Reflections on empathic design: a K-16 perspective

Heather Lynn Keahey[1]

Abstract

This paper offers a response to the article entitled, "Empathic design: imagining the cognitive and emotional learner experience" (Tracey and Hutchinson, Educational Technology Research and Development 67(5):1259–1272, 2019). This review examines the recent published study on empathic design in consideration of practical applications for K-16 settings. The case study explores the alignment of the designers' sensitivities with the learner perceptions of a web-based collaborative tool, the Virtual Hospital, developed for health professionals. Aspects of the study and empathic design can be useful in the development and evaluation of similar tools across all educational levels. The noted flexibility in the design discussions and the continued focus towards student affect are two facets which could support the development of educational technology tools. One noted limitation when applying the findings to K-16 students is that the collaborative program in the study was designed for health professionals with advanced degrees. Two suggestions are offered to make a comparable project more suitable for the K-16 environment. First, build an evaluative piece that contains an objective assessment to measure collaboration and second, include the teacher perspective in the design and evaluative process. The reviewed study offers an excellent blueprint for further work with empathic design.

Keywords Empathic design · Instructional design · Designer–learner design matching

As a shift to digital instruction in education becomes more commonplace, a focus is placed on good instructional design in the creation and development of educational tools. As schools, teachers, students and parents rely more and more on online and digital educational formats, instructional design of quality learning materials is paramount. In order to offer a more meaningful learning experience, instructional designers can employ empathic processes in an effort to create beneficial learner experiences. This paper offers a response to a recently published study by Tracey and Hutchinson (2019) examining an empathic approach in instructional design. The discussion provides practical implications and applications of the study and empathic design for K-16 settings.

✉ Heather Lynn Keahey
hlkeahey@liberty.edu

1   Department of Mathematics, Wharton County Junior College, 911 Boling Highway, Wharton, TX 77488, USA

Article summary

Empathic design adds a human-centered approach to instructional design and encourages the considerations of the designer towards the human experience of the end-user and towards the collaborative nature of design process (Mattelmäki et al. 2014). Empathic forecasting involves predicting another person's affective experience in a future event (Pollmann and Finkenauer 2009). Using empathic forecasting is important in instructional design because it requires that the designer places their sensitivity for the users at the forefront of the design process (Tracey and Hutchinson 2019). The exploratory study published by Tracey and Hutchinson (2019) documents how instructional designers used empathic forecasting to predict the cognitive and emotional learner experience while immersed in the design of a web-based collaborative instructional activity. The designers developed the Virtual Hospital, an interactive online simulation case-study activity, in conjunction with short advance sciences course to encourage collaboration and interaction among health professionals across various disciplines made up of physicians, radiobiologists, and radiation physicists (Joiner et al. 2017; Tracey and Hutchinson 2019).

The purposes of the investigation included "(1) document what sorts of empathic forecasts designers made, and (2) how these forecasts align with user perceptions" (Tracey and Hutchinson 2019, p. 1261). Researchers documented the designers' predictions and expectations and then compared the projections with reported learner experiences. The results showed that the process lead to a meaningful design which indicated alignment between the designers imagined empathic forecasts and the learners' perceptions (Tracey and Hutchinson 2019).

Application to K-16 settings

The overall study design provides a guide that can be used across multiple instructional settings, including K-16. Using an empathic design approach naturally leads to more discussion and collaboration during the design process. Having continuous discussion on learner perceptions and emotions and checking the accuracy of these predictions can lead to developing more engaging and meaningful digital products for elementary, secondary, and undergraduate students.

Another aspect of empathic design as documented in the study which is beneficial to instructional designers in all educational levels is the flexibility afforded the designers and the process. This flexibility allows for major revisions during the process benefiting the learners' experiences. As reported in the reviewed article, during the design meetings, when the instructional designers stepped into the shoes of the learner to visualize and better understand the learner experience, they expressed user frustration which prompted major modifications to the designed product (Tracey and Hutchinson 2019). Learner data supported the decision of the designers to alter the design (Tracey and Hutchinson 2019). As the designers take on the role of the K-16 learner through the process, having flexibility and freedoms for ensuing conversations and design decisions can lead to improved outcomes in terms of a finished product.

While this study of the empathic design of a collaborative activity provides contributions for K-16 applications, there are some noted limitations. First, the participants in this study were all health professionals with advanced doctoral degrees (Joiner et al. 2017; Tracey and

Hutchinson 2019), and therefore, experiences of elementary, secondary, or undergraduate level students were not a considered. For the K-12 and undergraduate student, it could be beneficial to include an objective measure of the effectiveness of a collaborative learning experience. For example, when considering STEAM activities, a popular offering in K-12 schools, assessment of student collaboration is needed to "identify the dimensions of the skill in order to provide appropriate problem solving opportunities within instruction" (Herro et al. 2017, p. 1). Such an assessment would offer an additional piece of information for the teacher and other decision makers when implementing digital tools within a curriculum.

A second suggestion is to incorporate the teacher/instructor perspective in the design and evaluative process. The study focused on empathic design for a virtual tool used by the learners who were all highly educated health professionals. When considering teaching technology tools for a K-16 setting, a teacher or instructor often plays a central role in delivery of instruction. Teachers frequently serve as facilitators and use digital applications and programs to enhance instruction. Their positive experience with an educational tool can influence decisions regarding use of the tool in the classroom. It is generally reported in literature that teacher integration of technology into the curriculum is key to effective use of technology in schools (Feng and Hew 2005). Teacher self-efficacy (Harrell and Bynum 2018; Joo and Lim 2018), perceived ease of use (Joo and Lim 2018; McCulloch et al. 2018), and perceived usefulness (Inan and Lowther 2010; Joo and Lim 2018) are factors affecting teachers' intention to use technology with their students. The role of a teacher or facilitator should not be undervalued when thinking of instructional design in the K-16 setting.

Conclusion

Empathy-based instruction can have a positive impact on learning in a K-12 setting (Lee et al. 2018). Through research and practice, K-12 education can benefit from the refinement of formal guidelines and best practices regarding empathic design which can be implemented across school systems and countries that maintain an empathic, active and experiential design approach (Dienfenthaler et al. 2017). As educational institutions are moving towards digital delivery, instructional design using an empathic approach offers a continuous and reflective model in creating learning tools. The reviewed article provides an excellent blueprint for future work in implementing and studying empathic design in a variety of educational settings.

Compliance with ethical standards

Conflict of interest There are no known conflicts of interest to disclose.

Research involving humans or animals This manuscript is a review to a previous published article, and no research involving humans or animals was used for purposes of writing this review.

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Heather Lynn Keahey is an adjunct instructor in the Graduate School of Education at Liberty University and at Houston Community College in Mathematics. In the Fall of 2020, she joined the Mathematics faculty full-time at Wharton County Junior College. Her research interests include topics related to online learning.