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Unlocking creative potential: idea generation training for design students

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For most designers, the ability to generate creative and compelling design ideas is an essential skill. Achieving creativity often requires breaking away from traditional thinking and exploring new and unconventional ideas, thinking beyond the limits of conventional thought processes. While the most unconventional and wild ideas that emerge from this exploration are often the ones that lead to innovative and creative design solutions later stage, nurturing the early seed ideas into viable design solutions requires more than just exploration. It also requires a thorough understanding of creative logical thinking principles, such as abductive reasoning and bisociation, as well as experiencing them through practice. In addition, it is also crucial to generate the early wild ideas into a reasonably acceptable design concept that may exist at the intersection between novelty and reliability where MAYA (Most Advanced Yet Acceptable) region is located. By using forced connection with randomly selected stimuli, this paper proposes a pedagogical technique or a drill, called Random Ideation, which enables students to experience those principles and practice them through a group workshop. Its board game-like process asks participants to develop a design scenario by employing the given conditions with a user, environment, and activity. We hope this method could serve as a drill for design students to practice thinking outside the box and cultivate early ideas into plausible solutions.

Keywords: bisociation; outside of box thinking; MAYA principle; group ideation practice

1 Introduction

Once designers have identified user insights, emerging trends and technologies through research, ideation process to generate innovative and creative ideas is begun. Often, a group of individuals from diverse backgrounds collaborate to utilize brainstorming techniques to generate ideas collectively. During a brainstorming session, participants aim to contribute novel ideas that draw from their individual experiences, viewpoints, and expertise. They then work to integrate and synthesize these ideas while following the established guidelines (Figure 1). This process enables individual designers to act as catalysts for generating new ideas that they may not have been able to conceive of independently.

The ideas in the early ideation stage are usually wild, absurd, and unrealistic with lower feasibility and reliability, but some of them have the potential to evolve into more innovative solutions later. Hence, the primary goal of a brainstorming should not necessarily be to generate a solution idea, but rather to promote the sharing of diverse thoughts and experiences among participants. Such interaction could stimulate new ideas in each other's minds that they may not have previously considered.

Figure 1. IDEO's the rule of brainstorming

To encourage creativity, designers are often asked to "think outside the box" that is a way to go beyond traditional and conventional thoughts. In this situation, the box represents the world we currently live in representing a familiar and safe zone that contains information we already familiar. However, designers who aim to develop innovative and creative solutions must be able to step out of this comfort zone, explore unfamiliar territory, and navigate back to the known zone, the box, despite the potential risks outside of the box. Then, this metaphorical "box" represents the boundary between our existing knowledge and unexplored ideas that have yet to be discovered. (Corazza. G, 2014).

When exploring ideas beyond the box, the ideas that are the wildest and most unconventional are more likely to lead to innovative and creative design ideas later. However, it is also true to say that the further an idea strays from the norm, the riskier it becomes and requires more iterations to refine it. Once the early ideas are generated, the process of cultivating the initial idea into a final solution begins. This process involves nurturing the initial seed ideas into fruitful design solutions. To effectively navigate this process, designers should be familiar with creative logical thinking process, such as abductive reasoning (Kolko, 2009) and bisociation (Koestler, 1964).

2 Bisociation

Our brains are wired to prioritize survival, which is why we naturally avoid unfamiliar situations where risk may be present. This instinctual need for safety was crucial for our ancestors, who had to avoid any potential threats to their survival (Kaufman, S.B. ; Gregoire,C., 2016). However, by consistently exposing ourselves to new and challenging environments, our brains can gradually adapt to these situations and become more comfortable with uncertainty. For instance, practicing public speaking multiple times can help overcome the fear of it. While our brains tend to gravitate towards safe and familiar thoughts, designers must resist this inclination in order to generate creative ideas. To do so, it is necessary for design students to practice themselves regularly to think outside of the box and

resist the pull of conventional thinking. By consistently pushing themselves to explore new ideas and perspectives, the student designers can unleash their creative potential and produce truly unique work.

Some claims to possess the capability to think outside conventional linear thought processes and generate creative concepts. Among them, Arthur Koestler (1964) insisted that creativity emerges from the intersection of two distinct frames of reference and coined the term "bisociation" as a type of thinking processes to generate novel ideas. He argued that routine thinking skills operate on a single "plane," while the creative act always works on more than one plane. According to him, our thinking mechanism behind any creative act is bisociation, which involves the combination of two or more seemingly unassociated frames of thought, rather than mere association. Specifically, he asserts "bisociation" involves blending two seemingly unrelated thoughts into a new, meaningful combination through comparison, abstraction, categorization, analogies, and metaphors.

- "I have coined the term 'bisociation' in order to make a distinction between the routine skills of thinking on a single 'plane', as it were, and the creative act, which, as I shall try to show, always operates on more than one plane."
- "Bisociation uncovers, selects, re-shuffles, combines, synthesizes already existing facts, ideas, faculties, and skills". Today we take the electric light bulb for granted, but for it to be created it took Edison to bisociate the two previously unrelated concepts of "light" and "electricity". (Koestler. A, 1964)

Furthermore, Koestler views bisociation as a sudden moment of insight that spontaneously connects previously unrelated experiences or concepts. This flash of insight results in the creation of something new and innovative. Given this fact, it might be essential for design students to regularly engage in bisociation for idea development through colliding and combining unrelated and diverse pieces of information until sparks of creativity ignite.

In similar vein, Steve Jobs, the co-founder of Apple Inc., stressed creativity involves connecting various pieces of information. He stressed the importance of collaboration as a means of bringing together diverse information and people with differing experiences. Jobs stated that creative individuals often feel guilty when asked how they achieved something because they simply connected experiences they had and synthesized new ideas. This is due to their broader range of experiences or deeper reflection on their experiences compared to others.

> *"Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn't really do it, they just saw something. It seemed obvious to them after a while. That's because they were able to connect experiences they've had and synthesize new things. And the reason they were able to do that was that they've had more experiences, or they have thought more about their experiences than other people. Unfortunately, that's too rare a commodity. A lot of people in our industry haven't had very diverse experiences. So, they don't have enough dots to connect, and they end up with very linear solutions without a broad perspective on the problem. The broader one's understanding of the human experience, the better design we will have." (*Beahm, G, 2011).

3 MAYA (Most Advanced, Yet Acceptable) principle

By breaking free from conventional thinking and pushing the boundaries of creativity, unconventional ideas can serve as the starting point for developing innovative design concepts. With an iterative process of refinement and testing, these initial "wild seed" ideas can evolve into practical solutions. However, what does the journey of nurturing these "wild seed" ideas into full-fledged innovative solutions look like, and what specific methods can be employed to facilitate this process?

Raymond Loewy, a renowned industrial designer, introduced the concept of MAYA (Most Advanced, Yet Acceptable) as a principle for designing products that strike a balance between novelty and acceptability. Loewy believed that consumers' decision to adopt a new product is influenced by two opposing factors - their attraction to novelty and their resistance to the unfamiliar. As Charles Kettering once remarked, "People are very open-minded about new things – so long as they are exactly like the old ones." (Gorman. C, 2003)

According to Raymond Loewy, a design reaches the MAYA stage when a new design faces resistance to change and consumers show reluctance to make a purchase. Specifically, when 30% or more of consumers display an unfavorable response towards its acceptance, the product has entered this stage. This concept would be positioned on the edge of the box, neither too far outside nor at the center, as shown in Figure 2. To determine the appropriate level of development for their ideas based on consumer preferences and desired product positioning, designers can use design research, which may involve targeting the MAYA zone or a point within the box (Gorman. C, 2003).

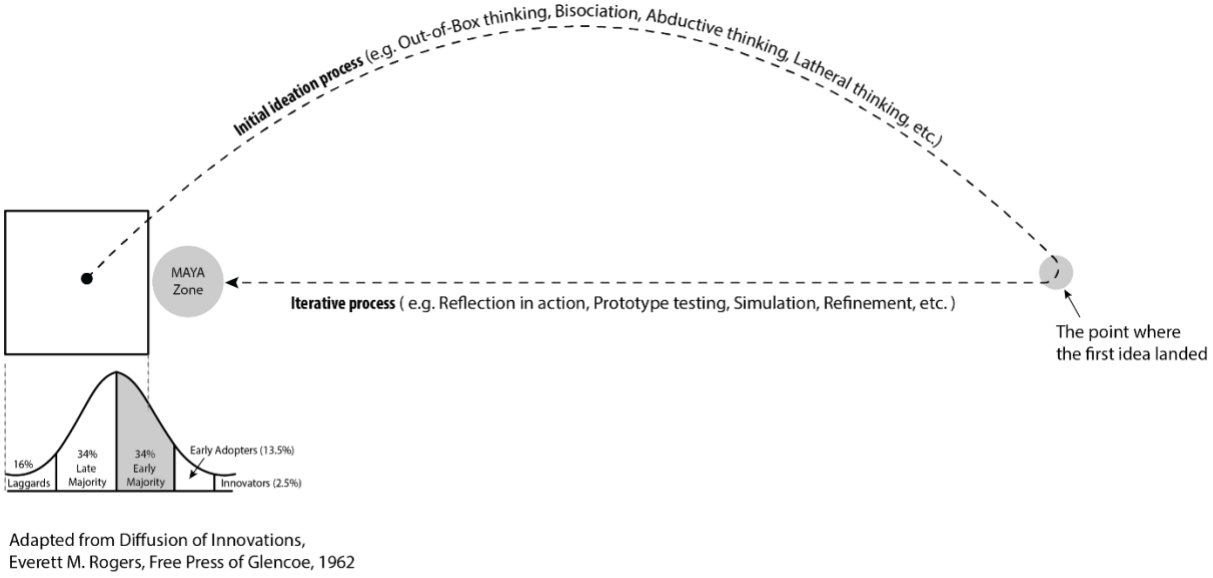


Figure 2. The physical location of MAYA zone and the journey of idea development through outside of box thinking.

Unlike pure artists who prioritize their own ideas over audience demands, designers who practice user-centered design must balance their initial creative ideas with consumer acceptance. Depending on the target audience, designers need to position their ideas appropriately and develop them to a degree that meets consumer preferences. For instance, a design that is too conventional may quickly become outdated for early adopters seeking innovation, while an overly innovative design may not suit the tastes of laggard consumers. As shown in Figure 2, designers have a responsibility to develop their ideas outside the box while aligning them with consumer preferences.

4 Training drill for ideation through Bisociation – random ideation

Although the theoretical principles for creative ideation are discussed, it is almost impossible for students to learn and fully understand the without actually experiencing and practicing them. To address this challenge, some techniques have been introduced to facilitate the ideation activity. For instance, "Forced connection" is developed to facilitate people to combine randomly selected pictures or other stimuli to generate a novel idea to a given design challenges. (MacCrimmon; Wagner, 1994). Edward de Bono (1970) made further modifications to this method to enhance lateral thinking process by using some random stimulation. He proposed three techniques, namely using a dictionary to generate a random word, formally selecting a specific book or journal from a library or employing a routine to choose an object from the immediate surroundings (De Bono, E, 1970). These modifications were intended to encourage innovative and unconventional ideas by introducing new and unexpected stimuli. For example, he suggested one could randomly pick a noun from a dictionary and associate it with another situation about which he or she is thinking. For example, if one chooses a word "nose" being applied to an "office photocopier", one of the possible ideas might be suggested such as 'the copier could produce a lavender smell when it was low on paper to alert staff' (De Bono.E, 2015). The basic idea behind those approaches is to enhance one's creative thinking process by connecting unrelated elements together which are similar to the notions such as bisociation.

Although this approach was developed to generate ideas, there are limited training methods that enable students to practice ideation with supporting justifications. Considering this, this study proposes a group ideation drill where students practice the idea of bisociation by merging unrelated words together in an enjoyable way like playing board games to generate initial ideas, and then develop them to the range of ideas that are both novel and acceptable in the user context, known as the MAYA zone. In this regard, this paper proposes a group ideation technique, called 'Random Ideation (RI)', as an exercise drill for student designers to experience and practice the notion of bisociation and abductive thinking to enhance the collective creativity.

Originally created as a group ideation tool to aid collaborative idea generation with both design professionals and non-designers, this method was introduced at another design conference before (Chung,W., 2019). However, after several trial runs, it was discovered that this method is better suited as an educational tool that enables students to explore the concepts of bisociation, out-of-the-box thinking, and the MAYA stage. For this reason, it was revamped to better suit educational purposes.

4.1 Procedure of RI method

The Random Ideation (RI) follows a specific procedure. Firstly, the fundamental principles of human creativity, such as bisociation and abduction should be explained for its participants. Then, each team is given three stimulus tables - Activity, Environment, and User tables - as well as a random ideation storyboard (Figure 3). Each team member rolls two dice to select a column and row number from the each table, then selects a word from the corresponding table. The goal is to choose unrelated and nonsensical words to make the conditions more unexpected. The 11 x 11 matrix table is for greater randomness, with a total of 121 stimuli per table (Figure 4).

The selected words are then written on the random ideation storyboard for all team members to see. For example, the team may select "taxi driver" from the user table, "taking a shower" from the activity table, and "convenience store" from the environment table.

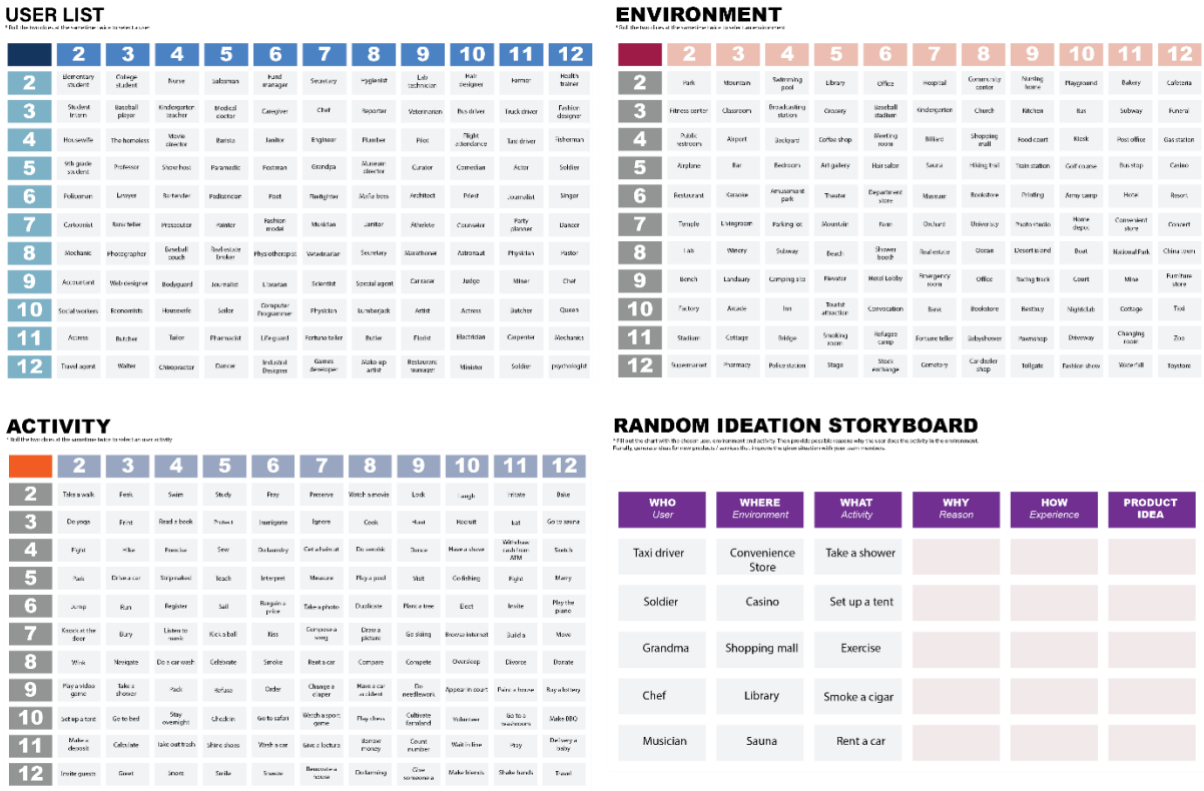
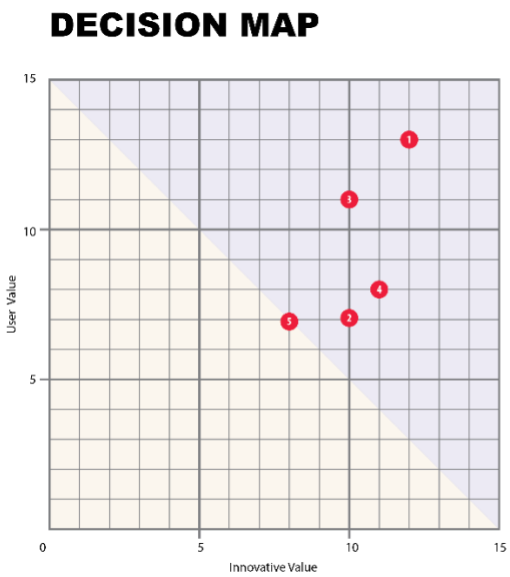


Figure 3. The three stimulus tables (i.e., Activity List, Environment List and User List).

After each team member has selected the three words from the three tables, the team then try to find a possible explanation for why "the user" would do "that activity" in "that place." In the example given, where the conditions were nonsensical, the team presented a possible explanation for why a taxi driver might take a shower at a convenience store. They suggested that "a taxi driver pulled over at a convenience store to take a shower to avoid driving while drowsy." The team further elaborated on this idea by suggesting that "a convenience store is an ideal place for a taxi driver to stop by because they are almost every corner of the block in a big city like New York or Tokyo." However, the team acknowledged that taking a shower at a convenience store in the middle of the day may seem impractical in real situation. To address this issue, they proposed an interesting product idea, a mint-scented face steamer booth, which represents a novel idea rather than a traditional shower booth with water.

Once a team has evaluated and discussed various ideas based on specific criteria such as novelty, feasibility, and relevance for innovative value, as well as convenience, reliability, and benefits for user value, they choose one idea that scores the highest. These criteria and values can be tailored to fit the design project's unique requirements. The team then scores each idea based on the evaluation and uses dots to visualize the number of ideas on a decision map, as shown in Figure 4.

Following the selection of their best idea, each team creates a poster to visually present their most promising design idea. The poster is designed to give a sales pitch to other team members, showcasing the unique features and benefits of the proposed design (Figure 4).



DESIGN CONCEPT EVALUATION TABLE

	Innovative value				User Value			
	Novelty	Feasibility	Relevancy	Total (X)	Convenience	Reliability	Benefits	Total (Y)
Concept 1	5	3	4	12	5	4	4	13
Concept 2	3	5	2	10	2	2	3	7
Concept 3	1	4	5	10	4	5	2	11
Concept 4	4	5	2	11	1	2	5	8
Concept 5	5	2	1	8	3	1	4	7

Figure 4. Decision map and Design concept evaluation table

While making the poster, all students are given an imaginary fund of $100,000 to do mock-investment in the most promising ideas, excluding their own team's design. Then each teams deliver a sales pitch to persuade other team members to invest in their design. Then, the team with the highest investment fund at the end of the session is declared the winner (Figure 5).

Figure 5. The sales pitch using a team poster by student groups and the mock-investment.

The mock-investment phase plays a crucial role in helping students understand the concept of MAYA by selecting the most advanced yet acceptable idea. Some students may initially think that their ideas are creative and appealing to others. However, through listening to other teams' presentations and observing the amount of investment they receive, they may realize that their ideas are not as

innovative or compelling for others. You can refer to Table 1 for detailed guidelines on the entire random ideation procedure.

Table 1. The guideline of Random Ideation

Sequence	Procedure
1	Roll two dice twice to generate a number for each column and row to make a selection for each contextual stimulus from the User List, Environment List, and Activity tables.
2	After each team member has chosen their three contextual stimuli, the team takes turns brainstorming potential scenarios to explain why "the user" is performing "the activity" in "the place." It's encouraged to come up with unusual and nonsensical word combinations.
3	To ensure that all team members can see the chosen words, the team should write them on the Random Ideation Storyboard in a visible manner.
4	The team must generate ideas to explain why the combination of selected stimuli makes sense.
5	For each idea generated, the team must develop a rationale to explain the chosen situation.
6	The team should come up with a product idea that improves the situation.
7	To evaluate the ideas as objectively as possible, each team member should provide a numeric score for each idea based on the given evaluation criteria.
8	After each idea has received a score, the team should mark each idea on the evaluation map with a dot. This visual representation of the numbered scores allows for a clear comparison of each idea.
9	The team should then create a poster that explains the design and supports its sales pitch presentation.

4.2 Underlying mechanism of RI method

As previously discussed, our brain is wired to prioritize our safety and tends to resist thinking outside the box, especially when risks and solutions are uncertain. To counteract this tendency, the proposed RI method involves randomly selecting three unrelated words, which forces us to break out of our usual thought patterns. These words are then used to create a plausible scenario, where each word represents the subject who performs an action, when the situation occurs, and what action is taken.

For example, with a combination of three completely unrelated words such as "taxi driver(who)," "convenience store(where)," and "take shower(what)," students are required to come up with a plausible reason and scenario for why a taxi driver would go to a store and take a shower. Through this process, they can experience the concept of bisociation. If desired, the selected three words can be modified to similar but slightly different words in context. For instance, "taxi driver" can be replaced with "bus driver" or "pilot," and "store" can be substituted with "market" or "supermarket." This provides some flexibility for team members to create scenarios.

The selection of three unrelated words often elicits a sense of amusement among team members, which can help to break any initial awkwardness or tension, creating a more relaxed and comfortable environment for the workshop.

The students are now encouraged to think about the reasons behind the user's behavior (why) and how a product or service (what) can assist that user (how) in order to create a comprehensive scenario. This process allows students to share diverse perspectives and opinions, which can serve as a catalyst for generating ideas through bisociation. Various scenarios created from different word combinations are evaluated based on user and market value, and the team comes to an agreement on the most innovative and feasible scenario through discussions. The design scenario that receives the highest score based on team members' discussions can be represented visually through a decision map, while the other scenario design concepts are also presented.

5 Key findings and recommendations from participant's survey

The proposed method has been applied in numerous idea generation workshops, both in professional and educational settings, to foster participants' out-of-the-box thinking process. The method was first implemented in a workshop held in March 2014 in South Korea, where participants included both non-designers and design professionals. Following its initial success, this method was subsequently introduced and practiced in several design workshops in educational settings. These workshops attracted students, including both non-designs majored one seeking to learn creative ideation techniques and industrial design students in South Korea and Canada.

Following each workshop, participants were asked to answer the four voluntary survey questionnaires, aimed at gathering their thoughts and opinions about the method. The survey questions were as follows:

1. "During the workshop, have you experienced the out of the box thinking moment? If yes, can you describe it in specific when and how?"
2. "In your own words, what are the things that you like most about this method?"
3. "If you disliked the workshop, which elements of the workshop did you dislike the most?"
4. "What was the most challenging part of the workshop process?"

The feedback from these surveys was invaluable in evaluating the effectiveness and impact of the proposed method. Regarding the first question about experiencing out-of-the-box thinking moments, several participants reported that these instances occurred while they were trying to create a rationale for seemingly absurd combinations of the randomly selected and unrelated words. This finding suggests that the method effectively encouraged them to explore unconventional ideas beyond traditional associations. Additionally, some participants noted that the out-of-the-box thinking experience predominantly took place at the initial stages of the ideation process. As the workshop progressed, however, they found themselves gradually transitioning back to more conventional thinking. This observation underscores the dynamic nature of the creative process, where initial ideas can evolve from unconventional to more practical and grounded concepts over time. The insights obtained from these responses will significantly contribute to our understanding of how the method incorporates the concept of bisociation and that of MAYA during the workshop. Below is some of participants' feedbacks for the first question, "During the workshop, have you experienced the out of the box thinking moment? If yes, can you describe it in specific when and how?"

- *Yes. The assignment with the 3 random words helped me to think of something I normally wouldn't think about. This helped me to come up with things that were unusual.*

- *I had more out of the box thinking experience at the beginning, but I felt I came back into the box during the process of making sense of the product ideas.*
- *The first ideas were basically the description of existing products/services, but at some point, I started to force myself to think about things I have never seen before, even confirming on Google search if those products were new. At the time, I felt I was thinking outside the box.*
- *I felt like the method just leaves us outside of the box, and our job was to come back to the box. The process of making the idea realistic was challenging and fun.*
- *The situations really push you out of the box because they aren't very common ones you would usually think of.*
- *I came up with some crazy ideas then tried to apply to a practical application.*
- *We were bouncing around an idea when a light bulb moment happened, and I felt like a saw the situation from a whole new angle.*
- *Yes! During the workshop, our group picked physical therapist, emergency room, and kiss. This combination is almost impossible to relate to. However, the concept of "kiss" is not only physical contact, but also includes a series of human interaction concepts such as hugging and touching. When we think about this layer beyond the limits of "kiss," the three key words become more connected. It took some time to come to out of the box thinking - Probably after the 2nd or 3rd set of factors... It becomes more fun at that point.*

To assess the level of participant engagement with the method, the second question, "In your own words, what are the things that you like most about this method?" was asked. The responses indicated that the majority of participants found the method to be a fun and engaging exercise. The recurring words in their answers included "fun," "creative," "engaging," and "out-of-the-box experience." The author suggests that the board game-like process, which involved rolling dice and generating absurd word combinations, likely played a crucial role in breaking the ice and fostering interaction among the participants. This aspect of the method appears to have contributed significantly to their enthusiasm and active participation in the workshop. The positive feedback received underscores the effectiveness of the method in creating an enjoyable and stimulating environment for idea generation. It also highlights the importance of incorporating elements that encourage creativity and interaction to enhance participant engagement and overall workshop success. Below is some of participants' feedbacks for the second question, "In your own words, what are the things that you like most about this method?"

- *It was fun, creative and wasn't too serious. It gave combinations we wouldn't think of otherwise! And it let us ideate very out of the box.*
- *I enjoyed it because it was different from the typical lecture that simply asks for ideas for new design ideas. Instead, it provided a way of thinking.*
- *It encouraged us to be creative in a fun way.*
- *We could be very creative & out of the ordinary.*
- *It allowed us to find weird new connections to things not usually thought of.*
- *Rolling dice to get the random object, situation & environment were fun. It really helped us to think differently.*
- *Fun and engaging - Randomness amongst categories kept you thinking big and exploring (and laughing).*

- *I like how it forced us to find links between unrelated things. The options were fun, but we still put lots of thought into it and went through the motions of the early design process.*
- *It was a great networking process with a very lively atmosphere. A lot of people's opinions could be heard.*
- *I particularly enjoyed the aspect of showcasing group products and voting. It was not only interactive and engaging but also allowed everyone to exchange ideas and preferences, enabling us to learn from one another. This collaborative process enhanced the overall experience and contributed to a richer learning environment.*
- *Shaking the dice to choose words and answer questions was a fun and creative way to engage with my team members. It added an element of unpredictability to the process, too.*
- *When it is asked to invest in other teams' ideas after their presentations was noteworthy.*

In response to the third question, "If you disliked the workshop, which elements of the workshop did you dislike the most?", the participants were asked to share any drawbacks or negative opinions about the method. Although the number of negative responses was relatively small, this feedback is considered invaluable for improving and enhancing the proposed method. Collecting and analyzing the negative feedback provides valuable insights into potential areas for improvement. The willingness of participants to provide honest feedback, even if it includes criticism, also showcases their engagement and commitment to the success of the workshop. Addressing constructive criticism and identifying any shortcomings will enable the refinement of the method, making it even more effective for future workshops and activities. Below are the participants' feedbacks for the third question, "If you disliked the workshop, which elements of the workshop did you dislike the most?"

- *After listening to the presentations from our group and other groups, I couldn't find any ideas that felt like they were thought outside of the box. It seems that all the groups stayed within conventional thinking and didn't break free from the familiar boundaries.*
- *It was difficult for me to invest because I didn't fully understand the final presentations of each team.*
- *It was difficult to fully grasp the exact details of each team's design idea during the final presentation due to the limited time for each presentation. The lack of understanding made me difficult to confidently invest in each team's design ideas.*

We concluded the survey by asking the fourth question, "What was the most challenging part of the workshop process?" about the challenging aspects of the proposed method, aiming to identify opportunities for further improvement. This process was essential in enhancing the approach and addressing any potential difficulties that may arise during the workshops. Interestingly, a recurring aspect was that many found it challenging yet enjoyable to derive new ideas that make sense from three randomly selected, seemingly unrelated words. Initially, when presented with these three words, most participants felt puzzled and unsure about how to proceed. At this point, the guidance of the instructor proved to be crucial. The instructor's expertise in providing examples of how seemingly absurd word combinations could evolve into design ideas showcased the potential of such creative thinking. This demonstration of possibilities added an element of excitement and intrigue, making the exercise even more enjoyable for the participants. Overall, this feedback sheds light on the valuable role of the instructor in facilitating the ideation process and encourages the consideration of further strategies to overcome initial challenges. By incorporating these insights, we can continue to refine

the method, creating a more enriching and rewarding experience for participants in future workshops. Below are the feedbacks for the last question, “What was the most challenging part of the workshop process?”

- *The hardest part is how to jump out of the box and put three words together.*
- *I think it’s very difficult to connect the extracted keywords to create a new product that is reasonable and can solve the problem.*
- *There was such a moment of outside of box thinking at the beginning, but after more group discussion and communication, we slowly opened up our conventional thinking mode.*
- *We encountered difficulties at the beginning of the discussion because we started by thinking only around the users themselves or the positioning of the keywords themselves and did not analyze them in terms of the situations they might encounter and the impact the environment might have on them, so at the beginning of the discussion we just linked a few words together.*
- *In my opinion, the most challenging aspect of the project was team cooperation and communication. It was evident that individual ideas emerged easily because everyone had their own unique perspective. However, relying solely on personal thoughts had its limitations, too. When team members' ideas collided, the real challenge was to foster comprehensive consideration, complement each other's viewpoints, and integrate all results to generate new and innovative ideas. Finding a way to effectively handle these differences and achieve synergy was the most challenging part of the process.*

In addition to the survey, some participants raised concerns about the ambiguity surrounding the criteria for novelty and reliability in the proposed design ideas. Depending on the nature of the product ideas and the market situation, there may be variations in how these criteria are applied. However, since the method aims to support designers in collaborative idea generation, it is reasonable for the focus to lean towards fostering novelty. In this context, nurturing creativity and innovative thinking becomes a central goal, as generating fresh and unique ideas is crucial in the early stages of product development. The emphasis on novelty encourages participants to explore uncharted territory and break away from conventional approaches, leading to potentially groundbreaking concepts.

As these ideas evolve and progress towards implementation, the assessment of reliability and feasibility becomes more prominent. At later stages of development, the ideas can be subjected to a more thorough evaluation to ensure their practicality and suitability for the market. By recognizing the different phases of the design process and adjusting the criteria accordingly, we can ensure that this method effectively supports young students in generating valuable and inventive ideas throughout the product development journey.

6 Conclusion

The paper highlights the potential benefits and strengths of the proposed group ideation method, Random Ideation. The method leverages storytelling or scenario building, enjoyable and familiar activity for everyone, making it delightful drill for design students to exercise their creativity muscle in a team setting. It encourages students to engage in both outside-the-box thinking through bisociation and inside-the-box thinking using the MAYA principle. The paper emphasizes that thinking

outside the box alone may not be sufficient to develop a creative design idea, and returning to the "MAYA" region, where novelty and reality converge, is crucial to ensuring practical and feasible solutions. The unique combination of suspending disbelief, exploring novel ideas, and converging on feasible solutions through collaborative decision-making makes the proposed method effective in generating creative design ideas. Additionally, the introduction of mock investment with fake cash adds an element of competition and a sense of "winning," bringing participants back to practical considerations and encouraging them to evaluate their ideas in real-world market contexts. This reflects the importance of balancing creativity with practicality in the design process. In summary, the method's multifaceted approach contributes to a well-rounded and effective method for generating creative design ideas. It empowers participants to think imaginatively, consider practicalities, and arrive at innovative and viable solutions through collaboration and critical decision-making.

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