

Design Thinking: Jump on the Bandwagon or Cogitate a while

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Abstract

Design thinking has gained massive prominence in recent years and being heralded as most promising problem solving approach that not only enhances cognitive capacities and skills but also has empathy and collaborations as its crucial corner stones. With the NEP 2020 also signifying its importance, there is a need to chart out a map of how design thinking needs to be adopted as both a philosophy and a process in teaching learning environments. This paper attempts to examine the researches done in the area of design thinking to answer key research questions like - Does design thinking actually paint a promising future for our education systems? Should education systems be overly excited towards adopting design thinking? The researches reveal that design thinking has tremendous potential to foster and enhance skill development, cognitive capacities as well as collaborations. However there may be certain challenges stemming from curricular demands to time constraints and resource management amongst few others that need resolution.

Key words- Design thinking, problem solving, curriculum, education, teachers, students

Introduction

The buzz words apparently revolutionizing our education system currently is design thinking. The recent focus of research has overtly brought to surface the scholarly link between teaching and design (Boling, 2010) though this connect is not very new (Schon, 1983) as the world of academia for past 30 years has been dialoguing on it. Tracing the roots of design thinking leads to its primary association predominantly with

engineering and architecture (Renard ,2014) however the recent literature studies markedly place design thinking amongst other disciplines as well (Wrigley & Straker, 2017).

According to Cross (2001) designers in order to solve problems, use design thinking as an approach and view it as a cognitive skill. Design thinking is abductive in nature and leads to discarding traditional solutions for creative problem solving (Fischer, 2015; Donar, 2011)

Design Thinking Amalgamation with Education

A crucial review study was done by Lor (2017) on applicability of design thinking in education. This study concluded that design thinking can understood in terms of (1) design thinking in curriculum design, (2) design thinking as a teaching-learning approach, (3) teacher training & support for design thinking. Rauth et al. (2010) revealed that different competencies like prototyping skills, emotional skills, capability of adopting perspectives, empathy and a certain mind-set. In design the issues dealt with are real world and problems dealt with are open ended and their solutions are creatively generated with bridging both theory and practice (Hoadley & Cox, 2009). Design thinking enables students to become better team players (Çeviker-Çinar et al., 2017) and supports the implementation of 21st-Century Learning as per a study done by Retna.K (2015).

The researches done in this area have now shifted towards understating its growing role in education as well (Panke, S,2019). Needless to say this idea also percolates through our education systems. Education as a dynamic field is constantly subjected to challenges and design offers ample scope for deliberation on problem solutions (Jonassen, 2000).

Teachers and Designers: The Connect

Norton & Hathaway (2015) have credited the teacher's role to be similar to that of a designer. Teachers as designers surfaced in the theory of technological pedagogical content knowledge as given by Mishra and Koehler (2006). Their theory brought into perspective how educators are constantly involved in designing learning experiences using different tools and pressed on how teachers therefore are to be considered as designers of classroom transactions, engagements, learning experiences and knowledge. Koehler and Mishra (2005) note that teachers must have learning experiences that place them overtly in the role of designer. and

be dynamic, creative designers (Kirschner, 2015). As per Carlgren (1999) teachers are now to be make shifts from traditional domains of implementing what was already existing and be inventors, constructors and designers of the practice of schooling.

While the new Educational Policy steadily enters our education systems and demands a complete overhaul, teachers are faced more than ever with creating innovative pedagogical practices and processes. Deciphering the overall vision of NEP puts on forefront the need to integrate paradigm of design thinking into the educational system. This would imply eroding of the culture of rote learning, mass uniform evaluation and skill devoid education and pave way for critical thinking, and experimental learning.

Some pertinent question that surface in this regard are:

Does our education system acknowledge/credit teachers and learners to be designers of the learning process?

Do teachers view themselves as designers?

Are the teacher and learners in education system silent designers or unaware designers?

This paper attempts to examine the researches done in the area of design thinking to answer two key research questions

R 1: Does design thinking actually paint a promising future for our education systems?

R 2: Should education systems be overly excited towards adopting design thinking

In order to answer these questions several researches were studied in context of situating them in perspective of design thinking exclusively for education. Given below are some focal areas and issues as addressed by the researches.

R 1: Does design thinking actually paint a promising future for our education systems?

Enriched Learning: A report by Ferguson et al (2019) highlighted that design thinking enabled environments fostered playful learning. As per Watson (2015) students responded to design thinking as joyful experiences with creative expression and playful. Several researches proved that design thinking in education led to innovation, problem solving, creativity and collaboration (Kwek, 2011; Scheer, et al 2011). Introspecting design thinking, as a Constructivist learning strategy researches done concluded that there was motivation

amongst students for openness to ideas, creativity as well as exploration and problem solving (Scheer & Plattner ,2011; Bruton ,2010; Carrol ,2014) Retna (2016) implied that teachers consider perceive that skills such as creativity, problem solving, communication and team work to have enhanced due to design thinking as well as empower students to develop empathy for others within and beyond the community.

Affective Domain: Acceptance: Non Judgemental attitudes, acceptance and comfort with people with different backgrounds and opinions and openness are all elements of empathy as key to the user-focus of design thinking (Carlgren et al., 2016). A shift in focus towards people, interactions with them and their activity were shown by students in a study by Aflatoony et al.,(2018).

Ambiguity/ Uncertainty and Resilience: Design thinking a process involves trial and error approach towards solution and there are chances of failures which are viewed as aids to learning and celebrated, introspected with openness and used as means for furthering more creative successes in future (von Thienen, Meinel, & Corazza, 2017).

Creative Confidence: According to study done by Munyai (2016), when non designers engage in design thinking they gain creative confidence, and equip themselves with the ability to take responsible actions in wake challenges. Bowler (2014) highlights that design engagements and thinking like designers builds creative confidence. As designs lead to widening the scope of imagination without much of constraints, creative confidence nurtures and this as per Carroll et al (2010) is a crucial aspect of learning. Renard (2014) advocated design thinking to be adaptable and flexible enabling student's capacity developments.

R 2: Should education systems be overly excited towards adopting design thinking?

According to Kimbell (2011), design thinking is under theorized and understudied. It is ambiguous and may lead to learners experiencing confusion and frustration (Glen et al. ,2015). Diverse group of students with low threshold for risk taking may not find design thinking appealing enough. In such cases the facilitator has to strategically model design thinking as per the learner. In overcrowded Indian classrooms with fixated curriculum, time table rigidities and time bound examinations, these individual design strategizing practices may be difficult to adopt. While learners presently are expected to deal with 21st century problems however they are not engaging much in problem solving endeavours. Only 16 percent of teachers reported they were

giving problem based projects to their students (Project Tomorrow, 2009). Researches have shown that teacher experience in design thinking area is another major issue.

The nature of design thinking dictates it to qualify less as standalone subject in comparison to being interspersed with different discipline areas and owing to its interdisciplinary/ multidisciplinary outlook it must well be integrated in academic content (Carroll et al. 2010). There is pressing need for knowledge and experience encompassing a number of disciplines in order to explore design thinking to the fullest. This also translates into demands put on students which may at times be not in sync with their educational experiences and cognition capacity. With too many cognitive demands put on students to think from unconventional perspectives yet empathize at the same time, design thinking may actually not seek its purpose fully if the learners are not prepared or motivated enough.

Design engagements require tremendous motivation for both learners and facilitators as they require long deliberations to generate novel and elegant solutions. According to Harden & Moore (2109) there may be scope of misunderstandings when teachers fail to meet the learning related expectation of the students. The constant question of how would a learner gain through the design engagements. Will learning be have measurable outcomes? The context driven nature of learning would require remodelling not only the learning scenarios but also moulding the mind-sets. Such achievements are long term and slow to attain. The long term focus of design thinking is on constructivism and experiential learning which require competencies and skill development. The ideation phases are generally long and require sufficient time to critically evaluate ideas. In the rigidities of conformity to the curriculum and time paucity these phases may be hurriedly done or neglected. This may lead to shallow ideas being pursued with comprises on creativity along with frustrations, anxiety and inability to cope with uncertainty and failures. Kwek (2011) and Bruton (2010) have pressed the demand for design implementation training to be given to teachers.

Indian education systems largely have retained the assessment pattern followed over the years. With the advent of design thinking, these patterns will pose challenges as the skills involved are difficult to assess and the mind sets promoted are long term and not singularly to be evaluated . Creativity, empathy, collaboration, creative confidence are all long term and cannot be really assumed about or evaluated (Hennessey & Mueller, 2020).

Conclusion: Weaving a Thread across Researches

While design thinking looks all positive and is in fact the need of the hour, yet there is no denying that it comes with its own set of challenges stemming from both teachers and students. On one hand creativity lacks, confusion, frustrations, ambiguity, dearth of novel ideas and collaborations may prove to be hurdles for students. On the other hand teachers may face challenges in terms of curriculum inflexibility, time constraints, assessments, resource and space crunch along with insufficient training and motivations. There appears to be a need to divulge more in-depth regarding the strategies for application and an understating of the experiences of teachers and student's as they engage in design cycle. The design models and theories validating the efficacy of design thinking need to be examined in multiple setting, levels and from multiple perspectives. Design based curriculums need to be evolved and examined. Corollary to this is the focus on realizing the criticality of transforming the teachers mind sets towards acceptance of design thinking based pedagogies while suitably addressing their training needs. There is no denying that the immediate future will present before scenarios of extensive usage of design learning and hence the preparation for the same has to rapidly gear up.

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