



## Courses design based on perspective human-centered learning design

Taopik Barkah<sup>1</sup>, Asep Herry Hernawan<sup>2</sup>, Angga Hadiapurwa<sup>3</sup>

<sup>1,2,3</sup> Universitas Pendidikan Indonesia, Bandung, Indonesia

[taopikbarkah@gmail.com](mailto:taopikbarkah@gmail.com)<sup>1</sup>, [asepherry@upi.edu](mailto:asepherry@upi.edu)<sup>2</sup>, [angga@upi.edu](mailto:angga@upi.edu)<sup>3</sup>

### ABSTRACT

*This article aims to investigate and analyze course design based on a human-centered learning design perspective. In the modern educational era, effective course design requires an approach that understands the needs and characteristics of learners. The design of human-centered learning places learners at the center of the subject, acknowledging their diversity in learning styles, backgrounds, and individual needs. This research was conducted using the scientific literature review method to find data on the flow and recommendation model that can be applied in the development of courses or training with human-centered learning design. The results of this literature review provide insight into the principles of human-centered learning design and provide practical guidance for teachers, curriculum designers, and education practitioners in designing effective and impactful learning experiences. By understanding and applying this approach, it is expected that the development of learning design, both course development, learning materials, modules, and learning media can be more relevant, and interesting, and make a significant contribution to the development of the learning needs of today's students.*

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### ABSTRAK

Artikel ini bertujuan untuk menyelidiki dan menganalisis desain kursus berdasarkan perspektif desain pembelajaran yang berpusat pada manusia. Dalam era pendidikan modern, desain kursus yang efektif memerlukan pendekatan yang memahami kebutuhan dan karakteristik peserta didik. Desain pembelajaran yang berpusat pada manusia menempatkan peserta didik sebagai subjek utama, mengakui keberagaman mereka dalam gaya belajar, latar belakang, dan kebutuhan individual. Penelitian ini dilakukan menggunakan metode kajian literatur ilmiah untuk mencari data mengenai alur dan model rekomendasi yang dapat diterapkan dalam pengembangan kursus atau pelatihan dengan desain pembelajaran yang berpusat pada manusia. Hasil kajian literatur ini memberikan wawasan tentang prinsip-prinsip desain pembelajaran yang berpusat pada manusia dan memberikan panduan praktis bagi para pengajar, desainer kurikulum, dan praktisi pendidikan dalam merancang pengalaman pembelajaran yang efektif dan berdampak positif. Dengan memahami dan menerapkan pendekatan ini, diharapkan pengembangan desain pembelajaran baik itu pengembangan kursus, bahan ajar materi, modul, dan media pembelajaran agar dapat menjadi lebih relevan, menarik, dan memberikan kontribusi yang signifikan terhadap perkembangan kebutuhan belajar pelajar saat ini.

**Kata Kunci:** berpusat pada manusia; desain berpikir; desain pembelajaran

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## **INTRODUCTION**

The 21st century has brought numerous challenges for individuals across all fields. Increased mobility, the global reach of the web, and the instantaneous dissemination of information place people in contexts and situations that require immediate analysis, decision-making, and problem-solving. In the modern work environment, employees are required to continually learn and adapt to rapid changes. According to data from Workplace Learning & Development Trends (2022), although the majority of employees (75%) reported being satisfied with the training they received, 55% indicated a need for additional training to enhance their performance. This data highlights a significant gap between satisfaction and the actual learning needs. Furthermore, organizations tend to provide training periodically (36% monthly and 36% quarterly), but only 5% offer training on an as-needed basis, despite 12% of employees expressing a preference for such an approach.

Since Knowles introduced the concept of adult learning in the 1970s, learning and development within organizations have undergone significant transformation (Handoko, 2017). Traditional learning environments are no longer able to accommodate the needs of adult learners, who can dedicate only about one percent of their time per week to professional development. In today's work environment, employees are continuously required to learn and adapt to new situations (Wardhani *et al.*, 2022). Conventional learning models that fail to consider interaction with the external environment have become inadequate for the continuous development of modern learners (Melliyani *et al.*, 2023; Tamrin & Masykuri, 2024).

Efforts to address these limitations have seen the application of design thinking across various contexts in education and professional development. Previous studies have shown that this approach has been successfully implemented in higher education, healthcare, and multiple industries to develop human-centered solutions (Shé *et al.*, 2022). In higher education in particular, design thinking has proven effective in enhancing students' learning experiences and producing more inclusive solutions (Afriadi, 2024). This approach has also been applied in curriculum development and professional training programs with positive outcomes (Andayani, 2021).

This study offers a novel contribution by integrating the principles of design thinking and adult learning into a comprehensive instructional design model, referred to as the "Human-Centered Learning Design." Unlike previous research that tends to focus on only one of these aspects, the proposed model combines both approaches to create more effective and adaptive learning solutions. This model not only accounts for the time and resource constraints of adult learners but also incorporates design thinking principles to ensure the relevance and sustainability of the learning experience.

Although various learning models have been developed, there remains a gap in designing instruction that is entirely centered on the learning needs of adults, particularly in workplace settings. Existing models have not yet fully integrated human-centered design principles with the specific learning requirements of the workplace. This issue is critical given the increasingly complex demands for learning and competency development in the digital era.

This article aims to propose a learning design model based on the principles of “Human-Centered Learning Design,” specifically developed to address the needs of adult learners in a flexible and adaptive manner within modern workplace settings. The model provides a practical framework for instructional designers and training program developers to design more effective and sustainable learning interventions.

## LITERATURE REVIEW

### Instructional Design and Learning Design

The term Instructional Design is often used to describe a singular role in the processes of teaching, content creation, and learning. Instructional design focuses on the systematic planning, development, and implementation of instructional materials to facilitate learning. It encompasses various processes, including needs analysis, goal identification, content organization, assessment design, and instructional delivery. Instructional designers employ a range of models, such as the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), to guide their work (Putra & Dahlan, 2022).

Instructional design emphasizes aligning learning objectives with instructional strategies, ensuring that learners acquire the intended knowledge and skills. It involves careful sequencing of content, selecting appropriate media and technology, and considering learners’ characteristics and needs. The goal of instructional design is to create learning experiences that follow an instructional process while actively engaging learners and fostering meaningful understanding (Nunirmala *et al.*, 2024; Nuraini & Waluyo, 2021). Learning design, on the other hand, focuses on the broader process of designing learning experiences and environments by taking into account the various factors that influence learning outcomes. It adopts John Dewey’s holistic approach, considering the learning context, learners’ prior knowledge and experiences, and the social and cultural aspects of learning as highlighted by Malcolm Knowles. Learning designers work collaboratively with teachers, learners, and other stakeholders to create engaging and authentic learning environments (Muhlis, 2024; Sutrisno & Syukur, 2023).

Learning design extends beyond the development of instructional materials to encompass pedagogical/andragogical approaches, instructional strategies, and the integration of technology to support learning. It emphasizes learner-centeredness, active engagement, and the cultivation of higher-order thinking skills (Benjamin Bloom). Learning designers apply the principles of design thinking (Herbert Simon) to create innovative and adaptive learning experiences that address the diverse needs and interests of learners (Mor *et al.*, 2015).

Instructional design and learning design share the common goal of developing effective learning experiences; however, several factors distinguish the two, as outlined in **Table 1**.

**Table 1.** Differentiating factors between instructional design and learning design

Instructional Design	Learning Design
Focus primarily on the design of teaching materials and activities, following a linear and systematic process.	Taking a broader perspective, considering the entire learning ecosystem and emphasizing collaboration and co-creation
Places strong emphasis on aligning learning objectives with learning strategies and assessment methods.	Recognizing the complexity and diversity of learning contexts
Tends to be more prescriptive, providing clear guidelines for the design and delivery of instructions.	Encourage flexibility and adaptability in the design process.

Source: *Andayani et al. (2020); Mor et al. (2015).*

### Learning Experience Design

Human-centered design is a core principle across various design disciplines, such as interaction design, user experience design, and learning experience design. Learning experience design combines mindsets and practices that emphasize empathy and creative problem-solving. This concept adopts approaches from User Experience (UX) and design thinking with the aim of creating meaningful learning experiences (Schnepp & Rogers, 2022; Schmidt & Huang, 2022). *Learning experiences design* (LXD) Learning Experience Design (LXD) is defined as the process of designing learning experiences that enable learners to achieve desired outcomes through a human-centered and goal-oriented approach (Hickey & Correia, 2024). In practice, two fundamental steps are essential: (1) gaining a deep understanding of the learners' characteristics as the target audience of the design, and (2) developing empathy toward learners as the primary users of the learning experience.

Learning experience design adopts a human-centered perspective similar to design thinking, an analytical and creative process that engages individuals in opportunities to experiment, create and prototype models, gather feedback, and redesign (Lopez & Bhutto, 2023; Schnepp & Rogers, 2022). *Design thinking is a process that explores potential problems to be solved and clearly defines them before developing solutions. This approach identifies unforeseen issues and situates them within the user's perspective* (Carlgren et al., 2016).

It is essential for learning experience designers to understand how human cognition works and how people learn from experience. Integrating learning experiences with concepts from neuroscience and psychology forms the foundation of every well-designed learning experience (Schenck & Cruickshank, 2015). Learning experience designers draw upon psychological foundations when planning learning experiences to better understand the individuals they design for, thereby creating instructional designs that function intuitively (Tawfik et al., 2022). When designing a learning experience, it is essential to first identify the learning objectives. The methods used to teach learners can then be implemented either effectively or ineffectively. Focusing on the learner's perspective is a valuable approach to developing educational solutions. This not only enables teachers to better understand students but also allows students to contribute to shaping the learning experience. When students share responsibility for their learning context, they become more engaged,

motivated, and are more likely to succeed academically (Alammary *et al.*, 2014; Dole *et al.*, 2016).

Learning experience practitioners, typically teachers, personally communicate with students to understand their perspectives. Based on the insights they gather, teachers strive to create optimal learning experiences for specific students. When conducted iteratively and with multiple students in the class, teachers can refine instructional materials to be engaging, effective, and contextually appropriate for all (Schnepp & Rogers, 2022). The following are five reasons for adopting a human-centered learning design:

1. By looking at the overall experience, not just training sessions and learning modules, designers should have opportunity to deeply explore learners' needs in a more thorough and longterm manner.
2. Ideating, sketch, prototyping, and testing enable learning to create unique design solutions tailored to the specific needs of target learner.
3. Memiliki Possessing a deep understanding and empathy allows designers to create learning experiences that connect cognitive and emotional levels while respecting individual, professional, and cultural differences.
4. Engaging learners at every stage of design process enhances the likelihood of achieving desired learning outcomes in ways that align with the learners' needs.
5. Menyadari Recognizing how learners' experiences relate to people and the world around the enables learning designers to create more conducive and effective learning experiences.

## **Design Thinking Approach**

Design thinking is defined as a process that embodies design, empathy, solution generation, idea iteration, and innovation through active engagement in problem solving. The design thinking approach originates from Stanford Design School and was popularized by the design firm IDEO (Auernhammer & Roth, 2021; Shé *et al.*, 2022). Design thinking can serve as a mindset, a process, and a toolkit for approaching problem solving (Howard *et al.*, 2015; Metris, 2024).

There is a synergy between instructional design and design thinking, although the exact manner and impact of applying design thinking in instructional material development remain unclear (Micheli *et al.*, 2019). The application of design thinking to instructional design in higher education training has the potential to create more authentic learning experiences that emphasize empathy for students, thereby fostering greater student engagement (Henriksen *et al.*, 2020).

The focus of design has shifted from merely creating learning content to emphasizing learning experiences, prioritizing speed, flexibility, and nonlinear processes. This shift in thinking and approach draws on concepts from disciplines such as product development and software design (Adnan & Ritzhaupt, 2018; Shé *et al.*, 2022; Wasson & Kirschner, 2020). Agile methods iterative, flexible, and user-centered originally developed for software development, have similarly been incorporated into instructional design processes, emphasizing the user or learner experience in interacting with the learning environment (Adnan & Ritzhaupt, 2018;

Taufiq *et al.*, 2021). For instance, design thinking, a user-centered agile approach, has begun to be applied within instructional design.

In the context of instructional design, the introduction of design thinking represents a growing shift toward a more agile and user-centered approach. The design thinking process reflects iterative practices and an inherent sensitivity to the instructional designer's experience, which can sometimes be implicit in their work outputs (Henriksen *et al.*, 2019). The iterative problem-solving approach inherent in design thinking aligns with systematic approaches to learning design (Stefaniak, 2020). The design thinking process consists of five non-linear stages—empathize, define, ideate, prototype, and test which are detailed in **Table 2**.

**Table 2.** Design Thinking Process

Stages	Purpose	Action
<i>Empathise</i>	Emphasize with potential users or targets to understand their problems.	Develop an empathy map about users or targets by conducting research such as observation, interviews, surveys, and involving stakeholders.
<i>Define</i>	Consolidate the information obtained during the empathy stage to define the problem and establish features and functions that will help solve the problem.	Combine all research results and observe where the user or target problems exist.
<i>Ideate</i>	Generating ideas or developing ideas about how to solve problems creatively.	Brainstorm ideas about unmet user needs.
<i>Prototype</i>	Develop a draft or prototype version of the final solution to solve the problem.	Develop a rough prototype design for the solution offered to solve the problem perceived by the user/target.
<i>Test</i>	This testing phase involves the process of redefining and empathizing with end users to ensure the best solution is sought.	Soliciting user feedback on the prototype, incorporating the feedback, and retesting the prototype.

Source: *Shé et al.*, (2022).

*Design thinking shares similarities with other agile learning design approaches, such as the Successive Approximation Model (SAM), which actively involves users and stakeholders throughout the design process. Further parallels can be observed in the mapping of design thinking stages to instructional design steps. For example, the empathize stage corresponds with persona development and user analysis, the prototyping stage aligns with rapid prototyping, and the testing stage parallels usability testing (Shé et al., 2022; Svihla, 2023).* However, the primary distinction between design thinking and other instructional design models lies in its emphasis on human-centered design, particularly fostering empathy toward learners or users, and perceiving them as individuals rather than mere inputs (Stefaniak, 2020). The application of design thinking at the empathy stage is central to its methodology, ensuring that the design process remains focused on the learner experience. Consequently, employing design thinking allows instructional designers to address several barriers that

have been identified in cultivating empathy with learners (Hair Jr *et al.*, 2017; Shé *et al.*, 2022).

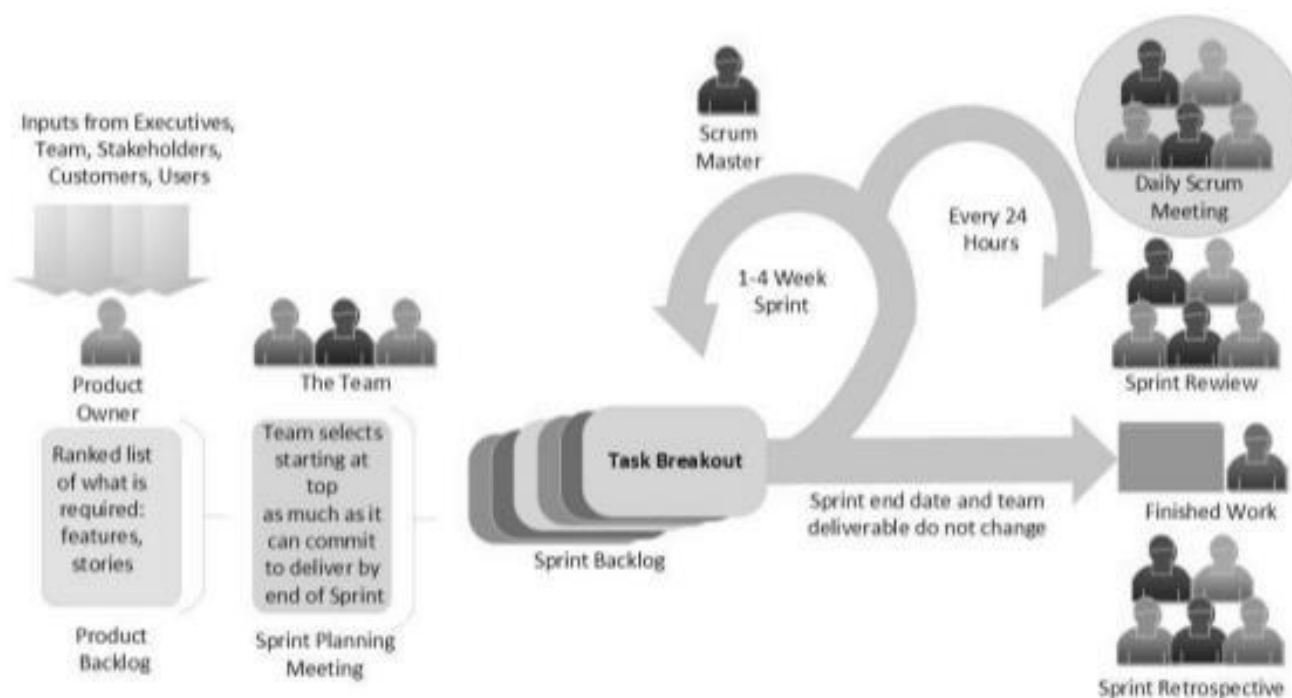
## METHODS

The researcher employed a qualitative approach, using a descriptive method, through a literature review. This literature study involved a systematic search for information by analysing relevant theories and previous research, including books and journal articles. The literature review categorized various sources under specific topics and presented documents pertinent to the research needs. Data analysis in this study focused on identifying the main themes in the literature, such as the principles of human-centered design and its implementation flow in learning. The researcher examined a total of 25 journal articles and textbooks relevant to the research topic. The primary focus was on applying the human-centered learning design model to gain insights into the ideal concept and its procedural implementation. Subsequently, the collected data were analyzed and critically reviewed through a synthesis of the related literature. The findings are presented descriptively to provide a comprehensive understanding of human-centered learning design and its essential elements.

## RESULTS AND DISCUSSION

### Project Management in Human-Centered Learning Design

The learning and assessment system constitutes a structured component of the curriculum, ensuring that the learning process occurs and learning outcomes are identified. In the context of digital skills courses, many practitioners have conducted intensive training or boot camps; however, research examining boot camp curriculum development using the Scrum framework methodology and user feedback for curriculum improvement remains limited (Wibowo & Veronica, 2022). The curriculum design process typically takes approximately two weeks to complete. The curriculum and training content must remain up-to-date, particularly in Software Engineering (SE)-focused curriculum and learning design, with an emphasis on web-based application engineering, where students determine their future careers after completing the course rather than following expert recommendations. The curriculum is divided into five categories: design, coding, database, product management, and communication skills. Based on these categories, learning materials are structured according to skill levels. As part of iterative development, educational institutions can create program workflows within their curriculum using the Scrum framework to develop both curriculum and learning design. Although the duration of this process may vary depending on the specific curriculum and learning design developed, it does not exceed one calendar month. The curriculum is designed to meet specific learning needs, with content development conducted iteratively and collaboratively following the Scrum Sprint Cycle. This approach ensures that learning remains aligned with the evolving conditions and needs of students. The Scrum framework sprint cycle diagram is presented in **Figure 1**.



**Figure 1.** Scrum Sprint Cycle  
 Source: *Wibowo & Veronica (2022)*.

Following are the steps of the scrum sprint cycle.

**Table 2.** Scrum Sprint Cycle Steps

Step	Description
<i>Product backlog</i>	Selecting material to teach based on level. Material is organized into a product backlog, which will then be completed according to level.
<i>Sprint planning</i>	As a second step, sprint planning involves deciding what plans will be implemented within a specified timeframe. This stage involves distributing a list of sprint backlog items planned to be completed within a specific timeframe. As the project progresses, the sprint backlog makes things easier because everything is neatly and carefully organized.
<i>Sprint backlog</i>	Once the product backlog, sprint planning, and sprint backlog have been defined, the next step is to distribute the work backlog, which distributes the work materials according to the defined levels.
<i>Daily scrum</i>	As part of the scrum team, the product owner and scrum master will provide regular guidance on ensuring the progress of the design is being carried out.
<i>Sprint review</i>	<i>The sprint review, which occurs in the fifth phase, involves a review with the Scrum team, including the product owner and Scrum master, to identify any missing or neglected aspects of the curriculum and learning design. Additionally, the sprint is conducted to evaluate the curriculum and learning design and optimize learning objectives if necessary. Afterward, the learning level is adjusted. The curriculum is implemented into teaching and learning activities, ensuring that students receive the appropriate level of material when the curriculum is completed.</i>

Step	Description
<i>Sprint retrospective</i>	To determine any gaps in the curriculum and learning design, a sprint retrospective will be conducted with the assistance of the product owner and scrum master. Gaps will be identified when students complete surveys and conduct one-on-one interviews as part of the teaching and learning process. The curriculum will then be repeated in subsequent rotations, if necessary. Following student feedback, the curriculum and learning design will be further developed and then retested with students.

Source: [Wibowo & Veronica \(2022\)](#).

Scrum is a software development framework that can be adopted and adapted for various contexts, including learning design or instructional material development. Each stage within the Scrum cycle is systematically organized to ensure that the developed content is well-received by learners and aligned with their learning progress. **Table 2** illustrates how these stages are applied in the curriculum development process. The application of Scrum in learning design can help development teams become more responsive to changes, enhance collaboration, and improve the quality of the final product. The following are several ways Scrum is utilized in learning design.

### **1. Product Owner (Pemilik Produk)**

A product owner in the context of instructional design can be a vision holder or a project holder who understands learner needs.

### **2. Scrum Master (Pemimpin Tim)**

Responsible for ensuring the learning design team uses Scrum practices correctly and addresses any impediments that arise.

### **3. Tim Pengembangan (Learning Design Team)**

The team members include instructional designers, content developers, media specialists, and others involved in the learning design process.

### **4. Backlog Pembelajaran (Learning Backlog)**

Create a learning backlog list containing work items that need to be completed, such as module development, material enhancement, or learning evaluation.

### **5. Sprint dalam Desain Pembelajaran**

Organize a specific time period (sprint) to focus on specific developments in learning design. Set a sprint goal and determine the learning backlog items to be completed during that sprint.

### **6. Daily Scrum (Pertemuan Harian)**

Hold short daily meetings to ensure all team members are up to date on progress and identify any bottlenecks in the learning design process.

### **7. Review Sprint dan Retrospektif**

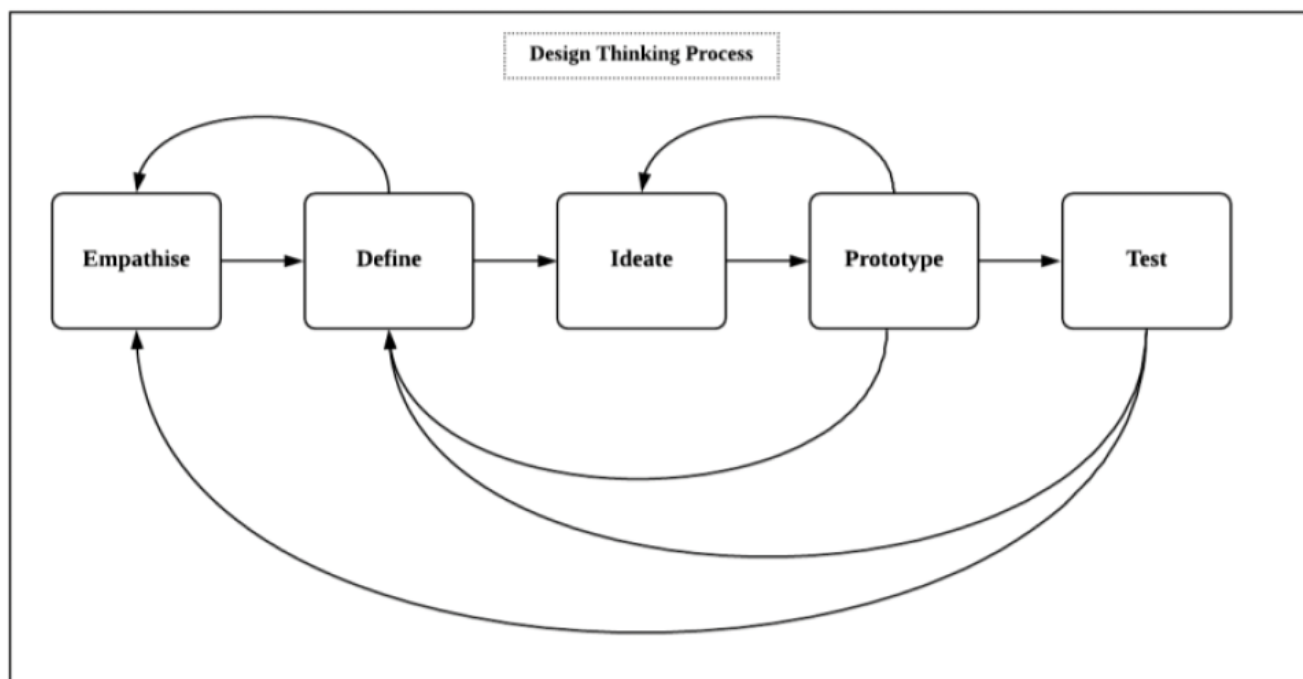
Hold an end-of-sprint meeting to review the work and get feedback from team members and stakeholders. Conduct a retrospective to discuss what worked and what needs improvement in the learning design process.

In Scrum-based curriculum development, each role carries clearly defined responsibilities: the Product Owner focuses on preparing the Learning Backlog, the Scrum Master facilitates and maintains the process flow, and the Development Team is responsible for implementing instructional materials in appropriate iterations.

## **Design Thinking Process in Learning Design**

The philosophy of design thinking develops five phases—empathize, define, ideate, prototype, and test—that must occur during problem-solving to transform critical needs into feasible solutions. The empathize phase requires individuals to genuinely place themselves in others' positions to better understand their needs and the challenges they face. Empathy maps are designed based on target user research data and visually represent the knowledge and perspectives of intended users (Choudhary, 2020). Personas are fictional characters created by designers to represent the real characteristics of their target users (Harley, 2015; Shé et al., 2022). The goal is to deeply consider those who will be affected by the designed solution. Defining the problem constitutes the second phase of the design thinking process. In this phase, an observer or researcher collects sufficient data to fully understand the situation being addressed (Kim & Ryu 2014). It is crucial to comprehend the problem to be solved, the individuals affected, and the contextual factors that may influence the success of the implemented solution. A case study exploring how the design thinking process facilitates the design and development of professional development course materials on online teaching through OpenTeach training demonstrates this application (Shé et al., 2022). The primary benefit of applying design thinking in instructional design is to ensure that developed materials truly meet the needs and challenges faced by learners. Through the Empathize and Define phases, researchers can identify problems more deeply and create more precise solutions. The Ideate, Prototype, and Test phases enable the development and testing of solutions that are more responsive to learner feedback, thereby potentially enhancing the effectiveness of technology-based learning.

The integration of the Scrum Framework and Design Thinking in curriculum development offers advantages in creating learning experiences that are more adaptive and responsive to learners' needs, while emphasizing more efficient team collaboration. The steps taken to incorporate the five non-linear phases of design thinking into learning design are illustrated in **Figure 2**.



**Figure 2.** Scrum Sprint Cycle  
Source: *Wibowo & Veronica (2022)*.

These stages utilize the design methodology from the Interaction Design Foundation, representing a pragmatic approach to implementing design thinking that is relatively easy to apply.

### 1. *Empathise*

The first stage in the design thinking process is to empathize with the prospective learners and understand their problems. The empathy process with the target learners, in this case, online educators who will participate in the course, is iterative. Creating an empathy map is key to ensuring the subsequent development of course or training materials, such as personas and scenarios, and is embedded within the design thinking process. As course or training materials are prepared and evaluated, learning designers must repeatedly return to this empathy stage to ensure the needs of the target learners are fully addressed.

### 2. *Define*

The second stage involves consolidating the information gathered during the empathy phase to define the problem and establish the features and functions that will help address the identified issues. During this stage, personas, scenarios, and course or training materials are defined and subsequently refined based on feedback obtained in the following stages of the process.

### 3. *Ideate*

This stage involves generating ideas to address problems creatively, based on the needs of the learning targets concerning the teaching materials.

### 4. *Prototype*

Developing a prototype version of the final solution constitutes the fourth stage in design thinking. This stage involves producing draft storyboards for each scenario and

instructional materials used to address problem-solving needs based on the scenarios. The prototype is then modified based on feedback received during the testing phase..

### 5. Test





This stage involves redefining and empathizing with the end users to ensure that the optimal solution is identified. Workshops are conducted to test each scenario and evaluate the instructional materials. Following the workshops, the scenarios and instructional materials are redefined to ensure that the empathy process with the learning targets has been successfully achieved.

There is evidence indicating that instructional designers involved in online learning face challenges in empathizing with their learners due to tensions such as employing methodologies that engage multiple stakeholders and dealing with time or project constraints (Matthews & Wrigley, 2017). The study demonstrates how design thinking methodology can be applied to ensure that the empathy process with learners is effectively established. Identifying key stakeholders ensures there is no conflict in understanding learner needs. A core element of design thinking is to facilitate creativity and "outside the box" thinking (Shé et al., 2022). To further understand the integration of design thinking, the following two sections elaborate on how this process is applied in the development of personas and scenarios.

1. Persona Development: Empathize and define persona development is an iterative process that entails empathizing with learners and defining their characteristics as part of the design thinking stages.

#### **Step 1: Creating empathy map**

An empathy map is created using data collected from learning targets and educators. The collected data must be categorized into two comprehensive categories representing the user characteristics necessary for course or training development, namely: (1) learning perceptions and (2) requirements for professional development. These data are then used to create two types of empathy maps reflecting the categorization of learner characteristics. The empathy map format is employed because it facilitates articulating a deep understanding of the various training materials to be delivered. User-targeted data should be organized into a four-quadrant empathy map table, as illustrated in **Figure 3** (Gibbson, 2018).

 <p><b>SAYS</b></p>	 <p><b>THINKS</b></p>
<p>“so it was very difficult for me at the beginning...” “For the first two years I felt quite isolated. I wasn’t sure what I was doing, ... I found it (technology) quite overwhelming when problems occurred”</p> <p>“saying ‘Hi’ at the very beginning of the academic year, like introducing yourself, ... kind of welcoming the students ... like that they see you as a person like, you know”</p> <p>“like what I find the most difficult is the feedback, because in face to face classes you can have an instant feedback,...in online classes, you know when somebody doesn’t find it like engaging, the person can just switch off”</p> <p>“For me it means like being prepared. Having like a set of slides prepared for the Students, quite detailed slides.”</p>	<p>Online classes are hard, particularly, at the beginning. The technology can be problematic. It can be isolating</p> <p>Social presence is important, get it going right from the start. It helps with interaction, make sure the students think of you as a person.</p> <p>When students are not engaging in online class then they are generally completely switched off.</p> <p>Key to success is being prepared</p>
 <p><b>FEELS</b></p> <p><i>Isolated</i> when starting out <i>Happy</i> when interacting with students and when class goes well <i>Confident</i> When things work out <i>Worried</i> Technology problems</p>	 <p><b>DOES</b></p> <p>Prepares, for example slides Aligns assignments and tutorials Prompts students in discussion forums Elicits information from students about their interests</p>

**Figure 3.** Empathy map four quadrants  
Source: Shé et al.,2022.

Says, refers to the segment containing the user’s actual spoken statements. Thinks, requires the interviewer or researcher to make inferences about the user’s intended meaning based on what they say; this can reveal underlying or implicit thoughts and values. Does, captures the actions performed by the user, reflecting what they have done as articulated in the interview. Feels, represents the fourth quadrant, containing the user’s emotional state as interpreted by the interviewer or researcher.

**Step 2: Determine the persona as initial information**

Initial personas were described using empathy maps, background data obtained from initial surveys, and the expertise of the project team. These personas (**Figure 5**) were developed in line with guidelines from the Nielsen Norman Group (Harley, 2015).

## Persona IT Tutor 2

Aoibheann has been involved in the DCU open education unit for about 10 years. She works full time in the IT sector and tutors part time on the CB1 module. She is an expert in her field and the students always praise her for both her expertise and engagement with them. She found the move from face to face to online classrooms difficult, mostly because of the challenges of engaging students. She still prefers face to face classes and feels that this is where she creates connections and builds the relationship with the students.. This then allows her to effectively engage with her students through the online environment. She is concerned how she will manage to do this, now that all her classes are moving online. Aoibheann is a busy lady and is not interested in spending lots of time on training but would like a quick fix every now and then.



**Figure 4.** User persona  
Source: *Shé et al.,2022*

### Step 3: Empathy

### Step 4: The final adjusted/revised persona (Figure 5)



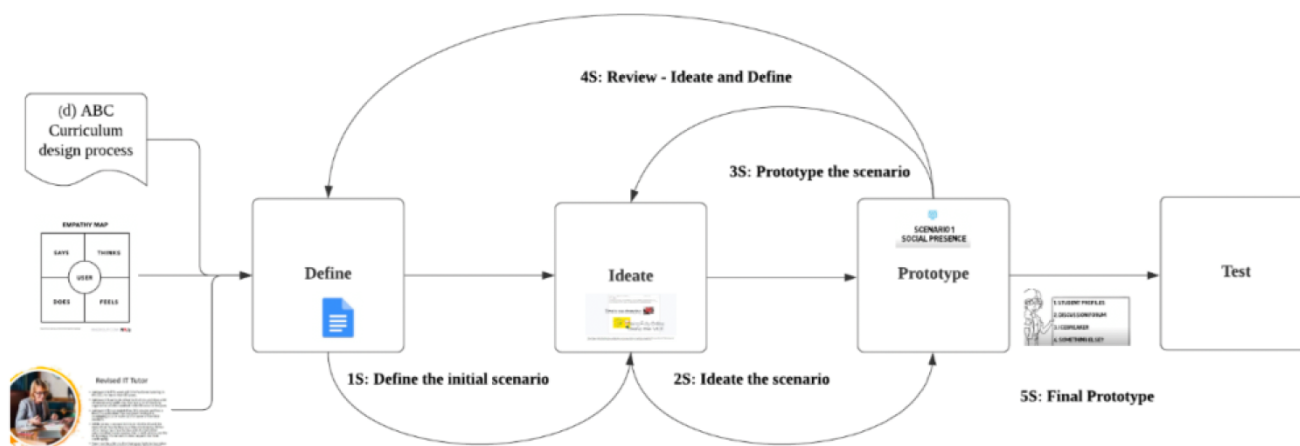
## Persona IT Tutor 2

- Aoibheann is fifty years old. She has been tutoring in the OEU for more than 15 years.
- Aoibheann teaches in other institutions and does a bit of consultancy work also. She has a lot of teaching experience and has worked in the IT sector in the past.
- Aoibheann has attended some of the OEU modules herself and has a level 9 qualification. She has been involved in developing course materials for some of the OEU modules.
- While Aoibheann is an excellent tutor she has found the move from face to face to online challenging. All her other teaching is face to face and she has never completed an online course. She is well able to use the technology, it's the online class rapport she finds challenging.
- Aoibheann can be a bit stuck in her ways, but she has taken part in some face to face workshops. Being paid to attend professional development will be a requirement.

**Figure 5.** Revised persona  
Source: *Shé et al., 2022.*

This modified persona is disseminated to the team and revisions are made before the final persona is agreed upon.

2. Scenario Development: Define, idea, and prototype. The scenario document involve an iterative process that applies the define, idea, and prototype stage of the design thinking process. Figure 6 illustrates the steps involved



**Figure 6.** The definition, ideate, and prototype stages used in scenario development  
Source: *Shé et al.,2022.*

### **Step 1: Determine the initial scenario**

### **Step 2: Designing the scenario**

After the scenario is defined, a creative process is used to ideate the story. This explores various methods for developing scenario-based learning activities, which are discussed and refined until a draft storyboard is produced, including specified audio and animation elements.

### **Step 3: Prototyping the scenario**

### **Step 4: Reviewing ideas and interpreting**

A comprehensive review of these materials is conducted in relation to the empathy map, learning outcomes, and curriculum design. The project team discusses these elements before reaching a consensus on the delivery of the final prototype.

### **Step 5: Final prototype**

The final prototype is created in video format and made available for testing through workshops, providing an opportunity to evaluate the prototype scenarios and related course materials, and serving as the first step in assessing the effectiveness of the design thinking process.

Design thinking and cognitive psychology aim to identify adaptive approaches that enhance student engagement and self-directed learning. Each course iteration serves as a prototype to be tested and refined, typically based on observer or researcher observations, discussions with colleagues regarding student learning evidence, and informal student feedback (*Rutherford, 2020*). Furthermore, Rutherford emphasizes the mindset adopted in design thinking, arguing that a course curriculum is more likely to achieve its objectives when the

users, in this case, are actively involved in the development process. The rationale for involving students in the curriculum design process is to formalize and expand the researcher's prototype testing approach, creating courses based on student-centered learning principles using design thinking methods. The goal of this course design is not to make permanent additions to the primary curriculum but rather to test curricular design methods through the application of actual course prototypes.

Involving students in the curriculum development process provides them with a deeper understanding of the purpose behind tasks and helps foster self-regulated learning. Self-regulated learners develop processes to assess their own learning in a course or project and identify as well as address gaps in skills and knowledge (Rutherford, 2020). Based on these findings, it is recommended that educational institutions consider employing the Scrum Framework and Design Thinking when designing curricula that are more dynamic and learner-centered.

## **CONCLUSION**

Based on the results of the literature review, it was found that the Human-Centered Learning Design (HCLD) approach can serve as an effective solution for creating learning experiences that are relevant, inclusive, and meaningful for adult learners. Specific findings indicate that this approach positions the learner at the center of the design process, taking into account their unique characteristics, needs, and the challenges they face in modern workplace environments. The proposed HCLD model integrates principles of empathy-based design, iteration, and co-creation, enabling training programs to be adaptively designed in response to the evolving needs of learners.

This study provides practical guidance for instructional designers on applying design thinking in the learning design process. This approach helps instructional designers empathize with learners, gain deeper insights into their needs, and create learning solutions that are both relevant and impactful. The study also highlights the limitations of traditional training and emphasizes the benefits of adopting a more creative and iterative design approach. By implementing the HCLD model, instructional designers can develop training programs that are more relevant, flexible, and effective, ultimately enhancing learner motivation, engagement, and learning outcomes. The researchers recommend that the application of HCLD in various modern workplace training contexts be further explored to ensure sustained effectiveness and to better accommodate the increasingly dynamic and complex needs of adult learners.

## **AUTHOR'S NOTE**

The author declares that there is no conflict of interest regarding the publication of this article. The author confirms that the data and content of the article are free from plagiarism.

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