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Modelling the student journey using customer journey mapping: moments of truth in the educational journey

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1. Abstract

Nations widely acknowledge the potential of education in shaping both the individual and society. There is a constant effort to develop a model to understand students' journeys which includes understanding what they go through during the whole process of education. This study creates a basic model to understand students' experiences before, during and after study periods of formal education at the University of Technology and Applied Sciences, Muscat.

An interactive discussion in the form of a semi-structured interview with final-year students was conducted to collect in-depth information related to the six phases of a student's journey. It concludes with an examination of six moments of truth, each of which is defined and explained using various touchpoints.

The sample was students in training who had completed all courses before receiving their Bachelor's degree (N=156) across the Business Studies, Engineering and Applied Sciences departments, including on-the-job training students pursuing. The semi-structured interview method was used as the method of data collection. The objective of this paper was to assess the application of the concept of customer journey mapping to design a methodology to map students' journeys from their points of view and develop a system that delivers a better experience for students. The user-centred design (UCD) was used for summarising the outcome of students' responses. The analysis is an effort to highlight the touchpoints which need to be taken improved on and also the touchpoints which are well appreciated by the students.

Keywords: higher education, customer journey, student journey mapping, moment of truth, touchpoints, user-centred design.

2. Background

The Sultanate of Oman is a growing and developed nation with a major vision to upgrade the quality of life of its citizens by providing quality education to every part of society and individual. According to Khalid bin Hilal bin Saud Al Busaidi, Minister of the Diwan of the Royal Court and Chairman of the Education Council in the prologue to *Vision 2040: National Strategy for Oman* (2018), education is the basic requirement for implementing any developmental programme in the nation. Educational establishments need to work in alignment with the general policies of the nation to achieve the overall goals to which the state aspires.

Educational establishments in the Sultanate are likewise trying their hardest to adapt to this highly revolutionised world to match the nation's general objectives and the shape it needs to take for the future. For both students and educational institutions, this is a period of transition and adjustment. In today's era of intense social network distractions, providing a satisfactory experience for pupils is a challenge. Working as a mentor and guide to students who are going through the difficult process of excelling in their field is a difficult management task.

Customer journey mapping is an approach that is commonly used in the marketing profession and refers to the understanding of customer journeys from the customer's point of view. This paper used customer journey mapping, which is one of the techniques of UCD (Schuhbauer et al., 2020) to map students' journeys using major and minor touchpoints.

Schuhbauer et al., argue that a student's life cycle begins even before they enrol at university, thus candidates strive to figure out which university is best for them before choosing where to study (2020). When a student completes their education, the student life cycle comes to an end. The administration keeps a record of the whole process from the student's point of view.

Life is a journey that is shaped and designed by the time spent in school, university or college. Countries and societies are shaped and structured based on the experience citizens gain in each phase of life. The journey through education builds the character of society. How a society behaves is shaped by these experiences. The mission and vision of the college are always aligned with the direction the country is heading in. The journey of a student in an educational institution is supposed to meld the individual to be in tune with the stated vision and mission of the institution and the country in general.

How the student feels and experiences their journey determines the brand image of the institution. It will also help us determine to what extent we are adapting to the changing times and can neutralise the effect of social and electronic media.

The objective of this paper is to assess the application of the concept of customer journey mapping to design a methodology to map students' journeys from their points of view. The goal is to better understand students' journeys and develop a system that delivers a better experience for the students. Processes should be re-engineered not simply to perform more efficiently, but also to meet the expectations of students. The focus is to understand the 'moments of truth' in the student's journey. Each moment of truth has touchpoints which are the points of interaction of the student at different phases of the journey.

2.1 Customer journey mapping

Marketing researchers separate the customer journey (see Figure 1) into three distinct phases: pre-buy, purchase and post-purchase, according to a recent comprehensive assessment of the literature (Lemon & Verhoef, 2016). When this concept is applied to the higher education journey, three phases emerge: prospect (pre-purchase phase), student (purchase phase) and alumnus (post-purchase phase). Each stage can be examined to determine the activities that are typical in that phase. For example, before a student is accepted and matriculates, they must be aware of and consider an institution and then apply for admission. Figure 1 depicts a student's path from pre-buy to post-purchase to show how customer journey mapping can be used in the higher education purchasing decision (Pharr, 2018).



Figure 1. Phases of Customer Journey (Lemon & Verhoef, 2016)

According to the Temkin Group (2018), a company treats each interaction step as an individual or isolated moment. Instead, one should consider the journey and every interaction to understand the customer.

Every phase has a moment of truth, the experience of which leads to the next stage. This is a concept widely used in marketing to understand the ultimate sale of the product and the stages

involved in the final purchase. According to Gao (2013), moment of truth marketing is focused on the processes that lead up to and then reinforce purchasing decisions. It is not only about the ‘trigger’ techniques employed at the point of sale to urge people to reach for the pleasurable thing, as vital as they are. Because the ultimate proof of marketing success (at least in the case of fast-moving consumer items) is the sale, the moment of truth is not concerned with client preferences at all; it is the reason why the final purchase does or does not happen.

Appleton (2012) measured how the library and student support service affects the student experience to discover key moments of truth or encounters between a ‘super-converged’ service area and university students, with a focus on monitoring and so influencing student retention and achievement. This paper has identified six moments of truth in student satisfaction.

Moran et al. (2014) noted that moments of truth help to describe the key points which connect customers to the brand. Identifying the key points helps to build the brand in the customer’s mind.

Santos and Gonçalves (2021) have defined various terms related to customer journey mapping, including touchpoints. These are the points of interaction between the customer and the company, which are part of a broader phase of interaction in the final purchase. WARC (2021) is a study of the customer experience through a set of interactions between customers and the company product and services, using both online and offline touchpoints in the process of building a brand that is viewed positively by the customers.

2.2 Customer journey mapping and student journey mapping

Shahzadiz (2011) developed a model which shows that academic performance in universities depends on learning skills and learning skills depend on study habits. The study found that the strongest factor in academic success is the home environment, which affects learning skills and ultimately academic performance. It concludes that a student can achieve high academic performance by focusing on the home environment and learning skills. West (2012) found that 63% of postgraduate students find it difficult to adjust to the level of university study due to factors such as language problems and difficulty in coping with the curriculum. According to Jochems et al. (1996), studying in a second language affects average grades and the likelihood of passing examinations and makes it more likely that students will postpone by a semester or follow a different order from that recommended for foreign students.

Final school grade, English language competence, self-regulatory learning practices and extrinsic goal orientation are all elements that affect pupils' academic achievement. Self-efficacy, locus of control, intrinsic goal orientation, personality traits and age all have an indirect effect on pupils' academic success (Karimi, 2008). Gallagher et al. (2017) identified that hope, self-efficacy and engagement are major contributing factors to the academic grade point average (GPA) of students for the first four years. They also found that hope is the most robust predictor of academic achievement after education history.

Fargo and Mastrangelo (2021) have conducted exploratory qualitative research using semi-structured, in-depth interviews to learn more about undergraduate student involvement experiences and perceptions of the library's role. They investigated how students see libraries and made recommendations for how libraries should continue to contextualise their work in student interaction.

Customer journey mapping is no longer restricted to marketing but is an integral part of the educational field as a tool for understanding students' journeys.

Vorbach (2019) found that through the application of journey mapping of entrepreneurial students, some experiences thought to be crucial are not at all supportive for the students, while other touchpoints that were never intended to happen at the university have a significant effect on the entrepreneurial intention of the students.

Schuhbauer et al. (2020) used journey mapping to study student journeys and found that they start before official enrolment in the university and end when the students who have completed the course enter the alumni phase and start working. A student's journey was mapped from the student's point of view, including every interaction between the student and the college administration. The objective was to check how relevant each touchpoint was to the journey and what the gap is between reality and the student's expectations.

3. Methodology

This study used the methodology described by Schuhbauer et al. (2020), who also researched student journey mapping. Although their approach is different from ours, the basic process was the same.

The study is qualitative research in which the customer (student) journey is displayed and analysed to identify areas for improvement. This project aimed to define students' processes from the point of view of the students using customer journey mapping.

Our study had two main aims:

1. To identify the Zero Moment of Truth, First Moment of Truth, Second Moment of Truth, Third Moment of Truth and Final Moment of Truth in students' journeys.
2. To identify touchpoints that need to be modified to provide a better experience for students.

3.1 Collection of data

The University of Technology and Applied Sciences, Muscat (UTAS-Muscat) is one of nine UTAS colleges and has seven streams of specialisation. The main four streams are Engineering, Business Studies, Applied Sciences and Information Technology. Students have to go through four levels of study (Diploma First Year, Diploma Second Year, Advanced Diploma and Bachelor) before they progress to two months of industrial training and finally graduate with a Bachelor's degree.

The sample was drawn from final-year students who had completed their academic courses and were in industry training. It targeted 250 students during semester three of 2020-21 in industrial training who are almost ready to graduate. We were able to collect qualitative data with in-depth information from 159 students through informal semi-structured interviews. According to Adams (2015), the semi-structured interview is the best combination of a closed questionnaire and deriving in-depth information from respondents. It helps in asking probing questions.

Students responded to questions related to **the** Zero Moment of Truth, First Moment of Truth, Second Moment of Truth, Third Moment of Truth and Final Moment of Truth. Touchpoints defining each were designed based on the academic experience of the researcher and the alumni students who took part in this process.

Zero Moment of Truth What is the experience of students in selecting the college? How was the information received and used in the process of selecting the college? Includes two touchpoints.

First Moment of Truth What is the experience of students in the foundation stage of academics? Includes three touchpoints.

Second Moment of Truth What is the perception of students in the process of being admitted to the college and registered for the courses in each academic session? Which is the preferred method, offline or online? Includes seven touchpoints.

Third Moment of Truth What is the perception of students related to the service provided in terms of classes and guidance from the teacher in academic and non-academic areas? Which is the preferred method, offline or online? Includes eight touchpoints for each level of education, Diploma, Advanced Diploma and Bachelor.

Fourth Moment of Truth What is the perception of students toward on-the-job training, which is the final stage before graduating from college? Which is the preferred method, offline or online? Includes four touchpoints.

Final Moment of Truth What is the overall impression of the institution that the student takes away after completing all phases of the journey? Which is the preferred method, offline or online? Includes three touchpoints.

3.2 Method of analysis

The method used is UCD which is an integrated approach (Ferris, 2004). This includes setting goals to understand the customer, designing the whole experience of the customer, evaluating the design and assessing the competition.

According to Al Subhi (2018), customer journey mapping is a method used in UCD to understand how the product or service is perceived by the customer allowing it to be designed to better suit them. There is no standardised way of building a customer journey map but there should be four characteristics: a team-oriented approach, a highly visual nonlinear nature, the use of touchpoints and an emphasis on real customers (Ortbal et al., 2016).

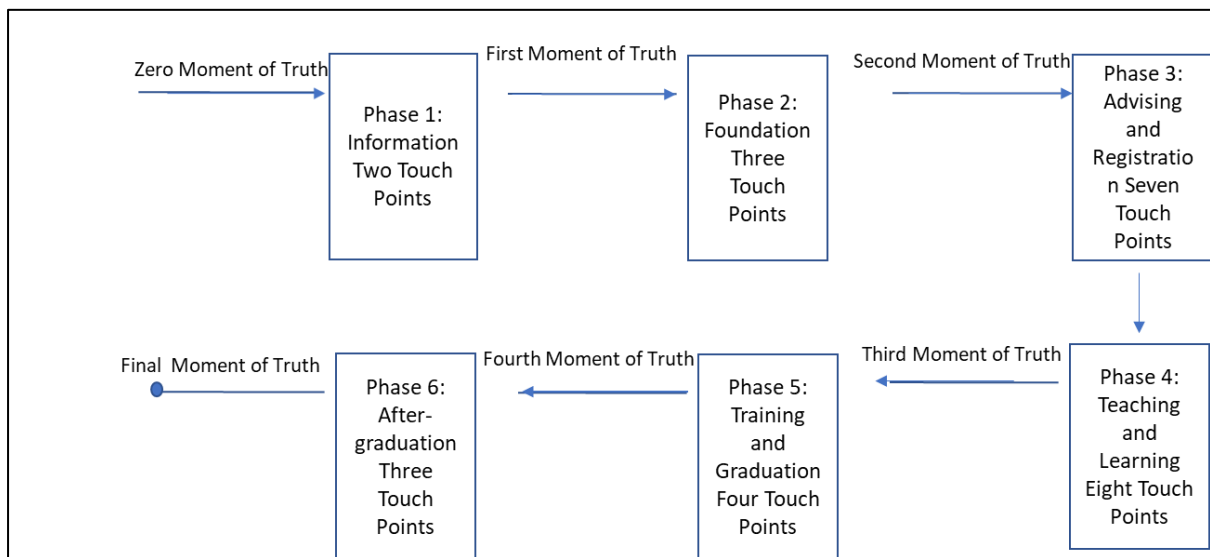


Figure 2. Flow chart: Phases in the student's journey and touchpoints

For this study, we used a qualitative evaluation of the student journey from the student’s point of view. Figure 2 shows the phases in the student journey. The touchpoint in each phase is the point of interaction and experience of the students in relation to the process.

4. Analysis

Data related to the student’s journey is summarised in seven phases:

Phases 1, 2 and 3 - Zero Moment of Truth, First Moment of Truth, Second Moment of Truth.

Phase 4 - Third Moment of Truth across the departments and levels of study.

Phase 5 - Fourth Moment of Truth across the departments.

Phase 6 - Final Moment of Truth across the departments.

In this research, it was important to grasp the overall experience of students to achieve the aim of understanding how to improve the educational process Figure 3. Regarding phases 1, 2 and 3, the students were not at all happy at all about the experience in the information phase. Moving to the foundation phase, it is clear that the students were happy only when there is face-to-face interaction. Then during the advising and registration phase, their experience was again poor. However, in phases 4, 5 and 6 the experiences were neutral for the online channel, but the students were happy in phases 4 and 5.

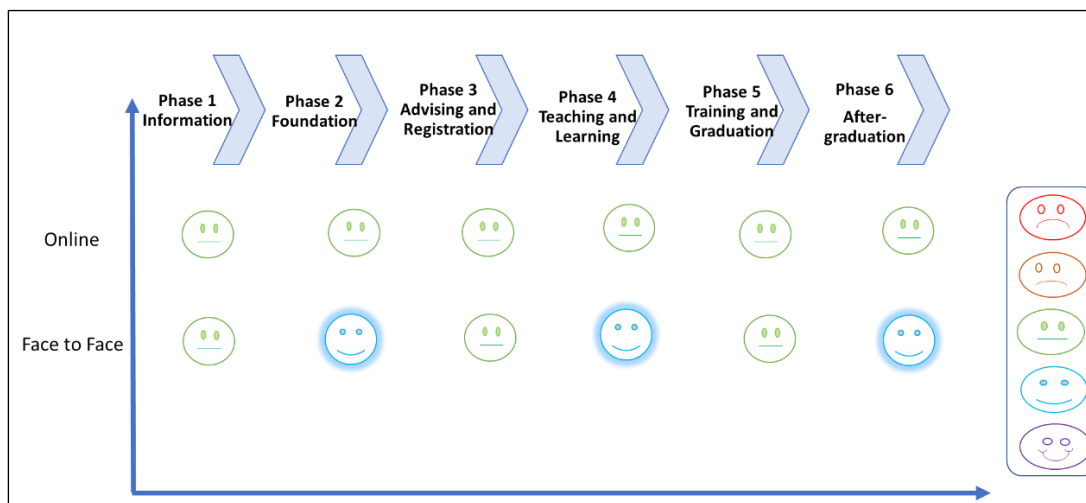


Figure 3. Overall Student Journey : All specialisation

4.1 Phase 4: Teaching and learning: Engineering, applied sciences and business

UTAS has different educational levels and the study was conducted separately at all levels. According to the results for both Diploma levels, it was clear that the students' experience was neutral and perhaps close to negative using online systems. However, they were happy with face-to-face interaction (see Figures 4 and 5).

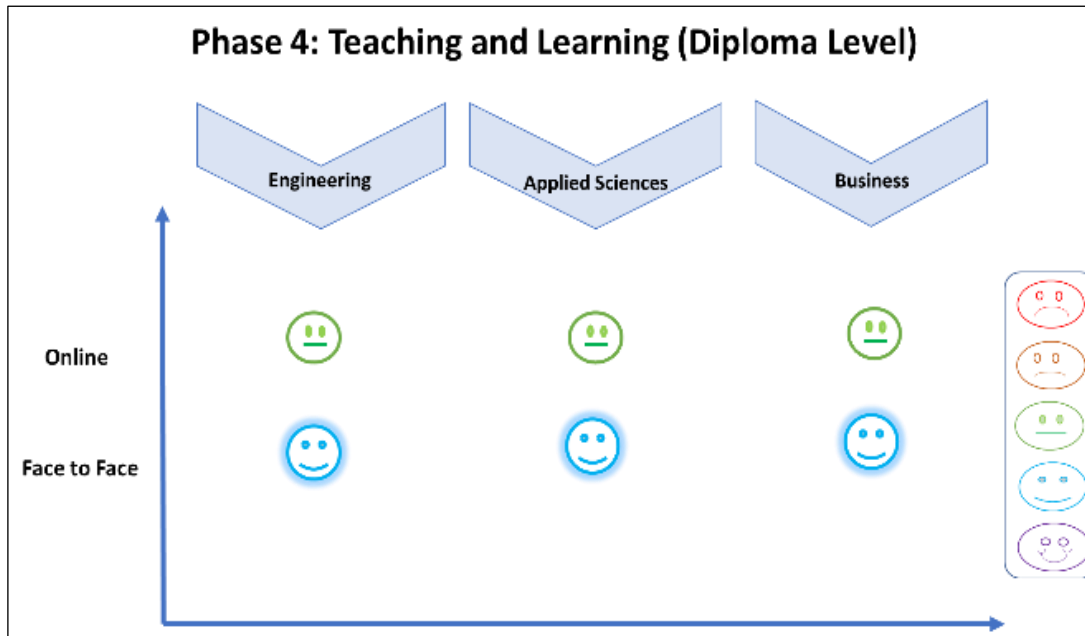


Figure 4. Phase 4: Teaching and Learning Diploma First Level

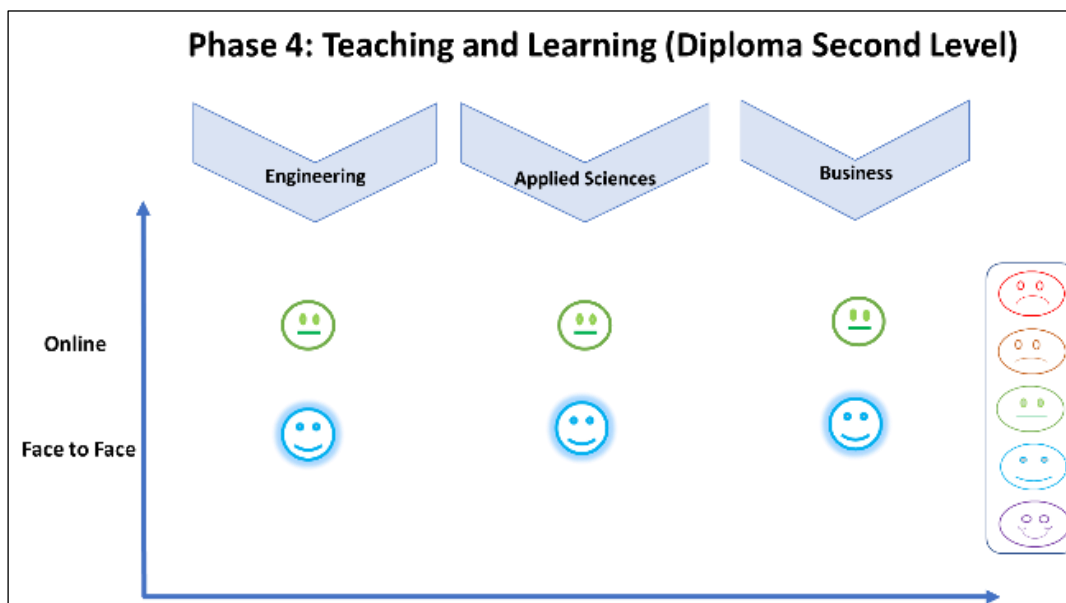


Figure 5. Phase 4: Teaching and Learning Diploma Second Level

Moving to the Advanced Diploma shown in Figure 6, again the students' experience was neutral while using online systems. However, during the face-to-face experiences, Engineering and Applied Sciences students were happy, while Business students were still neutral.

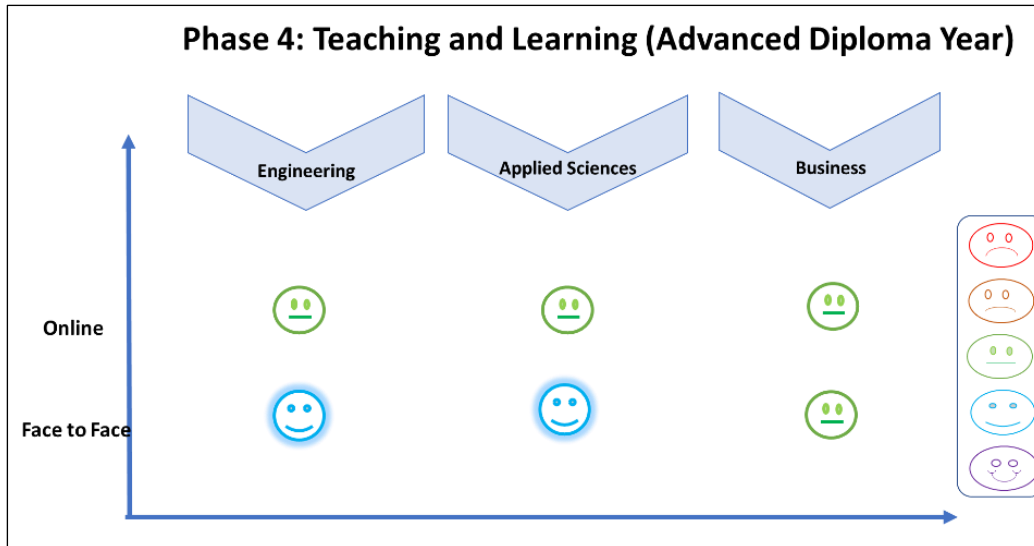


Figure 6. Phase 4: Teaching and Learning Advanced Diploma

Examining the experience of Bachelor level students (Figure 7), it can be concluded that there is a need for improvement in all systems in both channels, online and face-to-face. Except for Business students, it seems that the students are happy in this phase. Phase 4 in general needs improvement and enhancement to deliver a better student experience.

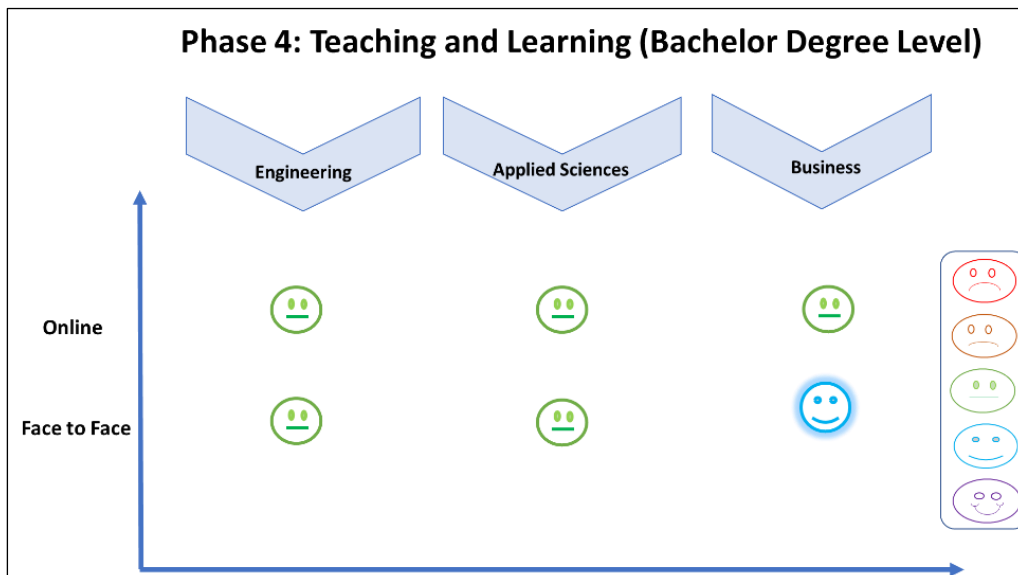


Figure 7. Phase 4: Teaching and Learning Bachelor Level

4.2 Phase 5: Training and graduation: Engineering, applied sciences and business

Regarding Phase 5 (training and graduation), it is clear from Figure 8 that the experience of students was bad in all specialisations, whether online or face-to-face. Hence, the student journey needs improvement in both channels.

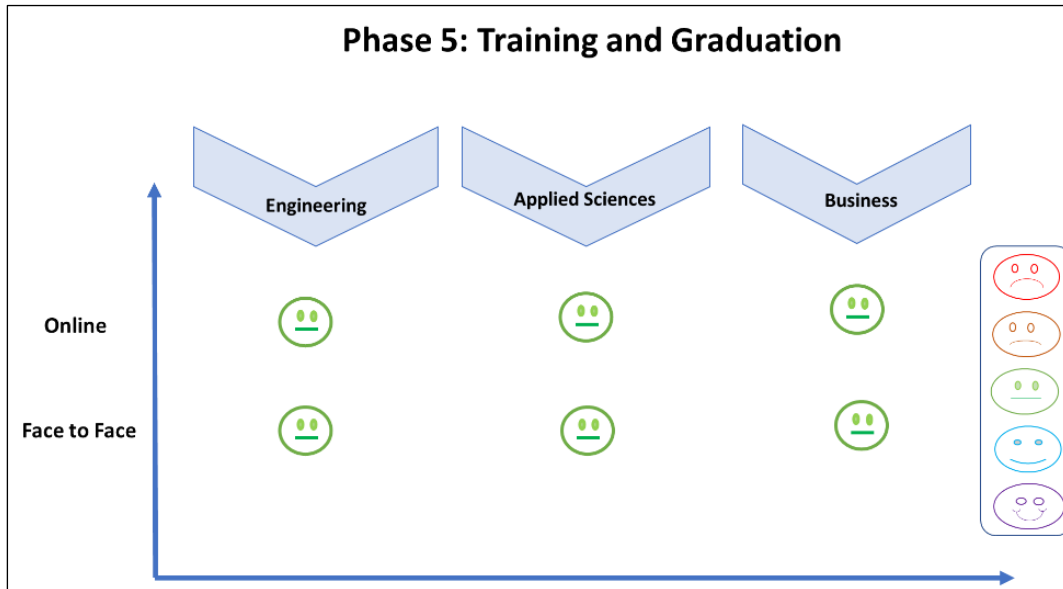


Figure 8. Phase 5: Training and Graduation All levels

4.3 Phase 6: After-Graduation: Engineering, Applied Sciences and Business

Considering the last phase in the student journey – after graduation – Figure 9 shows that in the Applied Sciences Department, the student experience was poor. In Engineering, the students were happy during face-to-face interaction, but their experience using online channels was poor. In the Business department, the students were happy during this phase in both channels.

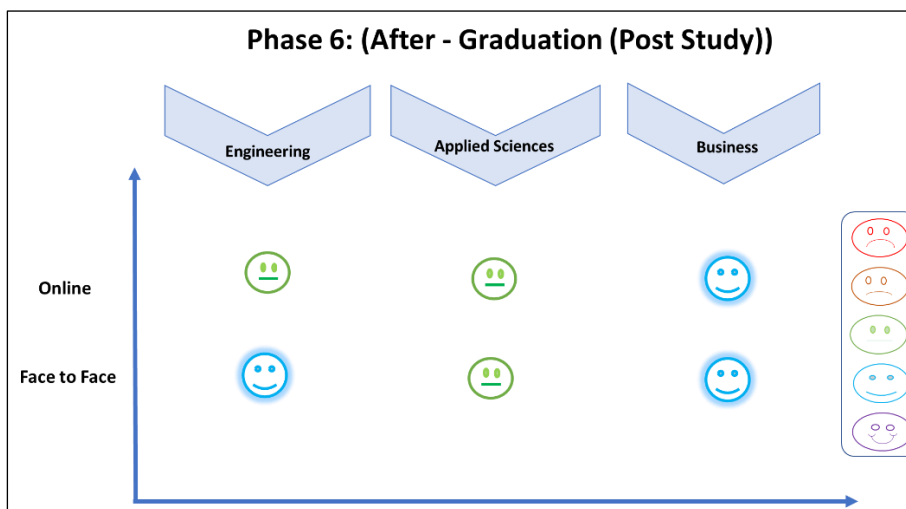


Figure 9. Phase 6: After-Graduation

5. Conclusion

The aim of this research was to assess the application of customer journey mapping to design a methodology to map students' journeys from their points of view and develop a system that provides a better experience for the students. This journey was built as shown in the analysis. The first objective of the study was to identify the moments of truth in students' journeys. This was achieved by classifying and recognising the moment of truth. The outcomes are summarised in Table 1.

The second objective was to identify touchpoints that need to be modified to provide a better experience for students. The summary of moments of truth in tabulated form identifies areas that need improvement. The underlined statements are the areas to improve and the statements which are in ***bold and italics*** are satisfactory results. Applying journey mapping for an institute helps in identifying the moment of truth in each phase of the educational journey which can be improved.

Moment of Truth	Touchpoints
Zero Moment of Truth: Information	The feedback from the students regarding this phase was poor. This reveals a need for institutions to be more attractive and innovative in how they reach out to potential students.
First Moment of Truth: Foundation	When the students first join the institution, they prefer to have face-to-face interaction for counselling, academics and guidance.
Second Moment of Truth: Advising and Registration	This is a very important phase for the students as they choose the subjects to be completed in each academic period. Whether a student has a satisfactory or dissatisfactory experience in this phase affects their level of motivation. The results indicate <u>that this critical phase in the whole journey needs a lot of improvements to make it satisfactory for the students.</u>
Third Moment of Truth: Teaching and Learning	<p>The central aspect of the student journey is knowledge input. The feedback of the students was not uniform across the levels and departments. At both Diploma levels, <u>it was clear that the students' experience was neutral and perhaps close to negative when using online systems.</u> However, the students were <i>happy with face-to-face interaction.</i> Moving to the Advanced Diploma, the student experience was neutral while using online systems. However, during face-to-face interaction <i>Engineering and Applied Sciences students were happy,</i> <u>while Business students were still neutral.</u></p> <p>Regarding the experience of Bachelor level students, <u>there is a need for improvement in all specialisations in both channels, online and face-to-face.</u> Except for <i>Business students, it seems that the students are happy in this phase.</i></p> <p>The results of this <u>vital phase indicate a need for improvement in specific touchpoints.</u> Therefore, for an institution to reach a high level of quality, it should consider these elements.</p>
Fourth Moment of Truth: Training and Graduation	In this phase, <u>the experience of students was bad in all specialisations,</u> whether online or face-to-face. Hence, the student journey needs more improvements in both channels.

Final Moment of Truth: After-Graduation	During the last phase in the student journey map, in the Applied Sciences Department, the student experience was bad. In Engineering, the students were happy during face-to-face interaction but their experience using online channels was bad. Moving to the Business department, the students were happy during this phase in both channels. <u>Thus, the institute needs enhancement in some areas regarding the post-study phase.</u>
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Table 1. Significant touchpoints in the Student Journey Mapping

Table 1 highlights and summarises touchpoints in the student journey mapping which need attention. Institutions do put in a great deal of effort to provide the best experience for students, but there are still areas where the students are dissatisfied. There is a need to apply state-of-the-art techniques to understand the students' points of view and make changes accordingly.

All the given points are constructive criticism which indicates ways to keep pace with the dynamic thought processes and requirements of students in a constantly changing world.

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