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Field Report

Digital Technology Use in Four Adult Education Classrooms: Challenges and Solutions

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Abstract

We have created the new, free curriculum CILIA-T (Content-Integrated Language Instruction for Adults with Technology Support) to develop the U.S. history and civics knowledge, digital skills, and English proficiencies of adult language learners. The curriculum focuses on academic vocabulary, critical thinking, and learners' existing knowledge. During the first pilot implementation of this curriculum, we observed the classrooms and gave some digital tests to the learners. In this report, we document the digital landscape in adult education classrooms, the wide variety of digital contexts, the challenges adults face, and some of the solutions we observed.

Keywords: digital skills, adult education, ESL, civics, history

The goal in this Report from the Field is to discuss observations of four adult education classrooms and to describe the digital landscape—that is, the available technology resources as well as teacher and student digital literacy proficiency to access and effectively use those resources. The digital landscape in adult education varies widely due to differences in technology familiarity, usage frequency, and available infrastructure (e.g., internet connection, apps, and software) in classrooms and homes. While discussing this variability, this report also highlights some challenges and possible solutions adopted by the teachers. We hope that this brief snapshot of the digital landscape can be useful to educators as they plan for their classes and prepare learners for an increasingly technology-driven future.

Context of the Classroom Observations

The classroom observations were part of the pilot implementation of a new curriculum. This free College and Career Readiness Standards-aligned 16-module curriculum, called CILIA-T (Content-Integrated Language Instruction for Adults with Technology Support), teaches U.S history, civics, and English language in an integrated way, while also building in

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opportunities to strengthen learners' digital skills. CILIA-T activates and builds upon learners' existing knowledge; targets domain-specific and transferable academic vocabulary; and encourages critical thinking, analysis, and application. Module 1 focuses on an introduction of digital literacy skills (Hauge et al., 2024), which are then practiced throughout the modules as learners use tools such as Gmail, Google Forms, Quizlet, WhatsApp (hereafter shortened as WA), and Zoom in their coursework.

However, digital literacy includes proficiencies that go beyond skillful use of digital tools (Coiro, 2021). The CILIA-T curriculum targets six digital competencies: (1) functional skills to use tools, devices, and applications effectively; (2) finding and evaluating digital information to understand the quality, reliability, and relevance of information; (3) responsible digital citizenship to take part in an online (hereafter shortened as OL) community safely, ethically, and respectfully in both personal and professional lives; (4) technology troubleshooting to develop digital resilience, applying solutions to new tools and contexts; (5) comprehension and integration to understand multiple texts and information in different modalities; and (6) communication, collaboration, and creation in different modalities, using different tools (Eckersley et al., 2023). The CILIA-T curriculum also includes free video tutorials and educator resources to support the teaching or refreshing of these digital skills (Northstar, n.d.).

In a pilot study, four experienced teachers implemented CILIA-T in their intermediate/advanced English as a Second Language (ESL) classrooms. The research team gave six mini-tests to learners before they started their CILIA-T course, assessing learners' digital proficiency in the following areas: smartphone apps, Zoom, Quizlet, WhatsApp, Gmail, and finding information.

Through the pilot, the CILIA-T research team observed classrooms to assess the technology infrastructure (including hardware [e.g., computers, projectors], software [e.g., learning platforms, apps], and internet connectivity), teacher usage and comfort, solutions to infrastructure limitations (e.g., using smartphones, shared devices, offline materials, peer support networks), and student digital proficiency and access.

The research team observed the classrooms during every CILIA-T lesson for the first five weeks, then half of the time for the remaining 11 weeks. The teachers dedicated different amounts of time to implementing CILIA-T curriculum, supplementing their English language instruction with other curriculum materials. Three classes were observed for 60 hours each, whereas one class was observed for 120 hours.

Course Delivery Methods and Technology Used for Instruction

All four classes included online teaching and learning. One class was fully OL, while the other three were hybrid, with some students attending OL and others in person. To address the challenges of a mixed group, each of the three hybrid classes had a different teaching approach.

In one class, only two to three students came to the classroom while 12–15 students joined OL. This teacher taught the class completely OL; even the students who were in the classroom with the teacher followed the course on their school laptops or their own phones and communicated with the students who were attending the class virtually.

In the second class, 15–20 students were in the classroom while three to four joined OL. The teacher taught as if it were an in-person class, using a whiteboard and camera for OL students to follow along. OL and in-person students had limited interaction. The camera showed different classroom views, but OL students struggled to follow discussions or see who was speaking. In-person students could not see OL students (most kept cameras off) but could hear them. For group activities, OL students joined breakout rooms while in-person students worked in small groups with paper copies of materials.

In the third and smallest hybrid class, three to four students came to class in person while four to five joined OL. In this class, the instruction was geared toward in-person delivery. The in-person students sat around a table, and the teacher usually left the laptop on the table so that all students could see and hear each other as afforded by the camera and speakers on the teacher's device.

Teacher Familiarity With Digital Tools

Two classes used Google Meet, and two used Zoom. All teachers could project and mark information using whiteboards, Jamboard, and online annotation tools, with varying degrees of use. Two teachers used two monitors, projecting class materials on one and keeping track of the OL students on the other.

All teachers were proficient in using Zoom/Google Meet and Gmail. Additionally, the CILIA-T research team asked them to use Quizlet for vocabulary review and Google Forms for OL homework. This required teachers to save copies of Quizlet and Google Form templates on their own computers and share those teacher-created links with their students. To support teachers, the research team held in-person meetings, modeled use, and provided support during class observations.

When the students read the materials, two teachers projected text sections to the class using Jamboard and Kami, marking key concepts and providing pronunciation keys. Another teacher wrote on a whiteboard and used the computer's camera to show OL students the notes.

Student Digital Proficiencies

Students were familiar with apps like Google Translate, WA, Zoom, and Google Meet due to personal use and increased use during the COVID pandemic. However, they needed guidance on Gmail, Google Forms, Quizlet, and OL safety. Teachers created WA groups for announcements, course links, and community building. Students used WA not just for academics, but also for social purposes—like notifying the teacher about absences (e.g., due to work, childcare, or transportation issues), requesting links, sharing class-related content, sending birthday wishes, sharing photos, or even asking the teacher to put their forgotten dinner in the fridge.

Communication With Students

All CILIA-T curriculum materials (detailed lesson plans and student materials) are on Google Drive, and, during the pilot, links to these materials were shared with the teachers. Teachers then shared links for these activities and materials with students. Given the variability in student digital proficiencies and available tools, teachers relied on multiple mechanisms to share information. In two classes, teachers printed out student packets and handed paper copies to in-person students. In all four classes, teachers shared the digital links to the materials using email and other apps such as WA or Remind. In one class, students with paper copies took photos of the pages and shared these with their OL classmates on WA. Three teachers always sent a reminder before a class, giving the Zoom/Google Meet link and links or PDF files of the materials.

Students shared their work in multiple ways as well. The CILIA-T curriculum deliberately includes activities to encourage students to use a variety of tools to build digital skills. Some responses were instructed to be shared by email as the students practiced their skills, such as email conventions or how to attach files and photos. Students also submitted their responses with WA. During the pilot, the CILIA-T research team found Google Forms to be the most convenient and efficient method for students to share their work. Google Forms enabled teachers to collect all the responses in one place rather than across multiple messages. Additionally, the software was easy for students to learn, allowing them to quickly complete forms individually, either in class or at home. Students used Google Forms to submit quick responses (e.g., multiple choice) and longer responses, such as their reactions to texts, photos, and videos. One teacher encouraged students to use the Remind chatbox for quick responses and emojis (thumbs up/down) to gauge the class's thoughts on an issue.

Challenges and Solutions

It is clear that OL instruction is here to stay. A recent review of adult education classes in Minnesota found that 25% of students are enrolled in online or hyflex/hybrid classes (Wetenkamp-Brandt & Cytron-Hysom, 2024). Even in classes in which all students attend in-person, OL resources may be used to provide additional support and practice. In this digital landscape, we observed the following challenges and the successful solutions used by teachers participating in the pilot.

Challenge 1

One major challenge was the variation in digital proficiency among students, from proficient to beginner, compounded by class size. Class observations and digital mini assessments showed that all learners needed at least some level of digital literacy support in the standards addressed in the curriculum.

Redundancy of digital tool use became important to support all learner levels. Teachers incorporated digital tools consistently to help learners build digital skills through multiple opportunities to practice. The research team observed teachers having success in use of clear and frequent communication through digital tools like messaging apps or email, ensuring that all students are on the same page regardless of their digital literacy level. These included sending links for electronic materials via email, WA, or chatbox message, and/or providing materials as paper copies, photos of texts, Google Forms, links, or PDF files. Additionally, to support various levels of learning, teachers tapped into the multiple capabilities of technology tools; for example, in Quizlet, teachers provided both the written words and definitions and played the audio for vocabulary for students to hear the word's pronunciation. For additional support, videos were also played with closed captioning, replayed, or played at slower speeds to facilitate learning. Importantly, teachers visited the digital tools repeatedly, in the same way, to help learners build digital literacy.

Challenge 2

Another challenge was hyflex/hybrid classes, which are almost like teaching two simultaneous classes, with teachers often needing support to interact efficiently with all of the students—both those in person and OL (Wetenkamp-Brandt & Cytron-Hysom, 2024). This setup often led to teachers feeling torn between their in-person and OL students. Participating in group projects and sharing work was also observed to be complicated, especially when some learners were in the classroom while others were OL. These factors made it difficult for instructors to provide the appropriate level of support for each student. The CILIA-T team also observed this difficulty and noted that sometimes OL students cannot participate fully when the teacher is interacting with those who are in the classroom.

Interestingly, while hybrid/hyflex classes are designed to offer students flexibility, we observed that students tended to choose one modality for the entire course and stick with it. The only time OL students attended in-person was when they had to come to their school site for testing. Similarly, students who typically attended in-person rarely switched to OL, even when unable to attend class.

A solution teachers incorporated to meet this challenge involved refining the way instructors interacted with students in a hybrid/hyflex environment. Teachers found that creating and using WA groups for their classes was effective, not only for sharing class announcements and links to course materials, but also to help build a community. Digital tools such as WA provide many opportunities for the students to get to know and support each other, which can affect persistence and build digital resilience combating the challenges of hybrid/hyflex classes.

Additionally, hosting all materials on Google Drive and sharing links with students allowed all learners to access a central hub of materials. Another effective way teachers built community in OL or hybrid/hyflex was through recruitment of learners as leaders. Students already provide tremendous peer-to-peer support, especially in using technology. Those who are more proficient in using digital tools help others. Making this more systematic and available in OL interactions was useful and provided opportunities for translanguaging and student leadership. Teachers did this by incorporating opportunities for small group work in both OL and in-person spaces.

Challenge 3

Finally, digital materials were often not easily organized to be revisited by students. We saw that many students interacted with the materials only once, either during the initial lesson or through OL resources. Afterward, they often struggled to locate or review the materials on their own. This issue seemed to stem from the inherent difficulty in managing digital files, links, and PDFs compared to physical materials that students might more easily organize in folders or notebooks. The challenge is ensuring that students can easily access and revisit digital resources when they need them, thus reinforcing learning and providing support beyond the classroom.

Teachers in the pilot addressed this challenge by creating structured, accessible digital environments. Teachers reviewed materials often (this included academic vocabulary, digital topics, and civics/history concepts). This was also enabled by the redundancies built in our curricula for two reasons: a) students using digital resources may not go back and review materials on their own, and b) new students need to catch up with their classmates. In CILIA-T, critical concepts are reviewed across multiple readings and activities. Additionally, the digital tools allow students to review materials while practicing digital skills. For example, vocabulary flashcards enables students to independently review academic vocabulary and add items for personal study.

After the pilot was completed, given the findings, we decided to move our whole curriculum to an ebook format, which is more accessible for both the teachers and the students,. This also provides a single resource for students to review, if they so choose.

Finally, independent video tutorials and educator resources (Northstar, n.d.) provided instructors with another method of onboarding and reviewing tools with learners using visuals. The research team also observed that instead of frontloading digital tools, a better strategy may be to start lightly with digital tools and then introduce and review additional tools when they are needed to practice the curriculum content. In some cases, offering physical copies of materials, like packets or handouts, in addition to digital formats, encouraged students to engage more consistently with the content.

Conclusion

In summary, the challenges faced by instructors in managing hybrid and OL learning environments are multifaceted, ranging from student proficiency with digital tools to the complexities of maintaining engagement across different learning formats. However, we observed that by using a variety of strategies, such as structured communication, collaborative digital tools, and organized access to materials, teachers can create more effective and inclusive learning experiences for all students.

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