

HIIT 2.0: DOES BLENDED LEARNING STILL HAVE A PLACE IN POST-PANDEMIC COLLABORATIVE IDEATION?

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ABSTRACT

In 2021 we proposed a novel way of teaching Design Sketch Ideation across a digital platform defined as High Intensity Ideation Training (HIIT). The COVID-19 pandemic precipitated a monumental shift in higher education, compelling educators to rethink traditional teaching methodologies and adapt to the demands of online learning. Now that we have returned to physical teaching environments, does the approach that we suggested still work? Or is there a better solution that utilises the learning from the pandemic, to further develop pedagogy? This paper outlines a framework for HIIT 2.0, utilising the originally digital structure of HIIT in a completely physical studio environment. This paper highlights that the original core benefits of HIIT in enhancing students' creativity, fostering collaboration, and promoting active participation are still achievable in a real-world environment. Through observations and comparisons to previous iterations, the authors found that this new approach outperformed fully digital models and allows for a more meaningful interaction within the student cohort. In this new era, the collaborative and creative skills developed through HIIT 2.0 will be instrumental in preparing students for the evolving demands of the design industry. This approach helps facilitate a future where creativity, collaboration, and innovation remain at the heart of design education, regardless of the challenges or opportunities in the educational landscape.

Keywords: Design education, pedagogy, creativity, community, belonging

1 CONTEXT

The world may have changed post-pandemic, but the needs of the Product Designer and therefore Product Design Student have remained the same. Studies have focused on the Pandemic's effect on the various levels of Creativity, seeing both positive and negative effects surrounding student's creative ability [1], however the tools required to provoke these instances have not adapted to the changing needs of students. Regardless of the education stage the student was within during Covid, there was a significant impact on their development, especially regarding their creative ideation. The loss of the early interventions often causes students to be more unsure when creating novel ideas or forces them to rely more heavily on existing structures taught from A-Level/GCSE Education. To combat this tendency, University educators utilize numerous techniques to activate creativity within students. HIIT was developed specifically to promote this activation during periods of lockdown. Provoking creativity, building belonging through community and collaboration are still fundamental tools that students need to become great Product Designers, but these gaps in creative exploration affect students learning journeys in differing ways. The Author's intention was to adapt the existing successful online system, to an in-person experience, and build on the learning developed to produce the optimum implementation. An important consideration to ideation is team working, as most designers work collaboratively. A key component to successful collaboration is feeling you belong within the group [2]. This was a challenge to achieve during remote working, and perhaps was an area under-explored within the previous iteration of HIIT. Students were often working from isolated bedrooms, meaning creating a sense of belonging was extremely challenging. With a return to on-site teaching, there are opportunities to build community within the group, using HIIT 2.0 to facilitate this. The system can be adapted to utilize the shared space of the students, and actively help to build bonds between students. By using HIIT 2.0 as a scaffold, is it possible to promote inclusion within the group, supporting a student's sense of belonging and therefore encouraging them to collaborate?

2 METHODOLOGY

2.1 Framework Updates

Original paper recommended that the optimum iteration of HIIT would be a blended approach [3]. However, after subsequent years of testing and refinement in post covid teaching, we discovered that the blended approach became a limiting factor to ideation, as students tended to exist behind their laptops and collaboration was reduced. Therefore, for HIIT 2.0 we propose a return to a purely physical environment, utilizing the tools that were developed in a blended world. This paper looks to assess the success of this method and to validate its effect on not only creativity but students' sense of belonging within their cohort. This revised structure is outlined in the below table (1).

Table 1. HIIT 2.0 Session Framework

Stage	Description	Duration
Set Up	Creation and printing of grids (one set per group). Post-it notes.	
30 Insects	Using pre-printed grids, the groups begin to ideate around the concept of 30 different insects.	10 minutes
How Might We Themes	Pre-defined project brief in central grid. Task is to think of 8 themes associated within the brief as a group. An unrelated example is provided to demonstrate concept. This grid is utilized for ideas in the next two exercises.	10 minutes
Group Idea Rotation	Each group member picks a theme and has 5 minutes to draw as many ideas as possible on post it notes and adds to themed grid. After 5 minutes move to the next theme and rotate until all themes are complete. Encourage drawing and being loose with ideas. Ideally 40 ideas per theme are generated.	30 minutes
Cohort Idea Rotation	Student groups rotate around the room building on the ideas of other groups. 5 minutes per group.	20 minutes
Cluster Rumble	As a group, the students cluster their ideas within each theme highlighting shared characteristics. Encourage all to participate in discussion.	30 minutes

The revisions made to the framework were intended to streamline the ideation session, adapting to barriers identified during previous sessions. The session requires some basic resources to be printed, such as the original HIIT template grids [3] and the "30 Insects" template. Beyond this, the sessions simply require a method for collating and categorizing the generated ideas. In this process, Post-it notes were used, but paper or physical modelling could be used depending on the project requirements.

During the HIIT 2.0 session, we utilized the '30 Apples' process first created by Johannsson et al. [4] but added a variant as the cohort had previous experience with the activity. Instead, we utilized '30 Insects' where students used the same template to rapidly generate 30 different insects. The content of the warm-up activity is secondary to the process of rapid ideation. It is the speed and freedom that creates the activated flow for ideation [4].

The overall concept of the HIIT 2.0 session remains the same, again being driven by the fundamentals of the Lotus Blossom technique. However, there were some important modifications made, based on the findings of the previous running. The HIIT 2.0 session was used within a specific project, where the students had been originally world-building in teams. This gave a direct link to the project the students were working on, allowing more linked learning to take place. This linking to the current project allowed for a much more structured approach to the initial theming of idea directions, and thus gave the students more tangible directions to explore. This was a key insight from previous sessions, as the theming became pivotal to ensuring the groups could generate a comprehensive quantity of ideas. If these themes were ill-defined or ambiguous, the students tended to struggle with generating ideas beyond the obvious first links.

The second biggest change to the system, made possible by the session now being in person rather than virtual, was the physical rotation of the groups around the room. This additional step, taking place between the final rotation and the Cluster Rumble (Table 1) allows the other student groups to look at themes and ideas created by the groups in the room, with the intention of the fresh sets of eyes adding value to the ideas. The students rotated several times to add ideas to differing groups, however the time taken at each group was reduced each rotation in an attempt to promote the rapid ideation approach. By this time in the workshop, the students are often running out of ideas and fatiguing, so the movement and reduced time limit aimed to rejuvenate their creativity. Following the Cluster Rumble students took ideas created as a team and began their own project ideation.

2.2 Introducing a Project Brief



Figure 1. Moodboard Generated During “Dreamworlds” Project

Unlike previous HIIT iterations, this version was carried out as a starting point for a specific project. Prior to the HIIT 2.0 workshop, student groups had been working on a project entitled “Dreamworlds”, using text-to-image AI to develop speculative worlds [5]. Project outcomes were videos and Moodboards (Figure 2) introducing these “speculative worlds” to the cohort. These deliverables were then used as starting points to inspire an individual toy design project, taking the themes and characters from these worlds and developing them into toys suitable for children aged 4-5. The HIIT 2.0 session provided a starting point for this, with groups using these Moodboards as visual cues for coming up with HMW Themes. These Moodboards were available throughout the HIIT 2.0 session as a reminder of the project brief and a source of inspiration.

3 DISCUSSION & FINDINGS

3.1 Set Up

In contrast to HIIT, the implementation of HIIT 2.0 significantly reduced the setup time required by staff. Unlike the previous iteration, there was no need to establish individual Miro Boards for each student group, as all participants shared a single workspace, the design studio. Additionally, the use of printed templates proved to be timesaving, eliminating the need to recreate them for subsequent sessions. Another efficiency was observed in the process of grouping students, particularly to ensure that each group focused on Moodboards relevant to their own “Dreamworlds” projects. In addition, running the session in person contributed to less waiting time for students to come online, which allowed for more meaningful engagement during the HIIT 2.0 session. Furthermore, running the session in person meant that student groups could work through the full HIIT 2.0 session without the potential for technical difficulties such as loss of internet connection. Overall, the streamlined setup process of HIIT 2.0 facilitated smoother workshop execution, enabling staff to dedicate more time to the workshop content and interactions with students.

3.2 HIIT 2.0

The adaptability provided by an in-person experience added value to the process overall, allowing for modifications to be made reactively during the session. As the workshop progressed, the Authors noted a gradual decline in students ideation ability, with some groups stagnating due to a drop in attention or mild creative burnout. Once this was noticed in the room, the Authors combatted the decline by modifying the rotation system. The groups were asked to physically move around the room, swapping ideas with other groups. This was highly successful, as the physical movement provoked a reactivation of motivation [6] and added a wider diversification of ideas through a ‘fresh pair of eyes’ approach. The physicality of the workshop also added several benefits to the process. Student groups were able to collaborate much more effectively and efficiently as they could build on each other’s ideas in real time and seek clarity from unclear sketch work. Whilst this was possible utilizing the method online, the

nature of talking over Teams/Skype created a roadblock to the free flow of ideas. Conversation could remain informal in person, and students could build on each other's ideas in a wider collaborative way. It was also easier to encourage students to participate in the session, as being in the same physical space allowed for tracking of disengagement by staff. If they weren't interacting with their team, or their ideation had slowed down it was simple for staff to reengage them or help with a creative prompt. During HIIT, less involved students remained unengaged online, as they were easily hidden behind closed webcams or the anonymous Miro space.

The refinements within HIIT 2.0 provided a wider oversight of the whole session. In the original HIIT format, Teaching staff were assigned to several isolated groups and whilst they could maintain oversight on this selection, it was more difficult for them to see how their group's progress related to the whole cohort. Again, the physical studio environment allowed for Staff to observe all groups and react to slow downs or earlier completions as they arose. This in turn promoted a more dynamic pacing to the workshop, as it could be easily tailored to the development of the method.

3.3 Cluster Rumble

The main aim of the "Cluster Rumble" is to encourage students to highlight key ideas and themes that they can further develop later. In the original HIIT workshop, the cohort worked on a HMW question unrelated to their current studio project, meaning similar ideas could be clustered together and that there would be clear ideas for group development. As HIIT 2.0 was run as part of a larger individual project, the "Cluster Rumble" became more of a challenge, students used the HIIT 2.0 session to come up with initial project ideas. As groups clustered the most suitable options to develop, it became clear that individual projects might become similar. This was observed during the final project hand-in, where although suitable; multiple projects had outcomes with shared characteristics. In future iterations of HIIT 2.0, it is suggested that students share their initial ideas within their groups to understand what others are working on. This would help to ensure there are a variety of project outcomes and encourages students to explore different options, reducing the chances of final project outcomes being too similar and encouraging a wider range of design opportunities.

3.4 Community & Belonging

Both HIIT and HIIT 2.0 help to encourage community building and a sense of belonging amongst the cohort. However, after running HIIT 2.0 it became clear that this is much more achievable in physical sessions. The real-world interaction during the HIIT 2.0 sessions enhanced connection among the students and provided more meaningful opportunities for collaboration and communication, in addition to further inclusivity than the original method.

A level playing field was established through students only needing to bring a pen to participate in the session. This setup is notably more inclusive than original HIIT workshops, which required students to own a digital device to participate, due to Covid restrictions. Removing the need for a laptop/tablet minimized barriers to participation and ensured that regardless of access to technology, students could fully engage in the workshop. This meant that students had equal opportunity to contribute and benefit from HIIT 2.0.

In addition to a more inclusive environment, working in themed groups during HIIT 2.0 allowed students to share ideas and gain feedback from peers on a shared brief. In grouping the cohort in this way, it was observed that there was a greater sense of "team working", as student groups ideated around the same brief, knowing that this would contribute to individual projects once the HIIT 2.0 session was complete. Throughout the session, students were able to bounce ideas off each other, exploring different points of view to improve their ideas. Not only did this benefit the whole cohort in terms of idea exploration, but this approach also provided a starting point for students who felt less confident with the brief to begin with. In working within a group setting, individual pressure to come up with ideas was alleviated, allowing groups to come up with ideas more freely and confidently. By working together in a collaborative setting, student groups were ultimately able to approach their projects with greater confidence and creativity, making for a more inclusive and productive learning experience.

Conducting HIIT 2.0 in the same physical space allowed staff to offer more timely guidance and motivation than was possible online. Staff were able to personalize parts of the HIIT 2.0 session more easily due to being able to monitor the whole cohort's progress, compared to online sessions where staff could only monitor one group at a time. This meant that students who needed additional support and encouragement were still able to participate in the sessions alongside their peers. This not only

strengthened student groups but developed a bond between staff and students. Additionally, these face-to-face staff-student interactions created opportunities for more spontaneous discussions than the previous iteration, meaning that students benefitted from more organic input from staff. In the previous iteration, staff interaction was more focused on ensuring student groups were staying on task, mainly due to staff having to jump between multiple Miro boards and groups. Overall, HIIT 2.0 allows for a more cooperative atmosphere amongst students and staff, promoting teamwork and collaborative problem-solving more effectively.



Figure 2. Students Collaborating in 30 Insects and Cluster Rumble

3.5 Tools for Creativity

The HIIT 2.0 method acts as a key activator to creativity within the physical space. The method is a useful tool in early project stages, as it actively promoted creative collaboration through the sharing of ideas. Students are encouraged to produce sketches quickly, with a reduced focus on quality, which reduces barriers to creativity by negating the ‘I’m not good at sketching’ mentality. A focus on quantity over quality ensures that all ideas are equal, and students do not become precious of their ideas. The early-stage implementation also ensures that ideas can be built on by several students after the workshop but directed into different areas of exploration through tutorial. This democratization of the ideas allows for a wider set of students to build on initial ideas in a similar way to a team design consultancy and helps to support those weaker Ideators who in traditional methods may have just focused on their first idea. Generating a wider sample of initial ideas allows for a more diverse iterative process and gives those less creatively minded a point to develop from.

A key failing of the original HIIT method was within the digital tools usable within Miro. At the time of writing the original method, the Authors believed this was a useful feature of the workshop, as it provided a more level playing field of ideation by students. With the implementation of HIIT 2.0 it was clear that this was in fact a negative levelling tool, as it caused all ideas to be drawn poorly (due to the nature of the mouse-pen interaction). By running the workshop in person, the sketching ability of others helped to lift the ideas of everyone, as a particularly strong sketcher could redraw an idea presented in another way. Combined with the focus on quantity over quality, as well as the instant Tutor input, any negative feelings towards poor sketching could be quickly addressed and mitigated. This became a key differentiator between the two approaches and provided a benefit to all participants.

4 CONCLUSIONS & RECOMMENDATIONS

Overall, the Authors feel HIIT 2.0 was a more successful implementation than the previous HIIT framework. In the original HIIT sessions there were spaces left within the Cluster Rumble template. In HIIT 2.0, 574 ideas were collectively generated within 1 hour by 52 students. These ideas were also

much more visible to the whole cohort, as in HIIT online the ideas were restricted to individual Miro boards. The physical space enabled the room to be effectively filled with ideas, allowing all students to engage with the process more fully. This shared space and idea generation, also enable stronger community links to be created, ever building on senses of belonging, as well as a deeper activation of creativity through the fast-paced, in-person 30 insects.

Practically, the sessions were more efficient to set up and easier to facilitate. There was less administration required, with printing being the only prerequisite to the session, compared to online set up which required multiple Miro boards being set up and managed.

The speed and pacing of the workshop allow staff to take a more reactive approach, allowing timings to be adapted to suit the needs of the students within the space. A result of this was that a wider oversight of the learning of whole cohort was possible, as there was much less chance of students or groups becoming isolated. This in turn promoted greater staff and student relationships, further embedding the collaborative qualities required to be a designer.

The belief from HIIT was that the digital tools were enablers to creativity, in effect 'levelling the playing field' for all students. However, the tools themselves were limitations as they restricted everyone to the level of drawing with a mouse/finger. HIIT 2.0 demonstrates the power of physical sketching, from the quantity of ideas created, to the collaboration of the students in developing the ideas. It also provided many opportunities for peer learning, as those with stronger skills could advise those with weaker ability, and they could also learn from the techniques the excellent sketchers were using.

Students were polled after the session to gauge their response to it, and 85% of participants scored the session a 3/5 or above for how satisfied they were. This highlights a limitation with the original study, as no feedback was received from it, whilst demonstrating the success of this current iteration.

With both iterations of HIIT there are limitations, particularly when considering the type of project students are using it for. Following HIIT 2.0, students took ideas from the sessions to use in their own individual projects. As a result of this, final project outcomes were similar, as all students had taken the best ideas from the HIIT 2.0 session forward individually. Therefore, it is suggested that HIIT 2.0 either be run as part of a group project where students can collectively develop ideas, or be delivered as a stand-alone workshop, giving students the skills for rapid ideation outside of assessed projects. A further iteration that could be students completing HIIT 2.0 as individuals, however this risks the loss of collaboration inherent in the group project style.

Overall, there are arguments for using both versions of HIIT, depending on need and circumstance. There are clear added benefits to HIIT 2.0, promoting student creativity and a sense of belonging, which the Authors believe make it the optimum iteration.

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