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A Practical Approach to Learner Experience Design

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Educators face the challenge of continually adapting and evolving their pedagogy to meet the needs of diverse learners. Learner experience design (LX) is a human-centered approach to curriculum and assessment development that is easily learned, adaptable, and repeatable. It focuses on empathy for students and creative problem-solving. In this work, we present an overview of LX and identify its usefulness to faculty in higher education. We proceed to describe a practical set of steps that teachers can follow to gain empathy for their students, identify important insights, and ideate creative solutions that can be implemented quickly, evaluated, and iteratively refined.

The student body on college campuses is increasingly more diverse (Cho & Forde, 2001; Deil-Amen, 2011), and students' expectations about their education are constantly changing (Baker et al., 2012). They engage in myriad learning modalities that incorporate online and face-to-face interactions. They have access to an unprecedented body of digital resources from which they synthesize their learning. They have diverse backgrounds, schedules, learning preferences, and levels of preparedness. In short, students have varied expectations about what it means to engage in a productive learning experience.

Most college faculty members have never received formal training in curricular development or pedagogy (Beyer et al., 2013). Some simply mimic the way their own instructors taught, seldom considering the potential for innovative teaching techniques. Others invest considerable effort into advancing their pedagogy but lack the foundational knowledge that informs modern instructional design. Effective educators not only provide content. They build learning experiences that are relatable and understandable to their students (Bain, 2004). They construct these experiences by combining sound pedagogy with insights into student motivation and expectations gained through empathy (Henriksen et al., 2020; IDEO, 2014).

If empathy for students is essential to effective teaching, what might faculty members do to better understand their students? A practical, learnable, and repeatable approach to gaining student insight would be invaluable to meet this end. Adopting such an approach would help prepare new teachers as they establish their personal pedagogy and empower seasoned educators to continually improve.

Learner Experience Design

Learner experience design (LX) is both a collection of mindsets and a set of practices that focus on student empathy and creative problem-solving. It borrows from the field of user experience (UX) and design thinking with the goal of creating meaningful learning experiences (Schmidt & Huang, 2022). Practitioners of LX, usually teachers, communicate with students on a personal level to understand their perspectives. Based on the insights they glean, these teachers strive to create an optimal learning experience for that particular student. When done iteratively and with several students in a class, the teacher can hone instructional materials that are appealing, effective, and contextually appropriate for all.

Teachers who embrace LX understand that pedagogy should continually evolve, and its evolution should be informed by learners (Soulis et al., 2017). When designing learning experiences, the learning objectives are known. The methods by which to teach students in the most effective way are not. Focusing on the perspective of students is a useful approach for developing educational solutions. Not only does the teacher better understand their students, it allows students to contribute to the creation of the learning experience. When students share the responsibility for an emergent learning context, they are more engaged, motivated, and academically successful (Zins et al., 2004).

LX takes a human-centered perspective similar to design thinking, "an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign" (Razzouk & Shute, 2012, p. 330). Design thinking is a process that unearths potential problems to solve and clearly defines them before developing solutions. It identifies unexpected problems and places them in the context of a user's perspective. Each design thinking scenario is unique and often requires highly creative and unusual solutions. A designed solution is characterized as being intertwined with a particular problem, where the approach to solving the problem is not linear (Cassim, 2013).

The field of UX leverages a human focus similar to design thinking to create, evaluate, and improve products and services (Ahn, 2019). UX is one of the fastest growing specializations across myriad industries because it demonstrably adds value. It is defined as "a person's perceptions and responses that result from the use or anticipated use of a product, system or service"

(Law et al., 2009). Donald Norman, who coined the term, emphasizes that UX encompasses "all aspects of the end-user's interaction," including their expectations, emotions, and the context of the experience (Norman & Nielsen, 2006, p.1). LX focuses on the experience of a certain type of user and outcome: the learner and their ability to achieve a particular learning outcome, among other distinctions (Bergin, 2019).

While the term LX was coined by Neils Floor in 2008, the typical implementation of LX is recent. LX has been applied broadly from singular assessment to program evaluation. Typically, individual educators apply LX to curriculum development and evaluation across multiple disciplines (Garreta & Pera, 2007; Kalyuga et al., 2000). But Soulis et al. (2017) utilized the mindsets of LX to develop a framework and a process for program level evaluation at an Australian university. For their work, they queried members of the university community to understand what makes a good program. Five themes emerged: (a) authentic assessment and feedback, (b) good teaching, (c) digitally enhanced learning, (d) industry relevance, and (e) students as co-designers. These themes were then used as a basis for program enhancement.

For instructors whose goal is to enhance their curricula based on student perspectives, integrating LX practices affords multiple advantages:

- *Efficiency:* Inclusion of LX in the curriculum development process helps teachers understand which methods hinder student learning and which enhance it. They quickly improve their curricula through iterations that address the insights they learn through continual communication with students.
- *Enhanced Student/Teacher Relationships:* LX can strengthen relationships between instructors and students. Through conversations, the instructor identifies key *pains and gains* for students, learning what students find challenging and rewarding. These interactions build rapport, trust, and communication, leading to increased social-emotional learning for both students and teachers (Zins et al., 2004).
- *Iterative Pedagogy Development:* Gaining empathy is only the first step in the LX process. Once insights are identified, they form the basis of creative ideation to develop new teaching and assessment approaches.

While the advantages of LX make it an attractive approach, it comes with challenges as well. These include

- *Overcoming Bias:* One of the biggest challenges that LX practitioners face is overcoming their own biases. Instructors often assume that students learn the way that the instructor learns. This is known as the false-consensus effect, whereby people "assume that others share their beliefs and will behave similarly in a given context" (Budiu, 2017, False-Consensus Effect section). Most instructors have spent years on their own education pursuing advanced degrees. They tend to teach using the methods that their teachers used and rarely question their efficacy. LX requires instructors to suspend these biases and to conduct research into student attitudes and behaviors. The information they gain prompts innovations in their teaching that often extend beyond their usual pedagogy. LX relies on empathy for students causing instructors to limit their own bias and "involve learners in the research and design processes and to rely on that evidence in making design decisions" (Bergin, 2019, p. 18).
- *Time and Effort:* It takes substantial extra time and effort to meet with individual students and to integrate their feedback into the process of continual curricular redevelopment. Innovative teaching is not always considered as a criterion for promotion and tenure. Some faculty members may not believe the payoff is worth the extra effort.
- *Unconventionality:* LX practices are not common. Despite gaining substantial attention in teaching and learning circles, LX is not often promoted at an institutional level (Soulis et al., 2017). Faculty may be reluctant to adopt new and unconventional practices. Moreover, some faculty may not be comfortable asking students questions that extend beyond the scope of usual class discussions. They may feel that the conversations are too personal.

A Practical Approach to LX

There are multiple ways that LX can be implemented with a variety of approaches, tools, and techniques. For those new to the idea, the following is an effective and accessible way to start. Its structure is based on the design thinking framework, made up of the mindsets empathize, define, ideate, prototype, and test (Brown & Katz, 2019). The LX mindsets can be practiced at any point during the semester and repeated with any number of individual students.

Student Perspective Discovery

The first step is to gain empathy for students through interviews. This requires the teacher to shift their perspective. They must try to understand the students' motivations, apprehensions, frustrations, and goals.

Learning these insights is not straightforward. If asked directly their opinion about course curricula, students may not provide an honest and genuine answer for fear of offending the teacher, or more commonly, because they may not be prepared to reflect on and articulate how they learn best. The purpose of these interviews is to reveal insights that might not otherwise come up if not for an open dialogue. This same approach is common in startup culture, where it is called customer discovery (Reis, 2011). It is used by entrepreneurs to understand the potential need for a product or service. Customer discovery is a technique that involves asking potential customers and stakeholders open-ended questions that do not specifically reference a proposed solution. Instead, questions are focused on pains - the things that people find frustrating, annoying, ineffective, and otherwise problematic - and gains - the things that are effective, engaging, and otherwise positive. Questions should avoid hypothetical scenarios. Rather, they should ask about past experiences, based on the assumption that people's past actions are more accurate indicators than hypothetical projections.

Student perspective discovery applies these principles to uncover insights about student behavior. It involves one-on-one interviews lasting 15-30 minutes during which the teacher asks a combination of predetermined open-ended questions and improvised follow-up questions. For example, if a teacher is considering integrating online message board assessments, they would not ask a student hypothetical questions about how the student would use a message board for class discussion. Instead, the teacher would ask adjacent questions about the student's past experiences using similar formats. It is more important to understand how the student tends to learn, rather than asking them to project about a hypothetical future.

The interview should flow like a conversation. Follow-up questions are key. Not every answer will yield actionable suggestions. But often, small kernels of insight appear unexpectedly and are usually revealed after the student has had the chance to delve deeper than the surface-level response.

Examples of good student perspective discovery questions/prompts include

- Think of a time you have been frustrated in a class. Why did you feel that way?
- Tell me about how you prepared for your final exams last semester.
- Think of something that you are really good at. How did you get to be good at it?
- What have you accomplished in school that you are most proud of?
- Tell me about a successful group project that you have worked on.

During student perspective discovery interviews, teachers learn answers to their planned questions. Further, the open-ended format invariably leads to unexpected insights. The conversational nature of this type of interview provides an opportunity for the teacher to get to know the student on a more personal level. After the interview, the teacher will have a clearer understanding of who the student is. It is useful to illustrate observations using an empathy diagram (Gibbons, 2018; Figure 1).

In an empathy diagram, the teacher lists examples of what the student might say, do, hear/see, and think/feel in quadrants. Each quadrant of the diagram serves a specific purpose. Things the students say are intentional and externalized. It is what the student wants others to know. Things they do represent what is important to the student and how they prioritize their time. Things they hear and see are external influences. These consist of messaging the student receives from friends, parents, teachers, social media influencers, religious leaders, neighbors, etc. Things they think and feel are the student's inner thoughts. They reveal the student's motivations, desires, fears, and hopes.

Items in the empathy diagram can be things that the student specifically mentioned in the interview or implied based on the teacher's intuition. For example, a teacher might notice that a particular student feels pride in maintaining a high GPA. This belongs in the THINK and FEEL quadrant. If a student explains how they typically study with a group of three friends, that goes in the DO quadrant. Advice from parents belongs in the HEAR and SEE quadrant, while general comments the student makes that indicate their attitude go in the SAY quadrant.

Identifying Insights

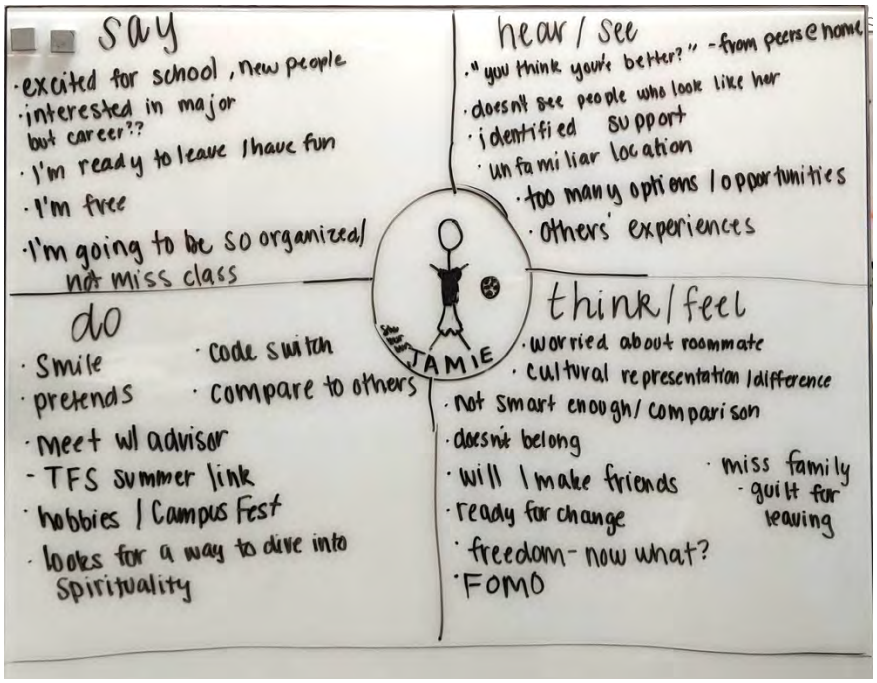
Armed with a thoughtful empathy diagram, the teacher can begin to identify important insights that may be valuable when designing curricula. This step can be done alone or in collaboration with a colleague. When working with others, empathy diagrams are useful to represent an abstract concept of a student because they narrowly represent the key takeaways from the interview. Insight identification involves looking over the empathy diagram and finding items or a combination of items that seem particularly relevant. It is useful to frame an insight using the following sentence structure:

<Persona> + <Action> + <Aim> + <Obstacle>

The persona is the name of the student (actual or pseudonym). The action is a description of something they tend to do or think. The aim is the reason that they do the action, and the obstacle is a problem that is the result of the action. For example, *Jaime spends a lot of time on her phone because she does not want to miss an interesting post, but it distracts from focusing on her*

Figure 1

An Empathy Diagram Depicting Insights Revealed Through a Student Perspective Discovery Interview



class project.

This exercise can yield multiple insights with varying degrees of utility. The next step is to prioritize them to use as a basis for problem solving. Compelling insights are reframed as a question that facilitates ideation. In the example above, we can reframe the statement of insight into a useful question in the form *How might we....* This question format is useful because it is open-ended and implies that there is no one correct answer. Instead, it enables the generation of myriad ideas. For example, since Jaime has a tough time focusing because she fears missing out on a social media post, one might consider how to replace the reward of staying up to date on posts with a different reward. The question could be *How might we integrate periodic rewards into a learning experience to keep Jaime focused?*

Posing the question in this way facilitates ideation by setting constraints that align with insights learned about the student. Since Jaime is motivated to engage with social media because she doesn't want to miss a post, a useful solution might replace this motivation with the promise of a different reward. Requiring that a solution incorporates some alternative reward for Jaime is a constraint. While it may seem counterintuitive, constraints can be quite useful to spark innovative ideas (Johnson-Laird, 1988). They funnel creativity in a useful direction that is specific to each particular student, generating solutions that are focused and usable. Additionally, constraints help to alleviate choice overload (Sellier & Dahl, 2011), which hinders creativity when there are many options. Constraints should be refined to include not just the insights learned about the particular student, but should also align with course learning objectives, the time constraints of the course, available technology, the scope of the course, and competency level of the student.

Ideation

Once insights have been identified and organized to promote creative problem-solving, the teacher can proceed to ideation. In this step, the goal is to generate a high quantity of ideas so that they can be prioritized later. The key to successful ideation is to ignore the inner censor and write down ideas even if they are unrealistic, unimaginative, or seemingly likely to fail. The simple act of writing an idea down frees the mind to consider other ideas (Putman & Paulus, 2009). Sticky-notes and craft paper both work well for ideation because these materials enable a quick and malleable workflow, which can enable increased creativity (Amabile, 2018). Digital ideation tools such as Google Jamboard also work well. Recording a high quantity of ideas should be the goal during this stage.

Like insight identification, ideation can be done, and indeed enhanced, by inviting collaborators. Working with others to produce creative ideas is a fantastic way to generate solutions (Figure 2). Not only does it increase creative capacity (Siangliulue et al., 2015),

Figure 2
Ideation in a Collaborative Environment

it also enables collaborative ideation, where contributors work off each other to form solutions that neither would have come to alone (Arias et al., 2000).

Returning to the example, the question *How might we integrate periodic rewards into a learning experience to keep Jaime focused?* might yield the following solutions:

- An app that blocks social media alerts during specified times.
- A group assignment that includes peer praise.
- A social media challenge that recognizes academic accomplishments.
- A quiz-show-style class activity with prizes.
- A community-building club that encourages collaboration.

While not all these solutions might be realistic given time constraints, resources, or learning objectives of the course, they are each creative ideas that might be refined to meet the challenge of the posed question. The more time spent generating new ideas, the more ideas will emerge. These can then be prioritized, refined, and reimagined until they reach a level of detail and feasibility to try with students.

A Testable Implementation

To determine the feasibility and effectiveness of a solution, the teacher designs a plan to implement a version of it that is testable and amenable to iteration. This prototype should have the following characteristics:

- *Malleable:* The solution should be easily changeable so that it can be iteratively refined. If the solution does not work out as planned, there should be alternate routes to explore.
- *Low fidelity:* The less time it takes to build a solution, the less attached to it the teacher is likely to be (Cross, 2011). Low-fidelity solutions are quick to change and, by nature of their sparseness and simplicity, imply flexibility. The teacher should not invest so much time and effort into a solution prototype that they are uncomfortable throwing it away if it proves ineffective.
- *Easy to implement:* The solution should have a low barrier for implementation, both for the teacher to put together and the student to use. One of the tenets of design thinking is a bias

toward action (Kelley & Kelley, 2013). By making a solution easy to try, the teacher can implement it quickly and directly learn from it.

- *Low stakes:* If the initial prototype is a graded assignment, it should not be worth a significant percentage of the students' grade. If it turns out to be ineffective, neither the student nor the teacher will be drastically affected because the consequences are low.

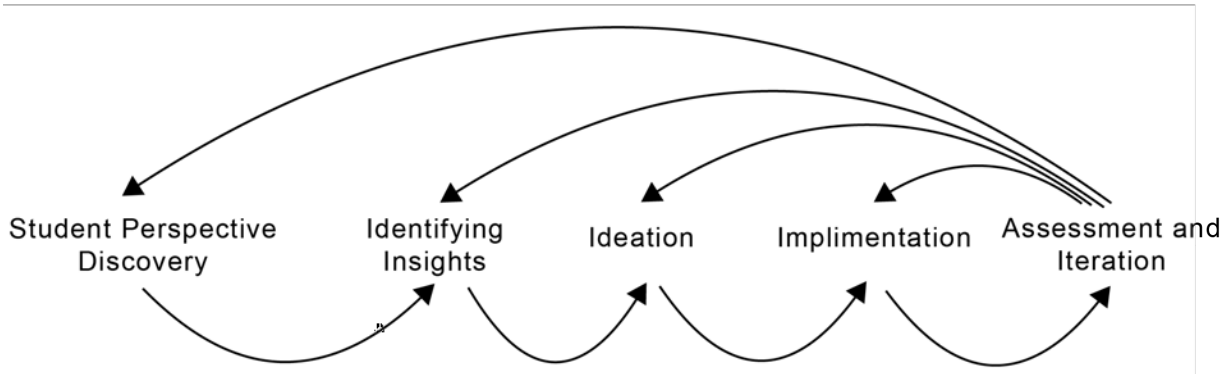
Continuing the example, a testable solution might be an assignment that requires students to post reflection videos on chapter readings using a video sharing service like Flipgrid to promote accountability and community. It would address the learning objective to demonstrate the understanding of course material, use technology similar to those in which the student has expressed interest, and leverage the insight that the student seeks the reward of recognition from peers through social media.

Assessment and Iteration

Some solutions work very well as first implemented, but most require various degrees of refinement. Therefore, testing and evaluation is an essential step in innovation (Manalo & Kapur, 2018). Like design thinking (Mazur, 2020), the LX process can be described as linear. But can also be thought of as a series of loops in which the path can circulate back to previous steps as needed (Figure 3.). For example, ideas sometimes fall short of expectations. It is important to accept that failure is not a terrible thing. Rather, it can provide vital clues to help improve. Secondary interviews may help unearth more insights. Multiple ideation sessions will generate more varied ideas. Several ideas may be worth trying and evaluating.

Figure 3

LX Mindsets can be Applied in Order or Take Different Paths to Revisit Steps as Necessary (adapted from Mazure, 2020)



Recommendations

In our experience leading LX workshops and implementing LX to innovate our own curricula, we have found that certain nuanced practices can improve the experience and promote greater success in developing solutions. While we view LX as a systematic approach that increases the likeness of producing effective solutions consistently, it can be applied and practiced in a variety of ways. The following recommendations will help new practitioners adopt LX:

- *Be open to change.* Especially when interviewing students and gaining empathy, it is essential that teachers be open to new ways of teaching and assessing. This means letting go of tried-and-true teaching techniques. It means being unafraid to consider new methods. Moreover, it is crucial that teachers avoid seeking validation of their usual approach to teaching. Instead, they should focus on listening to students, understanding their perspective, and finding ways to improve.
- *Keep it up.* LX is not a one-time activity. It needs to be practiced continually. Repeating the framework for several students each semester is time-consuming, to be sure. However, the insights gained and creative innovations that emerge are worth the time investment. Each mindset requires its own set of skills that are mastered through practice.
- *Be consistent, but flexible.* While each student perspective discovery interview will, by nature, reveal different insights, a good practice is to use consistent questions for each. Over time,

patterns will emerge that reveal consistencies across many students. These patterns are extremely valuable as a guide to develop overarching pedagogical themes. Of course, one must also allow the conversation to follow its own path. Asking good follow-up questions is a skill that requires careful listening and focused empathy. They should prompt reflection on stated answers and open paths to new conversational directions.

- *Insights aggregate.* The more that teachers interview students, the more patterns emerge, the better a teacher understands learning habits holistically. Over time, the process reveals generalizable solutions that work well for most students.
- *Be patient.* Not all interviews result in an innovation. And inspirational insights sometimes come unexpectedly. The serendipitous nature of LX can be frustrating and disheartening at times, but also extremely rewarding when fruitful. Patience is essential. Fortunately, consistent results can be garnered over time as the practitioner becomes more comfortable with the process and finds their own best practices.
- *Over time, LX becomes a habit.* Teachers who embrace LX find themselves integrating it into many aspects of their workflow. What starts as an exercise in applied human-centered design grows into a habit that they naturally and effortlessly employ throughout their day-to-day activities.
- *LX practices should be shared.* Teachers who use LX tend to integrate aspects of human-centered design into their class assignments. They teach students how to solve problems by using LX practices themselves like focusing on empathy, basing solutions on insights, and engaging in creative ideation. This improves students' problem-solving skills on several levels (Borge et al., 2020; Zoltowski et al., 2012). For example, students can use an empathy diagram to organize their understanding of a character in a literature course. They can spark a brainstorm to solve a social issue based on a well-formed *how might we* question. This crossover of workflow can result in highly engaging activities and creative output.

Conclusion

In this paper, we have discussed the advantages and limitations of LX and presented a straight-forward implementation that is prescriptive, yet customizable and repeatable. The method draws heavily on design thinking and UX. It has been refined through our own use and by workshop participants over several years. These techniques can be applied by teachers of all disciplines and can be customized and expanded. Our hope is that teachers will adopt LX as a regular practice, integrating it into their curricular development workflow.

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