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Promoting Engagement Through Means of Gamification

Case: A Saudi Arabian Massive Open Online Courses Platform

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Service Innovation & Design
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Laurea University of Applied Sciences **Abstract**
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The purpose of this thesis is to study customer engagement in the context of online education services, represented by Massive Open Online Courses (MOOCs). Online education has provided a means to reach a larger student audience, where the barriers of time, space, location, and accessibility have been broken compared to traditional forms of education. Within the online education space, MOOCs have gained a great attraction in recent years due to their massive enrollment rates. MOOCs are free, informal, collaborative and student-centered when it comes to responsibility for learning.

Despite the high student enrollment numbers in MOOCs, they have not managed to get completion rates that are comparable in any way to traditional means of education. Based on studies done by MIT & Harvard on 840,000 students across 17 courses delivered as MOOCs, 4% was the average completion rate of the students. However, recent studies have shown that students have different aims and goals when it comes to MOOCs, and completion for some of them is not the end goal when it comes to education in MOOCs. Hence, a gap exists between what is traditionally seen as a goal from educational providers' point of view and what students foresee as goals.

Therefore, a deeper look that goes beyond the completion rates is needed to understand the different aspects of MOOC service experience. Getting more into student expectations, motivations, and journeys with the aim to help elevate and enhance the overall MOOC learning service experience could yield better outcomes. In this sense, student engagement was hypothesized as the area of study and focus, which could help in elevating and enhancing the outcomes of MOOCs. Hence, an empirical and exploratory study was done on the biggest MOOC platform focused on native Arabic-speaking people named RWAQ. The study found that student engagement is one of the major issues that contribute to affect the overall value perceived out of MOOCs. As an example, issues like the absence of clear progression paths for students, limited teacher interactions, poor content design, and many other issues contribute to affect and lower student engagement within MOOCs.

To help solve engagement issues, gamification was suggested as a solution framework to promote and enhance different engagement dimensions. Gamification is the science of using game tools and methods in a non-game context where it is in itself a blend of disciplines that can help improve emotional, cognitive, behavioral and societal engagement dimensions of services. Hence, MOOCs can be motivational, relatively challenging, behaviorally optimized, social and fun for students.

In conclusion, the results of the study confirmed the positive effect of student engagement both on the value of the MOOC and its service experience. Therefore, in general, enhancing customer engagement helps to elevate services to be more satisfactory and fulfilling, and increases the value of services performances. Hence, this study can be used as a base to understand engagement in services, in general, with the aim to enhance the co-created value of services by using engagement as means to achieve that.

Keywords: Engagement, Customer Engagement, Student Engagement, Service Value, Gamification, Online Education, Massive Open Online Courses, MOOCs

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1 Introduction

1.1 Thesis structure

This thesis has four parts: an introduction, context, theoretical background, and the study. The introduction section gives a quick walkthrough on the topic of this thesis and lists the research objective and limitations. Next, in the context section, an overview of the online education services with a special focus on Massive Open Online Courses (MOOCs) and the case organization for the study will be given. Afterward, a look at the theory of service value, customer engagement and the theory of gamification that is proposed as solution framework for the engagement issues in MOOCs will be undertaken. Finally, the research study section details the service design research conducted on the case organization, were the methods, approach and results are explained in detail. Finally, the report will finish with a summary, key findings and conclusion.

1.2 General background

With the dawn of the 21st century, technology has paved the way to provide a new means to education. With the advance in communication technologies, mobility solutions, social platforms and the overall trend of digitization, online education is becoming a major medium for reaching students and educating them. In online education, the barriers of time, space, location, and accessibility have been broken when compared to traditional forms of education. Teachers and students alike can design, consume, interact and co-create learning in ways that were not possible before when it came to scalability, affordability, and accessibility. With these technological advances also came changes in behaviors at the societal level, which set a new level of expectation on how education services need to be approached, designed and delivered.

In recent years, a new breed of online education service has emerged where the education is free, informal, online, collaborative, and learning is student centered. This new form of learning is called Massive Open Online Courses (MOOCs). After the first implementation of an MOOC in 2011 with the topic on Artificial Intelligence, the education community has been taken by storm by the unprecedented high student adoption and enrollment numbers in MOOCs. Many well-reputed and well-known academic institutes started to follow this trend and provide MOOCs on different topics for everyone, everywhere in the world. For example, MIT, Harvard, and Stanford Universities started providing MOOCs on their homegrown platforms. Other universities from all over the world also followed the trend by using generic MOOC platforms like Udacity, Coursera or iVersity. These platforms are independent of any

academic bonding, but they give the space for academic institutes to provide academic courses to anyone, anytime and anywhere.

However, despite the high numbers of student enrollment in MOOCs, recent studies have shown that MOOC completion rates are averaging 7% at the global level. Issues like learning practices, content design, awareness about the differences between tradition mediums, lack of understanding of student aims and, last but not least, student engagement, are all reasons that contribute to low completion rates in MOOCs. Therefore, the need to look beyond completion rates in MOOCs to get a clear understanding of the obstacles, problems and issues facing students while learning was needed. Hence, an empirical study was done on the first Arabic MOOC platform named RWAQ to understand different issues facing students when it comes to student learning service experience with the focus on student engagement as the research main area.

The study started by looking at the online education context, with the special focus and attention to the topic of MOOCs and a brief look at the case organization for this research. Next, theoretical background was established to understand the topics of service value, customer engagement, and gamification. Afterward, a focus on the topic of engagement in the context of MOOCs and the issues facing students when it comes to engagement within MOOC services. Later, the empirical study was carried out to gain a proper understanding of the different issues faced by students within the MOOC service context. Finally, set of recommendations was presented to the case organization on how to enhance the overall MOOC service experience by enhancing student engagement within MOOCs through means of gamification.

1.3 Research objective

For the case organization of this study, completion rates averages to 6% as the completion average across all of its courses. Moreover, when asked about their aims when it comes to MOOCs, students showcased different motivations and aims that are not in necessary requiring course completion. As an example, the aim to update certain personal knowledge about specific topics to match market needs, the aim to socialize with like-minded personals or simply the pleasure of learning something new without any full commitments. Moreover, looking at the same issue at a global level, a study done by MIT & Harvard (2014), which included 840,000 students across 17 edX platform courses showed that two-thirds of the students at least got something out of the course, when it comes to measuring the overall benefits of MOOCs, which align with the empirical findings discovered when analyzing the student aims in the case organization. Hence, the question arises: Are completion rates the right measurement of the success of an MOOC?

Ho, Reich, Nesterko, Seaton, Mullaney, Waldo & Chuang (2014, 3) argued that completion rates are a misleading indicator of the success of an MOOC. The misleading happens due to many factors: the absence of any commitments from the registrant side, the potential to access the course content from someone who is not registered at all and last but not least, the nature of enrollment in MOOCs, which is opened for anyone, at any time, even after the course has started. Furthermore, Billsberry (2013) showed that despite the easiness of enrollment in an MOOC, the absence of teacher involvement, follow-up, exchange of ideas and clear path of progression are all factors that contribute to lower MOOC completion rates. That told, a more comprehensive look at the different aspects of the student MOOC service experience need to be undertook, where a proper understanding of student aims, expectations, needs, and behaviors need to be unlocked to enhance the adoption of MOOC service offerings.

Therefore, student engagement has been hypothesized as the area to study for this thesis. In this sense, enhancing student engagement would yield to enhancements in the overall value perceived out of MOOCs from the student point of view and also help the case organization enhance their overall MOOCs adoption. For that, the aim of this thesis was to understand and promote student engagement in the online learning environment represented by MOOCs with the help of service design and gamification to help answer the following questions:

- How to understand student engagement in MOOCs?
- How to promote student engagement within MOOCs using gamification?

It is noteworthy that the study aimed to help to promote student engagement limited to the case organization, which as a result could enhance the adoption of the case organization offerings, hence improving the overall brand value of the platform.

1.4 Research limitations

For this thesis, the study of pedagogical approaches and how it can be enhanced to improve the student overall learning is not present. Hence, This study focuses on online education / MOOCs as services, and the viewpoint is that of service sciences. Pedagogical issues are not tackled in this thesis, and the pedagogical approach is left aside.

Furthermore, it is worth mentioning that engagement is looked at from a student point of view, and other engagement issues that are related to teachers, for example, are not part of the scope of this study. To be taken into consideration also, the co-founders of the case organization of this research (RWAQ) provided their maximum support for this research; the

output of the research was not implemented due to platform roadmap considerations. Finally, the assumption is, the more research that is published on the topic of MOOCs, and the more understanding can be obtained on this interesting topic, this research is just one step in that direction.

2 Context

2.1 Online education

Education has undergone rapid shifts in recent years. Technological advances, population behavioral changes, global economic pressures and the rise of distance learning programs worldwide have all paved the way for the rise of online education. Moreover, online education has undergone a shift from distribution, to interaction, to collaboration and finally co-creation of education by both student and teachers. In this sense, online education can be as simple as making educational content accessible online (for example, PDF files) to fully collaborative educational platforms, all these are means of delivering education to its audience (Palloff & Pratt 2013, 7).

Palloff & Pratt (2013, 17) argued that the rise of K-12 virtual schools has paved the way for major advances in the online education space as whole. Hence, looking at K-12 as bright spots when it comes to online education, one can divide online education into the following models:

- **Blended models:** models were the majority of the student work is done using an online education system, but in some cases, face-to-face meetings are needed (not very often) to complement the online learning.

- **Supplemental models:** models were online learning is used to provide certain topics that extend what schools offer to help reduce learning budgets and support off-campus learning.

- **Classroom-based models:** models were the use of technology supports the face-to-face classroom model by engaging students in an online space within the classroom environment.

Though online teaching at the K-12 level may be different than online teaching in higher education, it cannot be ignored as a trendsetter when looked at from an effectiveness and uptake point of view (Palloff & Pratt 2013, 17; Van Dusen 2009).

2.2 Effectiveness of online education

According to Palloff & Pratt (2013, 18), the debate on the effectiveness of online learning is a never-ending topic. Reasons like, instructors disbelief in the medium, the presence of plagiarism and cheating and others are all fueling this debate. Phipps & Merisotis (1999) looked into

the effectiveness of online learning from a student point of view in detail. It is noteworthy that their review concluded that there are three broad areas when talking about the effectiveness of online learning: student learning outcomes, student satisfaction and student attitudes toward learning. For example, tentative conclusions reveal that student outcomes in online learning are often not different from student outcomes in traditional learning; they sometimes can be better. For instances where student outcomes are better in online education, this is often contributed to having the right conditions in places, such as student collaboration, motivation and other factors in place.

Phipps & Merisotis (1999) showed that one of the most important factors that affect online teaching is the instructors ability to master the art of online teaching. Finding the right ways to teach students by utilizing the technology is the key. Other factors that also contribute to the effectiveness of online education are: designing the right tasks for learning, student characteristics and student motivations for education.

When looking to design online education programs, Phipps & Merisotis (1999) listed seven key principles that could help instructors to deliver the right online content, which could help to have better and more effective learning outcomes. These principles are:

1. Encouraging contact between students and instructors
2. Enabling cooperation & collaboration between students
3. Providing prompt feedback
4. Active learning technique adoption by instructors
5. Timings tasks to create a sense of urgency and empower commitment
6. Setting and communicating high expectations
7. Understanding the diversity of students and designing for it

In conclusion, both students and instructors need to have the right enablement that will help improve the overall online education service outcome.

2.3 Understanding MOOCs

2.3.1 Defining Massive Online Open Courses (MOOCs)

Massive Online Open Courses (MOOCs) are a new pedagogical medium for education that has appeared in recent years. Waard (2013) defined MOOCs as: *"a non-defined pedagogical format to organize learning / teaching / training on a specific topic in an informal, online and collaborative way."*

Billsberry (2013, 740) defined an MOOC as a free online course where anyone can sign up for it and take it. The difference between MOOCs and other online offerings that provide educational content like YouTube educational channels is that MOOCs focuses on a certain subject in a full and comprehensive way that creates a common medium of purpose between the participants. Moreover, when looking at MOOCs, they can be counted as a blended learning model. In this sense, MOOC students do most of their learning tasks remotely, with very little student face-to-face interaction to support learning objectives. Therefore, MOOCs can be seen as an extension of current online distance education but with informality, student centrality, collaboration and minimal nature of risk / commitment.

2.3.2 Types of MOOCs

Based on Siemens (2012), MOOCs are divided into the following types: Connectivesest MOOCs (cMOOC) and Well-financed MOOCs (xMOOC). In cMOOCs, people are connected to each other to form a knowledge network and learn from each other throughout established connections within the network. While in xMOOCs pre-efforts and money investment are used to deliver a certain type of content, which represents a more thoroughly planned out course for it is audience, which is in a sense similar to normal academic offerings.

It is worth noting that for the scope of this study, the second type of MOOC (xMOOC) is the focus when it comes to studying the topic of engagement in MOOCs.

2.3.3 History of MOOCs

Based on Waard (2013), the term MOOC was first mentioned during a course on connectivism theory and the connective knowledge with the name CCK08, which was done by Bryan Alexander and Dave Cormier in 2008. At this stage, MOOCs were more about the distribution of knowledge in a network and getting the right connections to unlock knowledge potential (cMOOC).

In 2011, Sebastian Thurn made a breakthrough with his course on Artificial Intelligence when around 160,000 students enrolled in his course. This big number of enrollment seduced big universities to jump into MOOCs. MIT, Harvard and Stanford University started providing MOOCs on their homegrown platforms. Other universities from all over the world followed the trend by using generic MOOC platforms like Udacity, Coursera or iVersity. Those generic platforms are independent of any academic institute, but they give the space for academic courses to provide courses on their platforms. As MOOC adoption by leading universities took place, the initial idea of connectivism in MOOCs was brought back to the original format of

online education, which meant that MOOCs took the path towards less focus on the connections and more into a transformational model of education backed by recent advances in technology (xMOOC) (Waard 2013).

2.3.4 Drivers for MOOCs

No one can undermine the major changes that have happened in society in the past few years; those changes can be mostly attributed to the rise of technological advances. Moreover, the rise of the Millennial Generation, global economic pressures, commoditization of connectivity, and mobility are all reasons that helped to increase the adoption of online education solutions. That said, the need for continuing education, periodic skillset updates and the need for verified, credible sources of information, are additional reasons that helped in the rise of MOOCs as a preferred medium for gaining knowledge. Also, one of the biggest drivers for MOOCs is their low cost compared to traditional education. To lay sight on some economics when it comes to student education, student debt in the US, for example, was at about 1 Trillion dollars in 2012, and since 2000 there has been an approximate 72% increase in student tuition fees (Deloitte 2014, 18). With the above reasons and many others, the importance of MOOCs is something that cannot be overlooked. MOOCs are here to stay, but the need to make them the optimal education medium is what needs to be understood.

2.3.5 The success of online education and MOOCs

Palloff & Part (2013, 8) showed different types of online education, which all have in common the use of technology as the means of education. Palloff & Part (2013, 17) argued that technology alone is not the main factor in assuring high learning outcomes. To achieve high learning outcomes, planning, content alignment, instructor knowledge and student motivation / engagement, all play an equal role in achieving the desired learning outcome.

Looking at MOOCs, recent studies and quantitative analysis of data have shown that MOOCs have a very high rate of dropouts. Waard (2013) mentioned that both types of MOOCs, cMOOC and xMOOC have a high dropout rate despite the differences in their methods and structures of learning. Jordan (no date) showed that MOOC completion rates can be as high as 20%, but on the average they tend to be 7% based on the quantitative study of several MOOCs. Low completion rates have also been supported by a study done by Harvard and MIT, which highlighted that MOOCs had about a 4% course completion rate based on their research on 840,000 students. Nearly two-thirds of the students said they got at least got something out of the MOOC. The report showed that students engaged with MOOCs at different levels. Some had

read several texts or viewed videos; others practiced the problem sets; few had completed all the course perquisites, and some had mixed behaviors.

Although the numbers when looked at from completion rate point of view, look a bit devastating, but they are only concerning completion rates which implies completing the course till the end and gaining the final certificate. But with the referral to the causality nature of MOOCs stated earlier in this study, MOOC benefits should be looked at in relativity to the value creation facilitated for the student and not from the narrow view of completion rates. The question then arises, are completion rates the right measurement of the success of an MOOC?

Ho, Reich, Nesterko, Seaton, Mullaney, Waldo & Chuang (2014, 3) argued that completion rates are a misleading indicator of the success of an MOOC. The misleading happens due to many factors: the absence of any commitments from the registrant side, the potential to access the course content from someone who is not registered at all and last but not least, the nature of enrollment in MOOCs, which is opened for anyone, at any time, even after the course has started. Furthermore, Billsberry (2013) showed that despite the easiness of enrollment in an MOOC, the absence of teacher involvement, follow-up, exchange of ideas and clear path of progression are all factors that contribute to lower MOOC completion rates.

Alcorn & Christensen & Emanuel (2014) in their article, based on a statistical study done by the University of Pennsylvania, highlighted the fact that more than 80% of the students who fill out post-form surveys in MOOCs, say they have met their primary learning objective. Hence, completion rates might not be the right measurements for an MOOC, when compared to traditional education. Some students may see the value of learning in knowing the new topic only, some may participate in student forums to benefit from the wisdom of the crowd, while others may seek for accreditation or certification to boost their academic career and/or professional lives. Hence, a better criterion for success within MOOCs needs to be defined.

2.4 About the case organization, RWAQ

RWAQ (www.rwaq.org), which means “hallway” in English, is the first Arabic MOOC platform. It was established in 2013 and has managed to gain more than 170,000 registered students up to the time of this writing. The platform exclusively provides Arabic based content, were different MOOC topics like: Literature, Medicine, Engineering, Economics, History and many more are provided. In a little more than a years length of time, the following are the stats of the platform based on RWAQ (2014):

- More than 170,000 registered students using the platform from 172+ countries
- More than 65 teachers who designed courses for the platform
- 60+ educational courses published
- 22,000+ lectures
- 65 Ambassadors recruited as part of the RWAQ Ambassador program
- 5 Million website visits
- 100,000+ hour of educational content watched
- 75% registered males vs. 25% registered females
- 70% of the students are between 18-34 years old

Figure 1 shows the statistics of RWAQ as provided by the co-founder in December of 2014.

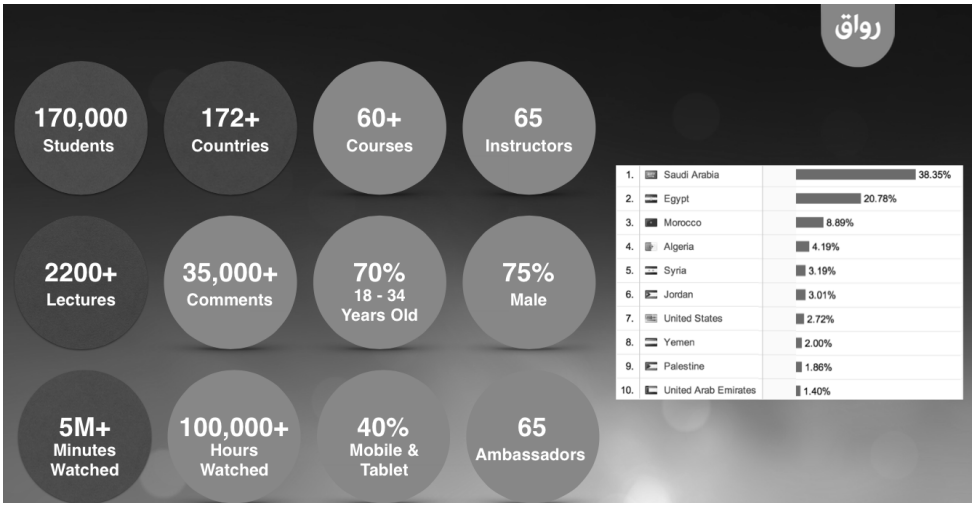

Figure 1: Education statistics (RWAQ 2014)

3 Theoretical background

The study carried out for this thesis is based on services sciences, and service logic perspective, in particular (Vargo & Lusch 2008; Grönroos 2008). Initially, services are defined as the application of competencies of one entity with the aim to support and benefit another. Moreover, based on (Vargo et al. 2008, 146), two general meanings of value exist when thinking about value and value creation as follows:

- **Value-in-exchange:** this is what is called the goods-dominant-logic (GDL), which is the traditional way of thinking about value. The meaning of GDL implies that the value is created by the service provider and exchanged with customers in the market for money.

- **Value-in-use:** this is what is called the services-dominant-logic (SDL), which is a newer perspective about the value of services. From this perspective, the producer and the consumer are not distinct from each other, and the value is always co-created by both entities jointly via efforts, integration of resources and applications of competencies.

In this sense, the value of services are defined to be value-in-use, were the producer of a service and the consumer are not distinct from each other, and the value is always co-created by both entities jointly via efforts, integration of resources and applications of competencies Vargo & Lusch (2008).

To get a proper understanding on the different subjects related to this thesis study, different literature were reviewed. Each class of literature was used to shade the light on a specific topic. The first part of literature was on services and their value, where the literature was used to set a base ground on the topic of value, co-created value and a deeper look to the Service Dominant Logic (SDL). Common and famous literatures from the services sciences were selected. Table 1 shows the summary and the list of literature for services and services value.

Table 1 - Service, Service Value literature

#	Author (Year)	Type	Tile	Summary
Services and Service Value Literature				
1	Dubberly & Evenson (2010)	Paper	Designing for service: Creating an experience advantage	Paper that examines the value of service experiences and how service designers need to create exceptional service experiences
2	Poline, Lovile and Reason (2013)	Book	Service Design: From Insight to Implementation	Book that provides a holistic view on service design, services and its experience.
3	Vargo, Maglio & Akaka (2008)	Paper	On value and value co-creation: A service systems and service logic perspective.	Paper that provides a holistic view on the differences between goods-dominant-logic (GDL) and service-dominant-logic (SDL).
4	Vargo & Lusch (2008)	Paper	Service-dominant logic: continuing the evolution	Paper that provides a fresh look at the service-dominant-logic and its foundational principles.
5	Grönroos (2008)	Paper	Service logic revisited: who creates value? And who co-creates?	Paper that examines value creation and the role of customers and providers in it.
6	Grönroos (2011)	Paper	Value co-creation in service logic: A critical analysis.	Paper that examines SDL logic and provides a critical perspective on how to interpret value co-creation.
7	Meyer, C & Schwager (2007)	Article	Understanding customer experience	An article that distills the concept of customer experience and how to act on it, with practical examples.
8	Kumar (2012)	Book	101 Design Methods: A Structured Approach for Driving Innovation in Your Organization.	Book that details the different design tools that can be used in pursuit of innovation.
9	Stickdorn, & Schneider (2012)	Book	This is Service Design Thinking: Basics, Tools, Cases.	Book introduces an inter-disciplinary approach to designing services, where service design process and methods are detailed.
10	Mortiz, S (2005)	Book	Service Design, Practical access to an evolving field	Book that introduce the Service Design as an evolving field and explains in a high-level its process and current development.

The second part of the reviewed academic literature was on engagement and customer engagement and how it is defined. Literatures exploring the newer topic of customer engagement were selected, in addition to literatures that explore the relationship between engagement and value of services.

#	Author (Year)	Type	Tile	Summary
Engagement and Customer Engagement Literature				
1	Brodie, Llic, Juric & Hollebeek (2011)	Paper	Consumer engagement in a virtual brand community: An exploratory analysis	Study on customer engagement in an online virtual community environment.
2	Hollebeek (2011)	Paper	The Customer Engagement/Co-Created Value Interface: An S-D Logic Perspective	Study that provides an SDL logical perspective on the value of engagement and its relationship to co-created value.
3	Flynn (2012)	Paper	An Exploration of Engagement: A Customer Perspective	A look at customer engagement based on scholarly work on employee engagement.
4	Jaakkola & Alexander (2014)	Paper	The Role of Customer Engagement Behavior in Value Co-Creation: A Service System Perspective.	A detailed view on customer engagement behaviors based on an empirical study of ScotRail.
5	Chandler & Lusch (2015)	Paper	Service Systems: A Broadened Framework and Research Agenda on Value Propositions, Engagement and Service Experience	Paper that defines a framework for looking at the fundamental role of value propositions and their role in services systems.

Table 2- Engagement and customer engagement literature

The third part of literature distilled on the topic of online education and issues faced by students in this pedagogical medium. Furthermore, a look at practitioners work when it comes to the new pedagogical medium of MOOCs and the issue faced student in this medium. It is worth noting that not much academic references were found at the time of this study when it comes to the topic of MOOCs. Table 3 shows the summary and the list of literature for the online education and MOOCs.

#	Author (Year)	Type	Tile	Summary
Online Education and MOOCs Literature				
1	Palloff & Pratt (2013)	Book	Lessons from the virtual classroom, the realties of online education	Book that provides an overview of online learning and how to prepare teachers to master the art of online learning.
2	Waard (2013)	Book	MOOC YourSelf, Setup your own MOOC for business, Non-profit, and Informal Communications	Book provides practical information about how to setup a MOOC for anyone who needs it.
3	Billsberry (2013)	Article	MOOCs: Fad or Revolution?	A review on MOOCs and their potential as an educational disruptor.
4	Muntean (2011)	Paper	Raising engagement in e-learning through gamification	Paper that talks about applying game tools and mechanics to e-learning to improve student outcomes and increase their engagement.
6	Van Dusen (2009)	Report	Beyond virtual schools	A report that lays down the case for supporting and developing high-quality online materials for student education.
7	Phipps & Merisotis (1999)	Article	What is the difference?	Article that explores the outcomes of distance learning compared to traditional classroom-based learning, and provides a set of guiding principles that helps in designing online education courses.
8	Pacansky-Brock (2013)	Book	Best Practices for Teaching with Emerging Technologies.	Book that shows the best practices for teaching and learning in an online educational medium using the latest technology.
9	Siemens (2012)	Article	MOOCs are really a platform	Article talks about the power of MOOCs as ecosystems to support education.
10	Jordan (no date)	Presentation	Emerging and potential learning analytics from MOOCs	Presentation that provides insights into and data analysis of existing MOOC data.
11	MIT, Harvard	Article	Despite low completion rates, MOOCs work.	Article shows MOOC value for students despite the low completion rates.
12	Deloitte (2014)	Report	Technology, Media & Telecommunications Predictions	Report that distills the key trends for the year 2014.

13	Weller (2013)	Article	Completion Data For Moocs.	Article that shows data on MOOC completion rates and correlate it to different student behaviors.

Table 3- Online education and MOOCs literature

The fourth type of reviewed literature was on the topic of gamifiaciton and how it can be used to elevate and add positive potentials to business contexts. The literature was used to form a relationship between gamifiaciton and customer engagement from different dimensions, emotional, cognitive, behavioral and societal. Furthermore, Literature, which explores the relationship between gamifiaciton and services sciences were in focus when it came to the literature selection, Table 4 shows the summary and the list of literature of the gamifiaciton topic.

#	Author (Year)	Type	Tile	Summary
Gamification Literature				
1	Hamari, Koivisto & Sarsa (2014)	Paper	Does Gamification Work? A Literature Review of Empirical Studies on gamification.	Empirical study on gamification that came to the conclusion that any potential positive effect gamification may have depends on the context in which it is applied and the user using it.
2	Huotari & Hamari (2011)	Paper	"Gamification" from the perspective of marketing.	Study that looks at gamification and how it is defined from the perspective of service marketing.
3	Hamari & Jarvinen (2011)	Paper	Building customer relationships through game mechanics in social games.	Study that examines online social games on the topic of customer relationship and how game tools are used at different customer relationship stages.
4	Hamari & Ernati (2011)	Paper	Framework for Designing and Evaluating Game Achievements.	Empirical study on popular games and achievement patterns.
5	Hamari & Koivisto (no date)	Paper	Social motivations to use Gamification: an empirical study of gamifying exercise	Study that applies theoretical background on social motivations and studies the effect of gamification.
6	Werback & Hunter (2012)	Book	For the win: How game thinking can revolutionize your business	A book on gamification that provides a framework on how to think, apply and benefit from gamification in every aspect of life.
7	Burke (2014)	Book	Gamify: How gamification Motivates People to Do Extraordinary Things.	Book about gamification and how it can be used for the aim of achieving motivation.
8	Ferrara, J. (2012)	Book	Playful Design: Creating Game Experiences in Everyday Interfaces	Books that talk about gamification and how it can be applied to user interface and experience.

9	Lazzaro, N. (2004).	Article	Article: Why We Play Games: Four Keys to More Emotion Without Story.	Article that talks about the different motivations for playing games.
10	Schell (2008)	Book	The Art of Game Design: A book of lenses.	A book that provides a comprehensive view of how games are designed.

Table 4- Gamification literature

Finally, Table 5 shows the list and the summary of the miscellaneous literature selected to support the study, in topics like challenge design, behavioral design, value proposition design and more. Table 5 shows the list and the summary of the miscellaneous literature.

#	Author (Year)	Type	Tile	Summary
Misc				
1	Dumitrescu (2012)	Book	ROAD TRIP TO INNOVATION, how I came to understand future thinking.	Book that details future thinking and how to achieve innovation using future vision.
2	Csikszentmihalyi (2008)	Book	Flow: The Psychology of Optimal Experience	Book that describes what is an "optimal experience", and how to achieve a state of flow, which makes an experience genuinely satisfying.
3	Fogg (2009)	Paper	A behavioral model for persuasive design.	Paper that presents a new model of understanding and design for human behaviors.
4	Frisendal (2012)	Book	Design Thinking Business Analysis: Business Concept Mapping Applied.	Book that shows the value of Design Thinking and how it can be used in combination with business analysis.
5	Osterwalder, Pigneur, Bernarda & Smith (2014)	Book	Value proposition design	Book that shows how to create products and services customers want and how to design their value.
6	Fisher (2011)	Video	Social Design: A Definition	Talk that defines social design and its components.
7	Kozinets (2009)	Book	Netnography, doing ethnographic research online	Book providing full procedural guidelines for conducting ethnographic research online.

Table 5 - Miscellaneous literature summary

3.1 Value of services

According to Vargo, Maglio & Akaka (2008, 145), value and value co-creation are the core purpose of services, which implies the collaborative and interactive exchange of the value between the service provider and the service user. Based on (Vargo et al. 2008, 146), two general meanings of value exist when thinking about value and value creation as follows:

1. **Value-in-exchange:** this is what is called the goods-dominant-logic (GDL), which is the traditional way of thinking about value. The meaning of GDL implies that value is created by the service provider and exchanged with customers in the market for

money. The distinctive nature of both the producer and consumer is apparent in this value definition.

2. **Value-in-use:** this is what is called the services-dominant-logic (SDL), which is a newer perspective about value in services. From this perspective, the producer and the consumer are not distinct from each other, and the value is always co-created by both entities jointly via efforts, integration of resources and applications of competencies. The most important part of this definition is that the value is always defined and determined by the beneficiary, while the purpose of the value for beneficiary system is to increase its adaptability and survivability.

Value-in-use can be extended to the "value-in-context" concept. In this extension, both social and economic actors are resource integrators to help co-create the value. Accordingly, the context has equivalent importance for participants and competencies when it comes to value creation (Vargo et al. 2008, 149). Figure 2 below shows the relationship between the different definitions of value.

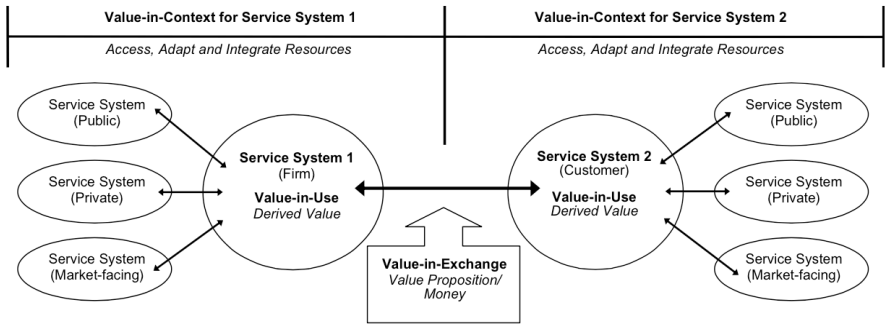

Figure 2: Perspective on value (Vargo et al. 2008, 149)

In a new perspective on the value of services, Grönroos (2008, 302) discussed the differences between value-in-exchange and value-in-use from a services logic point of view. In his view, the customers are the actual value creators and the role of the service providers is to facilitate value creation. Hence, there is no difference between goods and services from the customers consumption perception, as they are the ones who create the value for themselves within the consumption process. The difference comes from the providers side. In goods, the provider is a passive value facilitator. In services, the provider is an active value facilitator and has a chance to interface with the customer process. Moreover, the value-in-exchange does not have any meaning unless the customer creates the value-in-use after the exchange. Grönroos (2008, 304) emphasized the importance of the value-in-use for service providers, as it is an indicator and a clear measure of long-term value, despite the difficulty of measuring it compared to the value-in-exchange.

According to Grönroos (2008, 303), the definition of the value is: *"Value for customers means that after they have been assisted by a self-service process or a full-service process they are or feel better off than before"*. The key point here in this simple definition of a value is that customers are better off when using the service and have gotten something after the consumption of the service (utilitarian or hedonic). Grönroos (2008, 307) also stressed the point that service providers need to understand the customer practices and values they want to create for themselves in order to have the chance to create truly customer-centric offerings.

Moreover, looking at the types of value provided by a service, Poline, Lovile & Reason (2013) described three-core generic values based on what the customer gets, as follows:

- **Access value:** ability for people to access or use something for a temporary time; an example of such a type of service are educational services.

- **Care value:** providing care to people or objects; an example of this type of service are healthcare services.

- **Response value:** respond to people needs and assist them; an example of this type of service is concierge service.

It is worth noting that for some services, the value provided could be a mix of two or more of the above values. With this perspective on service value in mind, it is important to distinguish between co-created value and value co-creation (Hollebeek 2011; Jaakkola & Alexander 2014). Value co-creation is the processes were the subjects (customers) and the object (brand, service) comes together to realize the co-created value. The co-created value in this sense is the outcome or the result of the co-creation process.

Co-created value is the result of interactions or joint activities between different actors (customer and service provider) in the service context. The co-created value can extend from being value co-created from human-to-human interactions, to include human-to-inanimate object interactions, such as the brand (Hollebeek 2011). Hollebeek (2011) deconstructed the value co-created into utilitarian and hedonic components. Utilitarian co-created value represents the functional value that has no sensory effect on the customer, only the benefited utility. The hedonic co-created value, on the other hand, creates sensory outcomes that affect the customer were pleasure, gratification or enjoyment is created.

3.2 Understanding engagement

3.2.1 Defining customer engagement

Flynn (2012, 2) stated that most of the academic literature has focused on employee engagement, but with the evolvement of engagement as a concept. More and more academics and practitioners have started to look at customer engagement.

Focusing on customer engagement, Flynn (2012, 3) defined customer engagement as repeated interactions customers have with a brand, which can strengthen emotional, psychological and physical investment in the brand. Brodie & Hollebeek & Juric & Llic (2011, 3) looked at the development of customer engagement from a conceptual level based on its relationship to the service-dominant logic (S-D logic), where they built on the premise of S-D logic as a foundation to define the customer engagement concept as:

"Customer engagement (CE) is a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships...". From this definition we can see that engagement is a result of interactive and co-creational process between the customer and the brand.

Brodie et al. (2011, 3) continued to describe customer engagement as having multi-levels as *"...It occurs under a specific set of context-dependent conditions generating differing CE levels and exists as a dynamic, iterative process within service relationships that co-create value..."*

Chandler & Lusch (2015, 9) also looked at customer engagement within service marketing studies and asserted that engagement is based on both the connections of an actor (customer) and psychological dispositions of that actor within the service experiences. It is also worth mentioning the difference between customer engagement from other concepts like participation and involvement, where the existence of the proactive and interactive elements in engagement is what makes the difference (Brodie et al. 2001, 257).

Looking at the different definitions of customer engagement (Flynn 2012, 3; Chandler & Lusch 2015, 9; Brodie et al. 2011, 3), one can conclude that customer engagement has multi-dimensional aspects and effects. The following dimensions of engagement could be defined based on the theory analysis:

- **Emotional engagement:** Layer of engagement that effects emotions and feelings. An engaged person will feel happy, satisfied and gratified by the object of the engage-

ment (brand, service). On the contrary, a disengaged person will feel sad, angry, depressed or a mix of all of these feelings.

- **Cognitive engagement:** Cognitive engagement triggers thinking about the object of the engagement. In this sense, the object of the engagement is called from the background of the mind when the right context and triggers are in place for the subject of the engagement (customer).

- **Behavioral engagement:** A behavior is a physical action that is visible to others Fogg(2009). At this level, engagement is more than a feeling or a thought. It is something observed on the subject of the engagement (customer) by others.

Looking to the work of Jaakkola & Alexander (2014, 255), they described engagement behaviors that extend from a personal level to a society level, where the subject of engagement continues to affect the surrounding society by advocating, supporting, influencing or mobilizing other subjects. These types of behaviors can be looked at and defined as societal engagement. Figure 3 shows the different layers of engagement and how they relate to each other based on the interpretation of different engagement definitions.

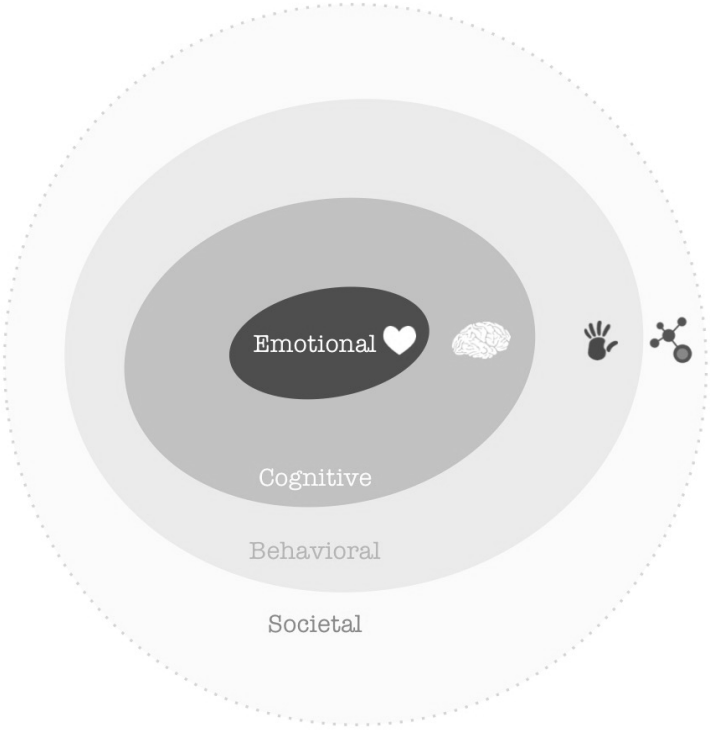

Figure 3: Layers of engagement

To summarize, customer engagement can be looked at as multi-dimensional and voluntary concept that creates an interactive relationship between the subject of engagement (customer) and the object of engagement (brand, service), where different dimensions are affected by engagement, including emotional, cognitive, behavioral and societal dimensions.

3.2.2 Types of customer engagement behaviors

According to Jaakkola & Alexander (2014, 255), customer engagement can include one or more of the following behaviors when looked at from a customer point of view:

1. **Augmenting behaviors:** customer contributes resources (time, money or other actions) that result in augmenting the service offered beyond its transactional nature.

2. **Co-Developing behaviors:** customer contributes resources that facilitate the development of the service offering with the service provider.

3. **Influencing behaviors:** customer contributes resources that affect other customers thinking (perceptions, knowledge or opinions) about the service or its provider.

4. **Mobilizing behaviors:** customer contributes resources that affect how other customers behave / do actions that affect the service or its provider.

Jaakkola & Alexander (2014, 247) stressed the point that these customer behaviors are overlooked or even underestimated when it comes to their effect on services and their experiences of service providers. That is why customer engagement needs to be understood and designed for by service providers as a way to enhance services and their outcomes.

3.2.3 Benefit of customer engagement

Brodie et al. (2011, 252) discussed the benefit of customer engagement when it comes to business environments and its important strategic imperative. Based on his view, customer engagement can result in the following for businesses: growth of sales & Increased profitability, competitive advantage within rivalry environments, enhancement of overall corporate performance, virility of offerings by customers and last but not least positive impact on the value of services and their experiences. Brodie et al. (2011, 261), also looked at customer engagement from the customers point of view and concluded that it can have the following effects on customers such as: increased customer satisfaction, increased customer commitment, positive customer relationships and experiences, creating customer trust with service providers, brand connection & emotional brand attachment and last but not least, customer loyalty.

Jaakkola & Alexander (2014, 249) showed that customer engagement in the value co-creation process happens when the customer provision resources voluntarily to support the focal firm or other stakeholders. These contributed resources can vary to include: time, money or other actions that can affect either the firm or its customers. Engagement in this manner creates value for all the stakeholders in the service context. Grönroos (2011, 22) stressed the im-

portance of interactions when talking about the customer value and value creation. Interaction happens when two or more parties effect and influence each other. In these interactions, service providers are part of the value creation and co-create value with their customers, who are the real value creators.

For the co-created value, a certain degree of interaction has to happen between the actors in a service context. The degree of interaction could affect the level, and the depth of co-created value as Hollebeek (no date) suggested. Moreover, customer engagement is fuelled by customer interaction; this means that more customer interaction creates the likelihood of having more engaged customers, though; it may not apply to all customers. Furthermore, Hollebeek (2011) found that customer engagement affects both the utilitarian and hedonic co-created value of a service in a positive manner.

Looking to customer experience and how it relate to engagement, Meyer & Schwager (2007) defined customer experience as a subjective and internal response customers have when they are in contact with the organization or brand, which implies some form of physical or emotional interaction between the customer and the brand. Dubberly & Evenson (2010, 3) argued that people are looking for experiences that support the value they want to create for themselves. Therefore, service providers need to design for the optimal experience when they are facilitating value creation, which could be done by creating the proper interactions across the different customer touch-points. Hence, relationship can be established between customer engagement and customer experience in a sense, better the customer engagement could yield to better customer experience.

The possible positive effect of customer engagement on services is something that cannot be overlooked. Therefore, it is very important for service providers to look at customer engagement as an important element in their business strategy and future service experience designing.

3.3 Understanding gamification

3.3.1 Defining gamification

Gamification as a discipline is a new field that first emerged in 2010 (Werback & Hunter 2012). There is no one single agreed upon definition for gamification. Many attempts have tried to look at its definition both from the academic and the practitioners point of view; The first encounter for the use of gamification as it is known today was in 2003. This occurred when a former game developer, Nick Pelling, started a consultancy with the aim of creating game-like interfaces for electronic devices. It was only in 2010 when the gamification concept got the attraction and the adoption (Werback & Hunter 2012).

Looking at gamification definitions, Werback & Hunter (2012) have defined gamification as: *"The use of game elements and game-design techniques in non-game contexts"*. Moreover, Bruke (2014, 6) said that Gartner define gamification as follows: *"the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals"*. For this definition, the distinctive element is to apply gamification in digital contexts as a digital engagement platform. The move to digital from the Burke point of view is to support economics of scale, overcome both time / geographical limits and to avoid the higher cost that might occur with gamification introduction. Furthermore, Hamari & Koivisto & Sarsa (2014, 2) looked at gamification and defined it as: *"A process of enhancing services with (motivational) affordances in order to invoke gameful experiences and further behavioral outcomes"*. In this definition, gamification is divided into three parts:

A. **Motivational affordances**: these are game elements that provoke players to be part of the game-like experience, elements like points, badges, leaderboards, etc.

B. **Resulting psychological outcome**: which result from the player reacting to the motivational affordances. Since its psychological outcomes, it tends to affect the inner feelings of the player.

C. **Resulting behavioral outcomes**: which are the obvious outcome from the gamification that appears in the player behavior, and it comes after the psychological effect.

Additionally, Huotari & Hamari (2011, 3) looked at gamification from the perspective of service marketing and came up with this definition of gamification: *"Gamification is a form of service packaging were a core service is enhanced by a rules-based service system that provides feedback and interaction mechanisms to the user with an aim to facilitate and support the users overall value creation"*.

Hence, gamification can be summarized as, the use of game thinking and techniques for the sake of achieving certain business objectives in a non-game context, which could be a business customer facing activities or internal business activities.

3.3.2 Gamification, more than game design

Both games and gamification are voluntary in nature, but games can be distinguished, by being open places where players have the chance to make mindful choices by themselves on what they want to achieve. Gamification, on the other hand, is about businesses trying to direct or channel people to make certain choices that correspond to certain business objec-

tives but with a twist of fun, a challenge, competition or any other game motivational factors (Ferrara, 2012).

Looking at Gamification from an aim perspective Burke (2014, 32) argued it enables motivation. Though games and incentive programs may use the same game tools as gamification, games are about entertaining their users, while incentive programs, like loyalty programs, are about incentivizing. Hence, the objective or aim is completely different. Figure 4 shows the different applications of game design and how it can be tailored to a different objective, be it motivation, entertaining or incentivizing.

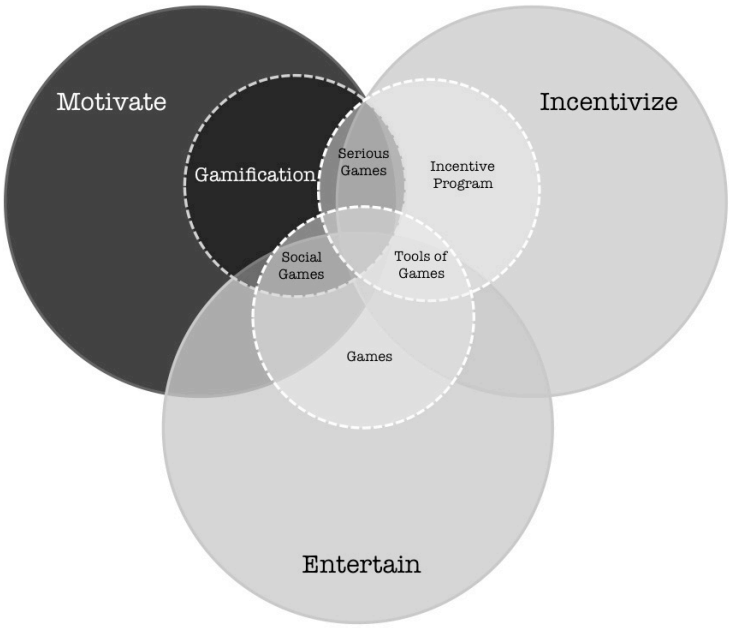

Figure 4: Different applications of game design, based on Burke (2014)

Ferrara (2012) talked about different motivations for playing games; one of them is social interaction as people play games for the social experience. Lazzaro (2004) argued that social bonding is one of the reasons people play games, were they communicate, collaborate and compete. Hamari, & Koivisto, & Sarsa (2014, 1) showed that gamifiaciton could be used to enhance the sociality of services. Hence, social interaction is one of the aspects that game design can support and facilitate. Fisher (2011) concluded that the social design in the online world is about three things:

- **Identity:** how people define the self and represent it to others.

- **Conversation:** it is the glue between identity and community, where people start to talk, share and interact with each other on a focus or a topic.

- **Community:** with the conversation trust happens. As a result, in creating communities where people share, helps and make themselves vulnerable to each other.

Figure 5 shows representations of the different layers of social design based on Fisher (2011).

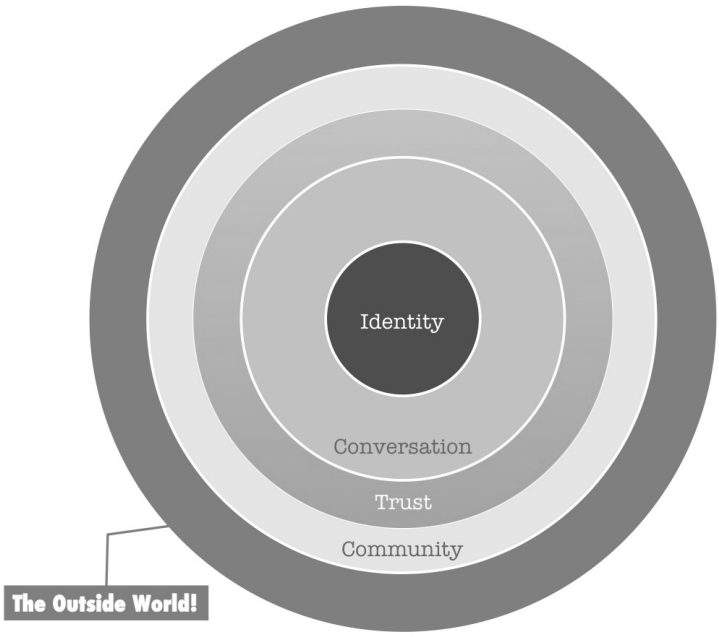

Figure 5: Social design (Fisher 2011)

On the other hand, Csikszentmihalyi (2008) discussed that for people to be immersed or happy in the tasks they are doing, the right level of challenge plus the right skillset needs to be in place at the same time. Hence, flow theory is suggested challenges designed relative to the ability of the user, and some activities that comply with the flow are games, sports, art, and hobbies. Schell (2008) discussed that game design intuitively follows the flow theory as games challenge players based on the skills and ability they acquired during the game play. Hence, it can be said that game design must comply with the flow theory to support creating tasks that are not too boring, nor too impossible to do. Figure 6 shows the flow channel in between the challenge and skill.

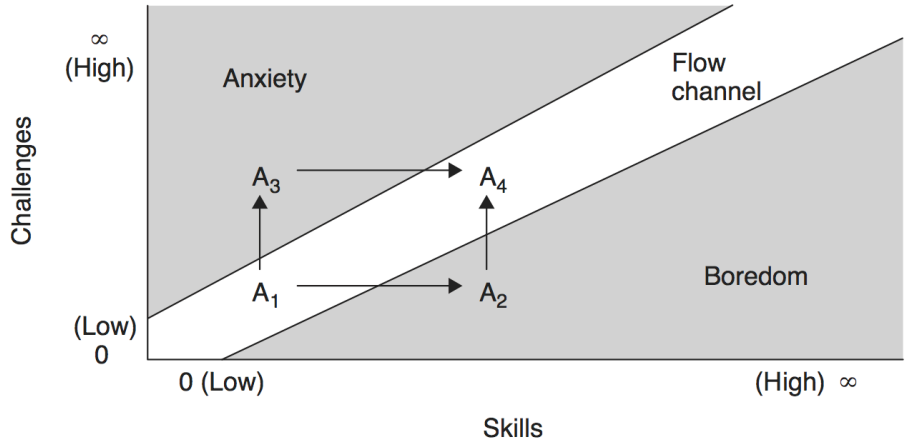

Figure 6: Flow channel (Schell 2008; Csikszentmihalyi 2008)

Furthermore, game design can be thought of as behavioral design. Behaviors are visible actions people perform based on Fogg (2009). In his work, Fogg studied behaviors and came to the conclusion that behaviors can be designed for, were they are composed of motivation, ability, and triggers. Hence, for any behavior to happen, the right motivation has to be in place, the right ability to do the behavior and finally the right triggers to make the behavior in the foreground of the mind of the participants. It is noteworthy that game design in general is a model to provoke behaviors, were the feedback works as an extrinsic trigger, player motivation to play as intrinsic trigger, game scaffolding as way to match the ability and finally game motivations like accomplishment, competition, social image, autonomy and creativity (Ferrara, 2012) as way to fuel the players behavioral interactions. Figure 7 shows the Fogg behavioral model and the relation between motivation, ability and triggers.

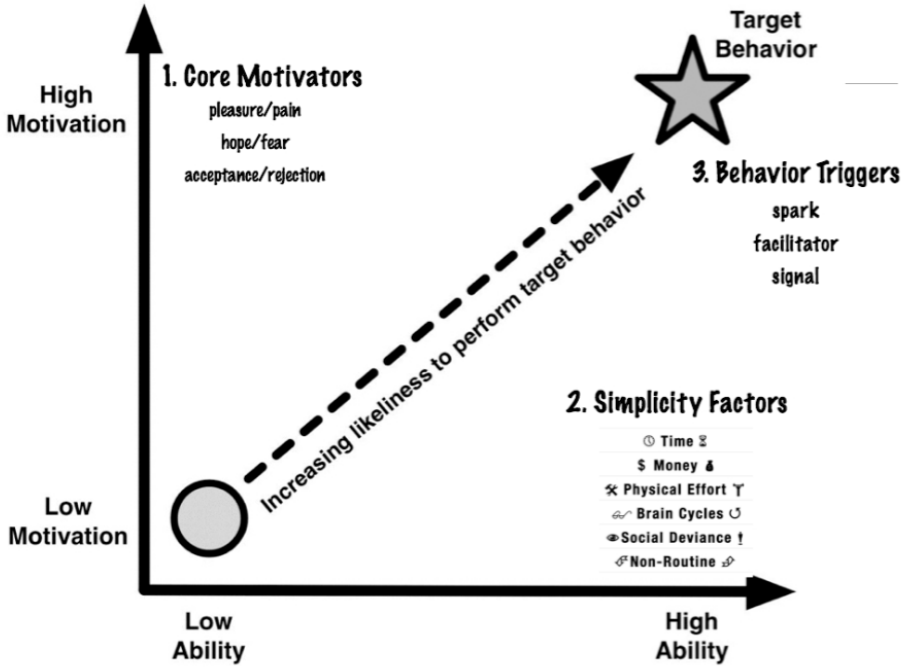

Figure 7: Fogg behavioral model (Fogg, 2009)

In the end, we can conclude that gamification is an intersection of different disciplines. Firstly, there is game design, which can help to make business interactions more fun and enjoyable (Burke 2014; Ferrara 2012). Furthermore, gamification helps to model for behaviors (Fogg 2009), help to raise social interactions (Ferrara 2012; Lazzaro 2004) and finally help to model challenges that are related to the user ability (Csikszentmihalyi 2008).

Therefore we can summarize gamifiaciton from a disciplines point as the intersections of:

- **Game design:** the use of game thinking, tools and methods to design playful experiences.
- **Social design:** designing for social interactions and facilitating it amongst a group of people.
- **Challenge design (flow theory):** designing challenges that match the users ability.
- **Behavioral design:** designing for certain behaviors in order to make them happen.

Figure 8 shows Gamification as an intersection of the four discussed disciplines.

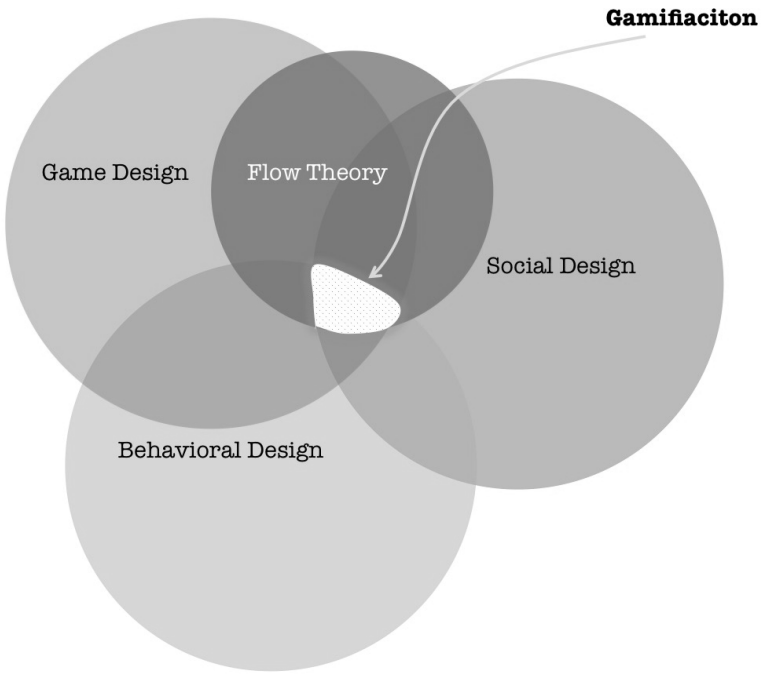

Figure 8: Gamification as blend of disciplines

3.3.3 Benefits of gamification

Gamification is a means to increase motivation of its targets (Burke 2014; Werback & Hunter 2012). This can include tapping into the inner human psychology by increasing motivation, creating permanent behavioral changes (habitual design) or uplifting the overall service experience in the mind of the target to be more immersive and fun, but it also can have other benefits.

Hamari, & Koivisto, & Sarsa (2014, 1) in their paper “Does Gamification Work?” argued that gamification could be used as a way to support user engagement and also as a way to enhance positive usage patterns of services, like the activity of the user, sociability aspect of services and the quality of the user actions themselves. Moreover, Burke (2014, 5) stated that gamification could be used to create new engagement models that motivate people to do behaviors they did not use to do or know about before. Burke showed the example of Foursquare was a complete new behavior, which is the check-in (declaring ones place at a certain venue publicly), has been propagated as new behavior to the user of Foursquare. The new behavior has been enforced by applying game tools like points / badges and game mechanics like competition.

Gamification can be used as a way to influence behaviors of its targets in a shorter term using techniques like immediate feedback loops, badges and rewards. These elements can be used as a way to let service providers gain fast and deliberate responses both from customers and employees, for the benefit of a certain business objectives. Such elements are called extrinsic motivators, since they motivate the targets to do activities not for the sake of the activity itself, but for external influencing factors outside of the activity itself, like badges or rewards. Service providers can gain performance improvements, voluntary data collection that can lead to better customer understanding or an increase interaction with the service provider (Werback & Hunter 2012).

When it comes to innovation, Burke in his book Gamify showed that gamification can be used to drive innovation, drive skill learning and also give new meaning to activities that may seem dull or very challenging to its users (Burke 2014, 35). Dumitrescu (2012, 192) also found as part of her future thinking research with the Institute For The Future (IFTF) that games could be used to find future solutions for today problems by tapping into the wisdom of the crowd and adding elements of challenge and fun.

Hamari & Jarvinen (2011) showed three types of customer relationships: acquisition, retention and monetization, and how game design and tools can be used to build long and lasting customer relationships. In the end, from a gamification user point of view (employees or customers), the sense of mastery, progression, competition and fun / pleasure can be seen as a clear benefits.

From a service provider point of view gamifiaciton can be seen as way to increase brand loyalty & attachment and creating the motive to promote the service provider offerings. Hence, gamification can be seen as a very powerful method to improve different aspects of the service experience, which require deliberate design from the service provider end.

Figure 9 summarizes both tangible and intangible benefits service providers can gain from gamification both for the customers of organization and for the employees of an organization (Burke 2014, 5; Dumitrescu 2012, 192; Hamari, & Koivisto, & Sarsa 2014, 1; Hamari & Jarvinen 2011).

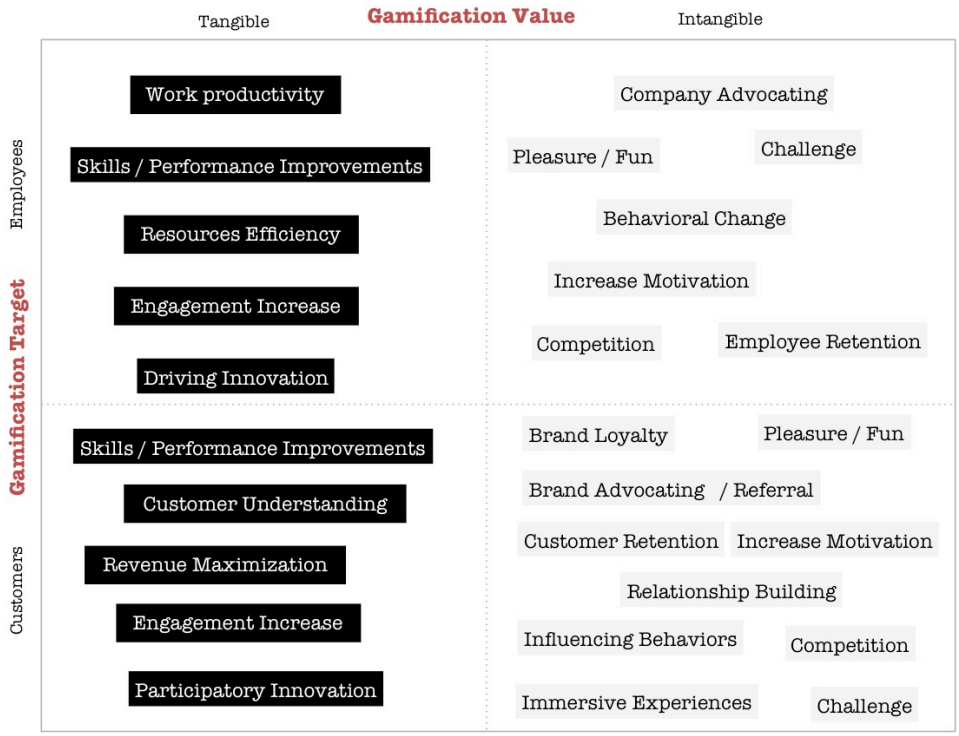

Figure 9: Gamification benefits for service providers

3.3.4 Gamification as means to promote engagement

With the identified engagement issues in MOOCs, gamification could be seen as a means to solve engagement issues in MOOCs. Muntean (2011) in her paper about raising engagement in online education through gamification discussed the challenges of current online education environments and how it is related both to behavioral design and challenge design. Muntean (2011) also stated that games could be used to change the behavior of students, which can yield to better learning within online education environments.

4 Research study

4.1 Research approach

Thesis is based on empirical research on the case organization and its stakeholders to study student engagement in detail. The tasks undergone in the research were based on the service design process defined by (Mortiz 2005). In this process, Mortiz (2005, 123) defines different phases for the service design process, where an understanding phase is carried out to understand study context, case organization, and stakeholders and to collect data. Secondly, a thinking step is carried out where the actual fieldwork for service development, analysis, sense making of the collected data is done to define the project direction and to plan the next steps. Thirdly, generations of possible solutions (or value propositions) to the identified problems are done with the help of the different stakeholders. Fourthly, a step where best possible solutions are filtered for future realizations. Lastly, making tangible concepts and preparing for delivery and implementation.

Figure 10 shows the Service Design process steps summary:

Figure 10 - Service Design Process (Mortiz 2005,123)

4.2 Understanding & Thinking phase

As per Mortiz (2005, 123), SD Understanding phase is carried out to understand the study context, case organization and stakeholders to collect data. Followed by an SD Thinking phase, which helps in making sense of the data collected. To better understand the context of engagement issues, different tools from the service design toolbox were used like observations, customer shadowing, interviews, and surveys alongside secondary data research. The following sections highlight the different methods and their corresponding results.

4.3 Primary research

Different tools from the Service Design Toolbox were used to collect the primary research data. The following section describes different tools used, what they are, how they are used and most importantly the reasons for using them.

Netnography

Kozinets (2012, 4) described netnography as the process of conducting ethnographic research within online communities and cultures. In the sense, ethnographic research is adapted to online mediums as the change of interactions from offline to online is enabled by technology.

Hence, netnography was done to unlock real and holistic view of the MOOC service environment, where it provided intimate insight about the interactions that happen during the different service processes, and provided a way to understand initially the different processes and issues faced by students during processes like registering, enrolling for courses, and participation to name some. It is worth noting, netnography in context of RWAQ was done before doing any of the interviews or surveys.

As a result, netnography helped in building the student journeys, which describes the steps taking by the student in a high-level within the MOOC service context. Moreover, the netnography helped in creating empathy with students in a sense, a better interpretation of the feedback collected from them as the same footsteps of students were taken during the netnography. It is worth noting that student journeys are discussed later in the study in detail.

Concept Map

Concept map (also known as system map) is a holistic view, which provides a high-level framework to think about the interactions happening within a context (Frisendal 2012, 60). A context map was mapped based on the data collected from student interviews and from the student surveys, where main entities in the MOOC service were identified and their related interactions. Furthermore, interactions with the outside world (for example student visibility and credibility) were also identified and visualized.

Frisendal (2012, 60) showed the importance of the concept map and how it can be used to gain understanding about the business or context. Moreover, it provides a holistic view that can help in innovation, opportunity finding, and business optimization. Frisendal also showed

that the entities could be of a human nature or even with non-human nature like systems or objects.

As a result of the mapping done in the context map, the following main entities were identified for the RWAQ MOOC platform:

- **Students:** people who enroll in a MOOC with the aim of learning and completion. These students are normally coming from all over the world using digital technologies to connect.

- **Teachers:** academics and practitioners who supply and design the content for the students and support their learning.

- **Content:** content created to support the learning, which can be either designed by the teacher, co-created with the students in the interaction or co-created by the students themselves within their interactions in forums or so on.

- **RWAQ Platform:** the platform that facilitates all the learning, interactions, hosting and promoting content between teachers and students.

- **Outside world:** any entity that is affected by the student learning outcomes and is located outside the context of the RWAQ platform.

For example, looking at interactions between student and teacher entities, teacher feedback is very important to support student learning. Meanwhile, designing the right content that will appeal to students and match their skills is a key factor that will help in elevating the overall MOOC outcome. In the same way, looking at the students, we can find different interactions with the community within the MOOC itself or even with the outside world (outside the MOOC context). For example, the ability for students to show their learning progress to their family or employers is one of the aspects students need to showcase their credibility. On the other hand, the ability for student to discover different content related to the MOOC like videos, discussions and so forth, helps in enhancing the overall student interaction within the MOOC. That said the MOOC platform is then looked at as the enabling factor that enables all of the above interactions and many more that defines the bases of engagement within MOOCs.

Figure 11 shows the concept map with main entities and the different interactions identified.

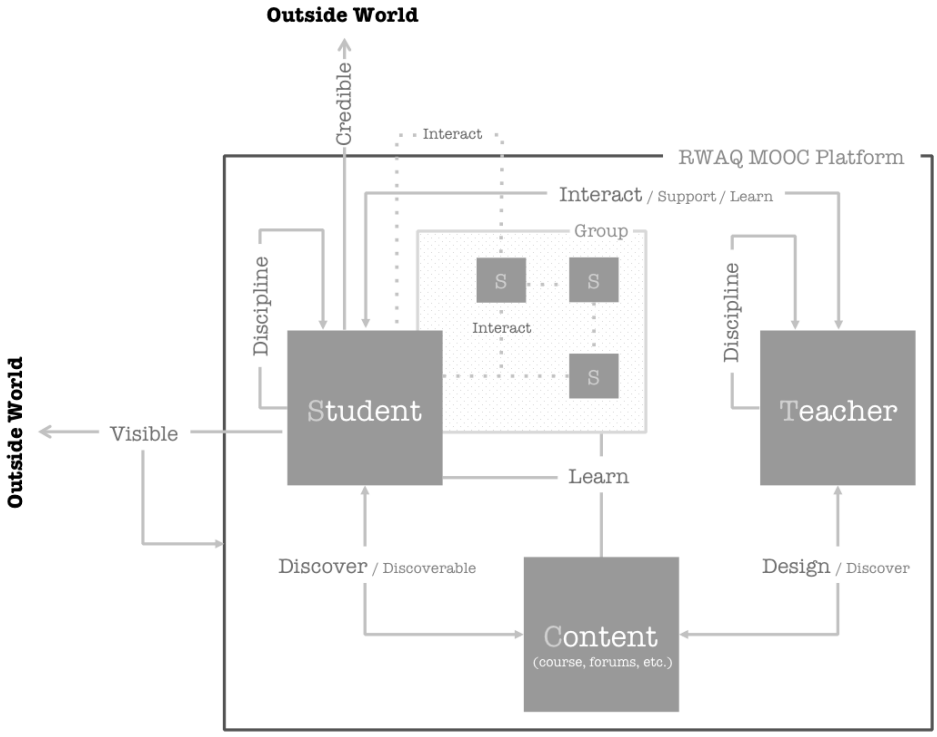

Figure 11 - Concept map of RWAQ

Online Student Surveys:

An online survey was done for the sake of this research with students to know more about and to understand different aspects of the MOOC service quantitatively, like demographics, enrollment frequency, completion rates and others. Alongside that, basic feedback was collected using open-ended questions about different issues related to the service experiences within MOOCs. This survey was done prior the qualitative interviews to gain a quick understanding of the students. As a tool, the survey was done using Google Drive Forms, were each survey was composed of different questions of different types. Some were closed answers questions, and others were open-ended questions, which gave the participants more freedom when it came to answers at a certain level.

Kumar (2012) described research-planning survey as tool to be used to collect early feedback, and enable quick discovery about the target audience. In this manner, the survey helps in having a basic understanding about peoples behaviors, attitudes, activities and perceptions about a certain topic.

As result, the online survey resulted in 206 responses from students, which helped in gaining a clear understanding of some of the factors and issues that affect student within the MOOC service context. It is worth noting that the survey was launched before doing the interviews, which helped to provide a clear understanding on some of the factors and issues that affect student engagement within MOOCs. For example, length of the content, teacher support, peers interaction and many other issues were surfaced during the survey.

Moreover, the student survey provided a quick mechanism that helped in guiding and framing the later qualitative research. An Arabic based survey was created, and the co-founders helped in propagating it to the target audience using social media channels. It is worth noting that subjective translation was done to the participants answers into English for the sake of this study, as all the answers accepted were in Arabic. Furthermore, all the questions in the survey were not mandatory, so as we will see in the analysis of the answers, not all participants provided answers to all the questions, but this was a minor act that could be considered insignificant. It is noteworthy that survey questions can be found in Appendix 1 at the end of this study.

For the online survey conducted, 66% of the participants were males while the remaining 34% were females. For the age distribution, 69% were below 25 years, 27% were between 25 and 40 years old while 3% were older than 40 years. Table 6 shows the gender distribution of the participants.

Gender	No. Answers	Percentage (%)
Male	132	66
Female	69	34

Table 6: Student gender distribution data

When it comes to professional life and current working conditions, only 23% of the total survey participants were working at the time of the survey, while 17% were working and pursuing some higher education at the same time. This sums up the total number of participants who were working as 40% of the total survey base.

Another 13% of the surveyed participants had finished their higher education and were looking for a job at the moment, while 40% were still studying at the time of the survey. The last 5% did not specify any option. Table 7 highlights all the numbers and the corresponding percentages for the work and studying condition of the participants surveyed.

Work & higher education	No. Answers	Percentage (%)
Working only	48	23
Working & studying	34	17
Not working & not studying	26	13
Still studying	82	40
Others	10	5
Total working	82	
Total studying	106	
Total not-working	108	
Total not-studying	72	

Table 7: Student working & studying conditions data

When asked about the number of courses the survey participants had enrolled in RWAQ MOOC platform, 41% said they had registered for more than three courses, 19% had registered for 3 courses, 17% for two courses, while 12% said they had registered for one course only. There are 7% of the voters who voted for the option of zero enrollments. This could be because the survey was announced on social media, were people who did not enroll before might not have answered the survey. In total, 200 participants answered this question, which means 6 did not vote for any option and skipped the answer to this question. Table 8 shows the enrollment statistics of the survey participants in detail.

RWAQ course enrollment	No. Answers	Percentage (%)
More than 3 courses	84	41
3 courses	40	19
2 courses	36	17
1 course	25	12
Zero courses	15	7

Table 8: Student course enrollment data

Furthermore, when survey participants were asked about the number of courses they had completed in the RWAQ MOOC platform, a nearly inverse number appeared compared to the course enrollment data.

The data showed that 43% did not complete any course, 27% completed only one course, 15% completed 2 courses and 7% completed 3 courses, while 10% managed to complete 3 or more courses. The survey data complies with the issue faced by all MOOC platforms, were enrollment is high, since it is very easy to enroll, while completion up to the end is the hardest part. Table 9 shows the data for the completion with its percentages; its worth noting that in total 112 have completed at least one course, while 88 did not complete any, while 6 have not voted for this question.

Course completion	No. Answers	Percentage (%)
More than 3 courses	20	10
3 courses	7	3
2 courses	30	15
1 course	55	27
Zero courses	88	43
Total completers	112	
Total non-completers	88	

Table 9: Student course completion data

Moving on to another question, participants were asked about their MOOC participation in global MOOC sites like Coursera, edX, iVersity, NovoEd, etc. For the question have you enrolled in any of the global MOOC sites before? 40% answered with Yes, while 58% answered with No, and the remaining 2% did not specify. Table 10 shows the numbers and the percentages in more detail.

Global MOOCs enrolment	No. Answers	Percentage (%)
Yes	82	40
No	119	58

Table 10: Student global MOOCs enrollment data

Within the global MOOCs, the question was raised concerning the number of people who have completed MOOCs, similar to what we have done with the RWAQ question. Data showed that 68% did not complete any course, 14% completed only one course, 7% completed 2 courses, and 0% completed 3 courses, while 6% managed to complete 3 or more courses. Table 11 shows the global completion rates as per the student inputs.

Course completion	No. Answers	Percentage (%)
More than 3 courses	12	6
3 courses	0	0
2 courses	15	7
1 course	28	14
Zero courses	140	86
Total completed	55	
Total not completed	140	

Table 11: Student global MOOCs completion data

It is worth mentioning that when the participants were asked to specify their motivations when it came to learning from the RWAQ platform from a predefined motivations list, the following data was revealed:

- 70% said they wanted to learn and benefit from the learning in their profession
- 63% said they wanted to explore a new topic that they did not know about before
- 45% said they wanted to learn to gain a certificate to support their profile
- 18% said they wanted to meet new like-minded people
- 8% said they had other reasons for joining, without specifying which

Noting that the participants had the option to select one motivation, without giving any priority compared to other motivations, which comes first and which follows. The data shows different motivations and goals when it comes to joining MOOCs. Table 12 shows the details of the student motivation question.

Student motivations	No. Answers	Percentage (%)
Support professional career	145	70
Learn new things	130	63
Gain a certificate	93	45
Know like-minded people	38	18
Other reasons	17	8

Table 12: Student motivations data

Arriving to the question, how many hours do you spend on average in a week studying? 39% of the people did not track the time; therefore they did not know how many hours they spent while studying, 45% said they spent from one hour to three hours on the average per week. Lastly, 14% said they spent more than 3 hours studying per week.

The points out that about 40% of the students did not have a mechanism to count the time, which may be a result of the lack of self-discipline in general. Table 13 shows the numbers and the percentages for the answers to this question.

Hours dedicated to learning	No. Answers	Percentage (%)
I dont know	80	39
From 1-3 hours	92	45
More than 3 hours	28	14

Table 13: Student time dedication data

The final closed question that was asked of the survey participants was, does your motivation decline with time while learning in the RWAQ platform? 32% said Yes, but this is normal and 32% said Yes, but I need some support to increase my motivation, while 33% answered No, I am always motivated. The data shows that nearly two thirds of the sampled participants needed some kind of external support to increase their motivation. Table 14 shows the detailed numbers.

Does motivation decrease	No. Answers	Percentage (%)
Yes! Its normal	65	32
Yes! I need support	65	32
No! I am always motivated	67	33

Table 14: Student motivational change data

With the last question above, an end comes to the closed-ended questions. Another set of open-ended questions was asked of participants like: How did you get to know RWAQ? What do you think of the student / teacher engagement in the platform? What do you think of the student / student engagement in the platform? What are the top three obstacles you face

while studying? The analysis of the answers to these questions was done as part of the qualitative analysis due to the open-ended nature of the answers, which needed qualitative analysis to find patterns or themes that affect the student engagement within MOOCs. So the results of this analysis will be integrated with the interview question analysis.

Reflecting on the student surveys, big portion of the students base are familiar with technology, this finding pace the way to apply gamifiaciton as its concerned about the applying game design in digital contexts as per Bruke (2014).

Moreover, it is clear from the student surveys that student behaviors confirm to the global practitioners observations for MOOCs, where enrollment is very high, while completion is the opposite. Also the data confirmed that students have different goals and aims other than gaining the final completion certificate, which in a sense support the topic of designing for engagement not for completion when it comes to MOOCs. Furthermore, nearly two thirds of the student explicitly confirmed that motivation is an issue that is affected when they studying in MOOCs, which can be strongly correlated to engagement and its dimensions.

Ethnographic stakeholders interviews:

Several qualitative interviews were conducted with different stakeholders, co-founders, students, teachers, and ambassadors in order to gain a deeper understanding of the MOOC context and its engagement issues. Kumar (2012) described ethnographic interviews as a way to get people prescriptions and perspectives through stories and their words. Some interviews were conducted in a face-to-face manner when it was possible to meet the stakeholder. Otherwise interviews were done using Skype as the medium of communication.

Kumar (2012) showed that ethnographic interviews help build empathy, promote learning from the subject and help focus on the experience from the users point of view. In the case of RWAQ, interviews provide data that laid the ground for other tasks of analysis.

Table 15 gives more detail on the number of interviews conducted per stakeholder. The main purpose of the interviews and the methods used to make the interviews.

Stakeholder	Method	Number of Interviews	Purpose of interviews
Founders	Face-to-Face Skype call	2	Understand the current / future vision for the case company, getting buy-in for the research scope and objective.
Students	Skype call	4	Understand intentions, goals and attitudes when it comes to learning. Finding issues and obstacles affecting student engagement.
Teachers	Face-to-Face Skype call	3	Understand how content is designed, how interaction and engagement with students is done, issues affecting teacher / student engagement.
Ambassadors	Skype call	1	Understand the motivations, behaviors and the steps taken as ambassadors to support advocating the case company services to society.
Total interview count		8	

Table 15: Research interview details

Stakeholder interviews helped to provide clear understanding of the different students behaviors and attitudes were established. Not that only, but a clear understanding of the different issues that affect the engagement in MOOCs were identified, supporting the student surveys conducted earlier.

It is worth to note that the questions were not fixed for all the participants, and varied either due to who was interviewed, interview duration and interview progress speed. Qualitative interview questions can be found in Appendix 3.

For the data collected from the interviews, an inductive analysis was done for the collected qualitative data. The analysis in a nutshell started by finding relevant information / patterns that were related to engagement within MOOCs, adding codes to categorize, grouping codes to sub-themes and finally finding grouping into major themes. Table 16 shows the result of the qualitative analysis when it comes to students, were the themes and sub-themes are presented.

Student qualitative analysis theme and sub-themes	
Theme	**Sub-themes**
Discipline	Time management
	Passion & motivation
	Self-discipline
Visibility / Credibility	Verification of efforts
	Status & recognition
Learning Interactions	Social interactions
	Like-minded discovery
	Learning support
Content	Information overload
	Information quality

Table 16 - Student qualitative analysis, themes and sub-themes

Student Personas

To gain a deep understanding of the student motivation, goals, attitudes and behaviors when it comes to the MOOC service experience, a tool was used to map major student archetype and how they were different from other archetypes. As the data from the interviews with the students was analyzed, four student archetypes / personas were identified. Stickdorn & Schneider (2012, 178-179) explained that personas used to gain different perspectives on a service and how the users of the service use it differently. In the case of the study, personas helped in mapping the different service expectations by students, and show later how to facilitate for those expectations.

As a result, four student personas were identified based on the interviews with the students and the data collected from the open-ended questions from the online survey. The four types in a very high level are as follows:

- **The Expert:** someone who is looking to dive deeper into his area of expertise or in a certain topic

- **The Knowledge Surfer:** someone who is in pursuit of new knowledge and driven by exploration

- **The Group Learner:** someone who wants to learn from the power of group work and interactions

- **The Advocator:** someone who is passionate about learning and wants to take it to the next level where everyone can benefit from it

Figure 12 highlights the four student archetypes in relation to what value they are looking for, tangible like a certificate or salary raise or intangible like self-gratification, social interactions and so forth, and their motivation / discipline when it comes to learning in a MOOC, is it based on self-motivation or is motivation based on the group.

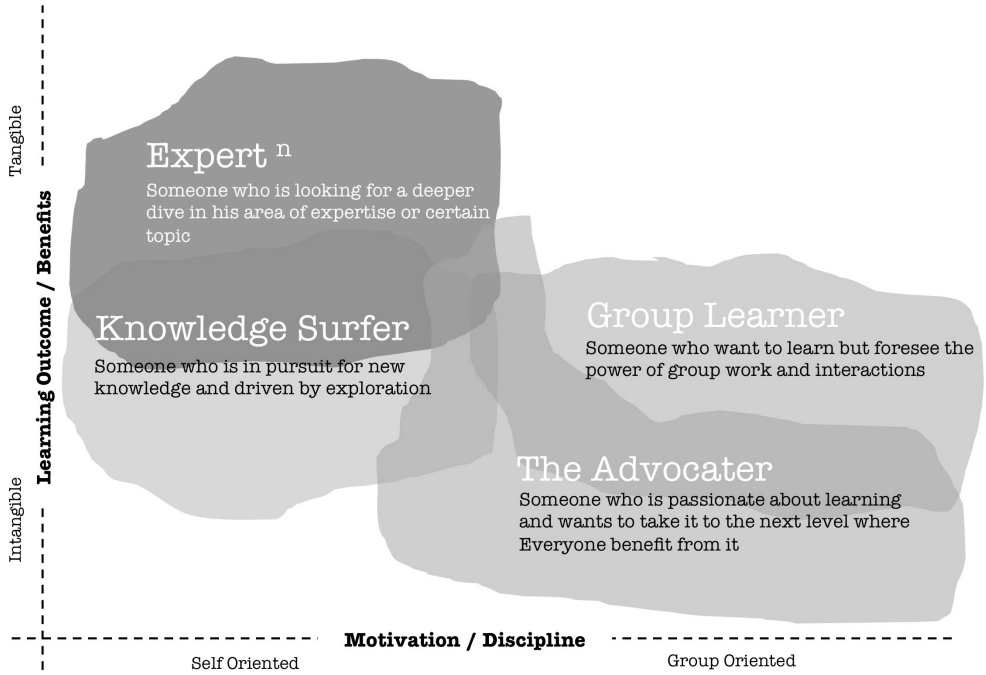

Figure 12: Student personas

Following, a detailed description of each of the four personas given:

THE EXPERT: Someone who is between 28-40 years old, middle aged, working in a decent job at an enterprise or as a consultant. When it comes to MOOCs, the expert can be described as a professional who is looking to gain expertise and tries to use free time in the day to get a deeper understanding of the related topic of knowledge. When it comes to the expert attitude, one can say that the expert is an efficiency seeker, uses free time to learn and boost career and last but not least, wants to find a return on the investment to the efforts spent on MOOCs. When having free time, the expert uses the time to learn and watch the course videos. Furthermore, the expert gets to learn about relevant MOOC topic from similar (like-minded) peers or custom newsletters and looks for ways to get engaged with like-minded people. In terms of benefits, the expert looks for direct functional benefits that can add to his career and asks the question, what is the return on the investment?

THE KNOWLEDGE SURFER: Someone who is looking for a new topic to learn. Normally working in consultancy job and aged between 25-50+. The knowledge surfer likes to explore new subjects and find more on some personal or temporal interests. When it comes to attitudes, the knowledge surfer wants to know the basic of a certain topic but with no deep dives. Furthermore, the knowledge surfer has a very short attention span when it comes to following the content of the MOOC. In terms of behaviors, the knowledge surfer utilizes free weekend time to pursue knowledge and signup (enrolling) is a no-brainer, driven by emotions and current interest of knowledge seeking. Looking at benefits, the knowledge surfer looks for personal gratification and the power of knowing something new.

THE GROUP LEARNER: Someone who is fueled by group interactions and collective power of friends. Age is normally between 22-32. The group learner works collectively with a group of friends and learning as an activity is the second priority, group interactions and support is the main drivers for learning. The group learner discovers MOOCs from friends recommendations in social media and group communications in channels like social media or gatherings.

THE ADVOCATOR: Someone who is energetic, open minded, passionate and loves to share knowledge with others. In terms of age, the advocator is between 20 and 28 age years. The advocator likes to payback for the MOOCs and spread the word on MOOCs to others to benefit the society. In terms of attitudes, the advocator cares about others more than the self, values the local community very much and looks for some recognition for the efforts. When it comes to behaviors, the advocator tries making face-to-face meetings with other, loves to know the detail and looks for guides and best practices to follow.

Student Journey Maps

Journey map is one of the service design tools that help explain the different steps the stakeholder takes to complete a service process. After classifying students into archetypes / personas based on the data collected, journey maps were used to map the journey of each of the personas and what are the points of frustration / issues that they face within that journey.

Based on Stickdorn & Schneider (2012, 158), customer journey map provides a high-level overview on the steps a user takes within a service experience and the factors that affect that experience. From the study point view, journey maps provided enlightenment and insights on the various factors that affect the experience of the different personas.

As a result, for each of the personas identified based on the analysis from the primary research, a journey map is created. The journey map helps in knowing the steps taking by each

persona within the MOOC experience and also helps to understand the frustration points that affect engagement for each of the personas. This at the end can help in finding solutions to remove or reduce these frustration points.

THE EXPERTS JOURNEY: The following are the steps that in general the expert takes in the learning service experience in MOOCs. The journey is described based on the interview data collected from the student interviews, plus observations as follows:

1. **A Recommendation:** The expert gets to know the MOOC normally from a like-minded peer recommendation. The topic has to be relevant to make sense and resonate. Other options for discovery could be newsletters, websites, or web ads he follows.

2. **Decision to join a MOOC:** Based on the potential of the course to add to his current area of expertise, and a rough calculation of daily available time when compared with expected timelines of the course, the expert will take the decision to take or leave the course.

3. **Enrolling in a MOOC:** After a thoughtful process, the decision to enroll happens and the expert joins a MOOC and prepares a tentative plan on how to handle the workload.

4. **Missing the pace:** At certain moment when the tasks are overwhelming, which happens normally in the middle of an MOOC course, the expert enters a phase where the pace of following the MOOC on the planned scheduled is not maintainable. Factors like the busyness of the expert, plus the nature of the task (if its time consuming) add to the frustration at this point. This is a critical point as the expert might have a chance to drop a course, in favor of other priorities.

5. **Back on track:** If the course is not dropped in favor of other priorities, the thought on the time spent and the expected return (the certificate), fuels the expert to continue.

6. **To the finish line:** The expert at this stage has reached a phase where its make-or-break. He will sometimes give up time from his weekend to try and catch up and finish everything. He will be anxious to see his results as to whether he will get a certificate or not, so the feedback element is very important for him at this stage.

7. **Analyzing results:** Upon finishing the course and getting the certificate, the expert adds the achievement to his personal profile (and may share it) and tries to find the

effect. A thought process about the content and how it affects professional life to see the cost / benefits analysis of the efforts given.

8. **A recommendation, again:** If the course has made a functional effect on the expert, he will recommend it to like- minded peers, and the cycle may start with another expert.

THE KNOWLEDGE SURFERS JOURNEY: The following are the steps the knowledge surfer in general takes in the learning service experience in MOOCs. The journey is described based on the interview data collected from the student interviews, plus observations as follows:

1. **Saw it somewhere:** The seeker sees information about a MOOC somewhere. At the same time it resonates with his current personal or temporal interest. The seeker is very sensitive to inspirational videos or key figures recommending a certain MOOC.

2. **Enroll:** Enrolling in a MOOC course is an NO BRAINER activity for the seeker, as he subscribes to many topics and themes in favor of filling his temporal interest. Knowledge seekers in some sense are T-shaped persons, who like to know about many things but have a deep understanding of some things.

3. **Starting the MOOC:** Based on the enthusiasm, the seeker will always do week 1 with ease. As the topic is still in very high interest, time management is an issue with the knowledge seeker, as he tends to be very vibrant in the time he allocates for MOOC content.

4. **Bouncing in & out:** As the current topic interest fades-out for the knowledge seeker, and an interest in something else fades-in, the seeker starts to reduce the current progress of the current MOOC, in favor for others. Other interests may be a breaking point as the seeker may simply ignore the course, and this counts as an implicit (mental) withdrawal.

5. **Mission completed:** Finally, there comes the stage where the official (physical) withdrawal from the current MOOC happens, as the seeker convinces himself that the current knowledge obtained is good enough for the current topic.

6. **What else is out there?:** At this stage, the seeker will have another temporal interest, or if not, he will peruse the MOOC sites to see whats new and what could be of interest. At this stage, the intro video is a make-it or break-it, when it comes to grabbing the seekers interest in a new topic or not. At the same time, the seeker will

be receiving many emails about courses he has enrolled in before and about to start, so this may also be an eye opener for him to other temporal interests.

THE GROUP LEARNERS JOURNEY: The following are the steps the group learner in general takes in the learning service experience in MOOCs, the journey is described based on the interview data collected from the student interviews, plus observations as follows:

1. **A social post:** For the group learner, it all starts with a status update or social share from a close friend or colleague. The interaction around the topic from the close social network (likes, comments) drives the group learner to be a part of the group that is participating in a MOOC.

2. **Enroll, together:** The moment there is enough influence from the social group, enrolling in the course is just a few clicks away. If there are any group formation with the MOOC, the group learner will make sure that all his closed group are all onboard on the same course.

3. **Starting the MOOC:** The MOOC in itself is a way for the group learner to socialize, collaborate and learn within a group setting with his friends (new people may be there also). So the group will agree to meet each other (possibly on the weekends) to discuss how to take the course tasks further.

4. **Meeting with friends:** Communication with friends for the course happens normally off-band, where social media or meetings in coffee shops happen. The team will have some kind of virtual leader that coordinates team efforts into reaching an outcome.

5. **Getting the certificates:** The common scenario is that group power helps everyone achieve the certificate.

6. **We did it!:** The moment the group gets the recognition, they start to brag about it in their social media for close friends and family, and it may be the topic of a couple offline meetings with friends about how they managed to do it. It will be very common that one of the groups will post a BLOG post with pictures of the group, while they are learning.

THE ADVOCATOR JOURNEY: The following are the steps the advocator in general takes in the learning service experience in MOOCs; the journey is described based on the interview data collected from the student interviews, plus observations as follows:

1. **Discover it:** The Ambassador is someone who has heard about MOOCs and their value from trusted sources or his social network.

2. **Enroll:** Once the Ambassador finds a good course, enrollment happens.

3. **Doing the MOOC:** The Ambassador in general is very efficient when it comes to executing the course till the end. So he is always on time or at least not far off, when it comes to following the MOOC course content. Based on a study I have done, the Ambassador usually has done a portfolio of courses from many MOOC providers successfully and gained the certificate.

4. **How can I Help?:** Seeing the value of MOOCs and how it can change education and embrace change society, the Ambassador feels its value and decides to take the value he gets to the next level! The Ambassador then ask a question, is there a way that I can help to take this knowledge to others? Are there any guidelines? Best practices?

5. **Sharing is caring:** The Ambassador takes the efforts to evangelize the MOOC platform to the local community and try to scaffold others to start.

4.4 Filtering & Generating phase

Equipped with the theoretical understanding of engagement, gamification, and MOOCs, and reflecting on the knowledge gained from the applied service design method and tools, time came to find solutions to identified engagement issues. As per Mortiz (2005, 123), SD Generating phase is the phase where the generation of possible solutions (or value propositions) for the identified problems is done. In this stage also, solution concepts are brainstormed with different stakeholders. Moreover, an SD Filtering phase follows, which helps in selecting the best ideas or solutions to the indented problems. Four steps were undertaken as follows to assure generating and filtering the best high-value and impactful solution, as follows:

1. Scope affected engagement elements for each of the identified issues
2. Prioritize the important issues that can have the biggest impact on engagement
3. Map the solution frameworks that best helps in solving the identified issues
4. Define value propositions

For the generating phase, online interactive sessions were done with stakeholders, including: students, teachers, and the co-founders to scope, prioritize and define the value propositions in a collective manner. Its worth noting that the possibility for having offline, face-to-face

sessions were not possible, and that is why online interaction sessions were the means to get the stakeholders on board.

4.4.1 SCOPE affected engagement elements

Engagement has been presented in this study as a multi-dimensional concept, where different layers of emotional, cognitive, behavioral and societal factors come into play when talking about engagement. Hence, a deeper look at what layer or layers of engagement was affected by the issues identified, will give a better perspective on what are the possible solutions that can be used to tackle engagement within the identified issue. Inductive analysis was done on the collected qualitative data, which helped in identifying the issues that affect the student engagement. Moreover to better understand the issues found, mapping to the issues found done against the four engagement layers identified earlier based on the theoretical analysis and review. This will help in finding the best solutions that can help elevate the engagement layer later on when coming the value propositions.

Figure 13 shows the different issues that affect student engagement based on the inductive analysis, and how do they related to the four engagement layers. In this sense, the horizontal axis is a scale that represents if the issue identified affect the individual, the group or both. While the vertical axis represents a scale, that shows if the issue identified affect the rational or emotional side of the person or persons reporting the issue. It is worth noting that mapping of the issues in the figure below is done in a subjective manner while trying to map the issues to the best possible engagement dimensions.

For example the issue of information quality affect the rational (cognitive) side of an individual in a sense that the absence or the hardness of finding information affects the student ability to understand, which in the end affects the overall engagement of the student. Another example, the issue of status and recognition, which affects the student when it comes to the personal image in front of others or like-minded peers, which also contribute to lowering the overall student engagement. Hence, understanding what these issues affect and what are the best possible solutions frameworks that can help in solving these issues is the aim.

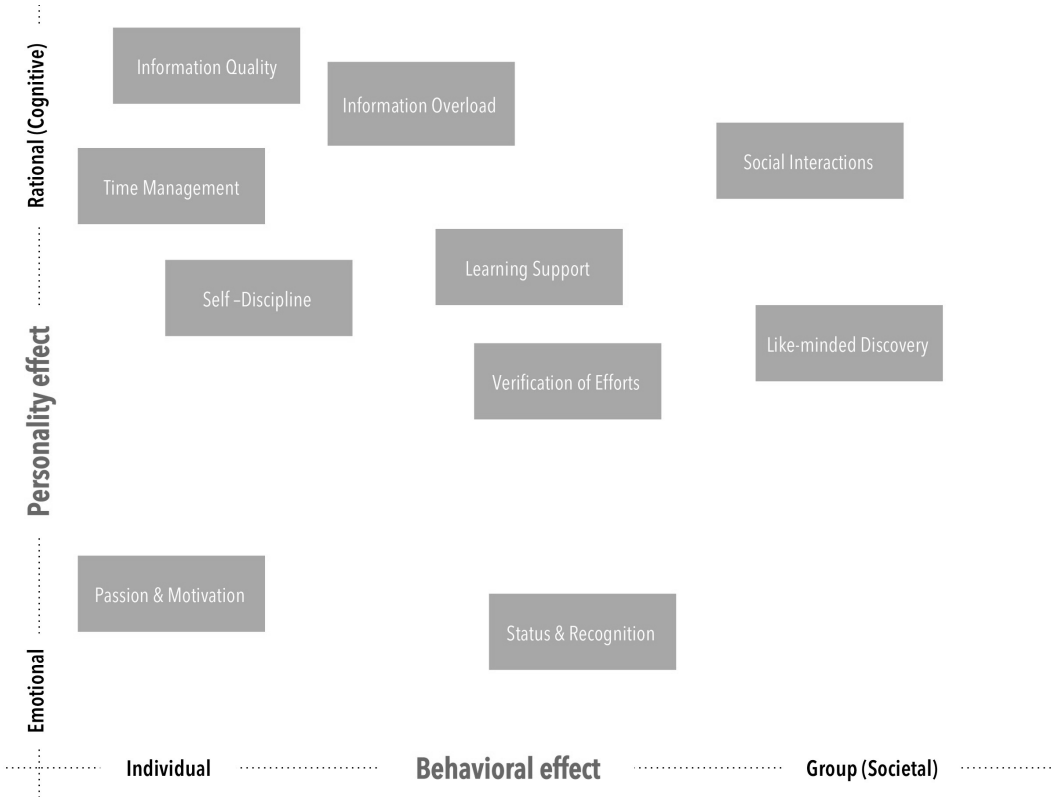

Figure 13 - Student issues mapped to engagement elements

It is also noteworthy that the identified issues are not exclusive nor comprehensive when it comes to engagement in MOOCs, but they were identified based on the design research conduct as part of this study. Future researches may find other issues that affect engagement such as cultural aspects or even educational background of both students and teachers as an example, based on other methods or even applying the same Service Design tools on different contexts.

4.4.2 Prioritize issues

The aim of finding solutions or value proposition design is not to find a solution to every problem, but to find the best solutions to the problems that customers really care about as Osterwalder, Pigneur, Bernarda, Smith (2014, 20) argued. Thats why the issue of finding what is really important vs. what is less important is a key to finding concrete solutions that tackle the most important problems, which can be realized in a very focused and time manageable manner. Collective exercise was done with the co-founders to ranks issues and prioritizes them based on the following criteria:

- **Roadmap alignment:** issues tackled should be somehow, not in the current roadmap of implemented solutions, which, in a sense will exclude issues that are already addressed in the current roadmap

- **Issues that are within control:** issues could be controlled within the context of the platform without reliance on external factors.

- **Issue ranking:** using four subjective criteria, issues are ranked and the top two issues from each category are selected to find possible solutions. The criteria are as follows:

    - **Importance of the issue:** how important is the issue from the point of view of the stakeholders? Is it extremely important or urgent?

    - **Visibility of the issue:** is the issue visible from the observations or interviews with stakeholders? Do we need to take an immediate action and solve the issue to avoid future consequences?

    - **Effect on engagement:** how severe is the issue effecting engagement and its dimensions? Will solving the issue help in increasing engagement?

    - **Affected audience size:** will solving this issue have an impact on a large student audience?

Using the above criteria, a collective selection of the top three issues that affect the students engagement have been selected to find possible solutions for them. Its noteworthy that the ranking done for the issues was done subjectively with the stakeholders, were collectively the participants in the ranking workshop gave a rank to each of the engagement dimensions and the issue were selected based on the sum of the ranking.

After the ranking was done on the three issues that affect students that were selected are:

- **Status and recognition:** how are students efforts in the learning process recognized by students and by the outside world?

- **Social interactions:** how to design and facilitate social interactions within the MOOC learning process, and support student interactions?

- **Information overload & quality:** how to make it easy to filter the large amount of content created by students and teachers?

4.4.3 MAP solution frameworks to issues

With the collective ranking done, the top three issues that affect the student engagement in RWAQ platform were identified. Value propositions proposed to tackle the issues from an engagement point of view, by looking at the affected engagement layers and trying to find best solutions framework from the different disciplines composing gamification. Table 17 shows the issues and the selected solutions framework or disciplines that are used to help solve that issue.

Issue type		Solution framework / Discipline
Issues effecting motivation / emotions		Game Design
Issues effecting thinking / cognitive		Flow theory
Issues effecting behavior		Behavioral design
Issues effecting social interactions		Social design

Table 17 - Issue type / solution framework mapping

Looking at the engagement layer affected for the selected issues, Table 18 gives possible solution frameworks that can be used to tackle the identified issues:

Issue name	Engagement element	Solution framework
Status & recognition	Emotions, Behavior	Game design, Behavioral design
Social interaction	Group Behavior (Societal)	Social design
Information overload	Social, behavioral	Social design, Behavior design

Table 18- Issues and selected solution framework

4.4.4 DEFINE value proposition concepts

Finally, the point came to define concrete value proposition concepts to help as solutions for the engagement issues identified earlier. The following value propositions were brainstormed with the different stakeholder during ideation session, which in a sense could help in solving some of the student engagement issues:

PROPOSITION 1: Creating student-learning groups to support social interactions

In this value proposition concept, student issues that emerge due to the inability to form learning groups and the discoverability of like-minded people are tackled by providing ways for student to meet new people, share knowledge with like-minded people and increasing student motivations using the social interactions.

For this value proposition, RWAQ platform will support the functions to help facilitate study groups within the platform itself and deliberately design social interactions in courses to make some course tasks done collaboratively. Moreover, the platform will support creating student learning groups where students can find other students based on location proximity. For example, a student can look up all the student groups that are in the same city he or she lives in and request to join it. Additionally, a student can create a group and assign it to a certain city, where others can look it up and request to join it.

As result, student motivation for learning will increase by both increasing emotional aspect of student engagement and also societal engagement due to social interactions. The changes to introduce such value proposition are counted as moderate efforts when it comes to efforts needed from RWAQ.

PROPOSITION 2: Supporting student status and recognition with badges of achievement:

For the second value proposition, some pinpoints were identified for students such as the absence of any student recordable status except the obvious status of completing the course. Furthermore, No differentiation between students regardless of their efforts while studying and other factors support having a value proposition to enhance and support student status recognition.

In this manner, student status and recognition will help students to get a verified sense of progression at all stages of the learning service experience, provide a sense of competition and comparison and finally provide a way for social bragging. To realize such value proposition, achievement design as described Hamari & Ernati (2011) will be used as means to sup-

port this value proposition. Within the process of integrating achievement design, teachers will be guided to mark different achievement levels in their courses with the needed completion logic and possible rewards, which will be virtual badges. To implement the badge system, integration with the current gamification providers like badgeville.com, where the mechanics of badges, levels, etc. are provided, as a service could be one easy way to realize such value proposition. Furthermore, providing a space in the student profile to show the badges collected from each course will support embracing the social validation for these rewards.

Such value proposition will possibly result in increasing the emotional aspect of the MOOC service experience, which will yield defiantly to increased student emotional engagement and, as a result, the overall value perceived from the MOOC service.

PROPOSITION 3: Creating social media Hashtag #AskRWAQ, for information filtering

One of the issues highlighted by students was the inability to discover information related to the MOOC content, which could be either created by the interaction with the teacher or by the student-to-student interaction, in an easy way.

The current forums in the RWAQ are overwhelming and to some point, provide frustration to students while trying to search for information. Furthermore, the absence of mobile-based information access and discovery contributed to this issue also. Finally, when it comes to students as they are mostly social media savvy, many of the student interactions related to the MOOC offering are lost due to that they happen in social media and not in the platform itself.

To solve this issue, the suggestion is made to create and communicate a unified hashtag, which is #AskRWAQ for anyone who wants to ask a question of a course or supplement the course offering with additional information. This solution will build on existing social media literacy of the students and provide way for students to have mobile ready option for information discovery, since all the social media platforms have mobile apps ready with hashtags filtering capabilities. Not that only, but such solution may contribute to adding new registrants to the RWAQ platform, as interactions with social media are visible to all the followers of the interacting subject. In terms of engagement, such solutions will strengthen both the behavioral and societal engagement within the RWAQ platform, and will apply to all the identified student personas discovered.

4.5 Explaining & Realizing phase

According to Mortiz (2005, 123), the SD Explaining and SD Realizing phase are both concerned about tangible concept making and implementation and delivery respectively. The solution concepts were presented to the co-founders and as per the early feedback and great impressions have been achieved initially. The co-founders have stated when interviewed; that gamification is an important element that they consider though, at the time of the interview, gamification was looked at as a solution seeking a problem. With the efforts of the study, the main problem, which is the student engagement was reviled and explained in a well proper manner, which made the case for gamification based on a scientific and research method. Hence, gamification was looked at with a different perspective as a way to make MOOC more engaging, fun, motivational, social ready and behaviorally aligned.

However, it is worth mentioning that for this study, realization of the value proposition concepts was not done due to reasons concerned about the current platform roadmap. In this sense, the owners communicated the difficulty of realizing the value propositions due to limits on time and budget, so the value propositions considered as part of the future roadmap of the platform. Moreover, until the time of writing, none of the proposals were realized.

5 Summary & results

In recent years, market competition dynamics, global economic pressures and always-on society are some of the reasons that have put higher expectations on online education. The need to have an effective, interactive, collaborative and learner-centric education that helps students and professionals alike advance their learning anytime and anywhere has risen. For that, MOOCs have gained the maximum attraction in the last couple of years, since they provide value propositions that match global needs and hunger for education without borders. But with time, several practitioner studies have shown that MOOCs are not as effective as traditional ways of education when comparing it to a completion rates point of view. 7% is thought to be the average global completion rate of MOOCs, which is very low when in comparison with traditional education. But with that, several studies have confirmed that learners are achieving their learning objectives, which raises the question: is completion rate the right measurement for the success MOOCs?

Hence, the need to dig deeper into the MOOC service experience to understand their aims, attitudes, behaviors and expectations, which can then be used as guiding knowledge to help improve the overall service value for students. Therefore, the topic of student engagement has been hypothesized as the focus topic of this study. Hence, this study set out to explore the topic of student engagement in Massive Open Online Courses (MOOCs) and has identified issues, obstacles and barriers that prevent students from maximizing the overall value of such pedagogical medium. Engagement was looked at as the overarching framework that could help increase student interactions, which as a result, would enhance and strengthen the emotional, psychological and physical investments students have in MOOCs. Moreover, engagement could help in improving the effectiveness of this online education services and have positive impacts on value perceived out of the service. Hence, the study sought to answer the following questions:

- How to understand student engagement in MOOCs?
- How to promote student engagement within MOOCs using gamification?

With the above questions in mind, the suggestion came to use gamification as a means to enhance the student engagement. Moreover, the relation between gamification and engagement has been explored and how gamification can be used as a solution framework for the identified issues.

Based on the study done, students, teachers, and the learning content were identified as the main three entities in the MOOC platform, were different interactions enable and facilitate the overall service. Results showed that positive or negative interactions would proportionally

impact the perceived service value the same manner. For example, looking at interactions between student and teacher entities, reducing the teacher feedback and support to the students reduces the overall value outcomes of MOOCs, and the inverse is true. Another example, improving the content discoverability enhances the service experience of students within MOOCs. Moreover, the study confirmed that the engagement has multidimensional aspects, were emotional, cognitive, behavioral and societal dimensions of engagement all contribute to enhancing service value. As an example, looking at the issue of the content discoverability in MOOCs, students may have the motive or the need to find some information, but due to the lack of the design concerning search behavior from MOOC providers (behavioral design), students get negative emotions (depression) that could result in reducing perceived service value.

Furthermore, by looking at the students, the study has shown that not all the students are the same when it comes to their aims, attitudes and expectations from an MOOC. Therefore, complying with previous practitioner results showed learners satisfaction from the learning outcomes in an MOOC, though course completion was not achieved. Hence, this finding opens the door to look at the design of the MOOCs from different lenses to help support different student expectations and needs. It's noteworthy that the study came out with the following four student archetypes:

- **Expert:** someone who is looking for a deeper understanding in his area of expertise or a certain topic.

- **Knowledge surfer:** someone who is in pursuit of new knowledge and driven by exploration.

- **The group learner:** someone who wants to learn but foresee the power of group work and interactions.

- **The advocator:** someone who is passionate about learning and wants to take it to the next level and also benefit others.

It's interesting to note, that the study results also confirmed that the engagement is strongly related to the value of the MOOC. In this sense, it's a two-way relationship, were more student engagement means more value perceived from the MOOC, and more value from the service means more student engagement. For example, enabling group interactions increases the social engagement within an MOOC. On the other hand, the visibility and the credibility of the educational artifacts (certificates) to the outside world may affect the perception of the value of the MOOC and hence, create social engagement.

That said; engagement should be ‘designed for' and ‘facilitated by' MOOC providers with the aim to improve and enhance the perceived service value. Hence, a comprehensive solution framework is needed to help support and enhance the different dimensions of engagement, which is gamification as the study concluded. Gamification in itself is a means to achieve business objectives using game thinking, design, and tools. Not only that, but gamification is a blend of disciplines that could help in tackling the different dimensional aspects of engagement. Hence, the study suggests using gamification as a means to achieve and enhance student engagement. One can claim that, gamification can be used to enhance the emotional, cognitive, behavioral and societal dimensions of engagement. In this regard, study summarizes gamification as the intersection of the following disciplines:

- **Game design:** the use of game thinking, tools and methods to design playful experiences.

- **Social design:** designing for social interactions and facilitating it amongst a group of people.

- **Flow theory (challenge design):** designing challenges that match the user’s ability.

- **Behavioral design:** designing for behaviors to make them happen.

Therefore, using gamification as a solution framework, three value propositions concepts that could affect and enhance the student engagement were proposed to the case organization. The value propositions tackled one or more dimensions of the student engagement issues, using one or more of the gamification underlying disciplines. The three value proposition concepts were presented to the case organization as follows:

- **Student learning groups:** in this value proposition concept the case organization will support the social and group functions to help facilitate study groups within the platform itself. Moreover, the platform will support creating student learning groups where students can find other students based on location proximity. Additionally, any student can create a group and assign it to a certain city, where others can look it up and request to join it. As result, student motivation for learning will increase by both increasing emotional aspect of student engagement and also societal engagement due to social interactions.

- **Student badges of achievement:** in this value proposition concept achievement design will be used as means to support student sense of progression and achieve-

ment. By integrating achievement design with the content design, teachers can mark different achievement levels in their courses (with the needed completion logic and possible rewards) to help the student get better progression feedback alongside the course. Moreover, create the sense of differentiation and competition among students while studying. Such value proposition could possibly result in increasing the emotional aspect of the MOOC service experience, which will yield defiantly to increased student emotional engagement and, as a result, the overall value perceived from the MOOC service.

- **Information filtering using social hashtags:** in this value proposition concept the suggestion is made to create and communicate a unified hashtag, which is #AskRWAQ for anyone who wants to ask a question of a course or supplement the course offering with additional information. This solution will build on existing social media literacy of the students and provide way for students to have mobile ready option for information discovery, since all the social media platforms have mobile apps ready with hashtags filtering capabilities. Such solutions will strengthen both the behavioral and societal engagement within the RWAQ platform.

However, due to the limitations of the study, none of the value postposition outcomes were implemented to foresee its effect on engagement and the overall MOOC service experience. Hence, the effect of the proposed value propositions on engagement have not been measured. It is worth noting that the implementation was limited due to founders inability to manipulate current platform roadmap, as much important activities were already scheduled.

6 Conclusion

Both the theory and the practice have shown the importance of engagement when it comes to services, their value and their overall experience. Engagement plays a vital role when it comes to enhancing the overall perceived value of service, as engagement helps to increase customer satisfaction, increased customer commitment, create positive customer relationships and creates trust between customers and service providers. That told, within online education services and in specific MOOCs, student engagement is an issue that is affecting the overall value perceived out of MOOCs, due to many reasons like limited teacher interactions, absence of clear progression paths, poor educational content design and the lack of student commitment compared to traditional means of education. Many of these issues have been already highlighted in practitioners work that is concerned with MOOCs success. Furthermore, the empirical study of the case organizations confirmed these issues and misalignment between MOOCs and the different needs, aims, and motivations students have.

Traditionally, success in MOOCs was measured by the same success criteria for traditional educational systems, which are completion rates. In this sense, completion rate have been sought as the ultimate and unified criteria for success. Therefore, this study carried out as empirical research to gain more human based understanding on this topic, and found that enhancing student engagement can be looked at a way to improve the overall MOOC service experience. This is of course with the assumption that the success of MOOCs should not measured by completion rates as such, but with what students perceive as value out of the MOOCs and their experiences. Therefore, gamification was suggested as the solution framework to address the different engagement issues. Hence, gamification is used as means to achieve engagement, which could enhance the different dimensions of engagement. As the study folded, gamification, found as framework that can help in making MOOCs more fun, motivational and behaviorally designed, and socially aware. Moreover, the conclusion came that gamification is more than game design, where gamification can be thought of as blend of design disciplines including game, behavioral, challenge, social design that come together to help achieve certain business objectives. Hence, gamification can be used as means to lift the emotional, congestive, behavioral and societal dimensions of student engagement in MOOCs. In the end, several value propositions concepts driven by using gamification as solution framework were suggested to the case organization. Unfortunately, the effect of these value propositions concepts on the case organization was not measured due to this study timelines and the non-readiness to implement such proposals at the time of their suggestion.

However, what we can conclude that the the topic of engagement is of major importance when it comes to services, in general, to the point that engagement could be thought of as,

the new frontier when it comes to the design of services based on the author point of view. Hence, service designers should consider engagement as an important element, when they are ‘designing for’ long and lasting service experiences. The question then arises: how to integrate the ‘design for’ engagement into the design of service experiences? As with any human based experience, engagement can be thought of as a subjective topic but, hopefully, this study is one step in understanding it by design. Though, more future research to support the understanding of engagement and how it can be ‘designed for' will defiantly be needed.

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Figures

Tables

Appendices

Appendix 1 – Student persona's journey maps

Journey map Expert Journey Map **Date** 22 October 2014

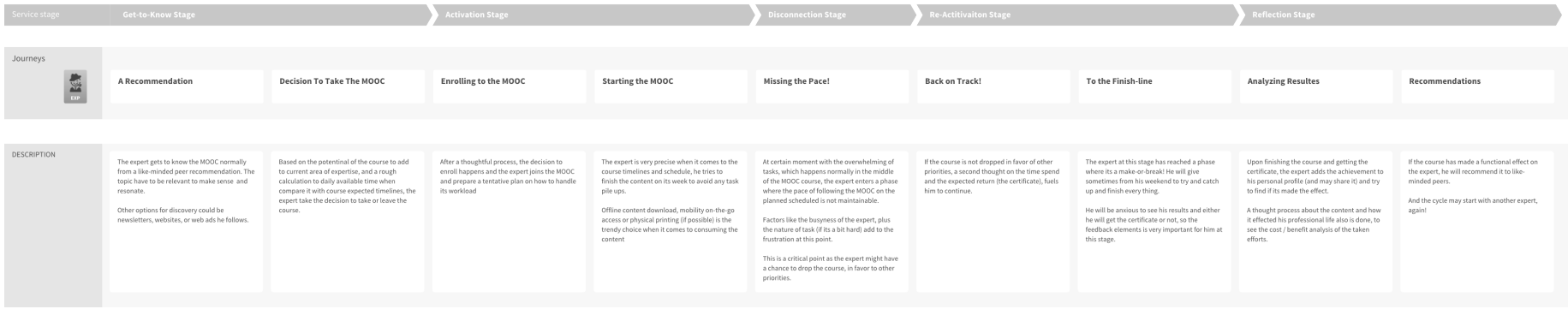

Figure 14 - Expert journey map

Journey map Knowledge Seeker Journey Map **Date** 22 October 2014

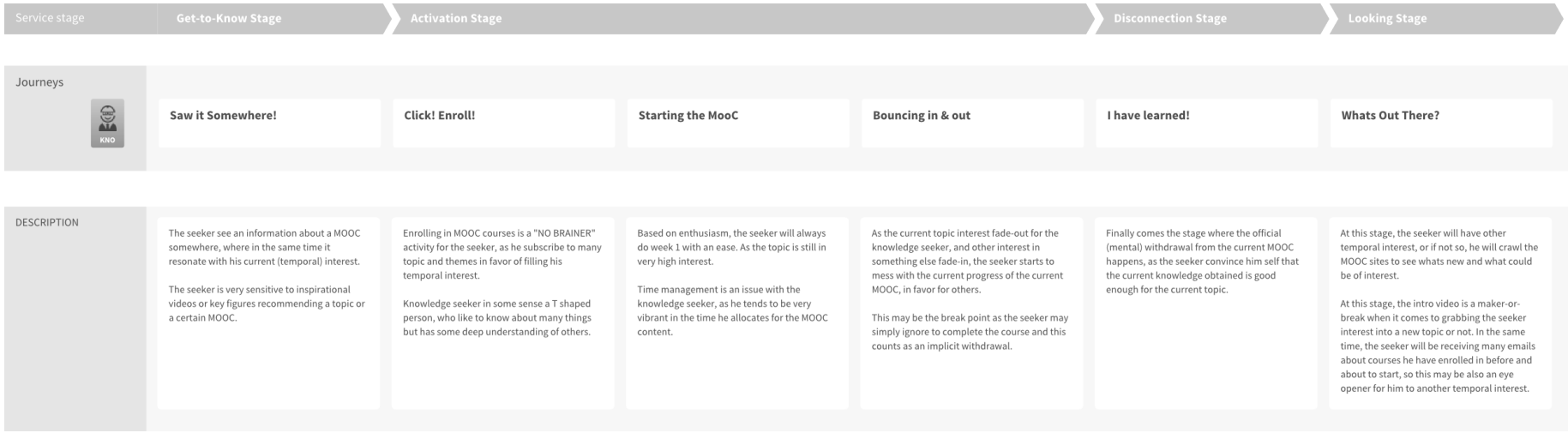

Figure 15- Knowledge seeker journey map

Journey map Group Learner Journey Map **Date** 22 October 2014

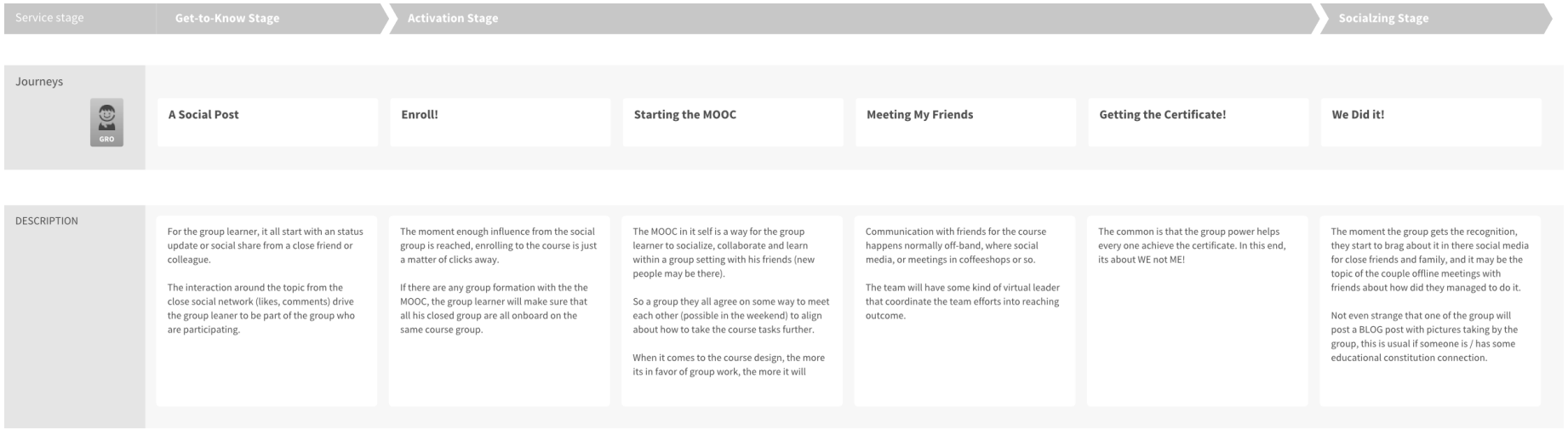

Figure 16- Group learner journey map

Journey map Ambassador Journey Map **Date** 22 October 2014

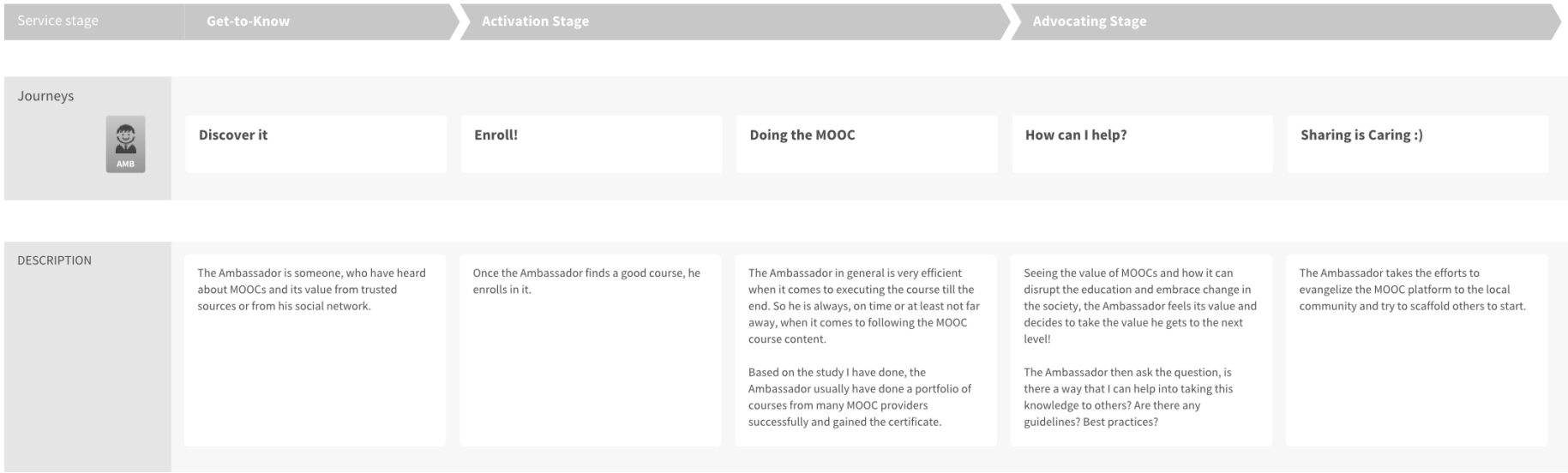

Figure 17- Ambassador journey map

Appendix 2 – Student online survey questions

- What is your age?
- What is your gender?
- Are you working?
- How many courses you have registered for in Rwaq before?
- How many courses you have completed till the end in Rwaq before?
- Did you register before in any of the global open learning platforms? (ex: Coursera, edX)
- Did you complete any course in any of the global open learning platforms? (ex: Coursera, edX)
- What are your main goal(s) that you want to achieve from Rwaq?
- On the average, how many hours you dedicate from your time, to learn from Rwaq?
- Does your enthusiasm get lower with time while you are learning from Rwaq?
- How did you get to know Rwaq?
- What is your opinion / perception about the Student / Teacher engagement in Rwaq? How do you see? How it can get better?
- What is your opinion / perception about the Student / Student engagement in Rwaq? How do you see? How it can get better?
- What are the TOP THREE obstacles you face when learning from Rwaq?
- If you have been assigned as one of the Rwaq team, what will be your suggestions to make it better?

Appendix 3 – Qualitative interview questions

- Can you provide me with your name, age and occupation?
- What MOOCs did you take before?
- Why did you take the MOOCs you took before?
- What was the main motivation for you to take the MOOCs?
- How did you hear about MOOCs?
- How did you discipline yourself while studying MOOCs?
- How many MOOCs have you completed?
- What is the chance to extend your efforts by taking an extended version of the MOOC you have completed? Moreover, why?
- Did you do any peer reviews? Moreover, if so, what do you think about them?
- What where the top three obstacles you can foresee in MOOCs?
- What are the top three benefits you can foresee in MOOCs?
- How about the student forums or communication spaces? What is your experience when it comes to them?
- Do you think the course structure provided a clear progression towards the final goal of completing the course and getting the certificates?
- How did the course timing as start date and week lectures resonate with your time? Moreover, what about of having different progression options in a single course?
- Do think it will be more helpful if the course was tailored to your time?
- What is the difference between an MOOC and a normal training you have witnessed before when it comes to engagement?
- Do you think adding real live interaction in MOOCs either with teachers or students is good idea? Using technology or offline sessions?
- Have you heard about gamification before? Moreover, where did you encounter it before?
- Do you think gamification will help in enhancing the engagement in MOOCs?
- Do you think course completion is the most important part in MOOCs?
- Whom do you think MOOCs are best suited to?
- Do you think MOOCs are the future of education?
- How can we make engagement better in MOOCs?
- How did you join the ambassadors program?
- Did you get certain guidelines about how to promote for the RWAQ platform?
- How do you interact with other ambassadors?
- How did you join RWAQ for teaching the course you are teaching?
- How did you record the course content? Moreover, which tools you have used and how long did it take to do it?
- How did you discipline yourself for the courses?

- How did you interact with students while the course is running? Moreover, how did you discipline yourself for that?
- How do you thinks MOOCs are different from the real teaching experience?

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Abstract

In recent years, Massive Open Online Courses (MOOCs) have been sought as one of the means to bridge the knowledge gap in world we live. Within MOOCs, the barriers of time, space, location, and accessibility have been overcome compared to traditional means of learning. The creation of collaborative, learner-centric and purposeful learning experience have been approached. MOOCs have taken the education community by storm with their unprecedented high student enrollment numbers. The adoption of well-reputed and well-known academic institutes like Stanford, MIT, and others persuaded many academic institutes worldwide to jump into this trend. When looked at the MOOCs success, completion rates can be seen as the key success metric to this new pedagogical medium. Nevertheless, many academic studies have shown that completion rates are a misleading indicator of the success of an MOOC, due to that learners have different aims and motivations. Some learners come with the aim to update professional knowledge to match market needs, some come with the aim to socialize with like-minded people while others simply enjoy the pleasure of learning and expanding their horizon about topics they did not know before. Going beyond completion rates to get clear understanding of the obstacles, problems and issues facing students while learning within MOOCs is needed. In general, enhancing customer engagement helps to elevate services to be more satisfactory and fulfilling, and increase the customer value of services. An empirical and exploratory study based on service science was performed on the first and biggest Arabic MOOC platform named RWAQ. The aim of the study was to understand the customer value of the service and promote student engagement in the online learning environment represented by MOOCs to help answer the following questions: How to understand student engagement in MOOCs? How to promote student engagement within MOOCs using gamification? The study was based on service innovation and design and gamification methods. The study realized as a part of the Master Program in Service Innovation and Design at Laurea University of Applied Sciences, enabled to gain a fresh look at the learners' aims, motivations, and needs and resulted in proposing solutions to enhance student engagement.

Keywords: Massive Open Online Courses, Gamification, Service innovation and Design, Service science