldn't know what the word meant."

In contrast, another 39-year-old woman talked about how this program was helping change her life, since it had been 20 years since high school. She stated, "you know, with going in and out of jail and living that kind of lifestyle that I did before, we didn't need computers for that kind of good stuff. So I, I just feel like I'm going through this whole paradigm shift, you know, and so I'm trying to soak up all the information I can." She was able to articulate a common theme in the interviews that signals how this population of women had some significant life circumstances that shaped every aspect of their lives.

While the participant above was able to use this program on her path toward personal transformation, other participants were not able to do so. Several participants reported that their laptops, hot spots, and mobile devices were either lost, stolen, or stopped working. Others talked about losing their jobs, custody of their children, family health issues, deaths in the family, having their cars repossessed, being evicted, or losing stable housing. One 49-year-old woman stated, "I was in between homes for a while. I'm just now getting stable again." Participants became houseless during the program, and the challenges of survival had to take precedence over the program: "things started happening in my life to where I put that on the backburner, that I lost my laptop, and I lost my house" (38-year-old participant). Some participants talked about almost a cascading effect that one life situation could impact almost every aspect of their lives, as one 54-year-old woman stated:

> My daughter's health issues are pretty much my whole world right now…It's affecting everything, everything. My car got, you know [repossessed], it got to where I was either…had to make a choice…My credit isn't that good, they gave me a loan, but they charged me a lot of interest…I paid $37,000 on a car for $15,000…and then with her, I have to pay for the pump, you know, and we had to pay 11 payment, and we were lucky that they agreed to do that, because usually they want it all at once…and then her Dexcom sensor, transmitters, and all that, I have to pay 25%. And so I can't get to my job, so I'm not working…It's day by day right now. It's horrible.

These factors are crucial in designing programs for economically and socially vulnerable groups. Our participants were already facing multiple vulnerabilities before and after their incarceration. Program designers should therefore proactively address these challenges and consider their role in preventing recidivism.

Social influence (*RQ3*)

Social influence refers to the impact of social factors and opinions or beliefs of others on an individual's decision to use a particular technology. In the context of this technology education

program, social influence was operationalized as the level of support from respected individuals or colleagues. This support greatly assisted and provided confidence to the women who considered joining the program. Nine participants said the way they were recruited into the program was an important factor in their motivation to participate. Some participants were encouraged by shelter staff, probation and correction officers, or other service providers to participate in the program. For example, one 38-year-old participant said her probation officer presented her with this opportunity at just the right moment, "And, so, all the things that I needed to know and that I've been struggling with—it's just like were a blessing in disguise, because they came right on time when my probation officer asked me if I wanted to do this class." Word of mouth was especially important for the second cohort of participants. Many stated they were inspired by the Digital Navigators, a select group of program participants who serve as peer mentors after obtaining technology and teaching skills through the program. Hearing about the program from people who had enjoyed it, learned from it, and completed it was a prime motivating factor for them to join the program. As one 43-year-old participant stated, learning about the program from the Digital Navigators was the encouragement she needed to enroll:

> And to talk to her and hear how and see how hopeful and how driven she was. And I was like, I want that, and then she told me about the classes. I wanted something different. I hadn't done anything with my life for 12 years. You know, I was stagnant. I wasn't doing anything…so I was just excited to better myself really. It was like getting a new start for me.

Notably, this level of direct encouragement and peer support was invaluable in the successful recruitment of many women into the program.

Once participants had joined the program, they also mentioned how important it was to have people support them in their efforts throughout their educational training. The role of instructors was critical to their success, and many participants also mentioned friends and family who would help them solve issues with technology, the online material, or specific tasks in the program. Similarly, they found it encouraging to have feedback from others about their progress. One 39-year-old woman explained how proud she was of developing her first slide deck, "We go to this 'ready training' center and use the computers there. So, there's a lady that works there. And I was showing it off to her. She was like, 'Oh, my gosh, [name of participant], this is so wonderful!' Like, thanks!" This external validation from peers, employers, and family members underscores the importance of social influences throughout the technology program, not just at the recruitment stage.

Many participants proudly used the certificates they earned, displaying them on resumes, during job interviews, and with existing employers. As one 50-year-old participant stated, "I have proof. I have my certificates to back up what I have practiced on, what I've learned." Having earned the certificates through the technology education program bolstered their confidence and career prospects, as they could demonstrate their acquired skills, benefiting their job search on platforms like Indeed and LinkedIn.

Facilitating conditions (*RQ4*)

In the UTAUT literature, facilitating conditions refer to an individual's beliefs about the availability of training, technical support, and necessary programs for learning and using new technology. While the literature typically focuses on these beliefs before program intervention, our interviews considered both pre-program feelings and experiences during the program. Two major facilitating conditions emerged: people and devices. These themes expand the concept of facilitating conditions, particularly for this specific population. For instance, women who were living in a shelter setting benefitted from facilitating conditions such as on-site computer labs, supportive shelter staff, and peer mentors.

People matter

Participants provided overwhelmingly positive feedback on the instructors and staff of the technology education program; this included staff, instructors, and Digital Navigators. They not only found the staff to be knowledgeable and accessible, but participants also said that the instructors and Digital Navigators were one of the main reasons they stayed engaged with the program. Participants named individual members of the team who stood out to them, and they spoke in glowing terms about how they felt seen as people, not as someone with a jail sentence or record. The women in the program who were able to interact with program staff, instructors, and Digital Navigators found these experiences validating, as one 45-year-old participant shared:

> I just thought it was excellent. Like, they're all super supportive and helpful and just, just genuinely caring. And so I thought that that was great…Oh! I don't want to forget [name of Digital Navigator]. I think she's amazing. And that's another thing that I look forward to is getting together with her and even like some of the more in person stuff as well.

The distinctiveness of the technology education program in comparison to other educational initiatives became evident through participants' consistent feedback about feeling empowered, valued, and recognized as important members by the program team. This qualitative difference was rooted in the team's philosophy of prioritizing support over judgment, a key factor that participants believed contributed to the program's high success rate. The words of a 43-year-old participant resonate profoundly, capturing the transformative impact of the program on individuals who often feel undermined and stigmatized by societal labels following incarceration:

> I mean, once you are incarcerated, you just kinda have this, you have [this] label on you. You know what I mean? And like you feel like there is nothing to do but just keep going the same stuff over and over again. There is no way out. And I feel like the program does that. It, I mean it gives you that light at the end of the tunnel…People do care. Not everyone looks at you like you are a convict, or you are a drug addict or, you

> know what I mean, you are just a hopeless, you know, individual. You are just a liability to everybody.

The program's unique approach, fostering a sense of care and support, stands in contrast to challenging the negative perceptions associated with incarceration. Within the realm of public interest communications, the program provided a caring and empathetic atmosphere by promoting positive change. This alignment with public interest communication principles (Chernin et al., 2023) emphasizes the program's commitment to societal well-being, addressing the stigmatization often faced by justice-impacted individuals. Instructors also played a pivotal role beyond their teaching responsibilities, serving as professional references for participants seeking employment. The immediate and positive connections formed between the participants and the team members were crucial in facilitating the participants' success in the program. This aspect underscores the program's commitment to creating an environment where individuals are not solely defined by their past but recognized for their capabilities and potential contributions.

Despite the overall positive atmosphere, there were some communication and technical challenges that participants faced. One frequent challenge in accessing support came through a misunderstanding of how to communicate with the instructors through the Learning Management Site. Some participants thought this feature was a live chat, with instructors synchronously staffing the chat, rather than more of an email environment. A 32-year-old participant said, "So, at one moment I thought I was doing the process of initiating a conversation with the professor, but actually it was just leaving notes for myself." Participants stated that the staff helped them navigate the Learning Management Site.

Similarly, when COVID-19 restrictions lifted, the program staff began holding in-person office hours to provide more direct human and on-site communication. For several participants, the hurdles of transportation, money, and time precluded their visits to office hours. Those who were able to attend the office hours found the interaction invaluable. One 53-year-old participant talked about how the program approached adult learning and how the program let participants be relaxed. These qualities made a difference in her own drive and accountability: "When you're an adult and so many other things going on in life, it's nice to be able to do something like this without someone waving a finger at you [laughs]."

Devices matter

Another significant finding of the program is that the type of device the participants used and had access to greatly affected their ability to participate and succeed in the program. While this may not be surprising, it is important to note that the team's ability to coordinate technology access and provide computers and hotspots was essential for many participants' success. One of the many challenges participants faced was related to devices: Internet access, device access, and device reliability. Some individuals were experienced users of technology, but most were not. Several participants attempted to take the course on their phones, with very uneven outcomes. The technology education program staff introduced to participants local nonprofits offering

refurbished devices, but some reported issues with device reliability. Participants accessing computers through residential or service programs had better outcomes and built-in support from fellow residents, some of whom were also taking the classes.

The women also reported significant benefits from having their own devices. One 53-year-old participant stated, "I've been able to help other people apply for things online," including housing, benefits, and care programs. She continued, "I helped someone to apply for that [name of care program] and for Social Security, and I help someone apply for that care program for rental assistance on the laptop. So it's been really beneficial." This type of support was not uncommon. The women mentioned using the computers for supporting their children and friends and applying for jobs, housing, and other assistance. They also were able to use the computers for accessing entertainment, searching for relevant information online such as health information, and staying in touch with friends and family.

Discussion

Based on interviews with women transitioning from incarceration, this study provides useful and applicable insights into how to enhance digital literacy among this and other marginalized populations. Based on empirical data from women who participated in a technology education program, this research provides evidence that digital literacy education is a powerful tool for social-educative integration and personal transformation.

Findings from this research contribute to advancing the UTAUT (Venkatesh et al., 2003; Williams et al., 2015), which was used as a theoretical framework for the study. UTAUT provides a useful framework to examine individual's perceptions, motivations, and beliefs that influence their decision to adopt or use technology for an educational program. Of the UTAUT constructs, *social influence* and *facilitating conditions* are the most valued and important determinants in the adoption and use of technology among this marginalized and underserved group. Our research suggests that facilitating conditions—for example, the individual's belief about availability of technological support or training needed for their adoption or use of a digital device or software program (Venkatesh et al., 2003)—is important in the women's adoption of technology and participation in technology education. In addition, a majority of the women stated their success and use of technology communication was established through instructor support. These findings indicate the importance of providing facilitating conditions that help underserved populations succeed in technology education and digital literacy programs. While UTAUT has successfully been applied to the general public, this study contributes to the UTAUT framework by applying it to women transitioning from incarceration, a population to which the theory and its components have not been sufficiently applied.

Another important finding from this research is the cascading effects of technology learning among women recently released from jail or prison. This study shows that incarcerated women have a range of needs that can be met through technology access and use. These include

parenting-related activities, financial independence, improvement of online security, occupational skills, career advancement, and social connections. Many women participating in this research study mentioned that the program not only increased their digital access and literacy skills, but the program also fostered their motivation to pursue other educational opportunities. The learning experiences enabled participants to gain cognitive and social skills needed upon release. This finding shed light on the wider impact of skills that people need for social and economic successes post-release.

This study is not without limitations. First, the interviews were conducted with different Ph.D. research assistants and the length of the interviews varied. This might be due to the close relationship some of the women had with the research assistants and their willingness to talk more about their experience in the program. However, each interviewer asked follow-up questions when necessary to provide a full extent of participants' responses.

Future research should examine the impact of other characteristics of the participants. For example, it would be helpful to examine age- or education-related differences in digital capabilities and needs for technology among women transitioning from incarceration. In addition, while this study focused on those living in two neighboring U.S. Midwestern states, a study involving participants from broader geographic areas would allow comparisons between groups in different regions.

To gain a deeper understanding of intersectional dynamics at play, future research could explore gender differences in technology adoption and support needs among justice-impacted individuals. Specifically, comparing experiences of women transitioning from incarceration with those of similarly situated men could provide valuable insights into specific challenges and opportunities faced by each gender group.

Policy and practical implications

This research offers practical and policy implications for supporting technology education of women transitioning from incarceration and other marginalized populations. The influence of facilitating conditions, such as instructor and peer mentor support, has direct implications for the replicability of the program. While the online Learning Management Site and curriculum used in a technology education program might be easily transferred to other entities interested in replicating the program, relationships are difficult to replicate. As shown in this research, the success of a program for this marginalized population is significantly related to the approach of the team and their interactions with the participants. Programs designed to serve this or other marginalized populations should consider incorporating learning circles on respectful and empathetic communication for trainers and others involved in public interest communication initiatives.

The adoption and use of communication technology have broad impacts on justice-impacted individuals' reintegration into society including employment. Furthermore, their adoption of communication technologies and digital skills are integral to their fuller participation in

economic, civic, and cultural activities. However, there is a significant lack of funding for programs aimed at supporting technology learning among justice-impacted communities. It is essential to establish collaborative partnerships between the public sector and the private sector to provide much-needed funding for technology education programs for those in and leaving incarceration. Moreover, public-private partnerships can contribute to strengthening capacities of local communities to better support justice-impacted individuals' technology learning and ultimately to building a sustainable ecosystem in this area.

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