Designing an Empathetic Chatbot and Exploring the Impact of Medium in its Experience and Adoption

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ABSTRACT

Grounded in the user experience driven innovation (UXDI) framework (Djamasbi and Strong, 2019), we developed an empathetic chatbot, ERIN, to help college students find resources about sensitive issues such as mental health and Title IX. This extended abstract: 1) Reports ERIN's UX driven iterative design process, 2) investigates possible influence of medium on ERIN's user experience, and 3) explores UX factors impacting adoption behavior.

Using the UXDI framework, we initiated ERIN's design and development process by gaining a deep understanding of ERIN users through developing proto personas. This objective was accomplished by interviewing two key informants. Next, we expanded our understanding of ERIN users by conducting a second interview study but this time with 15 undergraduate students (intended ERIN users) to 1) verify and/or refine proto personas that were developed as the result of the first study, and 2) gather user reactions to and preferences for interacting with an initial prototype that was developed based on the insight from the first study. The results of this second study verified and refined our developed proto-personas and provided insight for improving ERIN.

In a third user study (n=12), we tested the modified ERIN and examined the impact of its UX on its adoption. Because prior research suggests that medium (i.e., laptop vs. smartphone) may impact user reactions to chatbots, we designed the third study as a between-subject experiment. All participants were provided with two scenarios and asked to use the chatbot to address the situation described in the scenarios. Half participants accessed the chatbot via their laptop, and the other half via their mobile phones. After completing the task, participants' subjective experience was captured using the system usability score (SUS) and perceived task effort (PTE). Their adoption behavior was captured using TAM's perceived ease of use (PEOU), perceived usefulness (PU), and behavioral intention (BI). The results showed that user reactions to ERIN were almost significantly better in the mobile group compared to the laptop group (p=0.07). Consistent with a recent study (Jain, Djamasbi, and Hall-Phillips, 2020), we examined the impact of UX on adoption behavior by looking into the relationship between PTE, SUS, and BI (UX-BI model). Supporting the results of this previous study, our analysis showed that the impact of PTE on BI was mediated by SUS, which had a strong direct significant (p=0.00, B=0.08, Adj. R^2=0.54) impact on BI. Similarly, PTE had a strong direct significant impact on SUS (p=0.00, B=22.5, Adj. R^2=0.62). As in the previous study, we did not find a significant direct relationship between PTE and BI (p=0.10, B=1.44, Adj. R^2=0.17). Next, we examined the impact of UX on BI through TAM constructs, namely ease of use and usefulness. Our results showed only a strong significant positive relationship between PEOU and PU (p=0.00, B=0.85, Adj. R^2=0.79). The results showed that PTE had a marginally significant effect on PEOU (p=0.07, B=0.83, Adj. R^2=0.22) while it had a significant impact on PU (p=0.04, B=0.89, Adj. R^2=0.31). However, once the impact of PEOU on PU was taken into consideration, this relationship between PTE and PU became non-significant. These results suggest that the UX-BI model was more helpful in explaining behavioral intention for ERIN; hence it may serve as a useful tool for predicting chatbot adoption. These preliminary results must be verified with larger datasets. The results showing a stronger relationship between SUS and BI compared to the relationship between PU and BI supports the UXDI's central principle asserting that technology development must start with UX. Because UX is a dynamic phenomenon, the UXDI framework asserts the need for continual iterative assessments both in the design world and the usage world after a product is launched.

SELECTED REFERENCES

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