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Design Thinking Principles for Leadership Competency Development

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Abstract

In this quasi-experimental study, we tested an evidence-based learning activity designed to have students internalize the importance of empathy and its effect on a field work report ("Reflective Learning Project") that they have attempted. 33 consented participants from an undergraduate management course were randomly assigned to 1 of 4 different conditions, namely design thinking (active) ("DT-A"), design thinking (passive) ("DT-P"), functions of management (active) ("FM-A") and functions of management (passive) ("FM-P") where they are required to complete a voluntary online activity. After reading the relevant materials, students assigned to DT-A and FM-A conditions were asked to write a letter to help a student solve an ambiguous management problem and students under DT-P and FM-P conditions were asked to summarise their learning. Thereafter, students who went through these sequences were measured on their display of empathy in the Reflective Learning Project they submitted. There are no concrete outcomes deduced due to limitations faced as a pilot run. However, we found that students who went through the design thinking (active) and functions of management (active) sequences displayed higher empathy than the students who went through design thinking (passive) and functions of management (passive). Our future studies will attempt to find ways to attract 4-5 times more participants so as to examine and report more concrete outcomes from the analysis.

Keywords: Empathy; Social-psychological interventions; Design thinking.

Introduction

Many changes have taken place in the business world in the past few decades. As the world grew to be more globalised and modern work places more diversified, it is becoming increasingly crucial for contemporary leaders to have the competency to effectively navigate through the complex world of work relationships.

Transformational leadership is one leadership style that answers the need of current business world. It is a type of leadership that is built upon a leader's ability to establish a common understanding with others (Kellett, Humphrey, & Sleeth, 2002). While a transactional leader may expect the employees to act as they have been instructed, a transformational leader would inspire the employees to perform more than what they are asked to do (Hartog, Muijen, & Koopman, 1997). Transactional leaders look at their employees as means to ends or cogs in a machine. In contrast, transformational leaders look at their workers and see people with wants, needs, and desires (Bass, 1990). There has been a shift from transactional leadership style to transformational leadership style (Bass, 1990) and modern business school instructors want to groom their students into transformational leaders.

To be an effective transformational leader who is able to manage interpersonal relationships, empathy is a key asset the leaders should possess. Empathy allows the leaders to respond and calibrate their behaviours and actions through putting themselves in their employees' shoes. Empathy is therefore, imperative to effective leadership in the modern world of business (Holt, 2012; Isaac Mostovicz, Kakabadse, & Kakabadse, 2009; Tzouramani, 2017).

Cognitive Empathy

Empathy is generally agreed as multidimensional, with cognitive and affective components (Davis, 1983; Davis, Luce, & Kraus, 1994). The focus of this project is on the cognitive component, which is at times called "perspective-taking". Cognitive empathy is a conscious and intellectual process of making one comprehend another person's emotional state or point of view (Davis, 2009; Stephan & Finlay, 1999). It is essentially, an understanding of what someone else is experiencing, without having to feel it yourself.

Empathy can be developed over time (Holt, 2012). It is thought to be fully developed when a person is in the mid-twenties (Greimel et al., 2010). Therefore, it is suitable to include empathy development in an undergraduate business curriculum for the purpose of leadership development.

Design Thinking

Due to the constraints of fitting in competency development in an already packed curriculum, we had the idea of developing and measuring cognitive empathy skill through the introduction of the Stanford d.school's version of the design thinking process to students. This interpretation of design thinking focuses on the process of empathise, define, ideate, prototype and test (Brown, 2008). Figure 1 shows this model of the design thinking process.

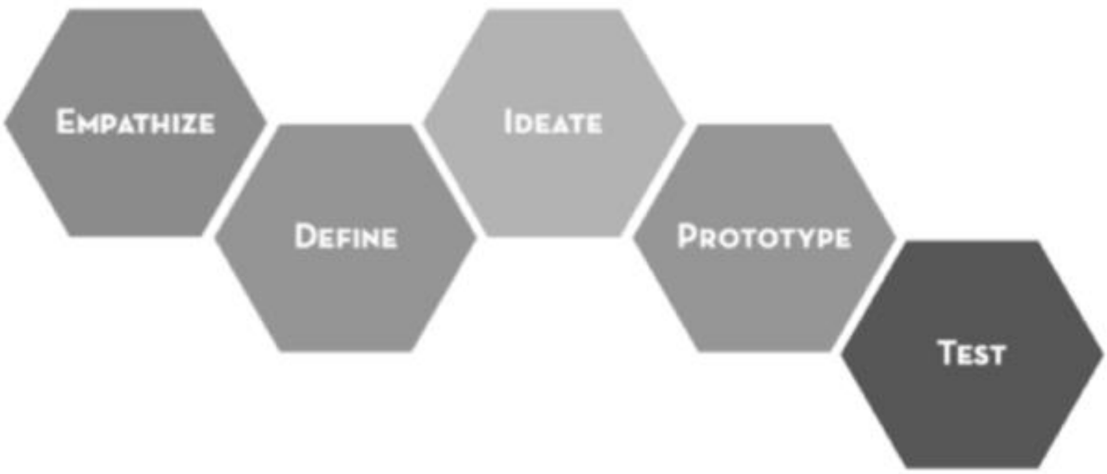

Figure 1: Stanford d.school's Stages of Design Thinking (Stanford d.school, 2012)

This process emphasises the use of empathy. The designer need to understand profoundly the needs, wants, and desires of the people he is solving the problem for (Brown, 2009; Stock, Bucar, & Vokoun, 2017). Empathy allows designers to "recognize that their seemingly inexplicable behaviours represent different strategies for coping with the confusing, complex, and contradictory world in which they live in" (Brown, 2009, p. 49). Through empathy, designer would be able to define the problem and brainstorm solutions that ultimately leads to the prototyping and testing of a solution that meets the obvious and hidden needs of people.

Social-psychological Interventions

Design thinking process is introduced to students through the vehicle of a social-psychological intervention. This intervention is an exciting new development in psychological sciences. It is an intervention or exercise that is typically short, appears conventional and similar to everyday experience (Walton, 2014). It is targeted to change how people think or feel. These interventions relies on identifying and removing cognitive blocks which has influenced how students view the world (Spitzer & Aronson, 2015). Through what appears to be innocuous activities, students are forced to engage in effortful cognitive processing that addresses the cognitive blocks and gives preference to different ways of thinking (Walton, 2014).

To put this into the second phase of the preliminary pilot run, we developed three hypotheses to examine the intervention.

Hypothesis

Hypothesis 1: Students who wrote the advice writing activity following [design thinking (active)] (DT-A) process will be more likely to display empathy in Reflective Learning Project than students who wrote the summary writing activity following [design thinking (passive)] (DT-P) process.

Hypothesis 2: Students who wrote the advice writing activity following [functions of management (active)] (FM-A) process will be more likely to display empathy in Reflective Learning Project than students who wrote the summary writing activity following [functions of management (passive)] (FM-P) process.

Hypothesis 3: Students who received resources on design thinking (active) and functions of management (active) process will be more likely to display empathy in Reflective Learning Project than students who received resources on design thinking (passive) and functions of management (passive) to display empathy in the Reflective Learning Project.

Methods

33 undergraduate students enrolled in a business management course voluntarily consented to making their course activity data and assignments available for analysis. 18 of these students were female, and 15 were male. 28 of these participants were in their second year of university studies. The remaining were in either their third or fourth year of studies.

Before the start of semester, an optional learning activity was made available online via Learning Activity Management System (LAMS) sequences. LAMS allows course developers to sequence online activities and resources for teaching purposes (Ghiglione & Dalziel, 2007). The course coordinator helped to develop the content and structure of the LAMS sequences but was blind to which sequence was provided to which students. Students were randomly assigned to one of the four versions of the resources. Each version of the sequence presented a slightly different set of resources. For the functions of management conditions (FM-A and FM-P), students received content emphasising the functions of management, project management, and decision-making. In the design thinking conditions (DT-A and DT-P), students received content emphasising design thinking, empathy, and decision-making. For students who went through the "active sequences", i.e. the FM-A and DT-A sequences, after going through the materials and resources presented to them, they were asked to write a short letter of at least two to three paragraphs as reply to a prospective student in response to her query. For students who went through the "passive sequences, i.e. the FM-P and DT-P sequences, after going through the materials and resources presented to them, they would write a short summary of what they had learnt through these materials and resources. Table 1 contrasts the differences between each conditions.

Table 1: LAMS Sequence Resource Descriptions by Condition

Resource	Condition			
	Functions of Management (Active)	*Functions of Management (Passive)*	*Design Thinking (Active)*	*Design Thinking (Passive)*
Module Overview	Description of what needs to done in this LAMS module	Description of what needs to be done in this LAMS module	Description of what needs to be done in this LAMS module	Description of what needs to be done in this LAMS module
Video 1	Introduction to the principles of management	Introduction to the principles of management	Introduction to empathy	Introduction to empathy
Video 2	Introduction to project management	Introduction to project management	Introduction to design thinking	Introduction to design thinking
Reading 1	Interview with Henry Mintzberg on the qualities of a good manager	Interview with Henry Mintzberg on the qualities of a good manager	Interview with CEOs on design thinking's application to management	Interview with CEOs on design thinking's application to management
Reading 2	Summary of recent psychological findings relevant to business decision making			
Written output by students	To write an advice to a prospective student in response to her query	To write a summary of what the student has learned from the LAMs module	To write an advice to a prospective student in response to her query	To write a summary of what the student has learned from the LAMs module

Students were informed that the activity was voluntary and they would not be graded, but it was nonetheless important to the course's learning outcomes and objectives. The activity remained active for one week.

In the ninth week of the semester, students had to submit an individual report ("Reflective Learning Project") of 1500 words on the topic of management challenges for the 21st Century. All students must submit the individual assignment which carries 25% weightage of the total course score.

During the final week of the semester, a researcher unaffiliated with the course approached students to voluntarily consent into the research study and complete a short survey to capture their demographic information and academic motivation.

At the end of the semester and after receiving consent from the students to review their coursework, a researcher coded the letter, the summary and the Reflective Learning Project for the presence of the design thinking and management terms and for displays of cognitive empathy. For this paper, as phase 2 of the deliverables, we are only focusing on the results and analysis from the Reflective Learning Project.

For all of the qualitative measures of the presence of cognitive empathy and number of management and design thinking concepts across the 4 conditions, a second coder was used to provide a calculation of inter-rater reliability. As with the first coder, the second coder was blind to conditions. With respect to identifying the set of management and design thinking terms, a custom set of specific guidelines and standardized agreed coding definitions and themes were used.

Results and Discussion

Hypothesis 1*:*

Students who wrote the advice writing activity following [design thinking (active)] (DT-A) process will be more likely to display empathy in Reflective Learning Project than students who wrote the summary writing activity following [design thinking (passive)] (DT-P) process.

In this hypothesis, we examined if the resources received and type of writing activity at the end of the design thinking activity sequences make an impact on the students' display of empathy in the Reflective Learning Project. When we explored into design thinking activity sequences (DT-A and DT-P), the results, as shown in Figure 2, indicated 62.5% of students who went through the DT-A sequence showed empathy in contrast to only 50% of students who went through DT-P. Regardless of what the chi-square analysis indicated, we found that students who went through DT-A sequences tended to display higher level of empathy in their writing activity when compared to students who went through the DT-P sequences.

Hypothesis 2*:*

Students who wrote the advice writing activity following [functions of management (active)] (FM-A) process will be more likely to display empathy in Reflective Learning Project than students who wrote the summary writing activity following [functions of management (passive)] (FM-P) process.

When we explored into functions of management activity sequences (FM-A and FM-P), the results, as shown in Figure 2, indicated 28.6% of that students who went through the FM-A showed empathy in contrast to only 12.5% of those who went through FM-P. Regardless of what the chi-square analysis indicated, we found that students who went through FM-A sequences displayed a slightly higher level of empathy in their writing activity when compared to students who went through the FM-P sequences.

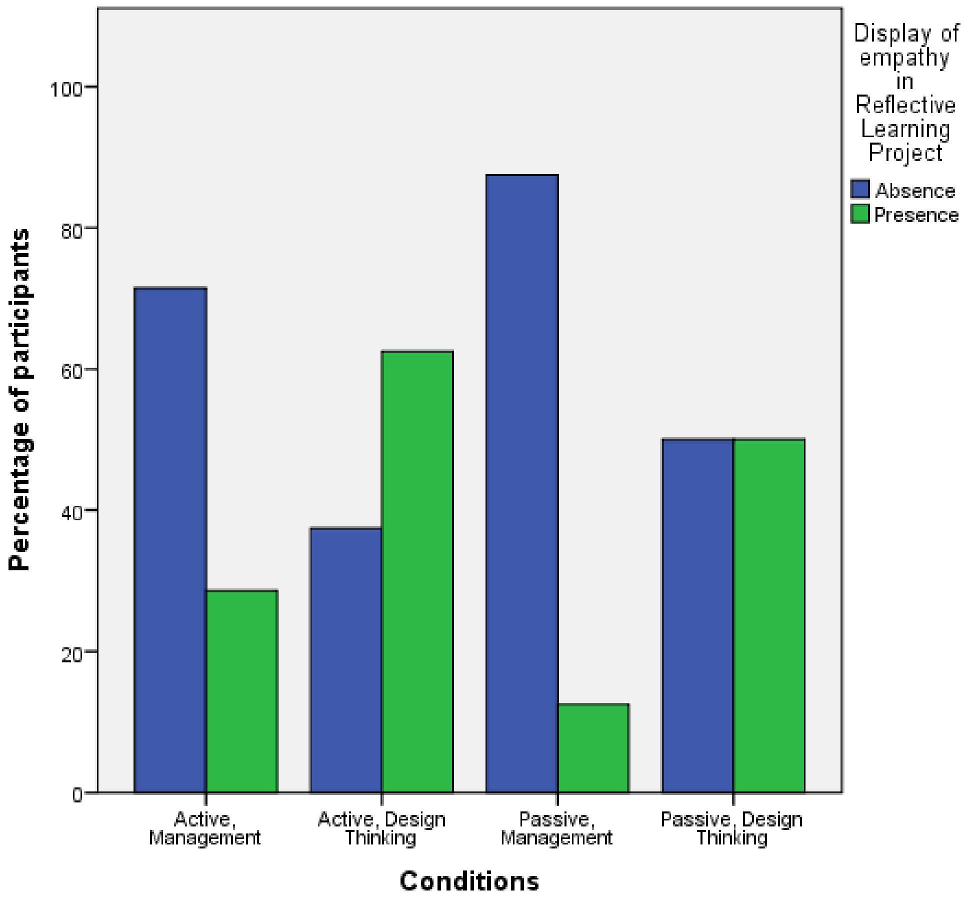

Figure 2: Presence of empathy by conditions

***Hypothesis 3**:*

Students who received resources on design thinking (active) and functions of management (active) process will be more likely to display empathy in Reflective Learning Project than students who received resources on design thinking (passive) and functions of management (passive) to display empathy in the Reflective Learning Project.

From the results of hypothesis 1 and 2, since the chi-square test result indicated that the difference in proportion of participants showing empathy (for both writing assignment) are statistically insignificant across the conditions, thus, we could not interpret the results conclusive due to the small number of participants involved. However, based on the percentage shown in Figure 3, we could still make a conservative deduction that students who went through active activity sequences tended to display a higher level of empathy compared to those who went through the passive activity sequences.

Hence, we are proposing to develop and test the hypothesis in the upcoming semester with at least 4-5 times more participants which will enable us to investigate and examine the results and report.

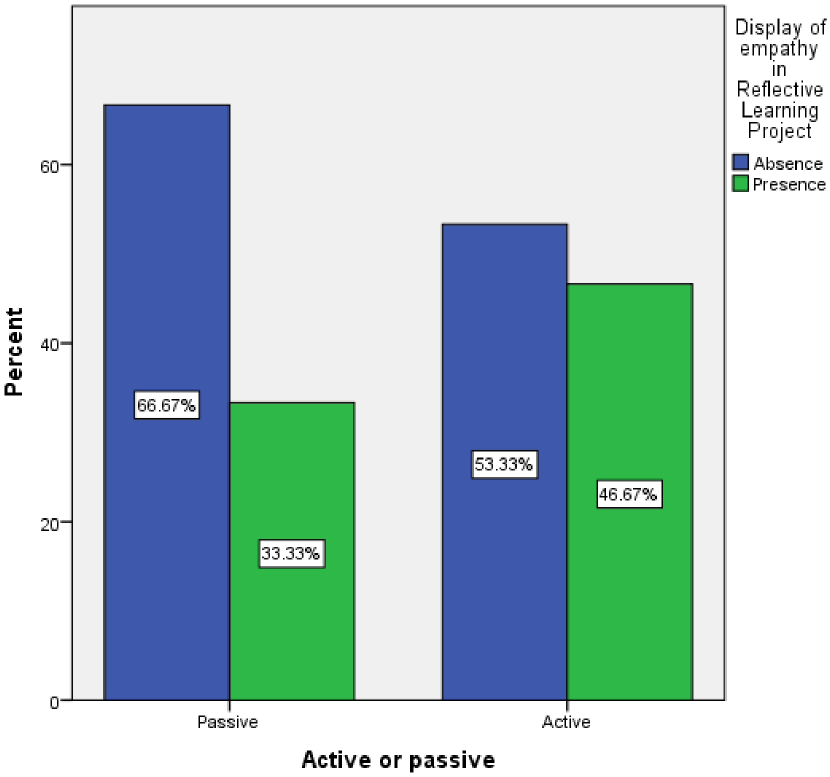

Figure 3: Presence of empathy by conditions (Active/Passive)

Conclusion

Overall, our results showed that it is possible to highlight the value of a competency through the intervention of short activities with four varying conditions of design thinking and management functions, together with letter and summary writing activities. We are proposing to use a larger sample size in the actual run of the intervention to have a more concrete conclusion.

The intervention provides a viable alternative to any unnecessary sacrificing of course content in order to develop softer management competencies. Not only are students willing to complete optional assignments that are designed with the principles of academic engagement in mind, students are also willing to produce meaningful and nuanced responses to management problems that consider the needs, thoughts and feelings of stakeholders. Moreover, the possibility of measuring the intervention's impact through displays of the soft skill aptitude, in this case cognitive empathy, in students' writing assignment itself is a way forward to explore competency development in students' learning.

Our next steps will be to replicate our activity conditions with reflective learning pointers and feedback gained this semester and to run three different clusters of interventions namely design thinking (2 sections), functions of management (2 sections) and the 4 conditions of FM-A, DT-A, FM-P, DT-P (across 6 sections). This follow-up study is to scale up our first two clusters of interventions so as to randomly assign the students within sections to either the functions of management or design thinking sequences and to achieve 4-5 times more number of participants in hope of performing some concrete deductions from the findings. The study will address some of the confounding limitations and issues that emerged in the current and earlier studies. We also plan on investigating individual learning profiles to better understand what influences some students to exhibit empathy and others do not when both went through similar conditions in varying cluster groups as mentioned above. Finally, we will look at the more distal impacts of our activity sequences. Right now, we knew the conditions resulted in interesting outcomes and effects, but it remained unclear whether we could generate these findings due to some of the results being found to be statistically insignificant. A replication study within a 4-5 times larger size of participants may help us in providing more concrete conclusions.

In summary, there is much work to be done in transiting traditional business courses toward grooming their students in meeting the needs of a rapidly changing world. However, if business instructors and course coordinators are prepared to move beyond using traditional pedagogical approaches through, for example, sanitized case-studies and problem-based activities that highlight a limited set of core business principles, group and class discussions that inadvertently coax students to match course terms to decontextualized questions, or adding a modicum of emphasis on humanistic design principles and processes to the curriculum may be a way forward. Our data suggests that undergraduate students are prepared to deliver the promise of more holistic decision-making and management solutions if the situation warrants it. All we have to do is to facilitate this process to happen and we could see potentially a great amount of effect in creating awareness and having the students cognitively engaged towards the competency and skills development.

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