

Entrepreneurial Design Thinking Course at Secondary School in Nepal: Contextual Prospects and Challenges

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Abstract

The glorification of entrepreneurship in Nepal has led to various stakeholders being interested in the entrepreneurship ecosystem of the country including the educational stakeholders. A surge is being observed in the number of educational institutions that now offer entrepreneurship courses to their students. However, little has been done to investigate the impact of such courses. A secondary school in Nepal used the design thinking approach strategy to conduct entrepreneurship classes for its secondary level students. This paper attempts to assess the effectiveness of the entrepreneurship classes conducted at the school by using the mixed method strategy. Our paper found that the year-long entrepreneurship course helped shift the mindset of students from a fixed mindset to a growth mindset by giving them a solution-seeking lens and the emotional engagement of the students with the course was also seen as high. Similarly, an emotional growth was also seen in the side of the educator. However, owing to the time boundaries and less support from school administration, the entrepreneurship course was not seen as successful in leading meaningful development of 21st-century skills like collaboration, creativity, curiosity, experimentalism in students.

Keywords: entrepreneurship, design thinking, entrepreneurship education, emotional engagement

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1. Introduction

One of the ways of uplifting the socio-economic position of Nepal is by developing the state-of-art of entrepreneurship in the country. Entrepreneurship is considered a catalyst for economic development (Dhaliwal, 2016). Entrepreneurship is a worthy pursuit to consider but not everybody might want to become an entrepreneur. Despite all of this, it becomes important to encourage and teach young children about entrepreneurship (Dhaliwal, 2016). It is important to develop an entrepreneurial mindset in students so that instead of lamenting about the problems they see in their community, they actively seek out solutions for it using creativity, critical thinking, and the power of collaboration. This paper seeks to find out the context of entrepreneurship education provided through the design thinking approach at a secondary school in the context of Nepal and explore its opportunities and challenges.

1.1 Design Thinking Approach

Design thinking is considered as a reiterative and recursive process where teams work together to find solutions to problems that have been redefined to focus on user experiences (Hamilton, 2020). Design Thinking is an approach to learning that increases students' creative confidence. Students engage in hands-on projects which focus on building empathy, promoting a bias toward action, encouraging ideation, and focusing on active problem-solving. Using one's imagination is central to the process of design thinking. (Carroll et al., 2010). It is a shift from the traditional model of education of consumption to instead focus on the purpose of learning and the power of student's voice through creation (Strauss & Portnoy, 2019). The process of design thinking starts with taking action and understanding the right questions (IDEO U, 2017). It is a five-step process (Tu et al., 2018)

- **Empathy:** In this stage, design thinkers try to understand the people they want to design a solution for, their way of thinking, what they do, and why they do it.
- **Define:** In this stage, the design thinker defines the challenge they shall be tackling based on the information they have gathered in the stage of empathy.
- **Ideate:** In this stage, the focus of the design thinker remains on generating ideas. Ideation provides a valuable source of information on how one can build prototypes and get innovative solutions in hands of users.
- **Prototype:** In this stage, the design thinkers need to turn their ideas into a prototype to give them a real touch and feel making it easier for others to conceptualize their idea too. A prototype can be anything that a user can interact with – be it a wall of post-it notes, a gadget you put together, a role-playing activity, or even a storyboard.
- **Test:** Testing is the phase where design thinkers solicit feedback from users or potential users about the prototypes that they have built and the ideas that they have generated.

Design projects are believed to pass through three spaces: inspiration, ideation, and implementation (Brown, 2008). The inspiration phase becomes a motivator for people to look for a solution to the problems. In the ideation phase, ideas are tested, generated, and tested for developing them into solutions and in the implementation phase, a way out is found for taking the ideas into the market.

1.2 Entrepreneurship in Education

Bill Rocher stated in his Ted Talk that to teach entrepreneurship in schools, giving students independence and allowing students to become in charge of their decisions was the most important and amazing part about entrepreneurship education (Roche, 2018). Entrepreneurship education requires the use of the active learning method placing the learner at the center of the educational process and enables them to take responsibility for their learning to experiment and learn about themselves with specific importance given to attitude and behavior (Gautam & Singh, 2015). Entrepreneurship education inculcates skills allowing one to play the role of catalyst for socio-economical change thus shaping the society and one's future for the better. However, the students who undertook the entrepreneurship course realized that entrepreneurship is challenging and even stated that taking the entrepreneurship course made them realize that entrepreneurship is not for them. (Borchers & Park, 2010).

1.3 Entrepreneurial Design Thinking Framework

Though not all student has to be an entrepreneur, the entrepreneurial skills are important to become successful in this rapidly changing world (Roche, 2018). Design thinking approach is considered as one of the ways of instilling an entrepreneurial mindset in students given that traditional teaching practices does not consider the skills like these. Atherton (2004) defined entrepreneurial mindset as "taking the initiative and responsibility to reshape existing boundaries and norms and to create new boundaries and norms to manage and deal with conditions of ambiguity, complexity, and uncertainty" (p.126). Entrepreneurship can benefit from applying design thinking given it can foster skills like creativity, problem-solving risk-taking among students, and the ability to work in multi-disciplinary teams (Val et al., 2017). The entrepreneurial design thinking approach is considered a framework for promoting entrepreneurship education. It is an approach for treating user-centered problems as entrepreneurial opportunities within an iterative process of solution creation and exploitation (Kortzfleisch et al., 2013).

A common intersection between entrepreneurship and design thinking can be termed as social skills i.e. the ability to interact with others and work in teams. Social skills increase the probability of involvement of people in entrepreneurial activities (Luca et al., 2012). Likewise, one distinguishing feature design thinkers possess is their affinity for teamwork (Owen, 2007). Another common intersection between entrepreneurship and design thinking can be innovation and creativity (Nair & Pandey, 2006). Given the design, thinking requires students to think creatively and design thinking, when taught to students, helps increase students' creative confidence (Carroll, et al., 2010; *IDEO Design Thinking*, 2018).

2. Research Methodology and Research Design

2.1 Transformative Praxis

The transformative praxis as a methodology provides an umbrella for those researchers who see their role as social agents and want to focus on developing social justice (Mertens, 2012). The focus on developing an education system that is more just for the students of the 21st century and the belief that the first step to social justice is empowering our educators and students by helping them acquire practical skills while looking at the world from the lens of empathy, transformative praxis as a methodology meets the purpose. The research was conducted with the perspective to explore the current school education system and find out the measures of improvement for the empowerment of the future generation to foster entrepreneurial mindset so that they take active steps from their side to improve the world. Under this methodology, the researcher not only captures and focuses on the data collected but also on how other factors in the ecology impact the collected data and its representation (Luitel & Dahal, 2020). Rather than just plainly focusing on the data shared via quantitative surveys and in-depth interviews by the teachers/students, the researcher's observation of the environment including observation of school administration, observation of the personal growth of the facilitator, and an understanding of personal perspectives of the facilitator have been taken as a major point of reference for the study. Given that it is a rare case that transformative praxis as a methodology used the only quantitative or only qualitative method of data collection, the research also uses a cyclical combination of both these methods of data collection (Mertens, 2012) to understand student growth in our study than relying on just one source of data.

2.2 Mixed Method of Data Collection

For collecting the quantitative data, a self-reported survey measure (Refer to Appendix I) was used with the students of the secondary school who participated in the longitudinal study for a year. The participants belonged to an institutional school located in Kathmandu, the capital of Bagmati Province, Nepal established around 30

years ago with approximately 1500 students studying in it. The school has had a ranking in the top 10 schools of Nepal. The school operates classes from the Nursery level to the higher secondary level (Grade 12). The participants of this study were students from grades 8, 9, and 10 respectively.

Given the limited expertise of traditional educators of the school on facilitating courses based on the design thinking method, the course design and implementation was outsourced from the organization where the researchers belonged that worked on emotional intelligence. The organization aims to work with educational institutions to create safe spaces where various educational stakeholders feel the freedom to embrace emotions. The outsourced organization chose the facilitator for entrepreneurship classes keeping in mind two aspects: i. the acquaintance of the facilitator with the design thinking method and emotional intelligence; and the ability of the facilitator to deal with young children. The extensive focus was given on the emotional intelligence capability of teachers because teaching is a profession that requires high emotional intelligence. After all, constant human interaction is required in the job of teaching (Syiem, 2012). Thus, an extensive focus was given to emotions, empathy, and emotional intelligence when designing the lesson plans for the school.

The survey questionnaire was filled during two points in time: when the classes had just begun and when the classes ended after a year. Affinity for teamwork, collaboration, curiosity, and experimentalism are considered to be some of the qualities that effective design thinkers possess (Kempkens, 2019; Owen, 2007). Likewise, the development of a problem-solving attitude and creative thinking are considered to be advantages of the design thinking method (Sándorová et al., 2020). Thus, the survey questionnaire was prepared with the hope of capturing how skills like collaboration, curiosity, experimentalism, problem-solving attitude, and creative thinking developed in students after taking the entrepreneurship classes that were provided using the design thinking method of teaching and learning. The convenience sampling method was used to conduct the quantitative study, whereby the data was collected from all the students who took part in entrepreneurship courses and were available and accessible in the days of data collection. A total of 56 responses were collected for the study.

An in-depth interview was done with the facilitator and a focus-group discussion was done with the 10 students who were part of the course for collecting the qualitative data. Both the in-depth interviews and the focus group discussions were taken over the online media Zoom virtually. Personal observation from the researcher during the facilitation of the course also served as a major point of reference in this study.

2.3 Research Design

This study evaluated the effect of a year-long entrepreneurship course conducted at an educational institution in Nepal based on the principles of design thinking. The course was structured based on the steps used in the design thinking process: empathy, define, ideate, prototype, and test (Tu et al., 2018). It was expected that this course would develop an entrepreneurial mindset in students by developing skills in them like creativity, curiosity, collaboration, risk-taking, and feedback-seeking behaviors. The students were oriented towards what entrepreneurship is, and through the use of emotional intelligence tools like self-awareness, the student's entrepreneurial values were determined in the first few weeks of the classes. The students were given imaginary prompts to help them explore the design thinking process in the second phase. Later, as students became comfortable and were oriented with the design thinking process, they were asked to look at the problems existing in their community and find solutions for those problems in groups.

The entrepreneurship course was designed for 12 months and was conducted with secondary level students studying in grades 8, 9, and 10. The course duration was shortened for just five months for grade 10 students because grade 10 had their board examinations while the course was shortened for 8- months for grade 8, and 9 because of other school programs. Since the course content had to be shortened extensively for grade 10 students it was expected that the effectiveness of the course would be compromised for grade 10 students.

The course consisted of a few lectures on the design thinking process and several hands-on experiences with students having initially to understand and empathize with the problems in their community and then working in teams to brainstorm solutions to those problems, develop prototypes, and finally provide a presentation.

The effectiveness of the course was evaluated based on two dimensions: the effectiveness of the course in developing skills like creativity, collaboration, feedback-seeking behavior, curiosity, experimentalism, etc. which was measured through a quantitative survey (Refer List of Figures). Likewise, the other dimension through which the effectiveness of the course was evaluated was by measuring student satisfaction and their reflection on their personal growth after taking entrepreneurship classes.

3. Research Finding and Discussion

3.1 Growth and Transformation as an Educator

The reflective team meetings that the facilitator used to do with her team members to understand the progress of the class and also to understand her wellbeing helped track the growth and transformation of the facilitator over a year. During the initial reflective meetings, the facilitator felt responsible for the outcomes produced by the students in her classroom. She felt anxious as she put herself under the pressure that students have to learn

something from the class. She expressed these emotions in the team meeting. As she expressed her emotions, her team members helped her understand that she needs to draw a thin line between the things that she can control and things she cannot control. Stephen Covey mentions two circles with which one operates in life – the circle of concern and the circle of influence (Covey, 1989/2013). The circle of concern including things that one remains worried about and which affect oneself and the circle of control includes things that one can control or influence. According to Covey, people who are proactive focus more on the circle of influence as a result of which their circle of influence expands whereas reactive people focus extensively on the circle of concern which includes things they have little control or power over (Covey, 1989/2013). In an educator's life, they can only control their quality of teaching. They cannot control student outcomes. There are various other external factors except the teacher's teaching that affect student's learning. Effective teachers know that they can only influence student's learning to a certain level by indirectly using tools and strategies to motivate them. Hence, the internal team from which the facilitator originally belonged suggested that the facilitator should focus on giving her 100% as a teacher and use strategies like being friends with her students and maintaining healthy relationships with them so that they would be inspired to learn from her (Yunus et al., 2011). Further the team helped her understand that despite that she should be prepared mentally to accept the fact that some students shall not achieve the desired outcomes owing to factors that may be completely outside of the control of the facilitator (Bertolini et al., 2012). Thus, it became important for the facilitator to not make students' achievements contingent on the satisfaction and joy she derived from taking the class but rather it became important for her to find joy in her own growth as an educator. In a study among 93 primary school teachers of the Slovenian region, it was observed that teachers reported more negative emotions than positive emotions in the classroom, and out of all the emotions, anger and joy were the most frequently reported negative and positive emotions respectively. One reason which allowed less room for joy in classrooms was the high expectations that teachers built over students' achievement as joy was induced among teachers when students performed well academically (Prosen et al., 2011). The facilitator shared, "Since the team always reminded me that I was there to do my job, to share what I knew and to create a nurturing environment for the students, it helped me go through the journey more easily. When I started, I was nervous and I didn't know a lot of things." (S. Shrestha, personal communication, March 13, 2020)

3.2 Improvement in Teacher-Student Relationship

All the students stated the great bond with their facilitator throughout the course. When being asked about how their relationship with the facilitator was, they shared how they felt comfortable around her and even shared how they felt more freedom in her presence. The comfort and freedom that they felt around their facilitator made learning more effective for the students. One of the students shared, "She was a friend to us and this even helped her while teaching new things to us because once there was a friendly environment in the classroom, it was easier for some of us to focus on her. With other teachers, because we don't share a friendly relation, we don't bother much when they are teaching and start interacting with each other but with her, it was completely different. She used to explain to us in the beginning about what all we would be focused on and when used to speak, everyone would be listening." (N. Tripathi, personal communication, March 25, 2020). The teacher-student relationship in the classroom is beneficial both for the learning outcomes and for the wellbeing of teachers. Strong teacher-student relationships can improve the academic engagement of students, increase class attendance of students, reduce disruptive behavior among students, and can also be the best predictor of whether teachers will experience more joy versus anxiety in the classroom (Sparks, 2019). Upon being asked what should be kept consistent in entrepreneurship classes, one student stated, "The friendliness of the teacher should be kept as it is." (S. Bhattarai, personal communication, May 4, 2020)

3.3 Increase in Shared Joy and Happiness within the Class

To implement the design thinking method of teaching and learning effectively, the students and the facilitator should share a supportive relationship along with clear communication of goals (Carroll et al., 2010). The personal intimate relationship that the facilitator shared with her students ultimately increased their engagement levels in entrepreneurship classes. Students noted that they looked forward to attending their entrepreneurship classes. When teachers become a dependable source of emotional and instructional support during difficult times, students feel high connect with their teachers and also safer at school (Furrer et al., 2014). One of the students shared how he was bullied in school and even during such a sensitive time he felt comfortable opening up to his facilitator. He shared, "As a student, I think at the beginning of class 10 – I used to get bullied upon. That is why there were some days for me when I didn't want to talk to anyone. So, at that time, when I had entrepreneurship classes, it was fun to open up to her. She was a really good teacher and I look up to her." (A. Dangi, personal communication, March 30, 2020). The students indicated how their relationship with their educator made them more engaged in the class and happier in the class. Another student shared how he normally felt dragged coming to school but his excitement levels used to be high on days of an entrepreneurship class. He shared, "Normally, I felt dragged. School days were a little boring, so I avoided school. But, I think that after entrepreneurship and design thinking class, I liked

coming to school on Thursdays because I liked the whole procedure and didn't want to miss a part of it either." (A. Dangi, personal communication, March 30, 2020). This not only impacted students' wellbeing but the facilitator's wellbeing as well. She stated, "I got to enjoy it when the kids started sharing their things with me, I actually started feeling like they were friends with me. I actually see that they were being friends with me and they cared for me as much as I cared for them. It was a very pleasant feeling." (S. Shrestha, personal communication, March 13, 2020). When teachers are happy and their wellbeing is high, their efficacy as a teacher also increases because there is a high co-relation between teacher efficacy and wellbeing (Mehdinezhad, 2012).

3.4 Students as Solution-Seekers

Problem-solving was at the heart of the model we used in entrepreneurship classes and problem – solving as well, we wanted the students to solve real-life problems that they see around them. The facilitator shared, "Overall if seeing on an average, the development I saw was in terms of taking initiatives of their own and creating their own ideas and finding people who can execute those ideas. Overall, they have been thinking about taking initiatives on their own. Students who were very regular my course, on average, have developed this sense that we can share our things, we can execute our ideas, we can give a presentation to the school if we have a problem and we can be vocal. We have the power to do this. I think, at least this thought process is in their mind now. That is how I see their progress." (S. Shrestha, personal communication, March 13, 2020). Design thinking develops the ability in students to imagine without constraints and boundaries developing creative confidence in them and making them empowered in their learning process (Goldman et al., 2009). The students who had become a part of entrepreneurship classes too shared how after taking the entrepreneurship classes, they see that they have developed an attitude of seeking solutions. For instance, one of the students shared, "As I studied design thinking, it got ingrained within me that we should look for problems in our society and keep on finding solutions for them." (A. Dangi, personal communication, March 30, 2020).

3.5 Need for the Integration of Emotional Intelligence in Educational Curriculum

Social competence and the ability to work collaboratively are required in the process of design thinking (Ericson et al., 2009). The students shared how coming to a consensus was extremely difficult as everyone in the team had different perspectives. A student shared, "Every team member had different opinions and thoughts and it was difficult to find an alignment in between those opinions and thoughts which was the most difficult part of working in teams." (A. Sitaula, Personal Communication, April 8, 2020). Another student shared,

"The difficult part of working in a team was coming into consensus and bringing every team member to a common point. In my group what happened was we decided to change the topic because we wouldn't find a common point. So, that was extremely difficult. And in our group there used to be a lot of cold war when choosing the topics. Like, for me global warming was an extra-large problem. We should have looked at a problem we could deal with. In my perception, good ideas would be like installing pad vending machine in the schools, etc." (Y. N. Tiwari, personal communication, May 5, 2020)

While the task conflict in itself might not be that harmful, according to a previous study, it is important for task conflict to not be taken personally. When task conflict and relationship conflict, co-occur, it nullifies the positive benefits of task conflict (Greer & Dannals, 2017). It has also been identified that emotional regulation strategies and problem-focused coping strategies can help in the process of not taking task conflicts personally. This shows that emotional intelligence needs to be integrated well with the design thinking model of teaching and learning for teamwork to be effective and for the course to have the outcome it intends to.

Another common pattern that was noted in the answers of the students teamed splitting up as other team members lacked dedication and were not willing to contribute. Three students shared instances of how their teams either split up in between the journey or they had to work alone with minimum help from their team members because of lack of dedication demonstrated by their peers. When interviewing the facilitator to understand the reason behind the student conflicts, she shared, "One reason why I think the dispute happened was because of the way they communicated which was very straightforward and blunt. So I could see that. If things would have been a little bit softer, I think they would have negotiated well. Most of the arguments would have this blunt tone with each other. I could see that." (S. Shrestha, personal communication, March 13, 2020). In a study on how emotional intelligence impacts teamwork, in a functional team, people are more aware of how their communication might impact other team members whereas in a dysfunctional team members weren't aware of how their emotional outbursts might impact others in the team (Luca & Tarricone, 2001).

3.6 Lack of Support from School Administration

The role of school administration as a stakeholder became important as well when running entrepreneurship classes. The school administration indirectly impacts the emotions of both the teachers and the students ultimately affecting learning. A challenge that the facilitator faced was that of lack of communication between the administration and the facilitator. The facilitator shared that because of the infrequent communication that happened with the

administration, she felt unable to put forth her needs in front of the school management and it also left her wondering about her contribution to the student progress. She shared, “I did have an open channel to communicate with the school. That was also a challenge. I would have to wait until very long and request them to meet me. In a way, communicating what I was having in the class and what I needed was a challenge.....I think the other one would be school not following what we did in the class. I consider this as a challenge because if somebody does not follow-up with what’s going on, we don’t know the progress happening, we don’t know how to improve. So, the non-responsive actions of the school was also a challenge.” (S. Shrestha, personal communication, March 13, 2020). The lack of resources and having to pay for additional resources or professional development leaves teachers feeling undervalued. The teachers don’t feel seen or heard during such situations as found by a previous study (Rosa, 2020). The lack of support from the school was not only a challenge for the facilitator but also for the students. It did have implications on the perception of the students. One of the students openly shared how the school administration needs to support entrepreneurship classes for them to become more effective. He said, “Firstly, the school needs to support. Like for example, a class has been assigned for an entrepreneurship class, even though the class has been assigned and the facilities are not there, that should not be the case.” (Y. N. Tiwari, personal communication, May 5, 2020).

3.7 Time Boundaries Decreasing the Effectiveness of the Course

Time boundaries too became important when determining the effectiveness of entrepreneurship classes. The course which was initially designed for 8 months had to be reduced and managed into five months leading to a massive compromise in the way the course was initially planned in the case of class 10 students.

There are two ways in which time boundaries reduced the effectiveness of the entrepreneurship classes – one by reducing the depth of experiences for the students and second by not allowing sustained exposure. Due to the time boundaries, the students could experience the whole process of design thinking only on a superficial level rather than being able to go in-depth and internalize the learnings from design thinking reducing its impact. Secondly, skill development and behavioral change is a slow process that only comes after sustained exposure and this sustained exposure was not possible in entrepreneurship classes thus leading to a lack of skill development portion among the students. One of the limitations of design thinking is the time limit and the time pressure it had upon students (Sándorová et al., 2020). It is suggested that there should be more flexibility in determining the time limitations for different processes of design thinking depending on the nature of the participants and the course (Sándorová et al., 2020).

3.8 Design Thinking’s Ineffectiveness as a Standalone Process

Entrepreneurship classes were seen as a standalone intervention rather than being given the space to nourish and flourish well in the school climate reducing the impact of classes. The students from the school were exposed to the design thinking process of teaching and learning only one time in a week whereas, for the vast majority of the week, they were being exposed to the traditional style of teaching and learning itself. This led the students to capture more traits and learning from the traditional style of teaching and learning than from the design thinking process. For instance, the facilitator shared how a difficulty was observed in developing skills like feedback-seeking behavior among the students due to the longer exposure they had to traditional behavioral styles. She shared, “.In the traditional teaching style, the teachers were open to giving constructive feedbacks, they were just open to seeing how they would increase their grades. That was their major motivator. I think this kind of culture hindered them from receiving feedback in entrepreneurship classes too.” (S. Shrestha, personal communication, March 13, 2020).

It becomes important to draw a thin line between teaching design thinking and embedding design thinking in educational settings (Panke, 2019). Only when design thinking is treated as a classroom culture rather than just an action, will design thinking to be able to revolutionize the way teachers and students think about creative problem solving, failure, and teamwork (Lahey, 2017). Even though design thinking might stand alone, its power as a learning tool comes when it can support a diverse range of interdisciplinary academic content (Carroll et al., 2010). Alongside embedding design thinking into the academic content, it also is important to create a space within the school community where the students can implement what they have learned. For instance, during the entrepreneurship classes, the students did not get a chance to implement the solutions they had developed after eight long months of effort. The solutions designed by the students for the problem-at-hand would have to be implemented in practical life for the course to be more action-oriented and for students to have increased learning. Thus, after the conduction of entrepreneurship classes, it was observed that, considering the design thinking method of teaching and learning as an extra intervention led to the course being ineffective. Better integration of design thinking within the school climate would perhaps amplify its positive effects.

4. Limitations

The data collected was scant. While 137 students had participated in the entrepreneurship classes, data of only 56

students could be considered in the quantitative research. The scant data collection could have led to a misrepresentation of the findings and it becomes difficult to generalize the results based on the limited data available. The reason for the scant data collection was that in the process of pre-session research, the survey questionnaire was not printed and readily available. Because of this reason, the researcher could not collect data from grade 9 students right in front of her eyes, and the school administration later collected data from grade 9. However, in the process of data collection, the identity of the students was not collected because of which there could be no pre-test and post-test comparison in the case of grade 9 students making the data invalid. Likewise, in the process of post-test data collection as well, since grade 10 had their major board examinations nearing soon, a lot of students had started preparing for the examinations staying back at home instead of coming to school thus leading to a reduction in the number of students from whom data could be collected post-session. Owing to both of these reasons, data from only 56 students could be collected and considered among a total of 137 students in the research process.

5. Conclusion and Recommendation

The findings from the study indicate that entrepreneurship classes led to emotional growth both on the side of the educator and the students. In the case of the students, a shift to a growth mindset was also observed where students became active solution seekers than remaining as problem finders. The emotional engagement of students in entrepreneurship classes and relationship building between the teacher and students remained a plus point of entrepreneurship classes. However, the entrepreneurship classes were not seen as effective in the ability to develop 21st skills like experimentalism, collaboration, creative thinking, and curiosity. The reason behind this ineffectiveness being a lack of support from school administration, time boundaries and limited exposure to the course. Thus, this study is indicative of the fact that for teaching methods like design thinking to flourish, it is important not to consider them as an extra two-hour intervention program but to build a school climate that can support the growth of design thinking course full-fledged.

Thus, some important learnings and recommendations which can be drawn from this study are:

- As schools introduce various intervention programs for helping students grow and develop in better ways, it is important to not only focus on the successful launch of the intervention program but also to focus on the successful implementation of the program. The schools can support the effective implementation of these programs by not considering them as extra courses but by rather prioritizing them both in terms of the distribution of time, resources, and efforts. As an article by the education magazine 'Edutopia' suggests, it is important for the school administration and teachers to collaboratively work when they intend to bring massive positive changes in the school. The article also suggests that strong collaboration between the school administration and teacher means emphasizing on teacher quality, focusing on student performance, working together to find solutions as problems arise, creating a culture that values collaboration, and creating a collaborative structure at all levels (OBrien, 2014).
- Schools need to build safe spaces whereby the teachers are allowed to express and healthily embrace their emotions. Only when teachers are given space to acknowledge their emotions, shall they be able to navigate their emotions well and when teachers have emotional intelligence abilities like emotional regulation, it can potentially benefit their students and the classroom environment in general too (Ruiz, 2016).
- One potential area that future researchers could touch upon can be investigating and observing students who have low engagement levels even when active learning strategies like design thinking are used. Data found by investigating such students can provide important insights on what can be improved in teaching approaches like design thinking so that they become more inclusive and can ignite heightened interest in all sorts of students regardless of their engagement levels with traditional teaching methods.
- Likewise, it is suggested that future research to be done on the design thinking approach or on intervention programs like this make use of resources like reflective journals where the students and the facilitators can write their emotional journey as they navigate through the course. These reflective journals can help researchers understand the emotional affiliation of the participants with the course and also can give a more comprehensive understanding of what should be done to make the course better in the future.

References

- Atherton, A. (2004). Unbundling Enterprise and Entrepreneurship: From Perceptions and Preconceptions to Concept and Practice. *International Journal of Entrepreneurship and Innovation*, 5(2), 121–127. ResearchGate. <https://doi.org/10.5367/000000004773863273>
- Bertolini, K., Stremmel, A., & Thorngren, J. (2012). Human Sciences Department of Teaching, Learning and Leadership. South Dakota State University College of Education and Human Sciences - Department of Teaching, Learning and Leadership. <https://files.eric.ed.gov/fulltext/ED568687.pdf>
- Borchers, A. S., & Park, S. A. (2010). Understanding Entrepreneurial Mindset: A Study of Entrepreneurial Self

- Efficacy, Locus of Control and Intent to Start a Business. *The Journal of Engineering Entrepreneurship*, 1(1), 51–62. ResearchGate. https://www.researchgate.net/publication/256375839_Understanding_Entrepreneurial_Mindset_A_Study_of_Entrepreneurial_Self_Efficacy_Locus_of_Control_and_Intent_to_Start_a_Business
- Brown, T. (2008, June). Design Thinking. *Harvard Business Review*.
- Carroll, M., Goldman, S., Britos, L., Koh, J., Royalty, A., & Hornstein, M. (2010). Destination, Imagination and the Fires Within: Design Thinking in a Middle School Classroom. *International Journal of Art & Design Education*, 29(1), 37–53. <https://doi.org/10.1111/j.1476-8070.2010.01632.x>
- Covey, S. R. (2013). *7 Habits Of Highly Effective People*. Simon & Schuster Ltd. (Original work published 1989)
- Dhaliwal, A. (2016). Role Of Entrepreneurship In Economic Development. *International Journal of Scientific Research and Management*, 4(06), 4262–4269. <https://doi.org/10.18535/ijstrm/v4i6.08>
- Ericson, A., Bergstrom, M., Larrson, A. C., & Torlind, P. (2009, August). *DESIGN THINKING CHALLENGES IN EDUCATION*. INTERNATIONAL CONFERENCE ON ENGINEERING DESIGNS, STANFORD UNIVERSITY.
- Furrer, C. J., Skinner, E. A., & Pitzer, J. R. (2014). The Influence of Teacher and Peer Relationships on Students' Classroom Engagement and Everyday Motivational Resilience. In D. J. Shernoff & J. Bempechat (Eds.), *NSSE Yearbook, Engaging Youth in Schools: Evidence-Based Models to Guide Future Innovations*. Teachers College Record.
- Gautam, M., & Singh, S. K. (2015). ENTREPRENEURSHIP EDUCATION: CONCEPT, CHARACTERISTICS AND IMPLICATIONS FOR TEACHER EDUCATION. *Shaikshik Parisamvad (An International Journal of Education)*, 5(1), 21–35. ResearchGate.
- Goldman, S., Carroll, M., & Royalty, A. (2009, January). Destination, imagination & the fires within: design thinking in a middle school classroom. *Proceedings of the 7th Conference on Creativity & Cognition*. 7th Conference on Creativity & Cognition, Berkeley, California, USA.
- Greer, L. L., & Dannals, J. (2017). Conflict in Teams. In E. Salas, R. Rico, & J. Passmore (Eds.), *The Wiley Blackwell Handbook of the Psychology of Team Working and Collaborative Processes*. Wiley and Sons Ltd.
- Hamilton, S. (2020, October 14). *Design Thinking for Pandemic Pedagogy*. Hybrid Pedagogy. <https://hybridpedagogy.org/design-thinking-for-pandemic-pedagogy/>
- IDEO Design Thinking. (2018). IDEO | Design Thinking. <https://designthinking.ideo.com/>
- IDEO U. (2017). *What is Design Thinking?* IDEO U. <https://www.ideo.com/blogs/inspiration/what-is-design-thinking>
- Kempkens, O. (2019, August 22). *Design Thinking begins with a Curious Team*. LinkedIn; Merck Curiosity Initiative. <https://www.linkedin.com/pulse/design-thinking-begins-curious-team-oliver-kempkens/>
- Kortzfleisch, H. F. O. V., Zerwas, D., & Mokanis, I. (2013). Potentials of Entrepreneurial Design Thinking For Entrepreneurship Education. *Procedia - Social and Behavioral Sciences*, 106, 2080–2092.
- Lahey, J. (2017, January 4). How Design Thinking Became a Buzzword at School. *The Atlantic*. <https://www.theatlantic.com/education/archive/2017/01/how-design-thinking-became-a-buzzword-at-school/512150/>
- Luca, M. R., Cazan, A.-M., & Tomulescu, D. (2012). To be or not to be an entrepreneur... *Procedia - Social and Behavioral Sciences*, 33, 173–177. <https://doi.org/10.1016/j.sbspro.2012.01.106>
- Luca, J., & Tarricone, P. (2001, December). Does emotional intelligence affect successful teamwork? *Proceedings of the 18th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education*. Meeting at the Crossroads, Melbourne, Australia.
- Luitel, B. C., & Dahal, N. (2020). Conceptualising transformative praxis. *Journal of Transformative Praxis*, 1(1), 1–8. <http://kusoed.edu.np/journal/index.php/jtp/article/view/381/197>
- Mehdinezhad, V. (2012). Relationship between High School teachers' wellbeing and teachers' efficacy. *Acta Scientiarum. Education*, 34(2). <https://doi.org/10.4025/actascieduc.v34i2.16716>
- Mertens, D. M. (2012). Transformative Mixed Methods: Addressing Inequities. *American Behavioral Scientist*, 56(6), 802–813. ResearchGate. <https://doi.org/10.1177/0002764211433797>
- Nair, K. R. G., & Pandey, A. (2006). Characteristics of Entrepreneurs: *The Journal of Entrepreneurship*, 15(1), 47–61. <https://doi.org/10.1177/097135570501500104>
- O'Brien, A. (2014, November 20). *When Teachers and Administrators Collaborate*. Edutopia; George Lucas Educational Foundation. <https://www.edutopia.org/blog/when-teachers-and-administrators-collaborate-anne-obrien>
- Owen, C. (2007). Design Thinking: Notes on its nature and Use. *Design Research Quarterly*, 2(1), 16–27. https://www.id.iit.edu/wp-content/uploads/2015/03/Design-thinking-notes-on-its-nature-and-use-owen_desthink071.pdf
- Panke, S. (2019). Design Thinking in Education: Perspectives, Opportunities and Challenges. *Open Education Studies*, 1(1), 281–306. [10.1515/edu-2019-0022](https://doi.org/10.1515/edu-2019-0022)

- https://www.researchgate.net/publication/339715764_Design_Thinking_in_Education_Perspectives_Opportunities_and_Challenges
- Pokhrel, D. K. P. (n.d.). *Entrepreneurship Development and Its Role on Economic Growth In Nepal: An Appraisal*. Academia. Retrieved November 24, 2020, from https://www.academia.edu/27324353/Entrepreneurship_Development_and_Its_Role_on_Economic_Growth_In_Nepal_An_Appraisal
- Prosen, S., Vitulić, H., & Škraban, O. (2011). Teachers' Emotional Expression in Interaction with Students of Different Ages. *Center for Educational Policy Studies Journal*, 1(3). <https://files.eric.ed.gov/fulltext/EJ1130793.pdf>
- Roche, B. (2018, January). *The Power of an Entrepreneurial Mindset*. TED. https://www.ted.com/talks/bill_roche_the_power_of_an_entrepreneurial_mindset
- Rosa, S. D. L. (2020, March 10). *Survey: Teachers want more support, resources from administrators*. Education Dive. <https://www.educationdive.com/news/survey-teachers-want-more-support-resources-from-administrators/573708/>
- Ruiz, D. R. (2016). Effect of Teachers' Emotions on Their Students: Some Evidence. *Journal of Education & Social Policy*, 3(4). http://jespnet.com/journals/Vol_3_No_4_October_2016/8.pdf
- Sándorová, Z., Repáňová, T., Palenčíková, Z., & Beták, N. (2020). Design thinking - A revolutionary new approach in tourism education? *Journal of Hospitality, Leisure, Sport & Tourism Education*, 26, 100238. <https://doi.org/10.1016/j.jhlste.2019.100238>
- Sparks, S. (2019, March 13). Why Teacher-Student Relationships Matter. *Education Week*. <https://www.edweek.org/ew/articles/2019/03/13/why-teacher-student-relationships-matter.html>
- Stanford. (n.d.). *An Introduction to Design Thinking PROCESS GUIDE*. Hasso Plattner Institute of Design at Stanford. <http://web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf>
- Strauss, V., & Portnoy, L. (2019, October 9). *Perspective | What is 'design thinking'? And why does it belong in classrooms?* Washington Post. <https://www.washingtonpost.com/education/2019/10/08/what-is-design-thinking-why-does-it-belong-classrooms/>
- Syiem, Dr. I. (2012). Emotional Intelligence: Why it matters in Teaching. *IOSR Journal of Humanities and Social Sciences*, 2(2), 42–43.
- Tu, J.-C., Liu, L.-X., & Wu, K.-Y. (2018). Study on the Learning Effectiveness of Stanford Design Thinking in Integrated Design Education. *Sustainability*, 10(8), 2649. <https://doi.org/10.3390/su1008264>
- Val, E., Gonzalez, I., Iriarte, I., Beitia, A., Lasa, G., & Elkoro, M. (2017). A Design Thinking approach to introduce entrepreneurship education in European school curricula. *The Design Journal*, 20(1), 754-S766. <https://doi.org/10.1080/14606925.2017.1353022>
- Yunus, M. M., Osman, W. S. W., & Ishak, N. M. (2011). Teacher-student relationship factor affecting motivation and academic achievement in ESL classroom. *Procedia - Social and Behavioral Sciences*, 15, 2637–2641. <https://doi.org/10.1016/j.sbspro.2011.04.161>

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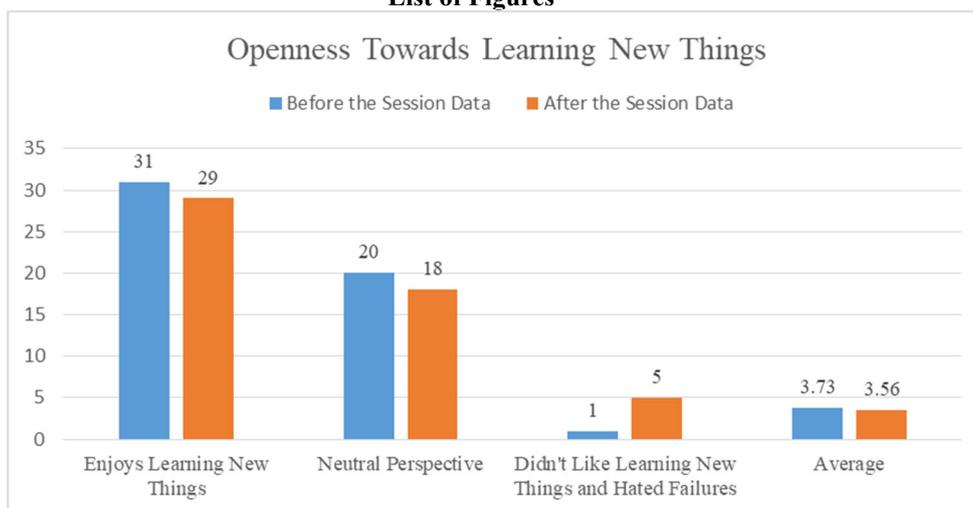


Figure 1: Attitude of Experimentalism in Students

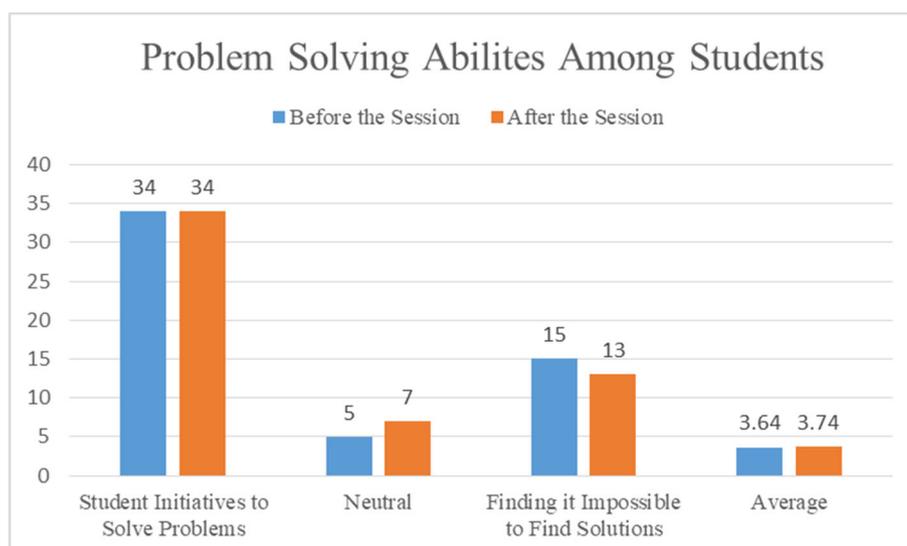


Figure 2: Problem Solving Attitude of Students

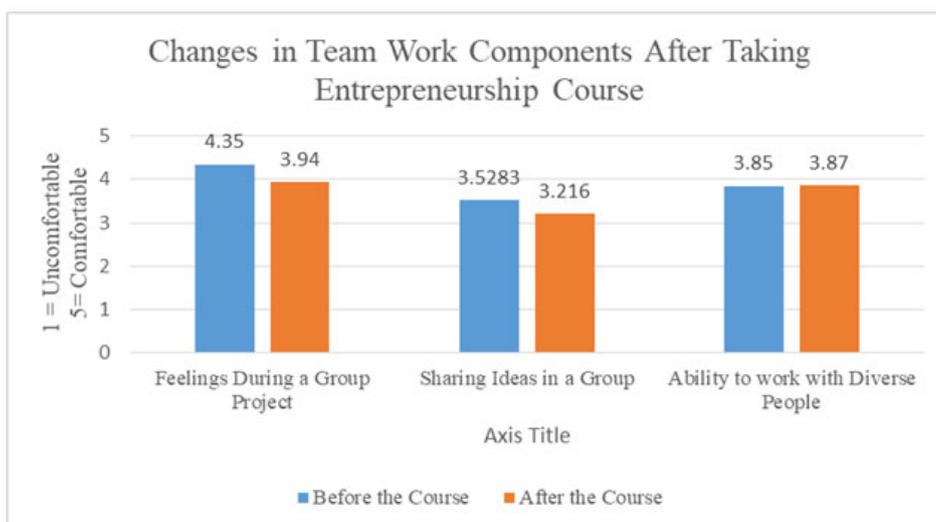


Figure 3: Changes in Attitude Regarding Team work

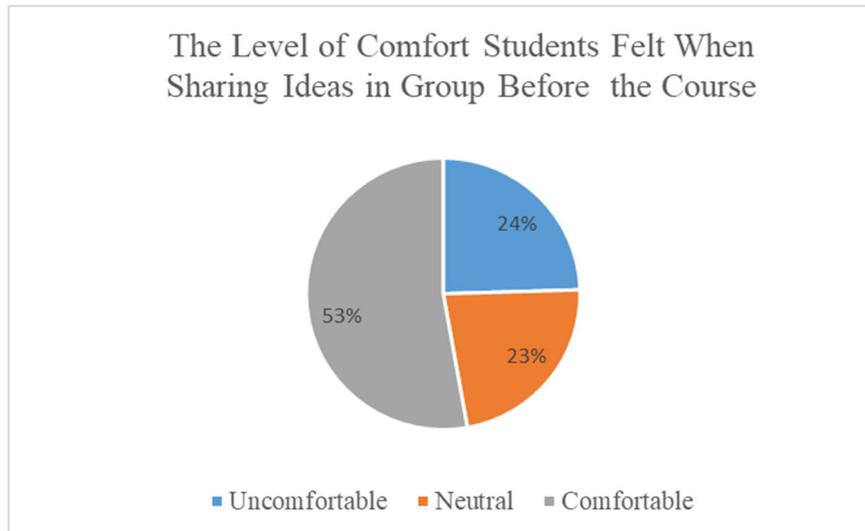


Figure 4: Comfort Level in Sharing Ideas Before Entrepreneurship Classes

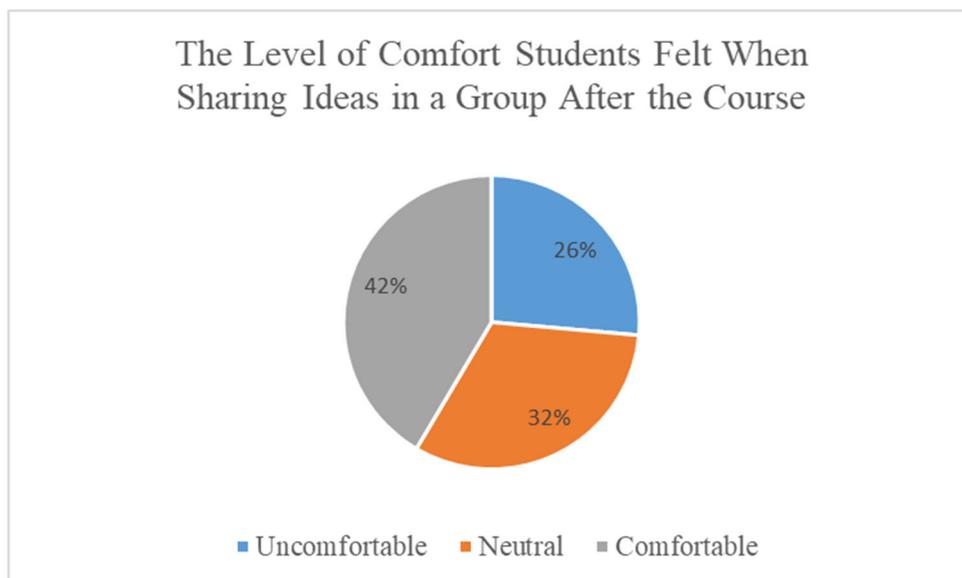


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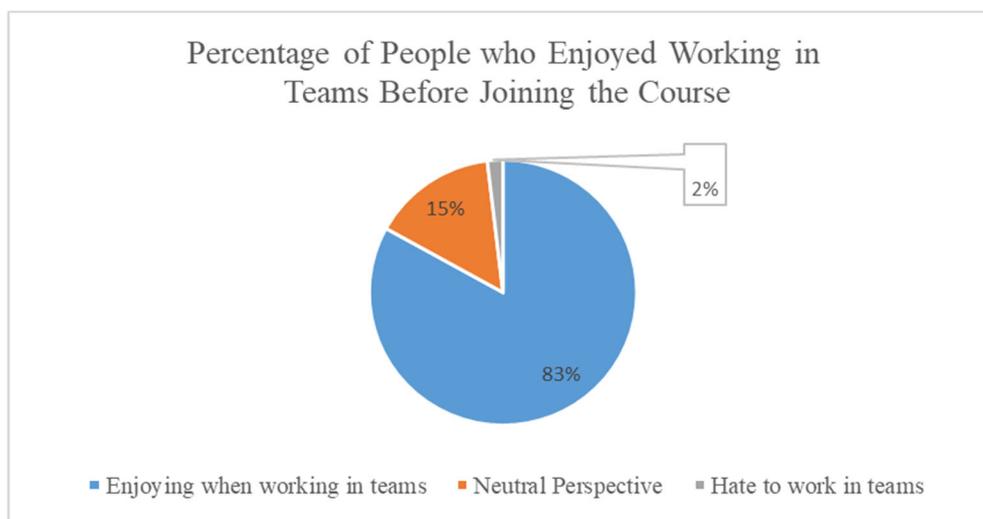


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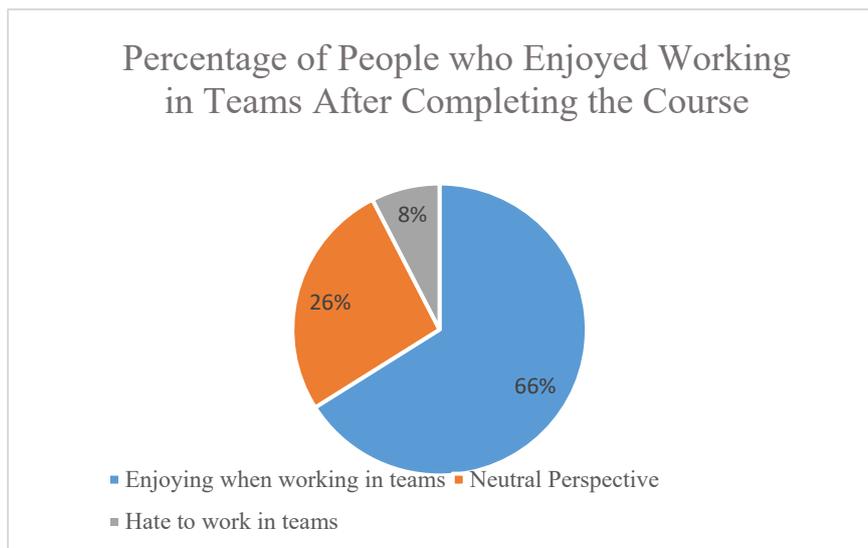


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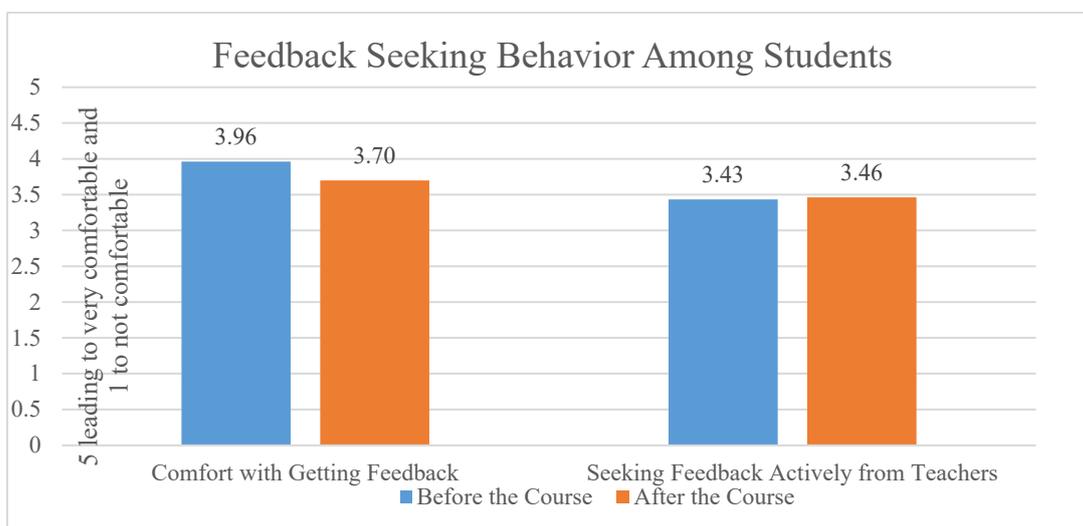


Figure 8: Changes in Feedback Seeking Behavior Due to Entrepreneurship Course

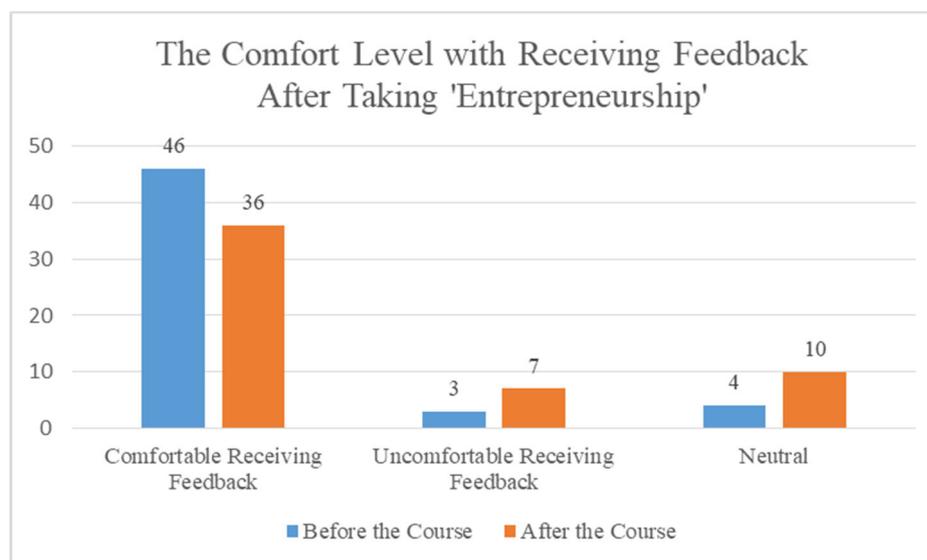


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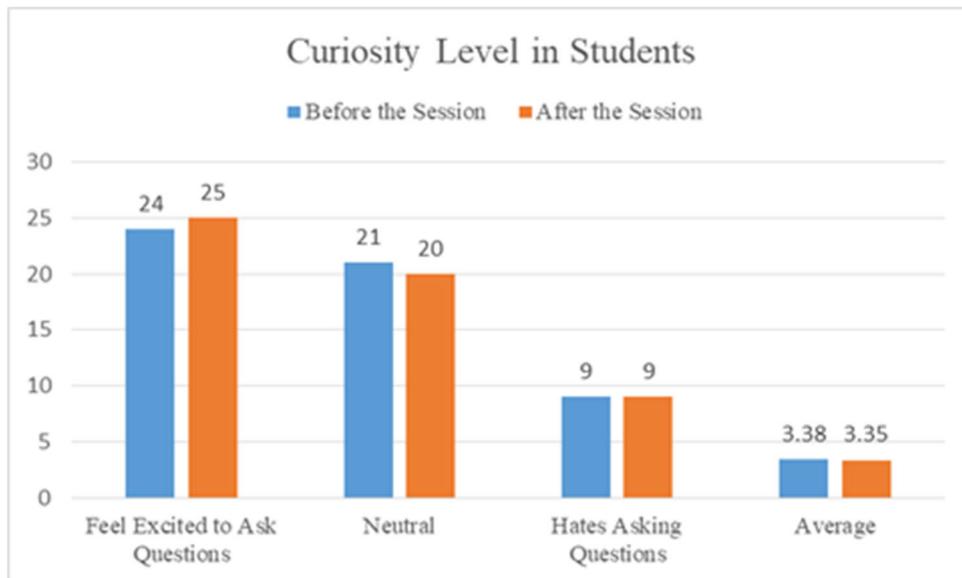


Figure 10: Changes in Curiosity Level After Entrepreneurship Course

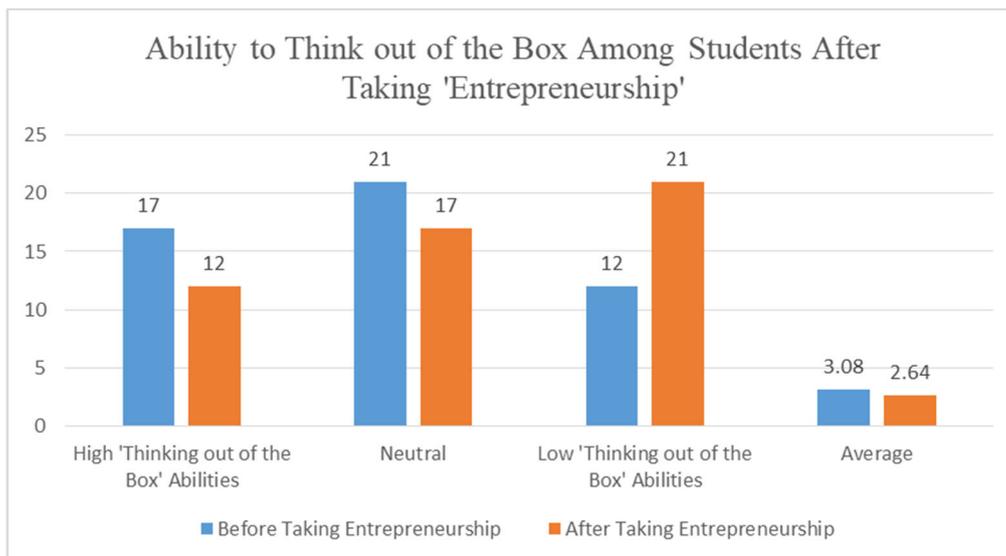


Figure 11: Changes in Creativity Level of Students after Completing the Course

Appendix I

1. How do you feel about coming to school?

- I enjoy coming to school as there are new things to learn.
- I like coming to school very often.
- I sometimes feel like coming to school whereas sometimes I feel lazy about it.
- I don't like coming to school as I get bored in classes.
- I want to stay back at home but I am forced to come to school.

2. What subject do you like the most?

- Science
- Social Studies
- Mathematics
- English
- Nepali
- Others (Please specify) _____

3. Please tick the statement which holds true for you.

- I enjoy learning new things even if that means high chances of failure.
- I like trying new things even if I would fail.
- I sometimes like trying new things but I sometimes like following the usual process of doing

- things.
- I wouldn't want to try new things if that would mean I would fail.
 - I hate failing and that's why I don't like to try new things.
- 4. What do you do when you feel that there is an existing problem in your larger community?**
- I look for alternative solutions for solving that problem.
 - I wait until someone does something about it and if none of my teachers/parents do something about it, I find some alternative solutions.
 - I wait until the problem gets automatically solved.
 - I tell my teachers/parents about the problem and then wait for them to take an action
 - I don't think it is possible for us students to solve the problems of the environment.
- 5. How comfortable are you sharing new ideas in a group?**
- I am very comfortable sharing my new ideas and thoughts in front of newer audiences.
 - I like sharing my new ideas and thoughts with my friends and teachers.
 - If I think of something truly innovative, I share it in the group.
 - I don't like to share new ideas and thoughts as they could be wrong.
 - I am not comfortable sharing new ideas and thoughts in front of others.
- 6. How do you feel when you have been given a project which you are supposed to complete in teams?**
- I enjoy working in teams as it makes the project more interesting and all of us can use our own strengths.
 - I like working in teams most of the times.
 - I feel it's normal to work in a team.
 - I don't like working in teams due to so much of fight that happens between team members.
 - I hate working in teams and I would like our teacher to give us more individual assignments.
- 7. How comfortable are you working with a friend who has a different set of strengths than you? (If you really are someone who likes playing sports and is not good at maths, would you want to work with someone who scores 95% in mathematics.)**
- I would want to work with the person in a team
 - I would not mind working with the person in a team.
 - It wouldn't matter if the person who is good at maths is a part of the team.
 - I would hesitate working with the person in the same team.
 - I would not agree having the maths topper in my team.
- 8. If my friend would suggest me to improve my handwriting as he wasn't able to understand anything when he took my notebook, I would do the following:**
- I would see what is wrong with my handwriting and change it
 - I would try to make my writing better from next time.
 - I think his statement is true but there is nothing which can be done now to change my handwriting.
 - I wouldn't appreciate his comment and would not change my handwriting
 - I would not feel good and this comment on my handwriting would anger me
- 9. What do you do when your teacher returns back your home-work or your tests and quizzes?**
- I make sure I go to the teacher and ask where all should I improve
 - When I score high marks, I ignore the situation but when I score low marks, I go to my teacher to ask for improvements.
 - I ask for the feedback of teachers when I feel like it otherwise I ignore it.
 - I just accept my marks as they are rather than asking my teacher.
 - I don't think talking to my teacher would help and they would make me re-do the whole assignment.
- 10. What do you feel about asking questions?**
- I enjoy asking new questions to my parents, my teachers and even my peers as I feel it helps me gain newer perspectives.
 - I like to ask questions when I feel curious about any subject.
 - I do ask questions sometimes when I don't understand things.
 - I hesitate asking questions as it may sound like I am stupid.
 - I hate asking questions to my teachers and my parents as it doesn't help anyone.
- 11. List as many possible uses you can of the materials listed below:**
- Ball
 - Lemons
 - Bangles
 - Water Bottles
 - Bric