Co-Designing a Study Platform for ASU Graduate Students to Enhance Learning Productivity and Performance Through Connection

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accountability Collaboration Learning platform student motivation

This project explores how ASU graduate students manage focus, productivity, and connection while studying, and how a digital study platform can support these needs. We utilize the challenge and creation phases of the Learning Engineering process to define core learning problems, gather early user insights, and generate design ideas. The findings informed the early concepts for a study connection platform that supports accountability, shared routines, and productive learning behaviors, which we tested through co-design activity. This work sets the foundation for later iterative development and measurement.

Introduction

This report presents our ongoing work in designing a study platform that helps ASU graduate students strengthen their learning productivity through meaningful peer connections. Many students manage demanding schedules and shifting priorities between part-time work and study. As a result, the process of staying focused becomes inconsistent. To address this, we adopted the learning engineering process as our guidance to approach the problem from identification to shaping early design ideas (Totino and Kessler, 2024).

Our work focuses specifically on the challenge and creation phases of the learning engineering cycle. Within both of challenge and creation phases, we conducted nested cycle of learning engineering processes where multiple cycles were needed to understand the challenge before moving forward, and where multiple pieces of the solution need to be created and tested (Craig et al., 2025). In these phases, the goal is to understand the learning problem in context, gather relevant literature, and generate initial solutions that can be refined through future testing. The methods used in these phases help us understand the learning behaviors in the world and build design concepts grounded in evidence.

Objectives and Challenges

Our project goals in the challenge faced were to understand how graduate students manage independent study, what hinders or motivates their focus, and how peer accountability supports learning. These challenges shaped the early design direction for a tool that fosters connections among learning individuals (graduate students at ASU) in an online setting, ultimately enhancing their learning performance.

Methodology

Literature review

The literature highlights the importance of peer connection, motivation, and structure in learning. Research on collaborative study shows that cohesive peer networks and shared regulation processes improve motivation, persistence, and academic outcomes (Berthelon et al., 2019; Haataja et al., 2022). Supportive peer relationships foster accountability, metacognitive interaction, and a sense of belonging, all of which contribute to sustained engagement (Shao et al., 2024).

Motivation research further suggests that both intrinsic and extrinsic factors influence learning behaviors. Gamification elements such as progress tracking, shared goals, and meaningful rewards can increase engagement when aligned with learning outcomes (Schlosser et al., 2023; Smirani & Yamani, 2024; Xu et al., 2021). Studies on group size indicate that while optimal size varies by context, consistency and clear roles often matter more than the number of participants (Connell et al., 2023; Corrégé & Michinov, 2021; Zhan et al., 2022).

Learning strategy analysis

To understand how students approach their work, we examined the learning strategies, which include spaced repetition, goal setting, distributed practice, and accountability. Our analysis suggests that a study connection platform should not only facilitate peer interaction but also embed effective learning strategies such as session timers for spaced learning, pre-session planning prompts, and periodic check-ins, so they become a seamless part of the user experience rather than standalone tools.

Prototyping

Based on insights from the literature and early student discussions, we developed low- and high-fidelity prototypes of a study connection platform for ASU graduate students. Prototyping was used as a human-centered design method to refine ideas, communicate concepts, and gather early feedback (Thai et al., 2022). The prototype emphasized core functions such as peer matching, guided study sessions, timers, and progress tracking.

Focus Group Discussion

After developing the prototype, we decided that a focus group discussion would be an effective way to gather qualitative reactions, understand needs and wants, and generate early insights before delving deeper into development (Thai et al., 2022). We conducted a 120-minute in-person focus group with five graduate students using a participatory design approach. Activities included discussions of current study habits, walkthroughs of prototype flows, and a card-sorting co-design exercise. The prototype can be seen on this link: bit.ly/asupeermatch.

Result and Future Research

The focus group session yielded rich insights into graduate students' study behaviors, expectations for study platforms, and experiences with the prototype. Five ASU graduate students participated in a 120-minute moderated session that included: (1) a brief discussion of current study practices, (2) structured walkthroughs and usability tests of three prototype flows, and (3) a card-sorting co-design activity. The findings reveal key barriers to productive study, essential platform features, and design considerations for future iterations.

Participants reported a strong preference for online study due to flexibility and physical distance from peers, but noted challenges with distraction and inconsistent focus. Motivation was higher when studying with peers who shared similar goals, whereas studying with close friends sometimes reduced productivity, echoing prior findings on peer accountability and group dynamics (Berthelon et al., 2019; Zambrano et al., 2019). Trust, psychological safety, and clearly defined expectations were identified as critical conditions for effective co-study.

Feedback on the prototype indicated that structured study templates, timers, peer matching, and personal study statistics were essential features. Participants valued simplicity, low cognitive load, and clear progress indicators. Gamification was viewed positively when tied to meaningful progress rather than arbitrary rewards, consistent with prior gamification research in higher education (Schlosser et al., 2023; Smirani & Yamani, 2024).

Future work will involve testing refined prototypes with a more diverse graduate student population. Additional research is needed to evaluate effective peer-matching criteria, embedded learning strategies, and motivation systems tailored to graduate learners (Connell et al., 2023; Xu et al., 2021). If deployed, future iterations could integrate analytics to support data-driven design improvements and better understand long-term study behaviors.

References

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*) There are several other pieces of literature that we will include on the poster, related to collaborative study, intrinsic and extrinsic motivation, and also group size for the study connection platform.