An Approach to Enhancing Continuous Evaluation through Self-Reflection among Students of the Foundation Program in Design Course

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Abstract

Continuous evaluation and self-reflection are essential components of design education, promoting critical thinking, creativity, and self-directed learning. An engaging self-assessment is a significant process for cultivating innovative projects. It allows students to evaluate multiple stages in order to improve their comprehension and recognize the scope of improvement. An established approach is the use of design journals or sketchbooks, where students can document their design process, thoughts, and ideas. These journals function as a tool for self-reflection, allowing students to track their progress, identify the scope of improvement, and articulate their design decisions. The evaluation process also incorporates peer feedback and critique sessions, offering students a range of perspectives and insights into their work. This paper explores an approach to enhancing continuous evaluation through self-reflection among students of the Foundation Program in Design Course. The study focuses on how self-reflection can improve students' understanding of their design processes, prepare them for improvement, and ultimately enhance their overall learning experience. The researcher conducted a systematic exploration with foundation year students from different batches and similar assignments to inculcate self-reflection as a valuable tool. This paper discusses the digital real-time feedback approach to facilitate self-reflection with specific criteria. It encourages students to consider their design decisions and iterate on their work in a focused manner. By integrating self-reflection into the continuous evaluation process, this approach aims to encourage students to share responsibility for learning. The objective is to familiarize students with the notion of self-evaluation as an initial informal experience prior to engaging in formal assessment at the foundation level.

1. Introduction

Self-assessment enables a learner to review their creative output. It also enhances the ability for constructive criticism (John, 2016). It is an effective tool that supports the creation of potential outcomes in alignment with the design specifications. Hence, when it comes to a student's creative assignments or projects, it is significant to employ self-assessment in order to achieve specific output and create fresh outcomes. It is significant for the students to reflect on their work to formulate a path for their learning process. A comprehensive inventory, a written analysis, or a one-on-one conversation with the student is a few techniques for evaluating creative work (Beattie, 1997). As per Merry Baskin, analyzing creative work is an important step in rationalizing the outputs while taking a number of supporting factors and expectations into account (Baskin, 2010).

The foundation program in design courses plays a significant role in shaping students' understanding of design principles and methodologies. Continuous evaluation and self-reflection are integral components of this program, facilitating students' learning and growth. Continuous evaluation is a pedagogical approach that involves assessing students' progress and understanding throughout the course's duration. In the context of design education (Beattie, 1997), continuous evaluation is particularly valuable due to the iterative nature of the design process. According to Biggs and Tang (2011), continuous evaluation provides students with ongoing feedback, allowing them to refine their designs and ideas iteratively. In the foundation program of design courses, continuous evaluation takes various forms, including critiques, design reviews, and project assessments. These evaluations help students understand the strong points and concerns regarding their work, encouraging them to experiment and explore new ideas. It also helps students enhance their subject comprehension and learning outcomes (Kim & Lee, 2019).

Self-reflection inspires students to think metacognitively about their design process. It helps them develop an understanding of design principles and their own design practices (Dweck, 2006). Classroom "preview" sessions enhance continuous evaluation by integrating it with an effective self-evaluation system. Students are encouraged to maintain learning diaries, design journals, and sketchbooks to document their design process, thoughts, notes, ideas, and brainstorming. This method encourages students to record and reflect on their continuous work progress (Goldschmidt & Tatsa, 2005).

Peer review (feedback) and critique are other ubiquitous methods to ensure consistent review and enhanced learning. Peer feedback enables students to re-

ceive input from their peers, providing them with a variety of perspectives and insights into their work. Peer critique sessions also help students to critique their own feedback-giving practices, fostering constructive criticism and collaboration (Topping, 1998). Continuous evaluation and self-reflection offer several benefits to students in the foundation program of design courses. These methods facilitate the cultivation of critical thinking abilities in students, enabling them to scrutinize and assess self-projects and the peer projects. Critical thinking ability is essential for contribution in the field of design (Brown, 2009; Cross, 2007).

Bloom (1968) proposed the concept of skill development and competency specific learning in the 1960s, established one of the earliest models of continuous evaluation. Bloom's approach emphasized the value of continuous assessment to identify and address individual learning requirements laying the foundation for later developments in continuous evaluation. The beginning of computer-based assessment tools in the 1980s and 1990s marked a significant advancement in continuous evaluation. These tools allowed for more frequent and efficient assessments of student progress, enabling educators to gather real-time data and adjust instruction accordingly.

The idea of continuous evaluation encompasses a broader range of assessment methods, including formative assessment, peer assessment, and self-assessment. Thus, it reflects a growing appreciation of the value of diverse and multifaceted approaches to evaluating student learning. Competency-based continuous evaluation emphasizes the strengthening of specific competencies rather than the completion of a predetermined set of courses, resulting in a greater emphasis on ongoing assessment and feedback. The continuous evaluation systems are considered to be a student-centered and flexible approach to learning. Continuous evaluation helps gain individualized insights into student learning and provides effective feedback. Continuous evaluation and self-reflection promote a progressive outlook among students, where they are open to feedback and view challenges as opportunities for learning. This attitude is crucial for developing resilience and perseverance for design challenges and effective solutions (Dweck, 2006). It also encourages students to take ownership of their learning and development. By actively engaging in the evaluation and reflection process, students become more self-directed learners with specific learning goals (Zimmerman, 2002). Continuous evaluation and self-reflection are valuable components of the foundation program in design courses, helping students develop analytical skills, a growth mindset, and self-directed learning abilities. By integrating continuous evaluation and self-reflection into the curriculum, educators can enhance students' learning experiences and prepare them for success in the field of design.

2. Objective and Research Question

The success of any educational setting depends on its ability to foster growth and readiness for high-quality output by incorporating in-depth knowledge. This study investigated self-assessment strategies to foster an interactive classroom

setting, drawing on the ideas of deep learning put forth by Michael Fullan (Fullan, Quinn, & McEachen, 2018). After researching the current evaluation systems, it was decided to initiate a well-documented self-evaluation system in the foundation program classroom. Students were encouraged to engage in creative project assessment during the classroom activities. Students were asked to analyze and come up with solutions. The key query was how to accomplish the creative project's desired quality output and deliverables. This activity was designed to foster an environment of informal yet systematic self-reflection.

A set of reflection questions was prepared based on assignment evaluation criteria. A Google document was prepared, and the link was shared with the students. A set of instructions was explained during the classroom session to guide the students through the self-reflection process. The following parameters were initiated to determine the research design:

- The research needs to be carried out as an informal activity with the foundation-year students.
- The self-analysis activity was conducted spontaneously with a group of students to bring out a natural response.
- The method and response were simultaneously documented, as it was a live-response method.
- To ensure that the process is transparent and effective, digital tools were employed.
- The descriptive responses were converted to key-word activities as a result of initial trials to bring simplicity, clarity, and focus among students.

3. Methodology

Recent study on research technique to enhance student continuous evaluation for design projects and assignments emphasizes the need of using a diverse range of assessment methods. Wang and Chen (2020) conducted research that demonstrated how integrating practical design projects with typical textual assignments may provide a more thorough evaluation of student learning. The research highlighted the positive aspects of including peer evaluation and self-reflection into design projects as a means to foster deeper understanding and learning. Another study conducted by Smith and Brown (2019) indicates that including industry experts in the assessment process might provide students meaningful input from real-world situations.

The research methodology centered on the metacognition process in learning. When applied to evaluation, metacognition can enhance students' ability to assess their skills through project self-assessment. The proposed methodology considered the concept of metacognition as a pedagogical tool in the context of evaluation, focusing on students' holistic learning identification. This self-regulation is essential for students for to make goal-oriented progress and develop strategies. The research methodology also adapted the core questions to inspire students to evaluate their own work, fostering a more objective and balanced view of their

skills and potential for growth. In the classroom, the researcher conducted the self-evaluation process using the "Preview of Design Assignment" framework and a real-time feedback activity as proposed by Beghetto & Kaufman (2007). The researcher initiated a classroom conversation to delve into the concepts of self-reflection and its importance in continuous assessment. The researcher created a design brief that had clearly specified objectives. The design brief and objectives were explicitly defined to enable self-evaluation of the creative task (Delerov, 2002). The researcher formulated a series of questions, strategically incorporating a concluding query to encompass the overarching educational objective, potential areas for enhancement, and insights gained from the student's project. The researcher instructed the students to compose a concise and detailed response within the provided real-time Google Sheet. To streamline the process, students were instructed to select a few important keywords from their replies that would indicate the areas in need of development and the offered solutions. The researcher attempted to include the enhancement and suggested an action plan in a question to elicit a focused and constructive response. The researcher provided a dedicated space for students to express their significant learning, thereby enhancing their focus on the learning progression.

3.1. Preparation of Reflection Question

The researcher created a set of questions to evaluate project criteria and learning outcomes. The final question was consolidated and shared with students for live review. Students spent about half an hour documenting their self-evaluation, discussing and referencing the project brief, criteria, and deliverables. The question and reflection methods are enclosed for reference (Figure 1).

3.2. Self-Reflection by the Students

The self-reflection sheet was updated by 80 students across two batches of foundation program. The self-reflection sheet indicates the student's identification of improvisation areas and a course of action within a specified time frame and available resources. By reflecting on their own performance and engaging in self-assessment, students gained insights into their strengths and weaknesses and developed a plan of action to address areas of concern. The process began with the identification of improvisation areas based on the student's own assessment of their performance and feedback received from peers in the randomly allocated peer group. This feedback was crucial, as it provided an external perspective to gain a more comprehensive understanding of their improvement areas and strategies to enhance them.

Reflect and write your answer in no more than 50 words, please feel free to discuss with your peers if needed:
Reflection question: What are your areas of improvement with reference to the project brief, how do you plan to enhance your work further, and what do you intend to learn?

Figure 1. Self-assessment open ended question.

Once the improvisation areas were identified, students needed to develop a course of action description to address these areas. The course of action outlined specific steps to achieve the desired outcome. We informed the students to consider the available resources, including time, materials, and support, when formulating their action plan. We also requested that the students identify their intended learning outcome, integrate it with the scope of improvement and consider possible courses of action.

4. Findings

The research aimed to explore the incorporation of evaluation with learning and development, along with inclusive evaluation for creative assignments. The assignments and projects may represent diverse variables, so the reflection question may differ for each project. Therefore, we identified and placed 3 variables for the students' self-assessment (Figure 2).

This activity involved asking students to select a key word or phrase that represents their understanding or approach to the following criteria.

1) Scope of Improvement: In design education, self-reflection and self-assessment play critical roles in enhancing students' learning experiences and outcomes. Engaging in self-reflection to evaluate one's skills and assess one's work through design assignments and project deliverables is at the core of design pedagogy (Cambridge, 2020). This methodology not only facilitated students in identifying areas for enhancement but also cultivated a profound comprehension of their own design procedures and methodologies. Students voluntarily recorded their self-reflection and examined their work prior to submitting it for the formal evaluation procedure.

2) Recommended Course of Action/Suggestions to Self: The self-evaluation grid, as a tool for self-assessment, goes beyond mere reflection by providing a structured framework for students to chart their course of action. This grid included sections for suggested courses of action, incorporating self and/or peer reviews. By encouraging students to think and propose efficiently for the implementation of these suggestions, the grid promoted a self-guided learning approach, empowering students to take ownership of their learning journey through key-words.

3) The concept of intended learning is central to the efficacy of self-evaluation. By setting clear self-learning goals, students could personalize their learning experiences, positioning them as per their interests and desired pathways. The intended learning variable ensured that students not only understood the goals of the course but also actively engaged in shaping their learning outcomes. Through activities such as the key-word activity, students can visualize their learning paths through activities like the key-word activity, enabling them to identify creative outputs and innovative solutions.

It was observed that students who actively evaluate their own work are more likely to take accountability for their learning outcomes and strive for excellence.

Self Evaluation Keywords activity			
Write down 3 keywords expressing in the following order			
	Scope of improvement	Action needed	Intended learning
Student 1	Neatness	Practice lay outing	Visual Presentation skills
Student 2	Details	Practice in-depth hand work	Enbance Hand Skills
Student 3	Editing	Cross check minor and major errors and improve during self study hours	Enbance Software skills
Student 4	Variations in Ideas	Brainstorm and Mind mapping	Conceptualization
Student 5	Finishing	Practice Hand work	Enbance Visual presentation
Student 6	Original Ideas	Explore Ideas and critique	Enbance Originality
Student 7	Editing concerns	Practice Software during self study hours	Software skills
Student 8	Influenced work	Brainstorm and explore further	Original concepts
Student 9	Technical errors	Edit carefully, print and cross check in actual scale	Software skills and precision
Student 10	Original ideas and diversity	In-depth-exploration	Individual style

Figure 2. Proposed framework for an informal key-word activity for student self-evaluation method for to engage students for deeper understanding.

Mapping of Students concerns regarding Learning Outcome		
(Class of 43 students and 2 Batches)		
Originality & Design Process	Editing & Technical Details	Presentation Skills
48%	72%	36%

Figure 3. Mapping of Students concerns regarding learning outcome.

By incorporating self-reflection, strategic planning, and learning objectives into the assessment process, student's may shape their capacity to analyze their work critically, identify improvement scope, and proactively enhance their design skills. Self-assessment also helps students develop metacognitive skills, which are crucial for lifetime learning. **Figure 3** represents the overall status of the learning requirements as perceived by the students. 48% of students stated the need to improve their design process, while 72% emphasized improvisation for editing and technical details. Thirty-six percent of students felt that they needed to enhance their presentation skills. It also suggests that the students needed more technical inputs to enhance their editing skills. The class visualization helped faculty devise courses of action and further inputs for the class to achieve the course learning outcome.

5. Conclusion

Since the assignments completed in a classroom setting are time-bound tasks, mapping the outcome for the whole class requires measurable stages. More than the completion of the projects in hand, continuous evaluation keeps track of a student's creative progress and development and keeps them inspired to achieve

their full potential. A student benefits from reflection before submitting creative work online, creating a portfolio, etc. The methodical self-evaluation stimulates the process, while each student's suggestions and action plans make it meaningful and individualized. This process of self-reflection led to deeper learning outcomes as students could identify the scope of improvement and take the necessary steps for enhancement. The key-word activity helped students visualize the improvement and learning path. The mapping of recurring concerns stated by students is presented in Figure 3.

By engaging in self-assessment activities, students learn to evaluate their own work objectively, identify patterns in their learning, and develop strategies for improvement. These skills are transferable to other areas of their academic and professional lives, making self-assessment a valuable tool for lifelong learning. In courses where the number of students is significantly higher, self-evaluation becomes a critical need. Keyword self-evaluation activities may be used as an effective instrument for teachers to gain insights into students' understanding and engagement with course material. Countries with a higher population, such as India, have more than 40 students in a class, making it a challenging task to address the individual concerns of students in each and every session. Therefore, sessions need to be conducted to learn self-reflection techniques. By analyzing recurring keywords, teachers can identify areas where students may need additional support or clarification. Teachers can use this information to develop teaching strategies and resources that better meet the needs of students. The keyword self-evaluation activities also provide a holistic and individual view of students' learning progress. By analyzing recurring keywords, teachers can visualize patterns and themes that are most challenging for students. The self-evaluation activities can help teachers identify students who may need further support. By identifying students who are facing challenges or excelling in certain areas, teachers can help these students reach their full potential and design more activities based on foundation program assessment feedback. The assessment methods may be based on several components; however, a key-word system simplifies and enhances a focused perception. Depending on the learning requirements and evaluation parameters, different semesters could devise and develop similar models.

Engagement can also lead to more effective assessment practices. By providing suitable opportunities for students to actively participate and demonstrate their understanding in meaningful ways, teachers can provide necessary guidance to students to develop critical thinking, problem-solving, and communication skills. It also facilitates a constructive and productive learning environment.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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