ReCALL (2025), 37: 2, 174–190
doi:10.1017/S0958344024000314

RESEARCH ARTICLE

Exploring attitudes to generative AI in education for English as an additional language (EAL) adult learners

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Abstract

This article addresses a critical gap in international research concerning digital literacies and empowerment among adults who are English as an additional language (EAL) learners. In the Australian context, where digital communication and services are embedded in all aspects of life and work, proficiency in digital literacies, including advanced technologies like generative artificial intelligence (AI), is vital for working and living in Australia. Despite the increasing prevalence and significance of generative AI platforms such as ChatGPT, there is a notable absence of dedicated programs to assist EAL learners in understanding and utilising generative AI, potentially impacting their employability and everyday life. This article presents findings from a larger study conducted within training providers, spanning adult educational institutions nationwide. Through analysis of data gathered from surveys and focus groups, the article investigates the knowledge and attitudes of students, educators, and leaders regarding integrating generative AI into the learning program for adult EAL learners. The results reveal a hesitance among educators, particularly concerning beginning language learners, in incorporating generative AI into educational programs. Conversely, many adult learners demonstrate enthusiasm for learning about its potential benefits despite having limited understanding. These disparities underscore the pressing need for comprehensive professional development for educators and program leaders. The findings also highlight the need to develop the AI literacy of learners to foster their understanding and digital empowerment. The article concludes by advocating for a systemic approach to include generative AI as an important part of learning programs with students often from adult migrant and refugee backgrounds.

Cite this article: Creely, E., Barnes, M., Tour, E., Henderson, M., Waterhouse, P., Pena, M.A. & Patel, S.V. (2025). Exploring attitudes to generative AI in education for English as an additional language (EAL) adult learners. *ReCALL* 37(2): 174–190. https://doi.org/10.1017/S0958344024000314

Keywords: adult migrants and refugees; adult education; digital literacies; generative AI; digital empowerment; EAL (English as an additional language)

1. Introduction

In contemporary society, digital literacy has become essential for facilitating access to information, communication, and participation in various domains of life. For adults who are culturally and linguistically diverse (CALD) and likely come from migrant and refugee backgrounds, proficiency in digital literacies is paramount for empowerment towards overcoming disadvantages (Drydakis, 2021; Eshet-Alkalai, 2004; Molla, 2023; Perry & Moses, 2011). However, despite the increasing recognition of the importance of digital literacies, now including generative artificial intelligence (AI), a critical gap exists in international research concerning the digital empowerment of this demographic.

Australia, a country known for its multiculturalism and commitment to social inclusion, presents a unique context for exploring the intersection of digital literacy and migration (Collins *et al*., 2023; Thomas *et al*., 2019). In this digital age, where communication and services are predominantly mediated through digital platforms, proficiency in digital literacies is not only advantageous but often necessary for navigating various aspects of daily life and work (van Deursen & van Dijk, 2014; Zholdoshalieva, Teng, Ayyappan & Tu, 2022). From accessing government services to seeking employment opportunities and taking part in education, digital literacies are pivotal in facilitating successful participation (Abood *et al*., 2023).

The pervasiveness of advanced technologies, such as generative AI, highlights the importance of digital literacy in contemporary society. Generative AI is an emerging but ubiquitous form of AI trained on large language models to learn patterns from existing data and respond to human prompts. This enables content creation, including text, images, animations, and audio. It can generate human-like written and verbal responses, produce creative works, and assist in problem-solving across various domains, making it a highly useful and innovative technology. Applications such as Open AI's ChatGPT, Google's Gemini and Microsoft's Copilot (among many others) have become increasingly prevalent in education and in the business world, offering new digital ways to create, produce, and interact. However, despite the growing significance of generative AI platforms, there is a notable absence of dedicated educational programs aimed at assisting adult English as an additional language (EAL) students with understanding and using generative AI.

Addressing this need is crucial for enhancing adult learners' employability and socio-economic success as proficiency in advanced digital technologies increasingly becomes a prerequisite for participation in the workforce and broader society. Our research project was designed in response to this need. It aimed to address the gap in research by examining the opportunities and challenges associated with the use of generative AI amongst adult EAL learners coming from migrant and refugee backgrounds.

In this context, we seek to illuminate both the challenges and opportunities faced by EAL learners in leveraging digital literacies, with a particular focus on proficiency in and understanding of generative AI technologies for successful participation in Australian life. Drawing on existing literature and empirical evidence from our qualitative case study research, we aim to identify barriers and facilitators shaping digital literacy education programs for this demographic group, focusing on the views of leaders, teachers and students in existing adult educational programs offered by training providers. Furthermore, we explore the potential impact of digital empowerment on enhancing their socio-economic outcomes, promoting work potential and fostering greater social inclusion, with an eye to generative AI (Scoble-Williams, Sinti & Vert, 2024).

This article contributes to the broader discourse on digital literacy for EAL learners by highlighting the need for educational programs designed to cater for their needs in light of the emergence of generative AI. By addressing the existing gap in research and practice, we aim to

https://doi.org/10.1017/S0958344024000314 Published online by Cambridge University Press

inform policy and program development and enhance digital literacy education and empowerment initiatives in Australia and beyond.

2. Literature review

2.1 Migrants and refugees and digital literacies

Many adults who are EAL learners have come to settle in a new country. Settlement in a new country is both a short-term and a long-term process that requires migrants and refugees to access, understand and trust complex information about how to live, learn, work and socialise in their new contexts (Borkert, Fisher & Yafi, 2018; Potocky, 2021). Migrants, who choose to move to a new country, and refugees, who may be forcibly displaced and are unable to return to their home country safely, must identify strategies for navigating and processing information while on the move and once they have settled into their new country. However, migrants and refugees are often more hesitant to trust online information or government authorities based on their previous lived experiences (Lloyd, 2020; Safarov, 2021). Migrants and refugees often face "information precarity", a term that captures the experiences of lack of access to information during their journey to their new country and therefore are vulnerable to misinformation (Şanlıer Yüksel, 2022).

Despite this precarity, which only furthers feelings of information mistrust, digital technologies, particularly the use of smartphones, have been used as a way for refugees to stay connected and validate information through connected diasporic and transnational networks (Dekker, Engbersen, Klaver & Vonk, 2018; Gillespie, Osseiran & Cheesman, 2018; Nedelcu & Soysüren, 2022). For example, Şanlıer Yüksel (2022) found that migrants, asylum seekers and refugees in Turkey utilised and navigated digital spaces, particularly using smartphones, not only to maintain their diasporic and transnational connections but also to interact and connect with their local contexts while on the move and once settled. This example highlights the knowledge and skills that migrants and refugees must possess so they can gain access to and understanding of key information while also effectively using, appraising and communicating the information they receive in digital spaces (Ndofor-Tah *et al.*, 2019; Potocky, 2021).

Digital literacies are increasingly recognised as an essential competency for all members of contemporary society, including migrants and refugees (Ndofor-Tah *et al.*, 2019; Potocky, 2021). Digital literacies have the capacity to empower refugees to obtain and evaluate information during their journey and settlement and become agential in how they employ digital technologies (Nedelcu & Soysüren, 2022; Safarov, 2021). Indeed, digital technologies can alleviate the challenges faced by migrants and refugees by mediating access to information and facilitating communication, ultimately supporting their wellbeing (Ekoh, Okolie, Nnadi, Oyinlola & Walsh, 2023). Digital empowerment allows migrants and refugees to actively decide how they use digital technologies to obtain information, overcome challenges, and avoid misinformation and/or digital surveillance (Nedelcu & Soysüren, 2022; Safarov, 2021). There have been calls for a more comprehensive and holistic instructional paradigm for adult EAL learners with migrant and refugee backgrounds that enables full participation in society (McHugh & Doxsee, 2018), with digital literacies as key to their long-term outcomes after settlement (Pegrum, Hockly & Dudeney, 2022).

2.2 AI literacies

Given the widespread adoption of AI for surveillance by governments and governance authorities (Kaneti, 2023; Nedelcu & Soysüren, 2022) and its increasing utilisation in both higher education and general education schooling contexts (Casal-Otero *et al.*, 2023; Chen, Tallant & Selig, 2024; Pretorius, 2023), the development of digital literacies among migrants and refugees must also

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include a focus on AI literacies. Drawing upon the concept of digital literacies, we define *AI literacy* as knowing how to utilise and interact with AI technologies (including generative AI), while also being able to evaluate their trustworthiness and consider the ethics of their use (Chen *et al.*, 2024; Pretorius, 2023).

Several studies have recently emerged exploring how AI literacy principles can be developed in both higher education (Chen *et al.*, 2024; Pretorius, 2023) and schooling contexts (Casal-Otero *et al.*, 2023). In higher education contexts, students often utilise generative AI to prompt and generate ideas for assignments (Chen *et al.*, 2024), aiding in the *process* of completing these assignments (Pretorius, 2023). A systematic review by Casal-Otero *et al.* (2023) revealed limited studies that have assessed student knowledge after interactions with and/or learning about AI.

Despite increasing attention to the development of AI literacy, there has been limited empirical evidence of developing AI literacy in learning contexts that involve EAL learners who may have a migrant and refugee background, and there is also a lack of understanding of how educators can specifically support the development of AI literacy. Furthermore, despite a focus on identifying the potential and limitations of generative AI in language learning (Huang, Zou, Cheng, Chen & Xie, 2023; Muñoz-Basols, Neville, Lafford & Godev, 2023), there is limited empirical evidence of how students develop AI literacies as part of language learning and in other educational programs, particularly in the context of the needs of migrants and refugees, post-settlement.

3. Conceptual framework

For this study, we devised a set of perceptual categories for analysing the research data inspired by the technology acceptance model (TAM), developed by Fred Davis in the 1980s as an extension of Ajzen and Fishbein's theory of reasoned action (TRA) in which beliefs, attitudes, intentions, and behaviours are seen as highly interconnected (Ajzen & Fishbein, 1980; Davis, 1989). TAM is a model that explains how users come to accept and show a willingness to use technology in the context of technology implementation in work and industry (Davis, 1989).

Central to TAM are three specific beliefs: (1) perceived usefulness, (2) perceived ease of use and (3) attitude towards usage (Davis, 1989). Perceived usefulness is understood by Davis (1989) as "the degree to which a person believes that using a particular system would enhance his or her job performance" (p. 320). Perceived ease of use refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989: 320). These perceptions of usefulness and ease of use are understood to influence attitudes towards using the technology, which is a significant predictor of actual use (Venkatesh & Bala, 2008).

There has been much debate in the technology literature about TAM, and researchers have extended and changed it since the 1980s to include several antecedents and influencing factors (Venkatesh & Bala, 2008). It has also been widely applied across diverse types of technologies, user populations and settings. In addition, TAM has been utilised in various cultural contexts, suggesting its robustness as a model that can transcend cultural and linguistic boundaries (Venkatesh & Zhang, 2010). The model, however, does not necessarily account for factors such as individual differences, reticence to use technology, subjective experiences, and system design challenges (Bagozzi, 2007). Despite recognition of its limitations, TAM remains a popular approach to assessing the levels of acceptance of technology adoption and use.

This study explores the complex understandings, motivations and aspirations of CALD learners along with their teachers and educational leaders in the context of the emergence of generative AI. In doing so, we are guided by TAM research to be sensitised to the potential importance of exploring participant perceptions of ease of use, usefulness, and attitudes towards using generative AI in their studies, work, and lives. There is no intention to measure these perceptual categories, which is typically done in TAM research. Rather, we qualitatively explore

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Table 1. Perceptual categories

Category	Description
1. Functional knowledge or understanding (FK)	FK refers to knowledge or understanding of how the technology works and may be applied, not necessarily the technical details.
2. Ease of use of the technology (EU)	EU suggests the perception about whether the technology can easily and readily be learned and used.
3. Usefulness or relevance of the technology (UR)	UR implies belief about whether the technology is applicable and useful in specific contexts in people's lives.
4. Intention to apply the technology (IA)	IA refers to the intention to use technology in a particular context and is particularly influenced by EU and UR.

participant experiences and conceptualise knowledge or understanding of technology as an important antecedent that should not be dismissed.

Table 1 outlines the four belief or perception categories that form the central focus of our study: to explore the role and implications of generative AI in the lives of adult migrants and refugees.

Each descriptor (FK, EU, UR, IA) points to the emergent quality of technologies such as generative AI that may not be implemented or are only partly implemented. These four perceptual descriptors are also designed to fit the notion of digital empowerment in highlighting the understanding, use and practical action that involves users of technology.

As part of deploying the perceptual categories, we also recognise the need for a critical digital literacies approach that evaluates digital technologies and literacies within the sociocultural and material context in which they are used (Ávila & Pandya, 2013; Lankshear & Knobel, 2008).

4. Methodology

4.1 Research design

This research employs data from a larger mixed-methods project, of which only part is reported for this article. Our approach is qualitative, using some quantitative descriptive statistics to support crystallisation (Ellingson, 2009). Multiple case studies were employed to explore the knowledge and attitudes of leaders, educators, and students regarding implementing generative AI within learning programs for adult EAL learners. The use of multiple case studies facilitated a comprehensive exploration, offering a broader and more detailed understanding within and across individual cases (Gustafsson, 2017). Three key stakeholder groups were involved: educational leaders within an educational institutional context, educators, and students who identified as having backgrounds where English is another language. Each group was treated as a singular case. The project was conducted in most states across Australia (Table 3), with participants drawn from a range of training providers. Information about the visa type (e.g. refugee or migrant) of adult EAL learners was not available, but the language background implied that these adults entered Australia through a range of visa pathways.

The primary objective of conducting individual case studies was to enhance understanding of the diversity inherent within each group and then focus on examining variations in knowledge and attitudes between cases across different contextual settings (Gustafsson, 2017).

4.2 Data collection

A mixed-methods research design was adopted that employed a multiple case study methodology with quantitative and qualitative components to understand attitudes to and uses of generative AI.

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Table 2. Survey details

Category	Extract of survey items
Artificial intelligence (AI) knowledge	1. I understand what generative AI is. (5-point Likert scale: *strongly agree* to *strongly disagree*) 2. In your own words, how would you describe what generative AI is? (open-ended)
AI use	1. I have used generative AI. (4-point Likert scale: *very little*, *somewhat*, *quite a bit*, *a great deal*) 2. What other ways do you use generative AI in your leadership role? (open-ended)
Attitudes to AI	1. Generative AI can be beneficial to adult learners in the program (5-point Likert scale: *strongly agree* to *strongly disagree*) 2. What are your concerns about using generative AI to support learning in the program? (open-ended)
Future intentions	1. I intend to learn more about using generative AI. (5-point Likert scale: *strongly agree* to *strongly disagree*)

Using multiple case studies allowed the research team to compare different participant groups, which counted as cases in this research: educational leaders, teachers, and students. Data collection involved surveys and focus group sessions with each case/participant group. Seeking to generate both quantitative and qualitative data, we structured the survey instrument to explore four distinct categories, as presented in Table 2. Table 2 also includes some examples of the survey items from the larger survey.

The *Qualtrics* platform was used to facilitate a national survey, representing participants across Australia. Demographic details of the survey participants are provided in Table 3.

Table 3 indicates that most leaders, teachers, and students are in an older age bracket, and the majority are female. For the student cohort, the large majority do not speak English at home and are likely to come from migrant and refugee backgrounds, and most live in urban areas.

After completing the survey, the respondents within each group were invited to participate in focus groups. Table 4 provides details of the focus groups. Focus groups aimed to facilitate open-ended discussions exploring the patterns and themes from the survey responses and nuances and ambiguities. All focus groups were conducted online via Zoom and involved participants from various states and program providers.

4.3 Data analysis

Qualitative data analysis employed a deductive approach, leveraging the four perceptual categories presented in Table 1. These categories were adopted as themes in the process of coding the data. Coding using the perceptual categories was undertaken by two of the researchers. Each researcher coded one selected focus group separately and then met to compare the coding outcome to establish intercoder reliability. A high level of intercoder reliability was observed, being above 90%. Coding of all the focus groups was then completed by three researchers.

Data for leaders, educators, and students were analysed separately within each category. This disaggregated analysis, while limiting the cohesive reporting of what occurred within each focus group, facilitated a systematic understanding of each participant group's specific perspectives and understandings regarding the use of generative AI within the program and enabled cross-comparison of data.

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Table 3. Demographic details of the survey participants

	Options	Case 1: Leaders $n = 47$	Case 2: Teachers $n = 38$	Case 3: Students $n = 175$
Age	19 or younger	0	0	3
	20–29	0	1	16
	30–39	5	2	17
	40–49	15	7	37
	50–64	23	25	82
	65 or older	4	3	20
Gender	Male	9	11	41
	Female	37	25	128
	Prefer not to say	1	2	6
Educational setting	Inner city	18	8	33
	Suburban	19	25	129
	Regional area	8	5	10
	Rural or remote area	2	0	3
Language background	English is the only language spoken	28	21	0
	English is an additional language but the language spoken at home	11	11	18
	English is an additional language and not the language spoken at home	8	6	157

Table 4. Focus groups details

Participant group	Educational leaders	Teachers	Students
Number of focus groups	2	2	3
Total number of participants	8	7	9
Duration of each focus group	60 minutes	60 minutes	40 minutes

5. Findings

This section presents our findings regarding data drawn from a survey (S) and a focus group (FG). Table 5 contains the codes that indicate the source of the data cited in the analysis that follows. Data from each of the leader, teacher, and student focus groups are combined as one data set.

A set of analyses of the data using the deductive categories outlined in Table 1 is offered. Under each of these categories the cases of leaders, educators, and students are treated separately.

5.1 Functional knowledge or understanding (FK)

The survey data from student participants indicate that over one third of adult EAL participants were aware of generative AI (36%; $n = 63$), one-third knew how it worked (30%; $n = 52$), and even

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Table 5. Data source codes

Survey	
Leaders	LS
Teachers	TS
Students	SS
Focus groups	
Leaders (2 groups)	LFG
Teachers (2 groups)	TFG
Students (3 groups)	SFG

fewer have utilised it (22%; $n = 39$), suggesting a need for increased educational support in this area.

The study found that the leaders and teachers had significant concerns about students' capacity to understand how generative AI works for practical applications and real-life situations. This is demonstrated by qualitative survey data indicating concerns about "plagiarism" and "over-reliance" as significant challenges alongside the students' capacity to evaluate AI-generated content. This concern was further discussed in the focus group of leaders:

> That critical literacy would be pretty important again too, wouldn't it? So, students can maybe know if something's right, or not, because I got it to generate something that looked really good. And I was like, hey wow, I didn't know that. And then I thought, or do I? Is that actually correct? (LFG)

Leaders perceived students as lacking the necessary critical understandings to evaluate the credibility and accuracy of the information and make ethical decisions when using AI-generated content for learning purposes. The teachers were also concerned about students not using AI in a critical and ethical way: "They're going to be using AI to fool their lecturers" (LFG).

However, their larger concern was about students' capacity to understand the nature of the technology and utilising it at an operational level:

> Gosh, if us trainers are struggling to get our heads around the concept of AI, trying to explain that to a pre-level is going to be impossible. (TFG)

> . . . when you're looking at prompt engineering, it's its own language, and understanding the nuances of how to ask something of AI. I think it would be well above any of our students. (TFG)

The data reflect teachers' views that generative AI is difficult to understand, as it is a complex technology that offers capabilities that we have not seen before. They imply, in quite a deficit language, that this new technology is especially difficult for CALD learners due to the language barrier. The data also suggest that teachers have some understanding of the complexities involved in prompt engineering, both as a starting point of interaction with generative AI and as a critical aspect of successful interaction for quality output. However, they believed that students would not be able to understand how to craft a suitable prompt, as it is "well above" the students' capacity. The teachers' apparent deficit language and their presumptions about learner capabilities in this context suggest they may be undervaluing their students' capacities for higher-order thinking and critical engagement in home languages, including their capacities for translanguaging using dictation and translation tools that utilise generative AI.

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Survey data indicate a basic understanding of generative AI among some students. Nearly four in 10 (39%; $n = 23$) survey respondents who have used generative AI (30%; $n = 29$) reported a general understanding of how it works. Focus group discussions further revealed that participants demonstrated some functional knowledge of AI, with one stating, "I have used ChatGPT for quite some time [for] basic information and inquiry ... But I know it is AI. There is no person in the background" (SFG). Participants also exhibited awareness of both general-purpose AI tools like ChatGPT and specialised applications tailored to specific needs. As one student noted, "ChatGPT is kind of a general AI, but you have [...] many specific ones" (SFG). This highlights some adaptive engagement with technology and understanding of its functionality. However, most student participants had low levels of understanding of what AI is and its potential uses.

5.2 Perceptions about ease of use (EU)

Reflecting on the perceptions about students' understanding of AI, many participating leaders thought that it would not be easy for EAL students to learn and use generative AI:

> It would be amazing if it [generative AI] was easy to access, easy to use, [and] students were able to use it. (LFG)

> [D]igital literacy is often quite low among [our] students, as is their access to data, and their access to phones, which further disadvantages them. (LFG)

At the same time, leaders strongly believed in the potential of generative AI for students, and this corresponds to the understanding exhibited by some students. Survey data support this, with 60% ($n = 28$) agreeing it is crucial for future employability and 62% ($n = 29$) seeing its benefits for students. However, as leaders indicated in the focus group, poor digital access and literacy among students pose significant barriers to harnessing AI's potential.

Teachers in the survey shared a similar concern, also noting that language proficiency makes it difficult for students to use generative AI easily, particularly those at the very beginning of their English language learning journey:

> My cohort is at a basic level. The students are overwhelmed by digital literacy in general. (TS)

> My students are not very digital literate and this is too advanced for them. (TS)

Interestingly, teachers' opinions in the focus groups about students' capacity to use generative AI varied:

> I don't think that skill level would be even in the [higher-level programs], if they don't already have a background in digital literacy of some sort. (TFG)

> In our levels of Certificate III and IV we have staff that actually are teaching students how to use it [generative AI] efficiently ... particularly with the ESL [English as a second language] students I find very driven, very motivated and very keen to get ahead quickly. (TFG)

The quotes from the teacher participants in this study emphasise the importance of prior digital literacy for EAL students in learning programs. The teachers position English language proficiency and digital literacy as prerequisite skills for engagement with generative AI rather than as potential outcomes of engagement. The first quote suggests that students may not have uniform skill levels, inferring that those with a background in digital literacy might find it easier to adapt to and efficiently use new technologies like generative AI. The second quote is quite upbeat about AI and learners' capacity and motivation to learn efficiently, which could make them receptive to

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integrating AI into their digital literacy curriculum. This suggests that introducing AI at higher levels could enhance students' digital literacy skills, potentially making it easier for them to use this technology effectively.

Some participants in the three focus groups conducted with students expressed a positive outlook for generative AI in their learning and lives, noting its efficiency and utility in language learning. Indeed, one participant stated that it enabled them "to make [my] English stronger and stronger by using ChatGPT (SFG)". However, users are aware of the technology's limitations, acknowledging occasional inaccuracies and the need to verify AI-generated content, which might suggest that it is also complex to use. Concerns over potential biases in AI responses also surface in the focus group discussion, emphasising the importance of critical engagement with the technology.

Despite this, there appears to be a strong appetite for further exposure to AI to "enhance our daily life" (SFG), indicating recognition of its potential to streamline tasks and improve productivity, making life easier. For adult learners, AI offers practical applications in navigating the often complex and bureaucratic process of establishing a life in Australia. Beyond simple document searches, tools like ChatGPT can provide step-by-step guidance for applying for government services, such as detailing the necessary forms, eligibility criteria, and submission procedures, with one participant appreciating how AI clarifies "how to find a government document [. . .] very helpful" (SFG).

Collectively, these reflections in the student focus groups suggest that although generative AI is valued for its practical benefits and ease of use for some specific tasks, users also show some critical perspective on its use and its inherent complexities.

5.3 Usefulness or relevance of the technology (UR)

Survey results reveal a reasonable acceptance among students regarding generative AI's role in job acquisition and future employment, with approximately half of the students positive about its practical benefits. Fifty percent ($n = 47$) agreed that "if I know generative AI, it will be easier to get a job". Similarly, 51% ($n = 48$) agreed that "generative AI can help me in my future job".

When considering the usefulness or relevance of generative AI to students' lives, the majority of leaders participating in the survey agreed that students need to know how to use generative AI for their future employability (60%; $n = 28$) and that generative AI can be beneficial in their program (62%; $n = 29$), suggesting a positive outlook and relevance for students. One leader stated in the survey, "Students using ChatGPT can access information in their own language or have access to texts in English that are useful and related to their own needs". The focus here is on access to text rather than usefulness based on the capacity to use the technology in practical ways. However, the leaders in the focus group went beyond the issue of access to seeing ChatGPT as important for both understanding texts and expanding what they can do:

> It would have a lot of potential to help them in their everyday lives, perhaps with text that they can't come to grips with. (LFG)

> I think it'd be good as a supportive tool for students to expand on what they can do. (LFG)

The teachers recognised the potential of technology to assist students in their daily lives, particularly in overcoming challenges with complex text production or interpretation. They viewed it as a supportive tool that can enhance students' abilities, but how this would be integrated into education to facilitate learning and skill expansion is less certain.

At the same time, there was much caution regarding the relevance and usefulness of generative AI for the student:

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> I have to explore this. Currently, I am not aware of how we can use it for students. (SS)
>
> This depends upon each student's individual learning abilities and vocational aspirations. Not entirely sure of the benefits; yet I would like to understand this further. (SFG)

The leaders participating in the focus group thought that factors such as individual learning abilities, vocational aspirations, and personal circumstances play an important role in determining whether generative AI is useful for people. However, they generally acknowledged their emerging knowledge about AI, noting their desire to learn more about and understand how this new technology works and how it can be useful for their cohorts of students.

Similar trends were evident in the teachers' survey data: 63% ($n = 28$) agreed that students need to know how to use generative AI for their future employability and 55% ($n = 21$) agreed that generative AI can benefit students in the program. Two participants in the survey noted the following:

> Might have no choice in the future, if that's the way technology is going, and our students need to be up to speed with the latest trends to prepare for work and further study. (TS)
>
> I believe it is beneficial [for students in the program] to learn about generative Al as technology is evolving and you can be left behind. Knowledge is power. (TS)

However, there are also alternative opinions and clear hesitation:

> Students have not been informed about it, so they don't see the value of it. It hasn't been considered important enough at this stage. When I showed students how it works, there wasn't enough interest shown. They thought it was simply a novelty. This is all down to the fact [that they] are generally insecure about digital literacy. (TS)

The quote implies that the teacher believed that students did not know much about generative AI and thus could not envision its potential application and usefulness for their lives. The participant also noted a lack of interest in and perceived value of generative AI, attributing this to it being "a novelty" and students' poor digital literacies. This set of quotes reveals the critical lack of integration of generative AI into the educational settings and perhaps awareness of the challenges that the students face after settlement.

From the qualitative data of the student participants in the focus groups, it is evident that generative AI is a highly relevant and useful technology. One participant describes the AI's utility in streamlining interactions with essential government services online, noting, "it's going to take you three days to answer the question. So, if you have something like that, I mean, that's very useful" (SFG). This quote suggests a significant reduction in the time spent on tasks pivotal to surviving and prospering in Australia. Another finds value in language learning, "looking for books, and texts and things to learn English" (SGF), pointing to the AI's role as an educational aid.

Furthermore, users readily appreciated the extensive, detailed information across multiple languages through generative AI, enhancing their ability to access and understand a broader range of content (SFG). According to several student participants, AI also serves as a homework assistant, especially for those managing multilingual households (SFG). For one participant oriented to becoming an entrepreneur, it supports business marketing efforts, helping "to create images for special promotions" (SFG), which indicates its impact on economic activities. Collectively, these reflections stress the potential usefulness of generative AI to support integration and empowerment.

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5.4 Intention to apply the technology (IA)

The survey data (SS) indicate cautious attitudes among students toward future intention to use generative AI, with only 20% ($n = 18$) planning to use it and 16% ($n = 15$) believing in its universal adoption. By contrast, when asked about the likelihood of implementing generative AI in learning programs, leaders seem to have a high intention to use it in the future (62%; $n = 29$). However, most of their examples were related to their leadership and administrative duties to speed up and streamline their activities rather than considering pedagogical applications in the classroom to equip learners with knowledge and skills for generative AI. In this sense, their approach to implementing AI is seen as utilitarian rather than visionary.

In addition, many leaders in the survey felt uncertain about how generative AI can be implemented, citing their nascent understanding of this technology at the time of the study:

> I think it'd be better if we learn about this new innovation and then decide how we will use it for leadership purposes. (LS)
>
> I do not have sufficient knowledge to determine benefits, security, or reliability. (LS)
>
> Not sure at this stage as I am a novice at this. (LS)

Nevertheless, most of the participants (92%; $n = 42$) expressed interest in learning more about generative AI, though there was a tendency to describe this technology as relevant sometime in the future, so no actual implementation plan was envisioned at this stage.

Similarly, teachers strongly intended to use generative AI in the future (66%; $n = 25$) and learn about it (87%; $n = 33$). There was a lot of interest in using generative AI for lesson planning, developing resources, and different administration tasks, or what might be seen as instrumental outcomes from the technology rather than innovative pedagogical possibilities and creative outputs. There were limited responses in the data set, indicating interest in using generative AI with students in class:

> And I can see how in the future with my high-level students I could definitely incorporate that into my writing classes. (TS)
>
> I would like to get them started in just some kind of way really, but I don't know how to get around that. (TFG)

At the same time, there were 18 open-ended survey responses suggesting a very strong stance that AI should not be used in the program, especially with beginning learners:

> A big "no" for EAL [and] refugee background learners ... I think it's going to hinder the whole progress of language acquisition, to be functional in society. (TFG)
>
> Not at all. It generally defeats the learning process. It only delivers information of often questionable accuracy, frequently deeply flavoured by philosophical-epistemological bias. (TS)

These excerpts from the data suggest clear scepticism and apprehension towards implementing generative AI in classrooms. Teachers expressed concerns about its potential negative impact on their students including those learning EAL. Additionally, doubts arise regarding its accuracy and inherent biases, with teachers questioning its value in the learning process. This hesitancy from teachers suggests the need to build confidence in embracing generative AI and allay the anxieties about its impact on their work.

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Yet, in the focus group data, students from refugee and migrant backgrounds seem to exhibit a proactive stance towards the utilisation of generative AI in their education, often learning about and initiating its use independently. As one recounts, "I was the one that started using it in class" (SFG). However, these students were aware of their knowledge gaps and expressed a strong desire for more information. Appreciating the potential for AI to positively impact their lives, they conveyed a need for assistance on effective use to be able to implement it: "We just need to know how to use it in a proper way" (SFG).

Interest in formalising learning about generative AI is apparent, with students indicating that tailored learning would increase their engagement and expertise: "The more you provide us with [an] AI course, the more interested we will be" (SFG). Even among those with some AI experience, there is an eagerness to further implement the technology, but this is held back by a knowledge gap.

6. Discussion

The findings reveal that one third of the student participants who identify as EAL learners reported they knew how to use generative AI, including for quite sophisticated purposes, though there was an uneven understanding of what it is and what it does. Educational leaders and teachers were concerned that adult EAL learners did not have the capacity to use generative AI due to their lack of digital literacy skills and/or their access to technology. While many leaders and teachers recognised the value of generative AI in supporting adult students for settlement and for future goals, others were unsure of the practical relevance and application to their students' lives. The leaders and teachers felt strongly about the impact that generative AI could have in hindering the learning process. At the same time, leaders and teachers were willing to use generative AI in the future but identified the value of generative AI as a tool for teaching and administration rather than learning.

While the findings suggest that learner-participants may lack the digital literacy skills required to effectively use generative AI, the findings also indicate that generative AI has the potential to foster opportunities for digital literacy learning. Given that the use of technology and application of digital and AI literacy both facilitate and mediate migrants' and refugees' settlement experiences (Nedelcu & Soysüren, 2022), proficiency in digital technologies is not merely advantageous but necessary for everyday life (Potocky, 2021). Despite the growing importance of generative AI platforms (Kaneti, 2023), there is a significant gap in educational programs tailored to equip adult migrants and refugees with the skills to understand and apply these technologies (Pegrum *et al.*, 2022).

The research highlights a diversity of perspectives towards generative AI within the learning program for adult EAL learners. Leaders were cautious yet optimistic about what generative AI might afford. Educators exhibited hesitancy, especially regarding its practical application for beginners in language learning and its potential interference with the language learning process, highlighting English language proficiency as a significant barrier.

Notwithstanding this, while educators reported varying levels of understanding of generative AI, there was recognition of its potential and its future pervasiveness in everyday life. The teachers were curious about how generative AI might be used for learning and teaching practices, but they were uncertain and hesitant to use the technology with students. These findings suggest that there is not only a significant gap in access to tailored educational programs for adult learners that explicitly teach digital and/or AI literacies but also a lack of professional development available for educators.

While the teachers reported interest in using generative AI in the future and learning more about it towards that end, their students showed keen interest in applying the technology in their lives now, despite their limited understanding. Interestingly, the survey results, as opposed to the

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three focus groups, showed that half of the students did not feel that generative AI would be needed for their future, nor would it support their learning. Recent research has established the pervasiveness and impact of generative AI across society, and it is already being used for settlement services (Nedelcu & Soysüren, 2022).

However, most of the student participants were unaware of its potential impact. These disparities indicate that while leaders and teachers are aware of how generative AI will influence everyday life and learning – both the affordances and the limitations – many of their students do not clearly understand its impact. This suggests that one of the first steps is to ensure targeted professional development is available for educators and program leaders to bridge the knowledge gap and support understanding of when and how to apply generative AI for learning and teaching purposes and how to harness its benefits to equip adult learners for the future. There is a clear imperative to develop students' understanding of generative AI and its potential impact on their lives. Therefore, we advocate for a systemic approach to embedding generative AI literacy within the digital literacy curricula of adult education programs for migrants and refugees.

Overall, while many leaders and educators identify the potential of generative AI in supporting adult students from CALD and migrant and refugee backgrounds, most participants are largely unaware of the benefits of developing knowledge and competencies in generative AI. Nevertheless, they show a strong interest in learning about and applying it in their lives, including for practical tasks such as language learning, writing and personal learning. Furthermore, being equipped with generative AI literacies allows migrants and refugees to be agential in how they choose to use generative AI for their future and promotes awareness of how generative AI is being used across society and in work contexts.

Although some educators were concerned about how generative AI might impact the learning process, it is important to remember that educators do not "own" the learning process; rather, they enable learners to actively make choices about their learning. This is also relevant to adult migrants and refugees as they gain a sense of digital empowerment that allows them to actively and successfully navigate and participate in their new societies (Nedelcu & Soysüren, 2022; Safarov, 2021).

7. Conclusion

In this article, we have brought attention to the central importance of digital literacies in the lives of EAL learners from diverse cultural and linguistic backgrounds within the Australian context. As part of these digital literacies that enable participation and foster empowerment, knowledge about generative AI and confidence in using it have emerged as important for present and future learning. We argue that the incorporation of generative AI into educational programs for this demographic is a crucial element in fostering capacities that are likely to be highly valued in work environments, in education and across society.

Two potential learning objectives for this population might include gaining a foundational understanding of generative AI and its possible uses, as well as becoming proficient in employing AI technologies for day-to-day activities like writing and communication. This would also extend to improving job-related skills and enhancing learning through tailored language and literacy development afforded by AI. However, from our reading of the data, this incorporation is substantially not yet happening to any large extent in the context of adult training programs.

The qualitative nature of the study, while rich in detail, also limits the generalisability of the findings. The perspectives captured are influenced by the specific contexts and may not reflect the nuances of experiences across different geographical and cultural settings. Additionally, the rapid evolution of generative AI and digital platforms suggests a moving target for leaders, educators and students alike, with the potential for our specific findings to become outdated as new technologies emerge.

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Having said all this, this article opens a new area of research, and the key ideas explored will provide a platform for future research and practice in this emergent space internationally. Our study has revealed a clear enthusiasm among some adult learners for engaging with generative AI, even if they are unsure of its specifics, juxtaposed with a hesitance or caution among educators and leaders to fully embrace these technologies in teaching practice. This dichotomy highlights the urgent need for comprehensive professional development for educators, aimed at cultivating a more consistent and informed approach to generative AI across educational settings.

Data availability statement. Data available on request due to privacy/ethical restrictions.

Authorship contribution statement. Author 1: Conceptualization, Project administration, Formal analysis, Methodology, Writing – original draft, Writing – reviewing & editing; Author 2: Conceptualization, Formal analysis, Writing – original draft, Investigation; Author 3: Conceptualization, Writing – original draft, Writing – reviewing and editing, Formal analysis; Author 4: Conceptualization, Writing – original draft; Author 5: Conceptualization, Writing – reviewing & editing; Author 6: Data curation, Writing – original draft; Author 7: Data curation, Writing – original draft.

Funding disclosure statement. This research article did not receive any specific funding.

Conflict of interest statement. The authors declare no competing interests.

Ethical statement. The project was approved by the Monash University Human Research Ethics Committee (ID 40630), and all participants provided informed consent.

GenAI use disclosure statement. GenAI was employed minimally to assist in structuring the article, suggesting initial relevant ideas related to the topic as search criteria, and formatting the reference list.

References

Abood, J., Green, J., Polonsky, M. J., Woodward, K., Tadjoeddin, Z. & Renzaho, A. M. N. (2023) The importance of information acquisition to settlement services literacy for humanitarian migrants in Australia. *PLOS ONE*, 18(1): Article e0280041. https://doi.org/10.1371/journal.pone.0280041

Ajzen, I. & Fishbein, M. (1980) *Understanding attitudes and predicting social behavior*. Englewood Cliffs: Prentice-Hall.

Ávila, J. & Pandya, J. Z. (eds.) (2013) *Critical digital literacies as social praxis: Intersections and challenges*. New York: Peter Lang.

Bagozzi, R. P. (2007) The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems*, 8(4): 243–254. https://doi.org/10.17705/1jais.00122

Borkert, M., Fisher, K. E. & Yafi, E. (2018) The best, the worst, and the hardest to find: How people, mobiles, and social media connect migrants in(to) Europe. *Social Media+ Society*, 4(1): 1–11. https://doi.org/10.1177/2056305118764428

Casal-Otero, L., Catala, A., Fernández-Morante, C., Taboada, M., Cebreiro, B. & Barro, S. (2023) AI literacy in K-12: A systematic literature review. *International Journal of STEM Education*, 10: Article 29. https://doi.org/10.1186/s40594-023-00418-7

Chen, K., Tallant, A. C. & Selig, I. (2024) Exploring generative AI literacy in higher education: Student adoption, interaction, evaluation and ethical perceptions. *Information and Learning Sciences.* Advance online publication. https://doi.org/10.1108/ILS-10-2023-0160

Collins, J., Reid, C., Groutsis, D., Hughes, S., Watson, K. & Kaabel, A. (2023) *Refuge and family futures in Australia: Settlement outcomes of recently arrived refugees from Syria, Iraq, and Afghanistan: Final report*. Sydney: University of Sydney Business School and the MERCI@WResearch Group.

Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3): 319–340. https://doi.org/10.2307/249008

Dekker, R., Engbersen, G., Klaver, J. & Vonk, H. (2018) Smart refugees: How Syrian asylum migrants use social media information in migration decision-making. *Social Media + Society*, 4(1): 1–11. https://doi.org/10.1177/2056305118764439

Drydakis, N. (2021) Mobile applications aiming to facilitate immigrants' societal integration and overall level of integration, health and mental health. Does artificial intelligence enhance outcomes? *Computers in Human Behavior*, 117: Article 106661. https://doi.org/10.1016/j.chb.2020.106661

Ekoh, P. C., Okolie, T. J., Nnadi, F. B., Oyinlola, O. & Walsh, C. A. (2023) Understanding the impact of digital technology on the well-being of older immigrants and refugees: A scoping review. *Digital Health*, 9: 1–11. https://doi.org/10.1177/20552076231194947

Ellingson, L. L. (2009) *Engaging crystallization in qualitative research*. Thousand Oaks: SAGE Publications. https://doi.org/10.4135/9781412991476

Eshet-Alkalai, Y. (2004) Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia*, 13(1): 93–106. https://www.learntechlib.org/primary/p/4793/

Gillespie, M., Osseiran, S. & Cheesman, M. (2018) Syrian refugees and the digital passage to Europe: Smartphone infrastructures and affordances. *Social Media + Society*, 4(1): 1–12. https://doi.org/10.1177/2056305118764440

Gustafsson, J. (2017) *Single case studies vs. multiple case studies: A comparative study*. Halmstad: Academy of Business, Engineering and Science. https://www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf

Huang, X., Zou, D., Cheng, G., Chen, X. & Xie, H. (2023) Trends, research issues and applications of artificial intelligence in language education. *Educational Technology & Society*, 26(1): 112–131. https://doi.org/10.30191/ETS.202301_26(1).0009

Kaneti, M. (2023) What can AI see? The image of the 'migrant' in the era of AI post-visualization. *Journal of Global Ethics*, 19(3): 307–322. https://doi.org/10.1080/17449626.2023.2279229

Lankshear, C. & Knobel, M. (2008) *Digital literacies: Concepts, policies and practices*. New York: Peter Lang.

Lloyd, A. (2020) Shaping the contours of fractured landscapes: Extending the layering of an information perspective on refugee resettlement. *Information Processing & Management*, 57(3): Article 102062. https://doi.org/10.1016/j.ipm.2019.102062

McHugh, M. & Doxsee, C. (2018) *English plus integration: Shifting the instructional paradigm for immigrant adult learners to support integration success*. Washington, DC: Migration Policy Institute. https://www.migrationpolicy.org/research/english-plus-integration-instructional-paradigm-immigrant-adult-learners

Molla, T. (2023) Refugee education: Homogenized policy provisions and overlooked factors of disadvantage. *International Studies in Sociology of Education*, 32(4): 902–923. https://doi.org/10.1080/09620214.2021.1948892

Muñoz-Basols, J., Neville, C., Lafford, B. A. & Godev, C. (2023) Potentialities of applied translation for language learning in the era of artificial intelligence. *Hispania*, 106(2): 171–194. https://doi.org/10.1353/hpn.2023.a899427

Ndofor-Tah, C., Strang, A., Phillimore, J., Morrice, L., Michael, L., Wood, P. & Simmons, J. (2019) *Home Office indicators of integration framework* (3rd ed.). London: Home Office. https://www.gov.uk/government/publications/home-office-indicators-of-integration-framework-2019

Nedelcu, M. & Soysüren, I. (2022) Precarious migrants, migration regimes and digital technologies: The empowerment-control nexus. *Journal of Ethnic and Migration Studies*, 48(8): 1821–1837. https://doi.org/10.1080/1369183X.2020.1796263

Pegrum, M., Hockly, N. & Dudeney, G. (2022) *Digital literacies* (2nd ed.). New York: Routledge. https://doi.org/10.4324/9781003262541

Perry, K. H. & Moses, A. M. (2011) Television, language, and literacy practices in Sudanese refugee families: "I learned how to spell English on Channel 18". *Research in the Teaching of English*, 45(3): 278–307. https://doi.org/10.58680/rte201113467

Potocky, M. (2021) The role of digital skills in refugee integration: A state-of-the-art review. *The International Journal of Information, Diversity, & Inclusion*, 5(5): 69–108. https://doi.org/10.33137/ijidi.v5i5.37514

Pretorius, L. (2023) Fostering AI literacy: A teaching practice reflection. *Journal of Academic Language and Learning*, 17(1): T1–T8. https://journal.aall.org.au/index.php/jall/article/view/891

Safarov, N. (2021) Personal experiences of digital public services access and use: Older migrants' digital choices. *Technology in Society*, 66: Article 101627. https://doi.org/10.1016/j.techsoc.2021.101627

Şanlıer Yüksel, İ. (2022) Empowering experiences of digitally mediated flows of information for connected migrants on the move. *Journal of Ethnic and Migration Studies*, 48(8): 1838–1855. https://doi.org/10.1080/1369183X.2020.1796264

Scoble-Williams, N., Sinti, D. & Vert, G. (2024, April 9) *Generative AI and the future of work: Preparing your organization for the boundless potential of AI in the workplace and its impact on jobs*. New York: Deloitte. https://www.deloitte.com/global/en/services/consulting/research/generative-ai-and-the-future-of-work.html

Thomas, J., Barraket, J., Wilson, C. K., Rennie, E., Ewing, S. & MacDonald, T. (2019) *Measuring Australia's digital divide: The Australian digital inclusion index 2019*. Melbourne: RMIT University and Swinburne University of Technology. https://doi.org/10.25916/5d6478f373869

van Deursen, A. J. & van Dijk, J. A. (2014) The digital divide shifts to differences in usage. *New Media & Society*, 16(3): 507–526. https://doi.org/10.1177/1461444813487959

Venkatesh, V. & Bala, H. (2008) Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2): 273–315. https://doi.org/10.1111/j.1540-5915.2008.00192.x

Venkatesh, V. & Zhang, X. (2010) Unified theory of acceptance and use of technology: U.S. vs. China. *Journal of Global Information Technology Management*, 13(1): 5–27. https://doi.org/10.1080/1097198X.2010.10856507

Zholdoshalieva, R., Teng, J. X., Ayyappan, A. & Tu, B. (eds.) (2022) *Leveraging innovative technology in literacy and education programmes for refugees, migrants and internally displaced persons. Education 2030*. Hamburg: UNESCO Institute for Lifelong Learning. https://files.eric.ed.gov/fulltext/ED627597.pdf

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https://doi.org/10.1017/S0958344024000314 Published online by Cambridge University Press