

Motivation, Enjoyment, and AI-mediated Informal Digital Learning of English (AI-DLE)

Thank you very much for the kind introduction. Hello everyone, and thank you for being here. So what I'm going to share today is based on one ongoing project that examines how Chinese university students from different social backgrounds negotiate the use of generative AI for language learning beyond the classroom. And the title of my talk today is "Motivation, Enjoyment and AI-mediated informal digital learning of English". Here is the structure of my talk. And I really want to start this presentation by framing the issue that is sort of related to the rise of informal language learning in a changing world, characterized by globalization and constantly emerging digital technologies.

So in *The Handbook of Informal Language Learning* published by Wiley, Mark Dressman and Randall Williams Sadler made the case that, "In the space of a generation, 25 years, learning a second language has moved from near total dependence on the knowledge, expertise, and planning of others, to a level of autonomy and opportunity for self-teaching and picking up new languages, and this is unimagined in any other period of human history". So in the field of TESOL, as a specific type of informal language learning, informal digital learning of English, or just IDLE in shorthand, has been gaining momentum. It is usually understood as a sort of self-directed and naturalistic and digital learning of English in unstructured and out-of-class learning environments, and IDLE has been recognized as a global learning phenomenon, especially among students with ready access to digital technologies. Also, it's been seen as a new individual difference variable in L2 development because it sort of fits within the structural change of the foundation for L2 English learning, from the top-down, classroom instructions, to the bottom-up, informal language learning practices.

And since late 2022, the release of powerful generative AI tools has really enabled new affordances for human practices, and also transformed a view of how informal language learning could happen, especially in the context of emerging and powerful new technologies. So to respond to such a reality, in one of our recent publications, in *CALL*, we directed attention to AI-mediated IDLE. We argue that maybe our students are not just using ChatGPT to cheat in their essay writing, but they are also using ChatGPT or similar AI tools to learn English in innovative and creative forms, like they are using chatbots for some personalized English-speaking practices or vocabulary development. And we see AI-IDLE as the kind of informal English learning activities that L2 English learners undertake by exploring what AI can offer while tapping into its abundant resources that expose them to the target

languages, diverse genres, styles and registers.

Because AI-IDLE is a highly nascent but promising field of study, the first step of pedagogically utilizing AI-IDLE would be understanding the antecedents and outcomes associated with this learning phenomenon. To this end, our investigation looks to the cognitive and effective foundations of second language development, as outlined in the Routledge Handbook of Second Language Acquisition and Individual Differences. So as the handbook editor, Dr Li Shaofeng and his colleagues highlight, learning an L2 not only involves the negotiation of cognitive and socio-cultural differences, but also requires the mobilization of one's conative functions, like motivation and effective resources, like the sense of enjoyment. So the research questions we want to address and we want to ask include: in what ways, if any, does motivation relate to L2 English learners' involvement with AI-IDLE? And, in what ways, if any, does enjoyment shape their participation in AI-IDLE? Then we adopted a quantitative-orientated, explanatory, mixed methods design. Meaning that this is a largely quantitative-first and qualitative-second study, and the qualitative part only aims to add details or context to the quantitative findings.

And the first step of this design is to establish and construct the research model and hypothesis. So we drew upon Zoltán Dörnyei's L2 Motivational Self System by conceptualizing L2 motivation as having an Ideal L2 Self and Ought-to L2 Self. The Ideal L2 Self is pretty much promotion-focused. It represents the envisioned future L2 Self that are associated with language learners, personal interests and maybe their future career plans. And Ought-to L2 Self is prevention-focused. It represents the external attributes learners feel compelled to possess, to avoid negative consequences, like to pass an exam. And we build upon Dewaele and MacIntyre's definition of enjoyment and see it as a complex emotion, capturing interacting components of challenges and perceived ability, that reflects the human drive for success. Then, by reviewing prior studies on the interplay of L2 motivation, enjoyment and IDLE in a non-AI environment, we generated the following five hypotheses. And the five hypotheses taken together help us generate the following research model.

So now let's move on to the context and data part. So the context is the Chinese university EFL context, but we did not focus on one single university. We focused on the university EFL context in general, because we collected the questionnaire data from a total of 690 undergraduate students

from different parts of China. We also collected interview data from 12 of them. Here, you can see we undertook purposive sampling techniques by sending the e-posters to more than 30 public or semi-public discussion groups on different Chinese social media platforms like Red Book/Rednote, Douban, Weibo, or Zhihu. And the qualitative data was collected using an adapted questionnaire, including the skills of L2 motivation, enjoyment and AI-IDLE. It was analyzed using a structured question modeling approach in primarily six steps. The qualitative interview data was analyzed using deductive thematic analysis, and I have to highlight that it was deductive because we just wanted to use the qualitative findings to complement and to add details to our quantitative findings.

Now, let's move on to the meat of the quantitative findings. Here you can see the key figure and table about the hypothesis-testing results, and let me briefly interpret these findings in a friendly manner. So basically, the quantitative findings reveal that students' Ideal L2 Self is positively and significantly related to their sense of enjoyment and their participation in AI-IDLE. However, Ought-to L2 Self cannot predict AI-IDLE directly. It can predict enjoyment in the first place, and then enjoyment can serve as a full mediator between Ought-to L2 Self and AI-IDLE. Meaning that, even though our students with a strong prevention-focused motivation may not use generative AI for informal language learning in the first place, they may develop a sense of enjoyment, and then that sense of enjoyment can sort of contribute to their participation in AI-IDLE. And looking at the R-square, we can see that 68% of change in enjoyment can be explained by the two L2 motivation variables, and 79% of change of AI-IDLE can be explained by this model, which is excellent, which adds credit to the explanatory power of this structural model.

And the qualitative findings sort of confirm the quantitative findings, but of course, they provide more details and more interesting findings. For example, the qualitative data shows that both the Ideal and Ought-to L2 Selves motivated students to find ways to access generative AI technologies that are officially banned in China or not available in China, especially given that the data was collected in mid-2023. That was a time when some powerful generative AI tools like DeepSeek were still not released in China. And then we found that students with a clear image of Ideal L2 Self can agentively use generative AI for productive language learning beyond the classroom, while their vivid Ought-to L2 Selves only invited them to use AI for some in-class language tasks like preparing for an English

presentation in the classroom, etc. And more importantly, we observed that enjoyment and the motivation to participate in AI-IDLE were imbricated in a pretty dynamic and non-linear way. It's kind of, like, while enjoyment and motivation can influence AI-IDLE, this holds true vice versa, or in the other way around. So it really depends on how students interact with or negotiate their own learning needs and learning conditions within their context.

For example, the case of Eve, a fourth-year undergraduate majoring in education, indicated that, “Oh, I think the sense of enjoyment has had a huge impact on my use of AI to learn English outside of class. You should know that it's actually not very convenient to use ChatGPT in Mainland China, because every time you need a VPN to go over the grid firewall. So I would say I must have enjoyed learning English first, then I can make AI an effective English learning tool beyond the classroom.” And she added that, “As I keep discovering how AI is becoming more and more useful in boosting my English skills, my feeling of enjoyment in learning the language keeps growing. It pushes me to dive into the other cool things AI can do and find better ways to make the most out of it.” And through this interview excerpt, we can see that for Eve, the sense of enjoyment precedes her AI-IDLE practices. She also highlighted the importance of context by recognizing the challenges of accessing ChatGPT in China. But as soon as her sense of enjoyment in learning English grew from AI-IDLE practices, she was further motivated to use AI to explore new affordances of AI, maybe for language learning purposes, maybe for other social purposes. And through this process, we can see how one's sense of enjoyment, motivation and AI-IDLE practices interact with each other in a non-linear way.

So regarding takeaways, we have the following major discussions that we want to highlight. The first research question is, in what ways, if any, does motivation relate to L2 English learners' participation in IDLE? We found that participants' Ideal L2 Selves serve as a main and significant factor that influence their productive usage of AI for language learning outside of the classroom. While it seems that their Ought-to L2 Self cannot leave a direct impact, this may suggest that for Chinese university students, their externally sourced motives cannot provide direct support or sustainable support for their self-initiated language learning beyond the classroom with AI. In terms of the second research question, we found that a sense of enjoyment does enable greater investment in AI-IDLE, but the impact of enjoyment, or the interplay of enjoyment and other variables may be pretty complicated.

Like, how motivation and enjoyment interact with each other and influence AI-IDLE is neither linear nor discrete. An accurate understanding of the effective and motivational foundation of AI-IDLE would require a comprehensive understanding of how our students negotiate their own learning needs, their learning resources and within their own socio-technical environments.

So this is pretty much my talk, and here you can see the journal article that this presentation builds upon. And on the right of this slide, I also copied the AI-IDLE scale that I developed and validated. Feel free to let me know if you want to replicate or adapt this scale in your own context, I will be glad to offer some help. Thank you very much.