AI-Assisted Language Tutoring to Aid North Korean Migrants

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- We identified problem domains that included AI-assisted tutoring, gamified learning for engagement, and AI life-coaching for postsecondary pathways.
- Following instructor review, we decided to focus on a specific marginalised group who can more directly benefit from our efforts.
- After discussing a few options, we decided to focus on aiding cultural integration for North Korean migrants living in other countries.

- Due to the country's extreme cultural isolation, North Korean migrants are generally presented with a number of complex challenges when acclimating to new environments.
- They are isolated from English terms, and generally have a low level of comprehension of Chinese characters. They often face social prejudice, which can lead them to develop narrow social networks of other migrants and limit close contact with native residents.
- We aim to address these concerns by working with a migrant assistance organization called Mirae to investigate technologically-assisted solutions to help migrants overcome these barriers.

Research Notes

Literature Review

- Learning Systems
  - We analysed a number of papers which demonstrated the efficacy of intelligent tutoring systems (ITS) over alternative computer teaching or human tutors, and the training of AI tutors through ‘machine teaching’ or with simulated learners.
  - Studies found that AI tutors for Korean and Chinese languages effectively identified student weaknesses, and that students reacted positively to learning with these aids.
  - Experiential learning was also shown to improve users’ confidence when encountering challenging situations.
- Cultural Integration
  - Research also examined the difficulty encountered by North Korean migrants in South Korea, with discrimination and knowledge gaps limiting integration at systemic and value levels.

Comparative Review

- ChatGPT is powerful, but also confidently inaccurate. Traditional tutoring is effective, but inaccessible. Self-study doesn’t offer personalised guidance or feedback.
- Existing post-secondary guidance chatbots demonstrate algorithmic bias and a lack of expertise relative to human counterparts.
- Gamified learning solutions (Minecraft Education Edition, ClassCraft) were shown to improve retention and open to collaborative learning, but overemphasize rewards and present specific design challenges in development of the games.
- Duolingo was found to be effective in developing A2 (beginner-intermediate) proficiency, but limited in its ability to educate beyond that point.
- Existing AI chatbots for postsecondary guidance were limited in response personalization and integration with university services.

Conclusion and Goals

Our research has shown that North Korean migrants face a number of challenges in acclimating to South Korean culture, including the recognition and use of English loanwords alongside the Korean language.

Existing online solutions for language learning have potential, but are limited in their assistance with vocabulary. Private tutoring is also effective, but exclusive and inaccessible, especially given the other systemic issues faced by migrants. Advances in AI technology have shown that it has great potential in personalizing the language-learning experience and generating curriculums for students in particular learning states. Students have reacted positively to experience with these tools.

We have reached out to the Mirae Foundation and Aurora for discussion about how these solutions can specifically help North Korean students to learn the language necessary to overcome the challenges they face in integrating to South Korean and other societies.