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Constructing Desirable Learning Habits: Evidence from an Instructional System Design Course Based on the IDC Theory

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Abstract: Habits are formed when people perform repeated actions in a certain context while pursuing a goal. In the context of a semester-long Instructional System Design course, we show how the goal of designing a real-life website for the sensitization of teachers and peers toward disabled students led to the construction of certain desirable learning habits. The participants in the course were the default IS designers and the Persons with Disability (PwD) cell of the institute was the client. Anchored in the Interest-driven creator (IDC) theory, this study provides evidence for the three conceptual components of the habit loop- cuing environment, routine, and harmony. We argue that the real-life goal provided a fertile ground for routinizing the behavioral and conceptual activities of the participants. We use a combination of deductive and inductive coding to analyze the data sources of interviews, class interaction observations, shared documents for class reflection, and class interaction records in a virtual space. Our findings suggest that the physical and virtual spaces for regular class interaction, learners' routine interaction with the group members, and the constant sharing-cum-discussion of ideas scaffolded desirable learning habits as they pursued the common goal of website design. This study has implications for fostering desirable learning habits in regular classroom interactions.

Keywords: Learning Habit, Shared space, Interaction, Interest-driven creator theory, Habit loop

1. Introduction: Habit and Learning

The Oxford English Dictionary describes 'habit' as 'a settled or regular tendency or practice, especially one that is hard to give up'. Habits are formed as we repeatedly perform an action or a set of actions in a certain context to pursue a goal (Wood & Rünger, 2016). These could be both desirable and undesirable. However, just as accessibility to healthy foods can curb the temptation of unhealthy eating (Sobal and Wansink, 2007), systematic exposure to thoughtfully designed contextual cues can support desirable learning habits. Habits are strengthened with repeated connections between the cues and the response. When one is exposed to a context cue that encourages a specific response, it is called 'direct' cuing (Wood & Neal, 2007). When habitual responses are selected based on the value they provide, it is called 'motivated' cuing (Wood & Neal, 2007). In the context of a goal-driven task, direct cuing is observed when a certain cue triggers a specific behavioral or conceptual process, while motivated cuing is observed when the learner initiates a specific behavior motivated by the reward/value in sight which could be the goal itself.

In a complex task, which requires coordination across different levels to reach a common end goal, habits are difficult to form, likely because of the perceived difference in the reward systems and the dynamic nature of one's interaction with the goal (Wood & Rünger, 2016). However, if we keep the larger reward constant, like in the creation of an artifact and enable systematic and regular interaction of ideas between learners, it becomes possible for certain habits to form. In the context of the present study, in the semester-long course on

Instructional System Design, the end goal was the design of a website for the sensitization of teachers and peers towards disabled students in an educational institute. The course was organized in a manner where the course participants were also the designers for the website, and shared both physical and virtual space. They had sufficient opportunity to share and discuss their insights as they tuned their behavioral and conceptual understanding according to the demands of the task. Thus, this course appeared to lay a fertile ground for desirable learning habits to flourish, something that we investigate in this study.

Zooming into the nature of these habits, we may realize that across different kinds of desirable learning habits, there are a few that all instructors, regardless of the academic level and cognitive abilities of their learners, want their students to inculcate. The ability to be aware of one's actions (Goren & Kaya, 2023), to understand the perspective of others (Mystakidis, & Lympouridis, 2023), and to be able to constructively collaborate with others to achieve a goal (Herrera-Pavo, 2021) are a few desirable habits that are essential to learning in different contexts. In this study, we will use inductive methods to analyze the emergence of these desirable habits (Miles et al., 2020).

2. Theoretical Framework: Interest-Driven Creator Theory

The Interest-driven Creator theory assumes that learners engage in knowledge creation when their actions are driven by interest and that through repetitive processes in their everyday lives, learners can benefit from interest-driven creation habits (Chen et al., 2020). The IDC theory consists of three different anchored concepts- interest, creation, and habit, that are interconnected in multiple ways (Chan et al., 2018). The interest component emphasizes supporting learning through interest, the creation component emphasizes learning through the design of interest-driven creation, and the habit component emphasizes learning by inculcating a habit of interest-driven creation (Chen et al., 2020).

The habit component of the theory proposes a habit formation framework to help instructors design systematic learning processes that can guide learners to gradually build habits for interest-driven creation. The framework consists of a habit loop with three components- cuing environment, routine, and harmony (Chen et al., 2020). A cuing environment is meant to trigger a learning behavior and it may involve a specific arrangement of place, time, people, or incidents. The routine component is concerned with the repetition of certain behavioral or conceptual patterns, and the harmony component refers to the sense of inner peace or satisfaction that appears when one through continuous efforts can achieve a goal.

The IDC theory has been recently reported to be used in scaffolding teaching practices and encouraging academic growth in learners (Looi, et al., 2023). In another example, it has been used to design a learning intervention focused on inculcating reading habit in learners, called the Modeled Sustained Silent Reading intervention (Wong et al., 2019). The IDC theory could be applied in all pedagogical contexts where learners' interest drives the creation of knowledge artifacts through developing a habit for long-term sustenance of the learning. We use the IDC theory framework in this work to examine the learning processes in the ISD course that targeted the creation of a knowledge artifact- a website, to explore the opportunities for learners to develop desirable learning habits.

3. Research Questions

1. Which elements from the ISD course align with the habit loop components of the IDC theory?
2. How did the real-life goal for the ISD course support desirable learning habits in a class?

4. Method

4.1 The Context: Instructional System Design Course

The present study draws from the semester-long course titled ET 614: Instructional System Design (ISD) offered in a higher educational institute during January- April 2023. This course was at an introductory level. The curriculum included teaching about ID models (ADDIE, SAM, etc.), technology and content integration framework models (TPACK, LCM, etc.), and

technologies to create interactive pedagogical material like CANVA, H5P, etc. The students had to spend three hours per week in class for both conceptual learning and project work. The course was atypical in the sense that it had a real-life complex goal of designing a website to sensitize teachers and peers and generate awareness about the needs and challenges faced by Persons with Disabilities (PwD). The idea was to apply the conceptual understanding gained in the course and parallelly apply it in the design of the website. The PwD cell of the educational institute was the client for this project. The website was agreed to be composed of different training modules addressing four types of disabilities- Autism, Attention-Deficit/Hyperactivity Disorder (ADHD), Locomotor Disability, and Visual Disability. In this regard, at the beginning of the course itself, the course instructor shared the goal with students as- *"To create awareness among the functionaries of higher education about the specific educational needs of differently-abled persons."*

4.2 Participants & Organization

The class was conducted in hybrid mode and was open to all departments interested in participating. Consequently, around 25 individuals (3 post-doctoral fellows, 17 PhD, and 5 Master students) with varying levels of expertise joined the class, while 10 credited the course. The primary recipients were the crediting first-year MTech and PhD students. The instructor structured the class in X, Y, and Z cohorts. The 'X' cohort was the primary recipient, the Y cohort included second and third-year PhD students, and the Z cohort consisted of final-year students and postdoctoral fellows. These cohorts were further divided into four groups, each having members from all three cohorts. The four groups, each having 5-6 members, were tasked with developing training modules for one specific disability (Fig. 1).

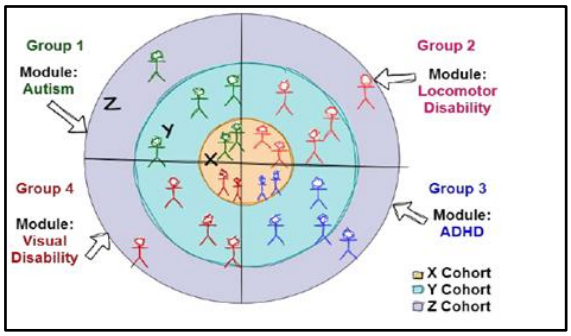

Figure 1. *Illustrative visualization of ISD course. Adapted from Srivastava et al., 2023*

Recognizing the diversity of expertise among the course participants, the instructor pre-defined the roles for each cohort. For instance, cohort 'X'- was responsible for content creation, cohort 'Y' was responsible for mentoring and providing a scaffold to Cohort 'X', and Cohort 'Z' was responsible for both mentoring and guiding Cohorts 'X' & 'Y', ensuring smooth workflow and achieving their group target (Fig. 2). This structured approach helped participants understand their responsibilities, establish their commitment, and manage their expectations before starting to design training modules.

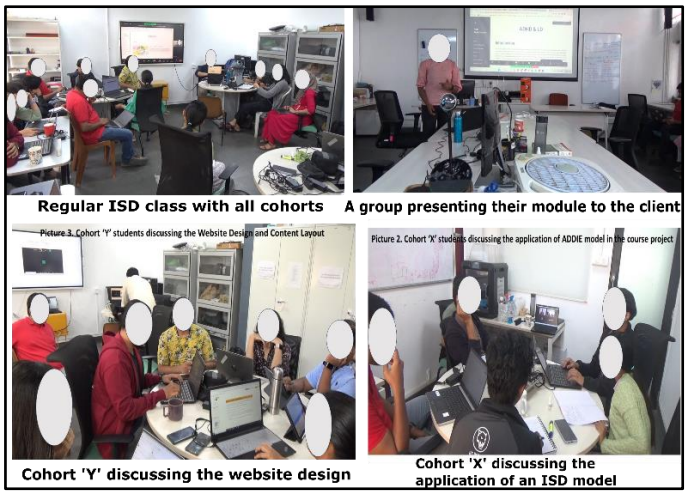

Figure 2. *Multifaceted perspectives visible in the ISD class*

4.3 Data Sources and Analysis

The data sources included interviews with the 'X' cohort students, researchers' class interaction observations, Homework-0 (HW0)- a shared document for class reflection, and students' interaction records on the WhatsApp interface.

We use a combination of deductive and inductive coding to qualitatively analyze the data sources (Bingham & Witkowsky, 2022). Our methods involve organizing the data according to the different sources and rendering them amenable to categorization. We use deductive coding to sort and categorize data based on the predetermined components of the habit loop from the IDC theory. Next, we use inductive analysis to identify the patterns emerging from the categories that may align with the desirable learning habits (Miles et al., 2020). The deductive category codes are used to map the ISD course elements onto the habit loop components of providing cues, routinizing behavioral/conceptual patterns, and developing a sense of harmony or satisfaction. The inductive category codes are used to study emergent patterns within and across data that support the development of desirable learning habits of self-awareness, perspective-taking, and constructive collaboration.

5. Findings

A. To answer RQ1, we closely observed, organized and systematically categorized the data sources to gather evidence for the mapping of the ISD course elements onto the habit loop components. Our pre-determined deductive codes were cue, routine, and harmony.

5.1 Cue from the Course Environment

The IDC theory states that the habit-supporting cue should be easily identifiable by the learner. In line with this, we found that the ISD course was structured in a manner that provided easy cues in terms of physical and virtual spaces, time duration, and specific interaction with group members. We describe these below.

Multiple flexible spaces for the conduct of the class and sharing of information: The class was conducted parallelly both online and offline. Although physical presence was encouraged for the class, an online Zoom link was shared for online participants. The course had a WhatsApp group dedicated to the conduct of the class where updated information about the class was available. The online Zoom link that read- "link for regular ISD class", was also shared there. Further, the three-hour-long class allowed learners to participate in both content-based learning and applied learning activities. As a result, the learners were given the cue to be flexible in their approach and switch their modes of learning.

Virtual space to encourage class reflection - Homework 0 (HW0): The goal of HW0 was to provide students a shared platform to reflect on their learning and experiences after each class by writing in a shared Google document. This activity was similar to journal entries, but since it was a shared document, the participants were able to read other participants' reflections as well. To motivate students to update HW0, the instructor read all the reflections

and gave comments, questions, feedback, and appreciation to the students. It was an interactive document and invited comments, suggestions, and sharing from other participants as well. The virtual interactive space provided by the WhatsApp interface was also used by the teaching assistants (TA) to remind course participants to participate in the self-reflection process and contribute to HW0. This virtual space gave learners the cue to be expressive, communicative, and interactive.

Social space for interaction with other participants: The class structure facilitated active interaction among people from different cohorts by engaging them in group activities as they coordinated their actions to pursue the final goal of designing specific modules. These interactions took place during physical meetings and discussions in the class, over the common WhatsApp group, and online meetings that were organized by the group members themselves.

A virtual cue from the course slides: The class slides were shared with the course participants after each session. These slides helped students recapitulate class discussions, including ISD concepts, case studies, brainstorming exercises, next action plans, assignments, and activity responses from class participants. They were also beneficial for students who could not attend the class for some reason, ensuring continuity and keeping all participants on the same page of learning and discussion. It ensured an association between routine and the course environment. This consistency supports habit formation and the development of automaticity. Here's an excerpt from a student who was absent during the class demonstrating the value of the slides: *"I was not present in the class…the class slides convey the story that most of the discussion happened around creating impactful resources which can be website, application, video, and others, to cater the need of pwd students in the institute"(sic).* Another student shared- "*I was not present in the class but I went through the slides and get idea about the requirement of pwdcell from our end. After reading slides I tried to understand the following deliverables from our end and our role" (sic).* These slides gave learners the cue to re-visit concepts at their own pace and be aware about the class progress.

The time cue: Time plays a crucial role when working in collaboration on a project. In the ISD course project, negotiations happened concerning the timing in different ways, like scheduling a meeting, working around the different working hour preferences of each student and cohort, finishing the assigned task on time, and getting feedback from cohort Z in time. On the flip side, it led to conflicts at times, and on the positive side, it led to developing the habit of being more responsible and accountable when working in collaboration. Time acted as a motivating cue as when the project deadlines were looming near, it became a cached motive to do the same thing again. Students figured out ways of working when time clash occurred. For instance, a credit student shared, *"things didn't match well or like if we were doing it after five* (5 pm) *because we are busy with classes and other stuff in the first half so we could do only in the second half. But for them* (other cohort members) *it was like they couldn't be there after five. So things didn't match with them and we didn't expect much from them only" (sic).* The timed deadlines of sub-projects cued learners to collaborate constructively.

The goal cue- The website "PwD Student Cell"- The website was created collaboratively by the participants as a course project outcome (Fig. 3). Content creation for the website began after the mid-semester break, with predefined roles for each cohort and group. The website featured four training modules, each focused on a different disability: Autism, Attention-Deficit/Hyperactivity Disorder, Locomotor Disability, and Visual Disability. Each group was responsible for creating a module, with continuous feedback from the instructor, subject matter experts, and ISD experts. After launching the initial layout of the website, editing credentials were shared with each group, allowing them to see how their content would display and fit in the provided space. This skeletal website acted as a contextually motivated cue that fostered healthy competition in designing training modules. Students could view and be inspired by updates from other groups, leading them to refine their content on the website. This skeletal website cued learners to take others' perspectives.

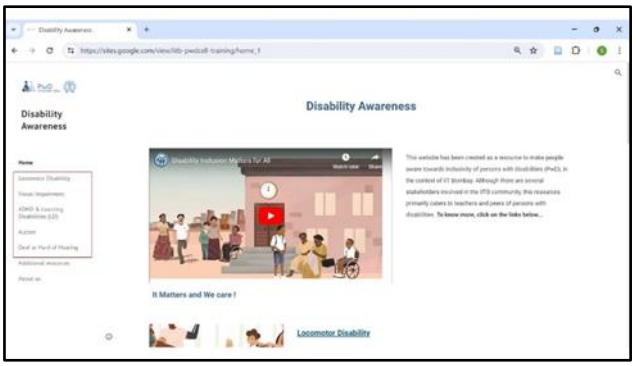

Figure 3. A screenshot of the student cell website with modules on different disabilities

These contextual cues acted as a trigger to influence habit formation, supporting the development of automaticity. Students could share their ideas and creations in a safe environment with peers, among different cohorts, and with subject matter experts and instructors. The interaction between cohorts exposed students to new ideas, perspectives, and arguments, which was crucial for enhancing their instructional design abilities and project-based learning skills.

5.2 Setting a routine

Incorporating interest-driven creation activities and goal-oriented activities into students' regular routines increases the likelihood that they will develop a habit of pursuing their interests (Chan et al., 2018). Our finding on setting a routine in the ISD course provides evidence of easy, and doable routine activity. Our major evidence comes from HW0 which was seamlessly introduced into students' learning routines. As shared earlier, the objective of HW0 was to provide a common platform to the course participants where they could reflect upon their learning and experiences from the course. The instructor motivated students to complete this activity at least before the next class. This allowed students to not only write their reflections but also observe and engage with their peers' reflections. To make it simple and doable, common instructions were provided on the top of the document, like who can write, how much time is enough to be spent on this homework, why should one do this, how often should one write there, is there any writing structure to be followed, what was the benefit of writing there, who could one contact if they had any doubt about the reflection homework, etc. In addition to common instructions, cohort-specific instructions, group-specific instructions, and format for writing instructions were also provided in the document itself.

For instance, here is a common instruction provided to write HW0: *"What should I write? - First, write what you did in the class. Then write what you observed happening in the class. Finally, write what you learned in (i) doing the activities given to your cohort, (ii) participating in discussions within your cohort, (iii) listening to discussions of other groups and cohorts, and (iv) listening to the instructor and observing instructor actions."*

Figures 4 and 5 give a tabular description of the number of posts by each cohort in the entire course and the different categories of posts made in the document.

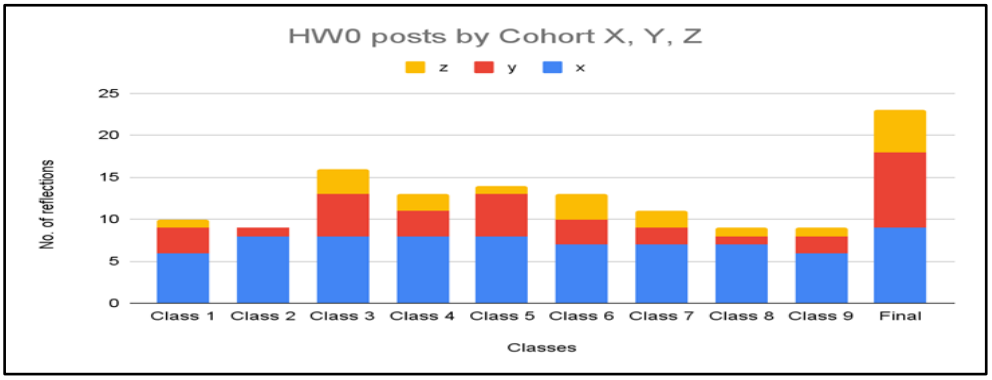

Figure 4. HW0 posts by Cohorts X, Y, and Z: The table represents post-class reflection (HW0) posted by the course participants. A total of 25 learners placed at different levels in cohorts X, Y, and Z participated in HW0.

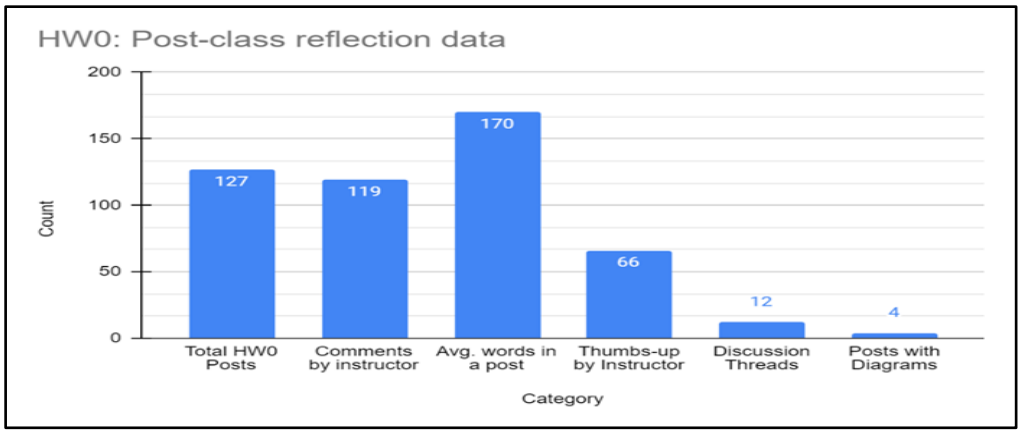

Figure 5. *The table represents the overall categories of HW0*

The tables suggest that HW0 was an interactive document that invited active participation from all cohorts. The HW0 proved to be pivotal in cultivating a reflection writing routine among learners.

5.3 Developing Harmony

Harmony, within the context of the habit loop, is the psychological state achieved when routine behaviors fulfill needs and provide inner rewards. It is crucial for encouraging the persistence of desirable learning habits (Chen et al., 2020). We describe the following themes, which were deduced to map the essence of harmony:

Sense of belongingness to the community: People highly value their relationships with family, and friends, which in turn contributes to their inner peace (Saphire-Bernstein & Taylor 2013). The course participants expressed no unhealthy interactions among their groups, although there were debates on content selection, design, and representation to meet the project expectations. For instance, a student reported, *"Yeah, I think we have some. I wouldn't call it a debate because it was not that elaborate. But we sure did have a lot of discussions" (sic).* Another student shared- *"Most of our conversations were constructive like, we look only on the merits of what is being told and just focused on that" (sic).*

The feeling of growth and sense of confidence: Gaining confidence from engaging in tasks motivates individuals to pursue these activities whenever possible, creating a sense of harmony. For instance, some of the reflections shared by credit students are: *"The course has definitely increased my confidence in executing an ID project with an acceptable level of panic. The course turned out to be completely different…it ran completely at the 'apply' level" (sic).* Another student shared- *"After completing this course, I am more confident in creating interactive content, making a timeline and sticking to that, validating the content at different stages and supporting the research, design, creation, and feedback through ISD concepts" (sic).* Yet another student shared- *"after being part of the course, my confidence in working on any live projects in my area of expertise increased as I feel more confidence to address the challenges in the project" (sic).*

Sense of meaning: The participants expressed a sense of accomplishment and meaningfulness as they realized that their work contributed to society. In an earlier study, it was reported that the ISD course students had a high sense of contribution to the task, with a mean score of 4.107/ 5 (SD= 0.79) (Srivastava et al., 2023). For instance, some credit students shared reflections in HW0 after the final class: *"After the presentation, you get to see the old page, you get an ad, you see other works and you see oh, this is a kind of very good feeling that this belongs to me. But at the end, I must say there is a feeling that my whole team was also there" (sic).* Another student shared- *"First of all, thank you for giving us a chance to work on the real-life problem and for arranging various sessions with different stakeholders; these*

interactions with stakeholders helped us to understand multiple perspectives and guided us throughout the project journey, working with team members and Y cohorts helped me to grow individually…Finally, I am satisfied after the user study that it can sensitize the user" (sic). Overall, we found that the ISD course journey was ripe with opportunities to help learners develop learning habits that have the potential to be sustained over a long-period of time.

B. To answer RQ2, we inductively analyzed the data sources to explore different desirable learning habits that were supported by the ISD course. We used open coding and constant comparison with the earlier categories to draw meaningful themes supporting desirable learning habits (Bingham, & Witkowsky, 2022).

Self-awareness: The shared exercise of HW0 helped students understand different perspectives and motivations to be creative and critical thinkers. Here's an interactive excerpt that reflects how it helped learners be aware of their own perspectives. A student's reflection after first class and the instructor's response to that: *"I liked how a lot of different instructional strategies like writing down our reflections alongside in the slides itself and discussing their significance, Think-Pair-Share, pointing out to the need for writing down our thoughts to reduce cognitive load etc. were used in the ISD class itself. Besides the use of inductive approach, that is letting us write an instructional plan first and only in the end introducing the corresponding ADDIE model was very useful to actually understand the model and not just remember its steps in a row."* The instructor commented on the "Instructional strategy" part of the student's response, *"good observation. Notice that you are wearing teacher's hat."* On the ADDIE Model aspect, the instructor wrote- *"good observation. Notice that you are wearing a learner's hat."*

The above interaction gives an example of how the instructor helped learners to reflect on and be aware of their perspective, as in the above case where the student was thinking like a teacher in one and an instructor in the other instance. The course instructor created an environment where participants alternated between identifying as learners and teachers, which we refer to as 'switching the hats'. This approach allowed participants to engage from two perspectives: as learners, they gained new skills and knowledge and as teachers, they identified areas for improvement in project planning and implementation. Wearing the learner hat motivated students to engage more deeply and master skills. Wearing the teacher hat provided a broader perspective, helping them understand project requirements, align with goals, and recognize what works and what doesn't, appreciate the strengths and limitations of different cohorts, and address clients' needs.

For example, a course participant shared her stance by switching the hats, "*Learner hat: I was always afraid of using editing software especially to create animations. I am glad that I was in a position where I had to jump in and face my fear and surprisingly enjoyed it a lot." Teacher Hat: i) "A rubric could have helped a lot. In making sure the project and course targets were met along the way…Similar to the rubric, a concept cheat sheet could be shared as a poster. This would have helped us align our concepts and practice.... ii.) Class tends to get dominated by seniors and I see juniors only participate when called out. This might be because they respect/expect the seniors to know more and let them (us) speak." (sic)*

Perspective-taking: HW0 also provided evidence of how it encouraged participants to become aware of and constructively engage with the perspectives of other participants, both group members and non-group members. Here's an excerpt that tells us how participants actively engaged with other perspectives from the class: *"From other groups, there were interesting ideas such as a break up of different roles associated with or interacting with PwD persons. Noted some in our slide notes" (sic).* Another student shared- *"The initiation of the ideas related to the pwd project by each group and commenting or giving feedback to other groups ideas helped to understand what are the things common, how our groups' ideas differ from others and was able to identify important things which our group might have missed" (sic).*

The narrow benefit of this activity is that it helped students know what had been discussed in the class if they were absent but the broader benefit includes the development of critical thinking, analysis, accommodation, creativity, and communication skills that have been considered 21st-century skills to help students become lifelong learners (Chen et al.,

2020). Additionally, opportunities to participate in classroom discussions also gave room for constructive ideas emerging from the diversity of cohort members to solve the project problem. It helped all students develop active listening skills, questioning, appreciating, and accommodating others' perspectives. For instance, a student reported, "*The initiation of the ideas related to the pwd project by each group and commenting or giving feedback to other groups ideas helped to understand what are the things common, how our groups' ideas differ from others and was able to identify important things which our group might have missed" (sic).*

Collaboration and sense of team: To foster collaboration, the idea of dividing students into groups and assigning each group responsibility for designing and delivering one module for the PwD website worked well because the responsibilities and accountability of each cohort member were predefined which helped them to understand their roles and coordinate their actions. Additionally, during the project, project assessment remarks were provided to the entire group as a whole rather than to any specific member. This also facilitated a sense of collaboration and teamwork among the students. For example, a credit student shared, *"We learn about team building process, working with team and role of seniors (specially cohort Y) and cohort Z to guide and provide feedback at right moments. Really highly thankful to cohort X group to always up for critical discussion, accommodate my ideas and most important always up for collaborative work at odd times" (sic).*

Another crucial aspect of collaboration was getting feedback. The students developed the habit of constantly engaging and tailoring their actions according to the client's needs. To inculcate this habit, the instructor ensured that students maintained a habit of taking regular feedback from the client, users, subject matter experts (SME), and instructional system designers. After completion of the theoretical concepts and project kick-off in the first five classes, the SME interaction happened from the sixth class onwards. Student groups presented their module draft and received feedback from experts on their content, language, and design. The exercise helped students with the "feedback seeking approach," which is adopted by ID professionals. It also helped them learn about the applications of the Successive Approximation Model that includes the preparation phase, iterative design, and development phase. As a result, they developed the habit of continuously engaging with the client's perspective and tailoring their actions according to the client's needs. For example, a credit student shared, *"In the project development phase, whatever we have learned, we try to apply that piece in project development like LbD and LeD from LCM model, following the ADDIE model with feedback of different stakeholders and subject matter experts, ways of sensitization from ummeed workshop and constructive alignment from tulna workshop, helps us to work in the right direction." (sic).*

Thus, we find that the course helped students to repeatedly engage with desirable habits of being aware of their perspective, others' perspective, and thinking in terms of team.

6. Discussion

Our study based on the ISD course highlights how strategically designed cues in a course can foster the formation of desirable learning habits among students. The consistent implementation of these cues in the learning environment aligns with the 'Habit' component of the Interest-Driven Creator (IDC) Theory (Chen et al., 2020). An effective and engaging pedagogy can play a crucial role in developing desirable learning habits if it can capture students' attention and keep them actively engaged in a purposeful manner. Evidence gathered from the semester-long ISD course demonstrates how the course was able to capture students' attention by breaking the larger task of website-building into designing of four different modules and systematically engaging them in the collaborative activity. This is in line with the earlier work, where it was shown how the course ignited students' interest in the task (Badhe et al., 2023).

We found evidence for the different components of the 'Habit-loop', namely cuing the environment, routine, and harmony. This, we believe, was feasible owing to the goal-based conduct of the class. Real-world tasks that are complex and dynamic are crucial for nurturing the problem-solving skills of learners (Rohm et al., 2021). Additionally, they give a sense of fulfilment when the targets are met. This is crucial for harmony to develop. The structure of

the course gave easy cues to the budding designers and helped them develop a routine for meeting the target. In the process, learners developed a few desirable learning habits of being mindful of their own positions, other's perspectives, and thinking collaboratively.

However, a few limitations are also associated with the study. The course participants were post-grad students, whereas, the habit formation process, prior knowledge, and student engagement may be different in different contexts, like for undergrad and school students. The study measured the development of desirable learning habits for just one semester, and we are not sure about the long-term effects of such a learning environment. The course participants could not spend much time learning theories in detail as the application and practical parts were more dominant due to the course project goal. Further research can be done to identify other factors that inculcate desirable learning habits among students, considering the habit component of IDC theory.

7. Conclusion

This study demonstrates that strategically designed cues and effective pedagogical approaches in an ISD course can significantly foster desirable learning habits among students. The integration of consistent class schedules, reflective practices, and collaborative learning activities aligns with the 'habit' component of the IDC theory, promoting student engagement and critical thinking. By creating a structured learning environment, encouraging regular reflection, and fostering a sense of community, the course helped students develop stable routines and a strong sense of accountability and motivation.

This study has implications for other learning contexts and provides valuable insights for educators and policymakers seeking to cultivate desirable learning habits, ultimately enhancing student engagement and success.

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