

## Implementing Learner Experience Design in University Teaching: An Action Research Study on Enhancing Faculty-Student Engagement and Motivation

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*Abstract: The Learner Experience Design (LXD) framework enables educators to create engaging and relevant learning experiences by considering students' backgrounds, motivations, challenges, frustrations, emotions, and needs, alongside their interactions with faculty, staff, and peers. The LXD methodology involves three steps: research, design, and evaluation. During the research phase, instructors gather important insights through student interviews. In the design phase, they develop a plan for a learning experience. In the evaluation phase, they assess the effectiveness of the learning experience and identify areas for potential improvement. This article details an action research case study examining a workshop series in which faculty members from universities spanning several countries utilized LXD with their students. It offers insights gathered from the participants of these workshops, revealing evidence of not only the anticipated innovative curricular improvements but also an unexpected enhancement in the connectivity between students and teachers and increased teacher motivation.*

*Keywords: learner experience design, instructional design*

Continuous improvement is a common goal among educators as it enhances the effectiveness of their teaching and ultimately improves the learning outcomes for their students (Watt & Richardson, 2008). To support this goal, universities often provide resources such as centers for faculty excellence, support for visiting scholars to conduct workshops on teaching, and professional development funding to enable faculty to engage in activities that will improve their teaching skills (Hott & Tietjen-Smith, 2018). Teachers are motivated to improve their teaching for various reasons, including personal pride, improved student evaluations, increased student test scores, and a record of their graduates' success in the workforce (Blackburn et al., 1995). Regardless of the specific motivation, continuous improvement is an important aspect of a faculty member's career development (O'Meara & Terosky, 2010).

There are many strategies, tools, technologies, and philosophies that lead to effective teaching. Most seasoned educators will agree that there is no one-size-fits-all pedagogy (Awan, 2019). Rather, teaching is a highly personal endeavor (Brown, 2003). Developing a personal pedagogical strategy involves trying multiple approaches, discarding those that seem less effective, and embracing and incorporating those that do. While this trial-and-error approach can be time-consuming, it is ultimately rewarding and allows educators to find the teaching style that best fits their personality and in-class persona, which can influence virtually all aspects of their courses (Nixon, 2013).

The Learner Experience Design (LXD) framework is one such approach that aims to create engaging and relevant learning experiences by considering students' past, motivations, challenges, frustrations, emotions, and needs, as well as their interactions with faculty, staff, and peers (Schnepf

& Rogers, 2022). The LXD process involves three steps: research, design, and evaluation. During the research phase, instructors gather important insights through student interviews. In the design phase, they develop a plan for a learning experience. Finally, in the evaluation phase, they assess the effectiveness of the learning experience and plan for potential revisions.

LXD was developed to improve course design by increasing student engagement and to ensure the coursework is relevant to new ways of learning (Schmidt et al., 2023).

Through the research, design, and evaluation process, instructors can continually create, assess, and refine learning experiences to ensure that they not only meet the specified course learning outcomes but resonate in meaningful ways with students (Vorvoreanu & Connolly, 2015).

In this action research study, we detail an inquiry where investigators evaluated the implementation and perceived impact of Learner Experience Design (LXD) on university faculty members. The investigators developed and led a workshop series where faculty members from universities spanning several countries utilized LXD with their students. They collected and evaluated the observations of workshop participants to identify trends. Results from the evaluation indicated evidence of innovative curricular enhancements as well as an unanticipated increase in perceived student-teacher connection and motivation.

### **The Distinction between Learning and Learner Experience Design**

*Learner Experience Design* (LXD) is a relatively new concept that expands upon the principles of User Experience Design (UXD) by considering the learner as a user (Gray, 2020; Robinson & Harrison, 2017; Yu, 2023). This term is often confused with *Learning Experience Design*, as they are associated with similar activities and are sometimes used interchangeably. While there is no consensus definition of either term, Learning Experience Design is often situated at the intersection of Instructional Design (ID) and Interaction Design (IXD) (Schmidt & Huang, 2022; Thurber et al., 2021)). It is used to describe design practice, design products, or a discrete field of study (Abbott, 2020). For this work, the distinction between *Learning Experience Design* and *Learner Experience Design* lies in the focus. While *Learning Experience Design* emphasizes the design of experiences that facilitate learning, *Learner Experience Design* emphasizes the necessary involvement of students as active participants and often co-creators in the design process (Schnepf & Rogers, 2022). This includes activities such as conversations with students, co-ideation based on learned insights, and the co-creation and cooperative evaluation of innovative curricula and assessments. The term Learner Experience Design also draws a parallel to user experience design, the discipline upon which it is based, with a focus on the learner as an individual rather than solely on the learning experience. Overall, Learner Experience Design prioritizes empathy for, and insights gained from, the learner in the creation of effective learning experiences. Figure 1 details the distinctions between the two terms.

<b>Learner Experience Design</b>	<b>Learning Experience Design</b>
Focused on the <i>learner</i>	Focused on the <i>experience</i>
Rooted in User Experience Design (UXD)	Rooted in Instructional Design (ID) and Interaction Design (IXD)
Development includes insights from student interviews	Development may include insights from students but draws more heavily on literature and best practices

**Figure 1: A comparison of Learner Experience Design and Learning Experience Design**  
A Foundation Based on UXD and Design Thinking.

UXD is the process of designing products, systems, or services with the goal of creating a positive experience for the user (Norman et al., 1995). The core tenet of UXD is user-centricity. It involves understanding the needs, preferences, and behaviors of the user and designing a product or service that meets their expectations and provides a high level of satisfaction (Hassenzahl, 2013). User experience practitioners typically engage in activities such as interviews, observations, and surveys to glean insights to inform design decisions (Gruen, et al., 2002). Utilizing these practices is also known as user-centered design.

This approach is widely used across industries (Apari et al., 2013; Martinelli et al., 2022; Mival & Benyon, 2014). Rather than designing for a general group of people, companies and organizations base design decisions on insights revealed by a set of individuals, leading to a more personalized approach to the final design. It has been found that designing for specific people, encapsulated as personas, yields more effective design decisions for broader groups (Pruitt & Grudin, 2003). Additionally, implementing user-centered design leads to a greater sense of personalization and connection to the product for the user (van Velsen, 2011). User-centered design and user experience design are essential to Design Thinking, which involves being curious, taking action, reframing problems to broaden perspective, recognizing the process, and seeking help when needed (Brenner, Uebernickel, & Abrell, 2016). Empathy, or the ability to see things from another person's perspective, is a key first step in the design thinking process.

### The LXD Process

LXD is an approach that emphasizes the design of educational experiences through insights derived from student interactions either prior to or during an academic term (Schmidt et al., 2020). In employing LXD, educators are enabled to foster empathy by conducting interviews with students, inquiring into their study habits, work patterns, and learning preferences. This empathetic understanding allows for the recalibration of curricular content, the innovation of pedagogical strategies, and the enhancement of teacher-student rapport (Gregg, 2023).

Traditionally, educators have relied on end-of-course evaluations as a mechanism for soliciting student feedback to inform instructional improvements. These evaluations are valued for providing a platform through which students can anonymously submit feedback, suggest enhancements, and express their perspectives (Edström, 2008). Nonetheless, such evaluations are conducted post-course, are inherently reflective in nature, and do not facilitate the development of a rapport between students and instructors, thus limiting their efficacy in real-time pedagogical adjustment (Frick et al., 2010).

LXD can be implemented in several ways. However, a straightforward approach involves short one-on-one interviews done towards the beginning of the semester in which the instructor asks individual students open-ended questions about the ways that they typically learn, study, and work (Schnepf & Rogers, 2022). It is based partly on design thinking practices, in that the instructor strives to gain empathy for the student. However, it incorporates a style of questioning popularized by *The Lean Startup* (Reis, 2011) where the interviewer avoids posing hypothetical scenarios and instead focuses on questions about habits and experiences. There is an inherent power differential when instructors interview students. However, in LXD this is diminished because the questions are general and not focused on particular coursework. This approach facilitates genuine responses that yield usable insights when developing effective curricular changes. It also involves the student directly in the curricular development process, akin to the co-creation of value processes described by Prahalad & Ramaswamy (2004).

### **An LXD Workshop Series for University Faculty**

Central to our action research methodology, we conducted three iterative LXD workshops with university faculty, embodying the collaborative and participatory nature of action research. The primary aim for participants was to acquire skills in integrating LXD into their curriculum design, intending to create innovative and effective learning experiences for students. Here, "innovative" refers to learning experiences that introduce new or creative approaches to teaching and learning, incorporating technologies, methodologies, or pedagogical strategies not traditionally used. "Effective" learning experiences are those that demonstrably enhance students' knowledge, skills, and attitudes, leading to improved academic performance and engagement. The ultimate goal was to empower educators to develop learning experiences that not only capture students' interest but also significantly contribute to their learning success.

Concurrently, our project sought to gain insights into how instructors perceive the advantages of using LXD in their teaching practices. To gather data on the effectiveness of these workshops, we collected detailed feedback from participants through post-workshop questionnaires. In addition, we documented reflections from the workshop leaders to gain a multifaceted perspective on the training's impact.

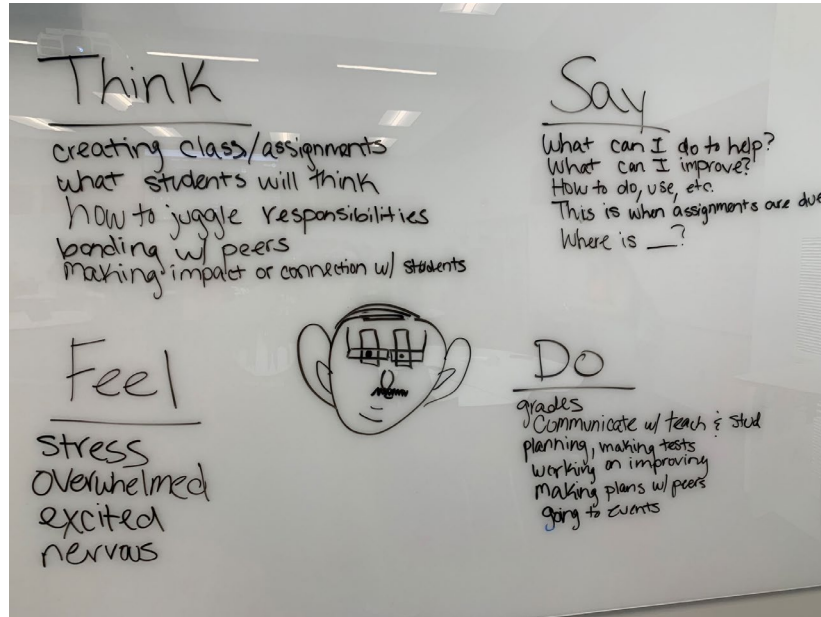
We delivered the workshop series three times: at two different universities and an additional online series developed in collaboration with the International Society for Exploring Teaching and Learning (ISETL) to accommodate COVID-19 restrictions. Each workshop session adhered to the format specified by Schnepf and Rogers (2022) and is described below:

#### Session 1 - An introduction to LXD

- LXD in higher education
- Building personas and empathy diagrams
- Identifying insights and forming a focus question
- Ideation through divergent and convergent thinking
- Homework - Conducting interviews with students

The first workshop session began with an introduction to LXD and an overview of the workshop's goals and activities. In the first activity, participants learned how to construct empathy diagrams. In groups of three, they created personas based on predetermined prompts. Prompts included general persona archetypes such as "The Instagram Influencer", "The IT Guy", and "The Soccer Mom". Participants invented details about their assigned persona and wrote out descriptions. They created

Empathy Diagrams to articulate key characteristics of the personas (Figure 2). The diagrams were structured in a quadrant system with sections for what a persona sees and hears, thinks and feels, says, and does, as described by Ferreira et al. (2015). This exercise served as a practical application of LXD, allowing participants to immerse themselves in a technique directly applicable to real student scenarios.



**Figure 2: Empathy Diagram**

After creating and diagramming personas, participants worked together in small groups to identify insights that might be useful when developing new solutions. This exercise examines the positive and negative aspects of a student's experience, called pains and gains. Pains can be viewed as opportunities to mitigate negative aspects, while gains offer insight into what students value, enjoy, or take pride in, and can be amplified to improve a learning experience.

The insights identified during the empathy exercises were used to formulate focus questions, which are essential for guiding ideation. A useful approach to generating focus questions is to begin each question with "How might we". This format reframes an insight into a problem that can be solved. For example, if an insight is that Alexis feels like she takes on an unfair amount of work in group projects, a useful focus question might be "How might we create a group assignment that ensures an equitable distribution of work?". Focus questions facilitate creative and eclectic ideation because they encourage divergent thinking, a large volume of ideas, and multiple tactics.

After developing a focus question, the workshop participants engaged in a collaborative ideation session that entailed brainstorming a diverse array of potential answers to the focus question. To facilitate idea organization and flexibility, participants utilized Post-it notes for physical workshops, allowing for easy rearrangement of ideas to form cohesive groups or build upon each other. In the online workshop format, Google Jamboards served a similar function, offering a digital space for dynamic idea arrangement. This brainstorming phase was intentionally time-limited to promote a sense of focus and urgency.

Following brainstorming, the groups proceeded to a convergent thinking exercise. This phase was structured to refine the pool of ideas generated during ideation. Initially, participants reviewed all the ideas, engaging in thorough discussions to evaluate their feasibility and relevance. This review

process involved critically analyzing each idea, considering factors like resource availability, potential impact, and alignment with the focus question.

Subsequently, the groups undertook the task of pruning, where less viable or less impactful ideas were eliminated. This step ensured that only the most promising ideas remained for further consideration. The remaining ideas were then distilled, a process of synthesizing and refining these ideas into more polished, actionable solutions. This distillation often involved combining elements of multiple ideas or further developing an idea to enhance its practicality and effectiveness. Once this process yielded a set of refined solutions, the groups collectively assessed these options and selected the most promising solution for implementation.

The steps outlined above, although based on hypothetical personas, prepared participants to apply the techniques to their own curricular development with their own students. The final part of the first session focused on equipping participants with practical tips and techniques for interviewing students in order to gather empathy data for use in future sessions. This instruction emphasized the importance of active listening, ensuring educators fully understand students' perspectives. Participants were taught to ask open-ended questions, fostering an environment where students feel free to express their thoughts and experiences. Additionally, the session covered how to build rapport, creating a comfortable and trusting atmosphere for students. Effective note-taking strategies were also discussed, enabling educators to capture key insights without disrupting the flow of the conversation. Lastly, the importance of developing genuine empathy towards students' viewpoints was highlighted, as this is crucial for accurately interpreting and utilizing the gathered data:

#### Session 2 - Integrating LXD into curricular design

- Sharing insights from student interviews
- Creating student personas
- Collaborative ideation
- Identifying solutions
- Homework - Implementing a solution

In the period between the first and second workshop sessions, participants conducted interviews with a number of their students. During the second session, they worked in groups of three to share the data they had collected and organize it using the techniques learned in the first session. This process involved creating empathy diagrams for student personas, identifying insights, forming focus questions, and engaging in ideation sessions. Rather than working with hypothetical personas, as in the first session, participants used the data they had collected from their actual students.

Participants' reflections highlighted the transformative impact of the workshops. They acknowledged a paradigm shift in their approach to curriculum design, moving from outcome-oriented to student-experience-focused strategies. One participant stated that they were better able to "identify individual student experiences and provide additional guidance, assignments, direction, etc. to match student experiences and feedback." Another noted that "this is a different approach; I usually think about the outcome and the constraints of the design situation and go from there. The workshops added a new element for me to consider."

After formulating focus questions, participants engaged in brainstorming with their colleagues and developed multiple ideas, as they had learned to do in the first workshop session. As they narrowed these ideas down to those that were feasible, participants began to develop new and innovative strategies for teaching with the aim of engaging individual students. Some of these strategies involved shifting assignments from passive to active, giving students a greater role in assessments, engaging students in field experiences, and exploring new classroom technology. Working in groups allowed participants to collaborate and generate not only a larger number of

solutions but also the synthesis of several ideas into more focused and sometimes more elaborate solutions.

Having identified implementable solutions, the participants agreed to try them out with their actual classes in the period between the second and third workshop sessions:

Session 3 - Reflection and future steps

- Sharing implementation experiences
- Barrier identification
- Group ideation and critique
- Reflection and plans to move forward.

The third workshop session provided an opportunity for participants to share their experiences implementing the teaching innovations they developed over the previous weeks. During the session, they discussed what worked and what did not, the responses from students, the barriers they faced, and ideas for improvement. Following this discussion, participants engaged in an ideation session to collaboratively identify ways to synthesize the things they learned over the previous weeks. The session concluded with a group reflection and plans for continuing to integrate LXD into their curricular design workflow.

## **Participants' Feedback**

The initial goal of the workshop series was to enable educators to develop innovative, student-centered teaching methodologies using LXD and to understand instructors' perceptions of LXD's value. However, as the series progressed, it became evident through discussions and post-workshop surveys that participants were experiencing unforeseen beneficial outcomes. These were primarily due to enhanced interactions with students, especially through one-on-one discussions beyond the traditional classroom setting. Such interactions led to multiple positive effects that enriched the educational experience for both educators and students. Notably, participants observed a significant growth in their understanding of student perspectives and an increase in empathy towards students. Additionally, a stronger bond was reported between faculty and students. Remarkably, there was an observed rise in perceived motivation levels of both the teachers and students, likely linked to the enhanced relationships and the implementation of creative curriculum enhancements inspired by the workshops.

### *Increased Empathy*

Teachers conducted interviews with students and built empathy diagrams based on their conversations. Comments about this phase of the process indicated an enhanced level of empathy for students. When describing the empathy diagram exercise, one participant noted that "It helped me to study each student in detail". Many teachers also developed a deeper understanding of the heterogeneity of the entire class. One noted that the exercise "really made me be aware of the vast differences amongst our students." Another identified the "variety of needs that each [student] brings into the classroom". These comments indicated that after engaging in empathy-focused activities, teachers were more aware of students' individual qualities and needs. The class is not a monolith, but a collection of complex individuals, each with their own unique social and cultural perspectives, family backgrounds, levels of preparedness, study habits, and preferred learning styles. The following excerpt from the survey answer exemplifies these notions:

“The exercise in identifying what a particular student (or group of students) may be thinking, feeling, hearing, etc. helped in better understanding student perspectives. In other words, we were placing ourselves in the shoes of our students or through the questioning process, learn[ing] more about our students ‘in depth’ and not just on the surface or through demographic information only. This is where the customization process and true learning experience will be able to grow.”

While empathy for the specific students interviewed might be expected, it led to the realization of nuanced differences between all students, which is more profound. Beyond the typical grouping of students as low and high achievers (Johnson & Johnson, 1989; Slavin, 1987), a deeper understanding of the subtle diversity among student’s values, anxieties, habits, and goals can help an educator create more insightful learning contexts (Felder & Brent, 2005). Meyers et al. (2019) highlighted the impact of teacher empathy on students’ sense of connection, engagement, and overall academic performance. Empathy is not a quality that teachers either have or do not have. Rather, it exists on a continuum. Teachers who deliberately strive for increased empathy develop a deeper understanding of their students. They connect with students on cognitive, affective, and behavioral levels. Students who experience empathetic teachers have a more positive learning experience (Mikkonen et al., 2015) and perform better academically (Chang et al., 1981).

From the Design Thinking perspective, empathy is seen as fuel for innovation (Gasparini, 2015). While the techniques learned in the workshops describe ways to develop empathy for students, the reciprocal nature of teacher-student interviews also conveys to students that their teacher cares about their input. Students’ perception of teacher empathy is essential to fostering a caring and safe learning environment (Tackett et al., 2017). To maintain such an environment, the teacher must communicate empathy to the students.

### *Teacher-Student Connection*

Interpersonal connection is at the heart of the LXD process. It is unsurprising, therefore, that workshop participants reported a sense of deepened understanding of their students. For many participants, the notion of one-on-one conversations with students was entirely new. One participant remarked that “by placing ourselves in the shoes of our students, we are able to develop a better sense of their needs in order to adjust our curriculum to those needs.” Through structured interviews that included ample follow-up questions and a loose, meandering format, participants were able to uncover insights that they would not have discovered through their usual class interactions. Participants were able to draw connections between individual learners and the class as a whole, discovering insights “from both a broad perspective and also specifically.”

Participants mentioned the value of student interviews as a means to understand them better. One remarked, “I’ve begun to seek out student opinions during the planning process of my fall courses so I can better understand their needs and what strategies will work best for reaching them.” What was intended as a way to improve the curriculum for their students led to a genuine increase in compassion. The act of interviewing students produced a connection. The bonds formed through interpersonal communication led to both intangible and observable positive outcomes for learners. A university professor shared that “one of my students, who experienced the death of a close friend, coach, and mentor during the course, said that what he was learning in the course helped save his life. I think he took the course more seriously and thus derived benefits from the course in part because we were able to connect and gain trust at the beginning of the semester.”

Gillespie (2005) observed that “knowing, trust, respect, and mutuality are inherent qualities of connected student-teacher relationships that contribute to an environment that affirms and supports

students' personal and professional growth." Bevis and Watson (1989) identified this type of interaction as the humanistic approach to learning, characterized by a focus on the interpersonal interaction between teachers and students that leads to an increased sense of comfortability, in which the student feels understood and safe. This humanistic approach to teaching is based on Maslow's (1943) general theory of humanism, which posits that motivation for action is directly related to whether or not an individual's needs are met. For students, this means that a deeper teacher-student connection enables a safe learning environment in which students' emotional needs are met, allowing them to focus more energy on learning.

The humanistic approach is symbiotic in that both the teacher's and the student's comfortability are increased through personal interactions. The reduction in barriers leads to positive outcomes for both groups. When students feel safe, they have less anxiety, are more open to asking questions, and feel empowered and free to individually explore topics on their own. Likewise, when teachers feel safe, they are unafraid to try new teaching techniques, will explain concepts in their own words, and are more likely to let students explore rather than feel the responsibility to rigidly guide their learning. The increased trust enabled through a humanistic learning context leads to free and open exploration for both students and teachers.

### **Perceived Teacher Motivation**

A variety of motivations drive teachers through their careers, such as the desire to guide students' purpose or to convey knowledge and provide students with the opportunity to find meaning (Whitcomb et al., 2008). Hence, it is likely that receiving feedback from students about their enjoyment of this guidance would increase teacher motivation. Conversely, if a teacher perceives that their students are not engaged or interested in learning, their own motivation may be diminished (Hardre et al., 2006; Hardre et al., 2008).

As participants progressed through the workshop series, they found that the closer relationship they developed with their students increased perceived motivation. One participant stated that "this approach helped me to understand my students a bit more, which then motivated me to tailor classes to their needs and interests." Another participant discussed the added benefit of getting to know their students, stating that "these techniques have increased my motivation to teach. I have always presented students with the opportunity to share a brief bio at the beginning of each class in order to learn more about their backgrounds. The expansion of obtaining additional information through this process has been beneficial. I enjoy learning more about my students and also the opportunity to create additional activities that increase engagement within the classroom."

Teachers who are motivated are more likely to be engaged and enthusiastic about teaching, creating dynamic and engaging learning environments that can foster a sense of curiosity and motivation in their students (Fredricks et al., 2004). This, in turn, can lead to improved student outcomes, including better grades, increased attendance, and higher levels of engagement and motivation (Hattie, 2009). Additionally, motivated teachers are more likely to persevere in the face of challenges associated with struggling students or difficult classroom environments (Goddard et al., 2004). This resilience and determination can be contagious, helping to create a positive and supportive learning environment for all students (Fredricks et al., 2004).

### **Perceived Student Motivation**

One of the many challenges faced by educators is helping students develop a sense of motivation for learning. Motivation is the internal influence that drives students to take ownership of their learning, meet deadlines, put in significant effort on projects, and overcome obstacles (Linnenbrink & Pintrich,

2002). Motivated students can also contribute to more interactive classes (Saeed & Zyngier, 2012). Participants who adopted the LXD methodology observed an increase in motivation from their students and greater interactivity between them. One participant noted that "learners become very active and classes become more interactive." Students have also felt a sense of ownership of their own learning as they have been able to co-design the curriculum with the instructor. Another participant noted an increase in confidence and competency, stating that "the techniques were used with students in clinical rotation and virtual learning environments and helped to foster effective communication and build rapport, which positively impacted the students' confidence and competency levels."

According to Redding's (2013) model of personalized learning, interpersonal relationships, motivation, metacognitive, social, and emotional competencies are all key factors in fostering motivation and ultimately leading to mastery of knowledge and skills. This suggests that the LXD process, which focuses on building relationships and fostering motivation, can be an effective approach to helping students achieve their learning goals.

### Conclusions

The workshop series produced unexpected positive outcomes related to the enhancement of relationships between teachers and students. The implementation of LXD techniques resulted in one-on-one interactions between teachers and students outside the classroom environment, leading to several desirable outcomes that improved the overall experience for both parties. Participants experienced increased empathy towards their students, a deeper understanding of their students' perspectives, a stronger connection between faculty and students, and an increase in both teacher motivation and perceived student motivation.

The importance of empathy cannot be overstated when discussing the positive outcomes of this study. The workshop series included exercises in which teachers conducted interviews with students and built empathy diagrams based on their conversations. These exercises led to a deeper understanding of the heterogeneity of the entire class, and participants reported an enhanced level of empathy for their students. Teachers who deliberately strive for increased empathy develop a deeper understanding of their students and connect with them on cognitive, affective, and behavioral levels. Students who experience empathetic teachers tend to have a more positive learning experience and perform better academically. Moreover, the reciprocal nature of teacher-student interviews conveys to students that their teacher cares about their input, fostering a caring and safe learning environment.

The feedback from participants was collected shortly after they had finished the workshop series. We do not know the long-term implications of the LXD process on their curriculum, or if they continued to use it during subsequent semesters. However, participants perceived value in the LXD process and noted its benefits. Regardless of whether workshop participants choose to adopt the LXD practices into their curriculum development workflow in the long term, it is clear that the connection-building and relationship-strengthening that result from these practices are overwhelmingly positive. They extend the teachers' expected role from supporting students to modeling empathetic behavior to the entire class, enhancing the learning environment. Empathetic actions can have a lasting impact on classroom culture and the overall learning experience. Ultimately, the positive impact of the LXD process on teacher-student relationships can contribute to the overall success and well-being of both groups.

## References

- Abbott, D. (2020). Intentional learning design for educational games: A workflow supporting novices and experts. In M. Schmidt, A. A. Tawfik, I. Jahnke, & Y. Earnshaw (Eds.). *Learner and User Experience Research: An Introduction for the Field of Learning Design & Technology*. EdTech Books.
- Apari, T. G., Molu, F., Findik, N., & Dalci, M. (2013, May). User Experience approach in financial services. In *2013 The International Conference on Technological Advances in Electrical, Electronics and Computer Engineering (TAECE)* (pp. 400-403). IEEE.
- Awan, O. A. (2019). What makes a great teacher?. *Radiographics*, *39*(7), 2167-2168.
- Bevis, E. O., & Watson, J. (1989). Toward a caring curriculum: A new pedagogy for nursing.
- Blackburn, R. T., Blackburn, R. T., Lawrence, J. H., & Lawrence, J. H. (1995). *Faculty at work: Motivation, expectation, satisfaction*. Johns Hopkins University Press.
- Brenner, W., Uebornickel, F., & Abrell, T. (2016). Design thinking as mindset, process, and toolbox. In *Design thinking for innovation* (pp. 3-21). Springer, Cham.
- Brown, B. L. (2003). Teaching style vs. learning style. Myths and realities, *26*(1).
- Chang, A. F., Berger, S. E., & Chang, B. (1981). The relationship of student self-esteem and teacher empathy to classroom learning. *Psychology: A Journal of Human Behavior*.
- Edström, K. (2008). Doing course evaluation as if learning matters most. *Higher education research & development*, *27*(2), 95-106.
- Felder, R. M., & Brent, R. (2005). Understanding student differences. *Journal of Engineering Education*, *94*(1), 57-72.
- Ferreira, B., Silva, W., Oliveira, E., & Conte, T. (2015, July). Designing Personas with Empathy Map. In *SEKE* (Vol. 152).
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of educational research*, *74*(1), 59-109.
- Frick, T. W., Chadha, R., Watson, C., & Zlatkowska, E. (2010). Improving course evaluations to improve instruction and complex learning in higher education. *Educational Technology Research and Development*, *58*, 115-136.
- Frymier, A. B., & Houser, M. L. (2000). The teacher-student relationship as an interpersonal relationship. *Communication Education*, *49*(3), 207-219.
- Gasparini, A. (2015, February). Perspective and use of empathy in design thinking. In *ACHI, the eighth international conference on advances in computer-human interactions* (pp. 49-54).
- Gillespie, M. (2005). Student-teacher connection: a place of possibility. *Journal of Advanced Nursing*, *52*(2), 211-219.
- Goddard, R. D., Hoy, W. K., & Hoy, A. W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational researcher*, *33*(3), 3-13.
- Gray, C. M. (2020). Paradigms of knowledge production in human-computer interaction: Towards a framing for learner experience (LX) design. M. Schmidt, AA Tawfik, I. Jahnke, & Y. Earnshaw, (2020). *Learner and User Experience Research: An Introduction for the Field of Learning Design & Technology*. EdTech Books.
- Gregg, A. (2023). Going Through the Motions? Asynchronous Online Course Discussions Considered Within a Learner Experience Design Framework. *The Journal of Applied Instructional Design*, *12*(3), 121-133.
- Gruen, D., Rauch, T., Redpath, S., & Ruettinger, S. (2002). The use of stories in user experience design. *International Journal of Human-Computer Interaction*, *14*(3-4), 503-534.

- Hardre, P. L., Davis, K. A., & Sullivan, D. W. (2008). Measuring teacher perceptions of the “how” and “why” of student motivation. *Educational Research and Evaluation, 14*(2), 155-179.
- Hardre, P. L., Huang, S. H., Chen, C. H., Chiang, C. T., Jen, F. L., & Warden, L. (2006). High school teachers motivational perceptions and strategies in a East Asian nation. *Asia-Pacific Journal of Teacher Education, 34*(2), 199-221.
- Hassenzahl, M. (2013). User experience and experience design. *The encyclopedia of human-computer interaction, 2*.
- Hott, B. L., & Tietjen-Smith, T. (2018). The Professional Development Needs of Tenure Track Faculty at a Regional University. *Research in Higher Education Journal, 35*.
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Interaction Book Company.
- Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an enabler for academic success. *School psychology review, 31*(3), 313-327.
- Martin, A. J. (2006). The relationship between teachers’ perceptions of student motivation and engagement and teachers’ enjoyment of the confidence in teaching. *Asia-Pacific Journal of Teacher Education 34*(1), 73-93.
- Martinelli, S., Lopes, L., & Zaina, L. (2022, October). UX research in the software industry: an investigation of long-term UX practices. In *Proceedings of the 21st Brazilian Symposium on Human Factors in Computing Systems* (pp. 1-13).
- Maslow, A.H. (1943). A Theory of Human Motivation. In *Psychological Review, 50* (4), 430-437.
- Meyers, S., Rowell, K., Wells, M., & Smith, B. C. (2019). Teacher empathy: A model of empathy for teaching for student success. *College Teaching, 67*(3), 160-168.
- Mikkonen, K., Kyngäs, H., & Kääriäinen, M. (2015). Nursing students’ experiences of the empathy of their teachers: a qualitative study. *Advances in health sciences education, 20*(3), 669-682.
- Mival, O., & Benyon, D. (2014). User Experience (UX) design for medical personnel and patients. In *Requirements engineering for digital health* (pp. 117-131). Cham: Springer International Publishing.
- Norman, D., Miller, J., & Henderson, A. (1995, May). What you see, some of what's in the future, and how we go about doing it: HI at Apple Computer. In *Conference companion on Human factors in computing systems* (p. 155).
- Nixon, S. (2013). Personal development planning; an evaluation of student perceptions. *Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education, 8*(3), 203-216.
- O'Meara, K., & Terosky, A. L. (2010). Engendering faculty professional growth. *Change: The Magazine of Higher Learning, 42*(6), 44-51.
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & leadership*.
- Pruitt, J., & Grudin, J. (2003, June). Personas: practice and theory. In *Proceedings of the 2003 conference on Designing for user experiences* (pp. 1-15).
- Reis, E. (2011). *The lean startup*. New York: Crown Business, 27.
- Robinson, N., & Harrison, L. (2017). Using learner experience design (LXD) to improve digital language learning products. *Digital Language Learning and Teaching: Research, Theory, and Practice*, eds M. Carrier, R. Damerow, and K. Bailey (Oxfordshire: Taylor and Francis), 156-166.
- Saeed, S., & Zyngier, D. (2012). How motivation influences student engagement: A qualitative case study. *Journal of Education and learning, 1*(2), 252-267.
- Schmidt, M., Earnshaw, Y., Tawfik, A. A., & Jahnke, I. (2023). Learning Experience Design. *Foundations of Learning and Instructional Design Technology, 197-215*.

- Schmidt, M., & Huang, R. (2022). Defining learning experience design: Voices from the field of learning design & technology. *TechTrends*, 66(2), 141-158.
- Schmidt, M., Tawfik, A. A., Jahnke, I., & Earnshaw, Y. (2020). *Learner and user experience research*.
- Schnepf, J., & Rogers, C. (2022). A Practical Approach to Learner Experience Design. *International Journal of Teaching and Learning in Higher Education*, 34(1), 161-169.
- Slavin, R. E. (1987). Grouping for instruction in the elementary school. *Educational Psychologist*, 22(2), 109-127.
- Tackett, S., Wright, S., Lubin, R., Li, J., & Pan, H. (2017). International study of medical school learning environments and their relationship with student well-being and empathy. *Medical education*, 51(3), 280-289.
- van Velsen, L. S. (2011). User-centered design for personalization.
- Thurber, D. (2021). Designing learning experiences for the future of learning in the digital age: A proposed framework. *Current Issues in Education*, 22(1 (Sp Iss)).
- Vorvoreanu, M., & Connolly, P. E. (2015, June). Using an experience design approach to curriculum creation. In 2015 *ASEE Annual Conference & Exposition* (pp. 26-1656).
- Watt, H. M. G., & Richardson, P. W. (2008). Learning and Instruction Special Issue: Motivation for Teaching.
- Yu, J. H. (2023). Learning Experience Design as Collective Praxis: Two Design Cases from Higher Education. *The Journal of Applied Instructional Design*, 12(3), 59-83.