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Interaction in Online Design Education

[1]Diya Malkani [2] Dr. Mukta Avachat [3] Dipankar Goswami
[1]BFA Student, MIT ADT, School of Fine Arts and Applied Arts, Pune Maharashtra
[2]Associate Professor, MIT ADT, School of Fine Arts and Applied Arts, Pune Maharashtra
[2]Assistant Professor, MIT ADT, School of Fine and Applied Arts
[1]Email – diya.malkani737@gmail.com [2] Email - mukta.shirke@mituniversity.edu.in
[3] Email - dipankar.goswami@mituniversity.edu.in

Contact No. - 8308401975

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Abstract: *Online education represents a learning approach that is digital and it utilizes internet technologies to provide educational content so students can access learning materials, communicate with instructors and engage in other forms of education from remote locations. In this context, online design education appears as a niche domain wherein students are subjected to a very long chain of tutorials that is eventually boring and which impacts students' motivation and also the eventual outcome of learning. The paper offers a case for the adaption of gamification principles in online design education as a means of improvement for better learning and engagement. The study ensured a mixed-method approach in the consideration of benefits concerning the inclusion of aspects of gamification within the curriculum as against a more traditional model applied towards tutorials. As this paper is only focused on online Design education; the survey has been taken of both students and designers. The research found that hands-on, challenge-based learning was more appealing than passive methods. The survey suggested that gamification's inhibitive features were appreciated whereas collaboration and skill-building features intensely enhanced engagement. Portfolio-building activities and systems built around skills seem to be the biggest asset; thus, meaningful learning experiences beyond just gaming mechanics are required. Meaningful learning experiences beyond just gaming mechanics seem required; so, what made learning interesting and worthwhile were, in fact, the essential features of peer reviews, mentorship, and flexible learning paths, according to the survey.*

Key Words: *Gamification, Design Education, User Experience, Student Engagement, Challenge-based, Learning*

1. INTRODUCTION:

Online education includes different ways to learn using the internet. This includes synchronous learning, which is real-time online classes; asynchronous learning, which are self-paced courses; blended learning, which mixes online and in-person teaching; massive open online courses (MOOCs); and flipped classrooms. These methods use digital platforms to offer flexible and accessible learning experiences in various subjects and locations. Improvements in the use of games in education seem to promise better user involvement and good results in learning. Old ways of online education, therefore, usually consist of lectures, in which students sit just to listen to recorded videos, read text materials, and take standard tests. These techniques often prefer settling on basic content delivery, static material for reading, routine

quizzes, and some interactive features. This makes students less interested and less motivated. However, these techniques of gamification in learning represent a new way of keeping students interested. They find a means of integrating game elements in achieving better learning experiences. Research by Hamari et al (Serafeim A & Christos K, 2022) has shown that gamification impacts the user engagement and motivation significantly when properly implemented; studies on intrinsic motivation have also shown that elements of games can create extended interest among students independent of reward. Building a whole learning environment as an extension of design education in gamification implies creating an atmosphere that induces active participation rather than just adding game elements. The transition from simple point-based systems (assigning numerical values to student achievements, such as completing assignments, participating in discussions, or achieving certain learning milestones) to meaningful game elements shows a shift in education towards more advanced implementation strategies. As institutions increase their adoption of gamified approaches, understanding these patterns and their impact is of high importance. The current paper analyses how gamification could be made easier to achieve the ideal user experience within design education, placing emphasis on meaningful game elements for engagement effectiveness and learning.

2. LITERATURE REVIEW:

Integration in online design education has shown tremendous scope in terms of engaging and enhancing students' learning outcomes. The tutorial-based model, though systematized and informative, always fails to bring in the element of interactivity to hold the motivation of students. Therefore, gamification, being defined as the process of bringing game mechanics into non-game contexts, fills up the gap by enhancing active participation and the intrinsic motivation of participants.

Meaningful gamification, as Nicholson intends by the RECIPE model (Nicholson, 2015), involves such aspects as Reflection, Exposition, Choice, Information, Play, and Engagement. This relates learning experiences to real life instead of the rather "shallow" additions of points and leaderboards to a game. For instance, giving an example of how to build a portfolio or tackle existing real-life design problems might give student opportunities with great potential for deep involvement while their job skills improve.

Another literatures point is that gamification holds much importance to collaborative aspects. As mentioned by Rapp (Rapp, 2013), peer review, mentorship, and social interaction encompass key drivers of intrinsic motivation in gamified systems. These elements alongside the community experience, used to enhance learning, will be useful in providing value to the feedback from participating, knowledge distribution, etc. Some effective strategies in design education settings focused on substituting competition with collaboration.

Studies by Triantafyllou and Georgiadis (Serafeim A & Christos K, 2022) indicated that user-centered design may be critical to gamified learning. Due to these requirements, flexibility and adaptability must be encouraged for the purpose of catering to individualization needs of the learner. Learning and skill-based systems are considered fundamental components that can help learners describe their educational journeys based on their particular goals and interests. This approach therefore speaks to the shift from static reward-based gamification toward dynamic user-centric engagement strategies that facilitate sustained engagement and meaningful skill acquisition.

3. AIM :

To understand how gamification can enhance the user experience in online design education.

4. OBJECTIVES

- To analyze how gamification impacts user experience in online design education.
- To identify effective gamification strategies that enhance student engagement in design learning.
- To evaluate user-experience improvements through gamified design education methods.

5. RESEARCH METHODOLOGY:

This research study adopted an applied research methodology that utilised a mixed-method approach: integration of both quantitative and qualitative data gathering methods to achieve its objectives. The research developed comparative analysis between gamified design courses and traditional design courses to consider the impact of gamification in design education. Mostly, the data was gathered through an online survey of online students who specialize in design. It collected fine feedback on what they think about their learning experience concerning digital education. Semi-structured interviews are conducted with undergraduate design students and the design teachers to get a better understanding of what the concept of gamification means to the learning process.

User experience questionnaires were given to evaluate the effectiveness of the gamified elements in the design curriculum. The research was conducted on the undergraduate design students studying in core design subjects, hence there was a combination of a focused sample group for the study. It would emphasise gathering concrete evidence about how gamification elements affect the engagement of users and the resultant learning outcome for design education, while qualitatively ascertaining the effectiveness of the user experience.

6. RESULTS:

The survey data provides answers that are highly informative about the trends of students and professionals on learning. Interestingly, 71% of respondents preferred learning by challenges (like sprints, interactive workshops, case study analysis, redesign challenges, etc). This establishes that an experientialist learning method is hence important for design education. As pointed by Hung (Hung, 2018), this is valid because gamification, especially when done with design thinking, is designed to hopefully ameliorate the practical learning experience since it involves very structured challenges that mimic the real-world contexts hence making it more efficient for the intermediate and advance learners.

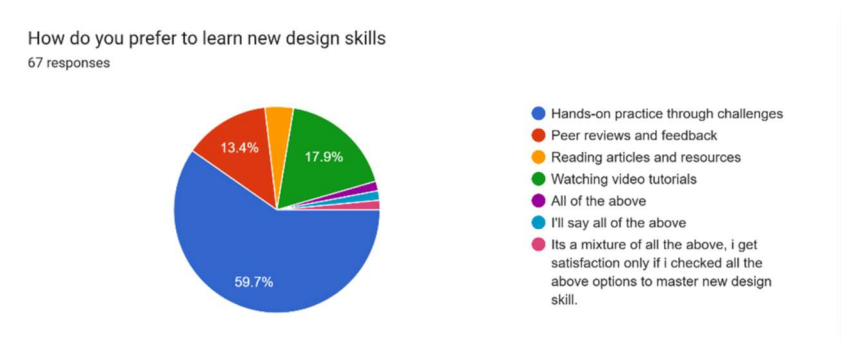

Fig. 1-How do you prefer to learn new skills (From the survey taken by the Researcher)

With respect to gamification features, 62% of participants regarded peer review and community engagement as essential components. This preference then reflects findings of Rapp (Rapp, 2013), in which meaningful gamification strategies such as peer interaction/feedback led to a deeper level of engagement compared with competitive features alone.

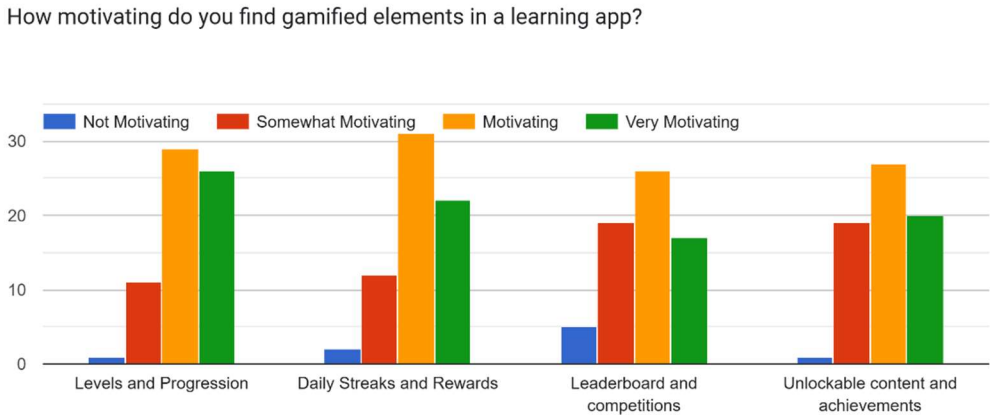

Fig. 2-View on Gamification Features (From the survey taken by the Researcher)

Finally, portfolio showcases as well as skill-based systems were of importance or very important to 78% of respondents, which indicates that professional development and the acquisition of tangible skills are motivating aspects for the learners. The findings are in harmony with the literatures of Domínguez et al. in (Hung, 2018). They imply that the gamified elements based on skills can promote learners' engagement; however, their effectiveness is dependent upon the situation. Situation- specific careful designs are needed for learners.

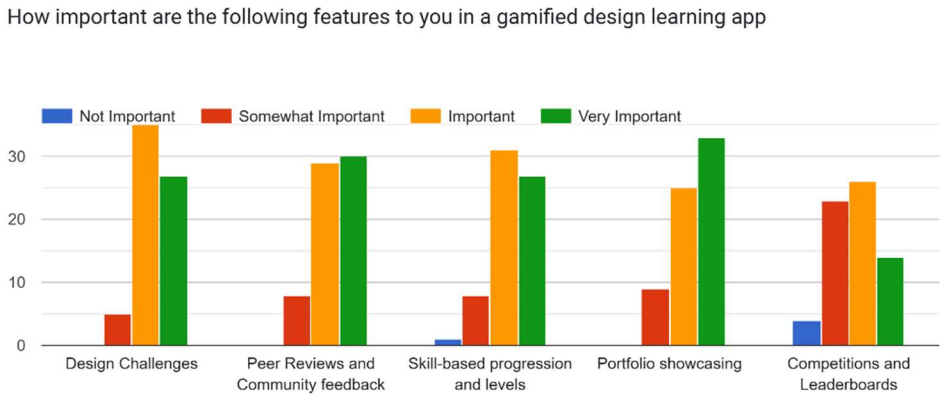

Fig. 3-Important Features on an Online Platform (From the survey taken by the Researcher)

Nicholson's RECIPE model (Nicholson, 2015) provides the entire recipe for successful gamification aligned with the findings. The model comprises six major parts-Reflection, Exposition, Choice, Information, Play, and Engagement-with the aim of creating learning experiences wherein a learner is inspired from within rather than by exterior rewards alone. The majority of the respondents (92%) would like such design challenges to be active. This implies that the model is centered on the Exposition and Information parts. In developing skill, where the model links it with practical life and offers essential understanding, it makes the process relevant and interesting for the learner.The model's strength lies in its ability to:

• Provide autonomy through Choice

• Create contextual learning through Exposition
• Enable critical thinking via Reflection
• Encourage exploratory learning through Play
• Foster meaningful social and system Engagement

In the end, RECIPE turns gamification from a simple reward system into a meaningful and motivating learning experience. People develop real professional skills and grow as individuals.
Other supplementary community learning features like collaborative challenges, interactive learning environments, networking, peer review, and mentorship were also valued very much, considering that 85% of the respondents said they would like to incorporate the mentoring feature into the design. Such conclusions are also drawn by (Leinonen & Eva Durall , 2014)when they say that collaborative learning in gamified settings heightens engagement and supports the sharing of knowledge. In the final analysis, the results reported here emphasize that features of gamification epitomized by challenge, collaboration, and skill-building could enhance learning within a design environment for students and professionals alike. This evidence supports an educational approach to gamification that focuses more on practicality, cooperation, and development rather than competition, thereby facilitating deeper engagement and professional development in the practice of design education.

7. DISCUSSION :

This study's findings offer deep insights into the gamification of design education by validating and expanding already written literature. In this regard, respondents' preference for hands-on, challenge-based learning, amounting to 71%, is congruent with previous studies that emphasized the benefits of active involvement in a task; such aspects make it evident that experiential learning positively impacts motivation and user performance. Hamari et al. (Serafeim A & Christos K, 2022) illustrated this phenomenon in 2014. A strong correlation between gamification components and improvements in learning outcomes would mean that careful integration of the latter holds much promise to enhance learner motivation and engagement in education.

Consistent with Rapp's meaningful gamification approach (Rapp, 2013), which focuses on fostering intrinsic motivation and long-term engagement through deeper mechanisms beyond superficial rewards, the findings of the survey results show that design students are more likely to value practical skill development and work collaboration through peer review over competition from leaderboards. Meaningful gamification is the type that emphasizes the importance of storyline, social connections, and personal growth-excluding all the extrinsic game mechanics, such as points or badges. Instead, it leads to behavior change and critical thinking, opening up to more authentic learning activities. Within educational gamification, the general trend gravitates towards learning events intrinsically motivating and personally significant as opposed to depending on extrinsic rewards gained through gamification.
Further, the questionnaire shows interest in practicing real, everyday design problems and professional development, since 68% of them needed to be updated about the new skills and 92% liked advanced challenges simulating real, professional tasks. These results are similar to those claimed by Nicholson (Nicholson, 2015), who asserts that authentic, real-life scenarios must be included within gamified systems in order to support continuous professional development. Authenticity is necessary for preparing effective and career-ready designers.
Given that the survey highlighted social learning aspects of gamification such as peer review, community engagement, and mentorship, appreciated by 85%, significant importance lies in the collaborative elements. It also illustrated in Self-Determination Theory research that gamified settings needed autonomy and relatedness to generate motivation and performance (Ryan & Deci, 2000). Thus, gamification will surely form an important element of meaningful learning experiences if sustained with a basis built upon community, mentorship, and teamwork that helps support competition

rather than driving it.

Moreover, the fact that more than 75% of the surveyed respondents believe learning on self-directed paths and customized resources is utterly indispensable indicates considerable demand for flexibility and personalization. This finding underscores the clear need for agile learning systems in design education whereby a thoughtfully generated library of resources together with inspirational references could possibly make a significant difference in the learning process. Such characteristics resonate well with the contemporary gamification ideology that emphasizes and encourages a user-centered design approach within which customization and personalization play significant roles in successful learning experiences (Leinonen & Eva Durall , 2014). For instance, tools like the Future Learning Environment (FLE4) exemplify this approach by enabling students to build knowledge collaboratively while customizing their learning paths, allowing them to organize and cluster information based on individual or group relevance. This will allow the learners to solve questions on their own and find answers-learning needs of each learner thus enhancing more responsibility and involvement in the learning process.In other words, the findings here indicate that essential, skill-based functionalities and real-world use cases are key elements of educational gamification that should make it support collaboration rather than competition. Such ideas seem intuitively appealing in how intrinsic motivation and user-centered gamified environments can significantly enhance motivation and learning outcomes in the context of education.

8. CONCLUSION / SUMMARY:

The outcome of the research hints that the way forward in gamified design education is more on the way of meaningful learning experience rather than shallow, superficial game-like elements. The need for hands-on challenge-based learning as preferred by most participants stresses an application end in educational settings. As much as the gaming element may come in handy to boost engagement, the value of substantive learning experiences outweighs traditional competitive mechanics-the leaderboards. The fact that peer review, mentorship, and community feedback are going to be at a premium level without exception would suggest them as core features rather than add-ons. The amount of people asking for self-directed learning pathways indicates what they will need: learning systems that are flexible and adaptive. The massive interest in the skills refresher and real-world design challenges indicate a great potential in using gamification in terms of continuous professional development. Together, these results point toward a general strategy required to be used properly in an attempt for gamification in learning design: an essential combination between practical skills, social learning, and personal mapping of the courses by students, all under the umbrella of true user experience.

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Full Home Address with Pin code / Zip code : (Second Author) :-
Name :- Dr. Mukta Avachat
House Number :- 1201
Apartment/Street/Building :- Rohan Madhuban 2
Area/Near by place :- Bavdhan, PVPIT College
City /Village/ Town :- Pune
District :- Pune
State :- Maharashtra
Country :- India
Zip Code / Pin Code: 411021
Mobile Number with country code: +91 9850625237