
Creative Practice Applied in a Higher Education Class

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ABSTRACT

In a society where information is widely available, being able to filter and understand facts is paramount to envision, devise and design practical solutions concerning a particular problem, and further consider its implications. In a higher education context, skills such as creativity and rational thinking are trained throughout a course, encouraging understanding and problem-solving skills, essential aptitudes in an everchanging world. Creativity can transform an idea of an existing domain into a new one, it is all about being curious, examining, connecting, experimenting, and playing with the surroundings, and thus incubating an entire new version or set of ideas, adding value to the process. It is the ability to reason and create connections with previously acquired knowledge that generate new ideas. The interest in creativity as a scientific area began in the 1960's, with advertising result of interaction between the individual thoughts and sociocultural context, creativity is a systemic and non-individual process (Getzels et al. 1966), involving a cognitive and emotional dimension. The purpose of any training is to stimulate awareness, develop skills, foster challenges, motivate, and attain accomplishments. In higher education institutions, students are encouraged to ask difficult questions, identifying the state-of-the-art, learning specific tools, applying methodologies, indulging in research and practice, developing soft skills, building character, and ultimately improving individual social-economic status. To face global challenges, it is necessary to understand its purposes to develop a global awareness, essential for present and future developments. The first step towards any (design) solution is to outline the problem, amongst all involved, correlating behavior, technology, and business in a reasonable manner. Most design output depends on creativity, and reasoning, which can be trained to generate ideas and solve specific issues. This research, in a higher education context, regarding applied creativity in a classroom, aims to further develop the creative process design students, using creative methods such as brainstorming, registering ideas and thoughts, using visual references and metaphors from an array of circumstances, in a project-based learning environment, fostering a creative output.

Keywords: Creativity, Brainstorming, Design, Pedagogy, Multidisciplinary

INTRODUCTION

Creativity is a cognitive process that allows individuals to address underlying issues in unconventional ways (Sawyer, 2013). It requires curiosity, observation skills, acquired knowledge, previous experience, encompassing different subjects, and the ability to think beyond common constraints.

In a global setting of fast changing paradigms, novel career opportunities unconsidered a decade ago contest human resources to develop skills like reasoning, resilience, business awareness, information analysis, communication, leadership, as well as empathy and respect, changing individuals and accordingly social habits.

Like most creative activity, design is a human-centered, solution-driven, problem-solving activity, to come up with tangible solutions to specific problems. It outlines specific issues, research correlated subjects, gaining specific expertise, towards creating a specific solution. Design is nowadays gradually considered a multidisciplinary planning assignment, developing sustainable human-centered solutions. Whereas in the past it endorsed consumerism disregarding the product life cycle, without a holistic approach to improve overall wellbeing.

CONTEXT

Creativity is a process that involves emotional intelligence, learning, understanding, and experimentation that nourishes on culture, art, history, technology, sociology, cuisine, connections, insights, listening to elders, acknowledging traditions, fostering side projects, observing people, playing, empathizing with problems, examining available resources, adapting existing solutions, experimenting and evaluating, making mistakes, reflecting, taking notes, drawing on paper, sleeping on it, laughing, being flexible, synthesizing and above all thinking. (Springer, 2020) Summarized in the formula:

something + *something different*' = creates something new with additional value

Amongst common creative methods such as: 5W1H, SCAMPER, Design Process (Form, Function, Meaning, Value, Sustainability) (Springer, 2021), Brainstorming is one of the best known and extensively used in the Design context. Brainstorming first emerged in 1948 with Alex Osborn an advertising executive who published *Your Creative Power*, a philosophy that encourages team thinking. Brainstorming is presently described as a group problem-solving technique that involves spontaneous contribution of ideas from all members of the group (merriam-webster.com). The following approach is adapted from the original technique:

1. Define the problem (topic)
2. Generate ideas envisioning a solution (± 30 min)
 - a. Refrain from judgment and be respectful
 - b. Encourage strange ideas and suggestions
 - c. Focus on quantity over quality
 - d. Improve and combine different ideas
 - e. Draw and write-down all ideas
3. Constructive criticism is essential to outline ideas and outputs

The increasing interdependence of systems in a global environment with complex, competitive, rapidly changing circumstances, cognitive abilities are fundamental to achieve success. In a higher education setting, project-based challenges establish context for students to learn and understand, adapt, and overcome adversity in preparation to future challenges. Students are thus encouraged to work in teams, conduct research, make use of tools and methodologies, convey assertive debates, perform peer-review presentations, and creating a portfolio towards an autonomous life in the real-world.

Process

Design as a process outlines issues, correlating behavior, technology, and business towards a sustainable and holistic solution. Its outputs depend on creativity, tools, processes, and methodologies (such as brainstorming). However, this requires flexibility and understanding of what matters to the those who interact with the design, anticipating behavior (frustration-acceptance-comfort), considering context and user-experience, making connecting and therefore creating added value.

“If you want to learn creativity, never focus on just the fact. Seek out the underlying conceptual structure and the deeper meaning” (Sawyer, 2013).

Design as a methodology requires flexibility and understanding of user, context, and user-experience, “connecting the dots” to create added value. This usually re-quires an immersive space with power sockets, quality Wi-Fi, funny people, and good vibes, that foster the development of ideas, where people collaborate, share knowledge, and share work-in-progress.

Good design changes the way we perceive and use devices, in a specific task or ritual, and ultimately feel about it. Though, the pandemic pressed the world to go on-line, particularly in a higher education context, and tasks were switched to asynchronous, and classes on-line, students mostly accomplished learning despite technological shortcomings with broadband connection.

Nowadays Individual designers require a broad skillset to create solutions, such as: creativity, research, technical knowhow, typography, color, print process, materials, ergonomics, time management, business, teamwork, communication, presentation, but above all awareness that they are creating today viable solutions for tomorrow’s world in a holistic manner.

The increasing multidisciplinary nature of design requires a comprehensive understanding of multiple issues, overcoming preconceptions, creating viable and integrated solutions fostering innovation. So, encouraging project-based learning exercises and real-life scenarios, develops intrapersonal skills such as adaptability and collaborative work, skills necessary for future endeavors that nurture adaptability, and resilience to handle expectations building character.

Project-based learning has been adopted as a learning tool in the higher education context, cultivating real-life scenarios and practice. In addition,

creative and playful assignments allow students to overcome obstacles by introducing distinct methods to accomplish a given task (James & Nerantzi, 2019). Therefore, students are given a design brief, explaining constraints and objectives, to be accomplished in a timeframe, thus developing an intuitive problem-solving mindset.

Project-based activities and inquiry-based learning, requires students to engage in hands-on assignments and critical thinking, using a transdisciplinary approach correlating science, technology, engineering, arts, and mathematics, to overcome complex problems and so acquire know-how.

In a higher education context tutors should empower students, encouraging these to accomplish project-based assigned, enabling understanding and acquiring know-how, asking questions, and fostering a problem-solving mindset. Considering the creative mindset individuals should develop:

1. Pursuit for general knowledge
2. Understanding of several key subjects
3. Curiosity and ability to understand underlying issues
4. Ability to observe and make connections
5. Flexible mindset and prolific imagination
6. Reasoning skills and a self-assessment aptitude
7. Willingness to experiment new ideas
8. Resilience to cope with frustration
9. Oral and written communication skills

More important than knowledge itself, is the ability to transform knowledge into new concepts and artifacts, developing a value chain that includes marketing, sales, advertising, distribution, and customer service (Cropley et al. 2011).

A first-year student states on creativity classes: “I’ve learned that with the right stimulus it is easy to come up with ideas and think of new things in a very raw manner. That a room with 40 individuals, brainstorming can fill a book of innovative and promising ideas, and that an image can have several meanings. We only see what we are used to seeing, and to see things from another perspective, we need to leave of our comfort zone and think and out of the box.” while another stated that: The most important thing I learned was to think outside the box. To understand that there are multiple possibilities and different realities and trying to know them and understand it will open your mind and boost your creativity.” (Digital Marketing, ISEC Lisboa 2021/22)

Brainstorming, as design methodology, used in to generate ideas and solve issues can be trained like a set of skills. It implies individual that nourishes a curious mindset and a will to learn, avoiding preconceptions that hinder perception, improving creative thinking and intuitive problem-solving skills.

A creative mindset is an asset for business and essential for any designer, especially in a global dynamic environment which requires constant awareness an adaptation. The idea underling creative thinking is to prevent the constraints of rational thinking, as encapsulated by the expression “thinking out of the box”.



Figure 1: Necessity is the mother of invention - christmas tree.

The future designer ought to be engaged and accountable in creating a holistic world, aspiring a better tomorrow, with a social conscience, moral principles, and a cultural awareness in a global setting. As an African proverb asserts, it takes a village to raise a child, implying that a community provides safety, encourages constructive interactions, influencing individual beliefs and behaviors.

Creative manifestations come in multiple forms as shown in Fig. 1., these require mental flexibility considering context, user-experience from frustration towards comfort, understanding behavior, relating different issues to create added value, and consequently changing society. As Einstein said: *“The formulation of a problem is often more essential than its solution”*.

Observing and questioning who is doing what, why, when, where, and how; fosters imagination, and thus interpretations in distinct manners, consequently incubating new ideas, that differ amongst individuals with distinct experiences, thus causing distinct responses and creating dissimilar solutions.

Unquestionably, a socio-cultural background and education influence an individual in different manners, acquiring experience and developing specific cognitive skills. Nevertheless, any conscious understanding involves awareness and applied practice, in a learning-by-doing setting. Everyone can learn and improve their creative skills by observing beyond the obvious, making connections and fostering ideas, using project-based methodologies, and learning assignments to devise solutions.

CONCLUSION

The creative process is an engine for transformation that uses interdisciplinarity in-sights, reframing problems, towards the devising of solutions. Creativity is essential to all disciplines and activities, particularly so in design and innovation. However, this ability to understand, relate, generate, refine, and communicate ideas occurs only with constant practice and personal development. It requires general knowledge as well as specific understanding regarding a specific context.

A creative individual is one that transforms acquired cultural domains (perceptions), incorporating new elements, and thus creates new perceptions, and thus values. Instructing an individual to become a designer requires fostering curiosity, understanding of applied tools and methodologies, developing critical-thinking skills (research and evaluation), asking the right questions, to devise solutions for a better world. Quite often a playful persona with a curious mindset, interested and informed in various subjects, with a broad understanding and an eye for detail.

Brainstorming, as creative process when used properly, allows a group to generate several ideas, leading to the design of products, services, and processes. It involves not only a broad understanding of different subjects but also specific knowledge, but most of all, it requires a curious mindset capable of connecting dissimilar subjects with an unbiased attitude towards an improved output.

Future problems will be distinct, combining multiple areas of knowledge and requiring innovative stimulus, “always/never” dilemmas will rise, but also opportunities to design better solutions, using creativity, critical thinking, and intuitive problem-solving involving learning, dialogue, and collaboration towards flexible solutions.

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