

Value proposition design for digitized gamified social learning

Positioning a gamified project manage-
ment application to potential users

Christine Kangaslampi



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ABSTRACT

Tampereen ammattikorkeakoulu
Tampere University of Applied Sciences
Degree Programme in International Business

CHRISTINE KANGASLAMPI:

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In modern institutions of higher education, team assignments are a major contribution to the workload of students. For example, in the degree programmes offered at Tampere University of Applied Sciences, the majority of courses require the completion of several group assignments during the semester as part of a normal curriculum. Therefore it can be assumed that students acquire a large portion of their skills and knowledge through collaborative learning with other students.

Although collaborative learning has many proven benefits, there are many practical issues that are usually overlooked that can cause significant stress to students and also impact the results of the collaboration negatively. This study aimed at uncovering both the experienced benefits and disadvantages of collaboration in order to gain clarity on the reality of the very current and relevant topic of peer-to-peer collaborative learning. Qualitative research study in the form of in-depth interviews and a literature review was performed.

In addition, an idea for a digital gamified collaborative learning application was developed as well as a value proposition that could be useful for potential future business development around it. The value proposition was designed around current findings on the states of the areas surrounding gamification in learning and social media. It was also based on the theories of customer value, value propositions, value proposition design and positioning.

Key words: collaborative learning, gamification, gamification in learning, gamification in social media, gamification in education, value proposition, value proposition design

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1 INTRODUCTION AND RESEARCH PLAN

1.1 Thesis topic

1.1.1 Background

This thesis is based on the development a gamified application for social learning activities, such as school projects, course works, workshops, seminars, online learning, or just thorough learning of a particular subject. The application is a combination of a project management app and a social networking app. The core target audience for the application is higher education students, with teachers, tutors and facilitators having some access to it. The basic problem behind the invention of this type of application is the lack of tools with a core focus in educational collaboration that also allow group creation and monitoring, as background research has revealed. (McAndrew & Goodyear, 2007) The basic assumption is that there is a need for this type of service as well as a lack of applications that offer gamified solutions for this need.

1.1.2 Social significance

One of the major aims of the application is to facilitate the user's ability to easily locate and contact other users with similar intentions for participating in collaborative educational activities. The users may come from the same educational organization or from different institutions and they may have varying degrees of familiarity with each other. The role of the application is, through its features, to facilitate the entire collaborative process. The application assists the users throughout the whole process - from the initial construction of the ideal team to the successful execution of the activity.

The application makes use of gamified elements such as rating each user and gathering reputation points within the internal user community. This rating and reputation system aims to benefit the user in their search for collaborators as well as helping potential collaborators to make better decisions when choosing to join a collaboration. It also promotes the positive interactions that benefit social collaboration. Other gamification elements include user profile customization and full playable games within the platform. The aim of these elements is to make the user experience more meaningful and purposeful, at the same time helping the user form a more cohesive identity of themselves.

The impact for the individual user includes the opportunity to expand and develop personal areas of expertise in a more social and customized way. Groups of individuals can have the opportunity to co-create new solutions and experiences together within their institution while expanding their social and professional networks in a more authentic, meaningful and personal way.

1.1.3 Business and organizational relevance

Further impact of this application is the afforded opportunity for co-creation between individual users and their institution or between users and external organizations in order to develop and innovate new learning material, courses, projects, products or services together that would otherwise be impossible or very inefficient to do.

The implication for organizations and institutions is that they have an advantage when it comes to effectively marketing themselves and their products because of the amount of information exchanged between organizations or institutions and their target audience. As an example, the application would be able to facilitate the marketing research process of organizations or institutions by providing a platform for the type of interaction and information exchange that would otherwise be very difficult to obtain through traditional marketing tactics.

1.2 Thesis objective, purpose and research question

The purpose of this thesis is to gain more knowledge on the integration of gamification in social media and collaborative learning and to gain clarity about value proposition design for this new type of application. The objective is to design a value proposition for the said application.

The additional purpose is to provide background information for possible further business model innovation and development of the application.

Formulating the objective as a research question, the research question can be considered to be the following: What is the application's value proposition to its users, and how do we position the application most effectively in the market?

The intention is to gain an understanding of how users would perceive the value they would be getting from the use of the application once it is launched, as well as an understanding of how to best design the application's features so that it can be positioned as effectively as possible in the market. To offer more background knowledge, the general concepts and theories of customer value, value proposition design, gamification in learning, gamification in social media and positioning will be discussed further in the next section of this chapter.

2 CONCEPTUAL FRAMEWORK

2.1 Introduction to the conceptual framework

In this section, an examination of the marketing concepts of customer value and value proposition concepts will be presented. In order to produce a more complete framework, the broader concept of the positioning aspect of marketing will be also be examined. In addition to those, the concepts of gamification in learning and social media will also be presented.

2.2 Customer Value theory

From a customer's perspective, value is a multidimensional concept. From a more theoretical approach, value can be considered as a representation of a net score that includes the measurement of total benefits perceived and total costs of using a particular product or service. Measuring total consequences experienced in using a product or service represents a quality metric. Although quality metrics are important for measuring customer value, they represent only one of the variables of the concept of customer value. (Gibbert, M. et al, 2008).

Goodstein and Butz, Jr (1996) suggest that it is the customer who ultimately defines customer value. They outline customer value as the emotional bond that is established between the customer and the organisation after the customer has used the product and has found the product to provide value. To illustrate this concept, they use the example of frequent flyer programs adopted by many airline companies. By the time the customer has the chance to benefit from the program, they will have used the airline's services many times and an emotional bond will have formed between the customer and the airline. Another illustration given by the authors is the example of the co-operation of the airline Cathay Pacific with the Hong Kong government to reduce waiting time at the Hong Kong airport for Cathay Pacific's airline customers. This set of actions increased Cathay Pacific's net customer value and strengthened the bond between the airline and their customers. (Goodstein & Butz, Jr., 1996).

Goodstein and Butz go on to identify three levels of customer value. These levels are (1) the expected level, (2) the desired level and (3) the unanticipated level. Following is a deeper examination of these three levels.

The expected level is the basic level of service or products that the customer has come to expect to receive. This is the level when there is nothing particularly memorable about a service or product, nothing distinguishes one particular brand from the other and all attempts to add value can be quickly copied by another organisation. (Goodstein & Butz, Jr., 1996).

The desired level is the level of service features that do add value to the customer's experience but they are simply not expected due to organisational or industrial standards. To meet the desired level of customer value, an organisation needs to have an understanding of what the customer really cares about and to take the opportunity to react to those desires. The more an organisation takes steps to increase its net customer value, the more it distinguishes its services or products from its competitors'. (Goodstein & Butz, Jr., 1996).

The unanticipated level of value is the level where value beyond the customer's expectations is added to the experience of the customer. This value is often also beyond the customer's current conscious awareness. This level includes any service or product feature that unexpectedly meets the customer's desires, such as unusual willingness to resolve a problem or extra service at no additional cost. The development of products such as the disposable diaper in the 1950's and VCR's in the 1980's illustrate such examples of meeting customers' previously unspecified desires. (Goodstein & Butz, Jr., 1996).

Authors Janelle Barlow and Dianna Maul define emotional value as the monetary worth of feelings when customers have a positive experience with an organization's products or services. They argue that emotional value, as much as quality or any other dimension of an organization's worth, can make or break a business. (Barlow & Maul, 2000).

Emotional value also refers to the feelings customers experience or anticipate to experience when dealing with organizations or their representatives. These feelings create a desire in the customer to either return to the organization's business or to go away and

never return. Ultimately, emotional value is more connected to customer retention than anything else. (Barlow & Maul, 2000).

2.3 Value proposition

After the examination of customer value theory, the value proposition concept will be investigated. According to Kowalkovski et.al. (2012) the concept of value propositions was first introduced in the 1980's. It was seen as a tool that can be used to accentuate the importance of communicating value in offerings. (Kowalkovski et. al, 2012).

Investopedia (2017) defines the value proposition as a promise that is made by an organization to its consumers that their product or service will deliver value to the customers or solve a customer's problem. It goes on to explain that a value proposition should be concise, easy to understand and it should communicate clearly the reasons why a particular service or product would satisfy a customer's demands. The value proposition is used as a method to target those customers who would benefit the most from the organization's service or products and therefore it should appeal to the customer's most powerful decision-making drivers.

Barnes, Blake and Pinder provided another strong definition for the value proposition concept. According to Barnes et.al. (2009), value proposition development as a whole can be seen as an organizational approach in which value becomes embedded into the customer experience. In other words, it can be seen as the management of the discipline of providing value to the customer.

Barnes et.al. (2009) define value proposition development as a conversion process with specific inputs, processes and outputs. Inputs of the value proposition process are, for example, the customer experience, offerings, benefits, costs, risks and price. The outputs, for example, can be new customers, retained customers, profits, or enhanced offerings. Barnes et.al explain that one of the outputs of the process is a set of messages that can be used for external or internal communication, and they call this set of messages the value proposition statement.

According to Barnes et.al. (2009), a value proposition statement must be “a clear, compelling and credible expression of the experience that a customer will receive from a supplier’s measurably value-creating offering.” They go on to emphasize that a value proposition statement should not be plainly a description of what the organization will do for the customer.

In their book “Value proposition design: how to create products and services customers want”, Osterwalder, Pigneur and Papadakos gave a similar definition to the value proposition design process. According to the authors, value proposition design is the entire process of designing, testing, building and managing a value proposition over its whole life cycle. (Osterwalder et. al., 2015).

2.4 Value proposition design

2.4.1 The co-creative paradigm and Service-Dominant Logic

The co-creative paradigm is an orientation within marketing that can be described as integrating and coordinating value creation activities with consumers. According to this orientation, existing or potential customers are seen as prerequisites to the creation of value. In relation to the co-creative paradigm, the Service-Dominant Logic argues that firms cannot unilaterally develop, offer and deliver value to consumers by bundling knowledge into goods, they can only offer value propositions. In this case a value proposition is not synonymous with a product offering but value propositions are formed through knowledge exchange activities between resource integrating actors rather than being predefined by a single organization. (Kowalkovski et al, 2012).

To paraphrase Kowalkovski et al, consumers can be understood as resource-integrating actors with many faces. In light of this, the formation of a value proposition cannot be portrayed only as a transaction of knowledge from an organization to its consumers. Instead, it should be seen as a co-creative practice of knowledge exchange between groups of resource-integrating actors drawing on different understandings, procedures and engagements. (Kowalkovski et al, 2012).

Insights from the work of Kowalkovski et al, insights from the co-creation paradigm theory as well as the co-creative practice of forming a value proposition will be used as the basis for the study that will make up the primary data of the thesis.

2.5 Gamification in Learning

In this section of the chapter, the integration of gamification in learning will be explored. Before going into the specifics of the topic, a more general overview of the subject of learning is given.

Jean Lave (1996) considers that “informal” practices through which learning occurs are so powerful and robust that questions should be raised about the efficacy of standard “formal” educational practices instead of the other way around. (Lave, 1996).

She describes learning as an aspect of individuals’ changing participation within changing communities of practice. According to Lave, learning happens over time whenever and wherever people engage in some ongoing, interdependent activities for substantial periods of time. (Lave, 1996).

Jean Lave goes on to give a short description of a theory of learning as proposed by Martin Packer. According to Packer and Lave, a theory of learning consists of three main conditions (Lave, 1996):

1. Telos: that is, a direction of movement or change of learning
2. Subject-world relation: a general specification of relations between subjects and the social world
3. Learning mechanisms: ways by which learning comes about

A type of modern formal education that incorporates Lave’s theories are massive open online courses, also known as MOOCs. They can be described as a certain kind of online education form with specific characteristics. MOOCs are completed through knowledge management, informal and social learning as well as lifelong learning principles. (Gené et al. 2014).

While some MOOCs just add multimedia elements such as video lectures to traditional pedagogy, some MOOCs go a step further. They attempt to engage the massive number of participants into discussion and contribution to the course by using specific built-in social tools for this purpose or by suggestion from instructors. Many of these tools have some element of gamification. (Gené, Núñez & Blanco, 2014).

Gené et.al. (2014) explain that one of the major features of MOOCs is the open, social concept that provides a new system of self-organization. Peer-to-peer interaction means that the teacher stops having the traditional role of lecturing to students, and that emerging, advanced students take on this role. They claim that the incorporation of this peer-to-peer tutoring can be considered one of the key factors in MOOCs' success. (Gené et al. 2014).

According to Gené et.al. (2014) MOOCs should trend towards further customization where new technology and pedagogy meet. They further claim that gamification technology has the power to enhance participants' motivation through the use of game mechanics and increase participation, commitment and loyalty in students. (Gené et al. 2014).

Within the field of education, the subject of gamification has been a popular topic since 2010 (Gené et al. 2014). When it comes to the subject of gamification in relation to learning, recent studies have shown that gamification elements help to attract and engage students in collaborative learning. (Li et. al, 2013).

In his article James Paul Gee (2005) claims that there is a need to make formal learning more game-like. He suggests taking inspiration from the learning principles that are already incorporated in video games. These principles are supported by current cognitive science research. According to Gee, challenge and learning are a large part of what makes games motivating and entertaining. He goes on to explain that humans intuitively enjoy learning. (Gee, 2005).

To quote Li et.al. gamification can be described as “the use of game mechanics - such as awarding points or achievement badges to engage target audiences and encourage desired behaviours.”(2013).

In his article, Gee uses the example of the science of biology as a school subject. He argues that a science such as biology is more than a set of facts; rather it's a game that certain types of people play. These people engage in characteristic sets of activities, use characteristic tools and languages and hold certain values. In other words, they play by a certain set of 'rules'. According to Gee, biologists as scientists are actively 'performing' or 'playing'. They also learn a multitude of facts as well as produce facts. However, the facts are learned and produced as part of the playing process. Outside of the context of biology, the learned facts are useless. So in essence, Gee argues that what is learned while learning a particular subject should also be how to learn that subject. (2005)

2.5.1 Principles of Good Gamification in Learning

According to Gee, good games incorporate the following learning principles. The first one is the principle of Identity, which he summarizes as the extended commitment of self to see and value work and the world surrounding that work in the way that the Identity requires of the player. In games, players can take on the role of a strong and appealing character, or they get to build one. In either case, players become committed to their new virtual world, in which they will learn and act through their commitment to their new identity. (2005).

The second principle is Interaction. According to Gee, offering the player an interactive experience is part of a good game. The act of playing the game and making decisions makes the game react back in the form of feedback and new problems. (2005).

Following Interaction comes the third principle, which is - aptly - Production. As the players interact with the environment, they don't only consume the media of the game, but they help to create it. They co-design the game with the actions and decisions that they make. (Gee, 2005).

According to Gee, the consequences of failure are lowered in good games. This allows players to experience a larger amount of freedom when it comes to Risk-taking, which is another good learning principle. Players are encouraged to take risks, explore and try new things. Intuitively, players learn that failure is a good thing. As they face a new set of problems, they use initial failures as ways to get feedback about the progress being made

and to find new patterns and solutions that will move them forward in the game. (Gee, 2005).

Allowing players to customize a game to fit their learning and playing style is another sign of a good game, according to Gee. This is the Customization principle. Combining the Customization principle and the Risk-taking principle, players are free to try out new styles of playing. (2005).

Combining all of the above mentioned principles, good games allow players to feel a sense of Agency, another good learning principle. Agency provides the player control and ownership over what they are doing. (Gee, 2005).

Gee suggests that attention be paid to how players become experts in games. He argues that the Challenge and Consolidation principles in games offer players a set of problems, which then the players are allowed to solve repeatedly until the solutions are nearly automatic. Then the game offers a new set of problems which require the players to re-examine their mastery, learn new strategies and integrate the new learning into their existing understanding. This new mastery becomes consolidated with repetition, only to be challenged again in the future. This phenomenon is called the 'Cycle of Expertise'. (2005).

The ways good games offer information to the player is by using the principles of Just in Time and On Demand. These two principles explain the way the game delivers information to the players when the players need it, when they have the ability to use it or when the players wish for the information. (Gee, 2005).

The Systems Thinking principle refers to the way that games encourage thinking about complex and dynamic interdependent relationships instead of isolated facts, events or skills. The Systems Thinking principle is related to thinking about how current actions affect future actions as well as the other players' actions and the progress of the game as a whole. Gee underscores the importance of developing this skill. (2005).

Good games take advantage of the Distributed Knowledge principle, which simply means that the player doesn't have to know everything about the game, just when and where to take action. In multiplayer games, players work together in teams where each member

can contribute their distinctive skills. The core knowledge of how to play the game is now distributed among the players. (Gee, 2005).

Another good learning principle that can be found in well-designed games is the principle of Cross-Functional Teamwork. In massively multiplayer games such as World of Warcraft, players play in teams in which each member must master their own unique set of skills to be able to perform their function in the team. They also must understand enough of each other's specialization in order to integrate and coordinate with the others. This is otherwise known as cross-functional understanding. The primary affiliation in such teams is the commitment towards a common endeavour. (Gee, 2005).

2.6 Gamification in Social Media and Networks

In his thesis Harri Pellikka (2014) uses Kaplan and Haenlein's (2010) description of social media and presents it as a term that is used to describe any application or service in which users can create and exchange self-generated content. This classification can be further categorized into smaller groups, such as blogs, collaborative projects, social networks and content communities. (Pellikka, 2014).

Pellikka (2014) also presents the term "social network site" as defined by Boyd and Ellison (2007) in their study. They define social network sites as web-based services in which the users are able to create at least partly public profiles. According to Boyd and Ellison's definition, users should also be able to define a list of other users that they share a connection with as well as view the connections of other users.

User generated content is another aspect that is related to social media (Kaplan & Haenlein, 2010). According to the OECD, user generated content needs to meet these three requirements: content must be made publically available and published on a web site or a social network site where it can be accessed by a group of users. It must display some amount of creativity and it must not be created in relation to professional activities. (Pellikka, 2014).

Quoting Bista et al, (2012) in his thesis, Pellikka states that gamification has benefits that can be used to improve engagement in social media. Gamification can offer solutions to

the three challenges of starting a new online community. These challenges are bootstrapping, monitoring and sustainability. In regards to bootstrapping, gamification can offer solutions for gathering the initial user base and keeping them engaged. In regards to the monitoring and sustainability challenges, gamification elements can be used as a way to observe the usage of the service and as a way to sustain user engagement after the initial phase. (Pellikka, 2014).

Using social networking platforms such as Facebook and Twitter as examples, author Jonathan Bishop (2012) presents the idea that gamification can increase interest and retention in social media systems and can also can promote positive activities. Bishop explains that gamification is something that should be exploited in the pursuit of increasing participation in relatively unknown online communities.

Pellikka concludes that although gamification has been integrated somewhat widely in social media, there is still room for further gamification, and that the majority of social media services employs little or no gamification at all. However, the findings show that in the social media services that do employ game elements, gamification is widely used to ensure the appeal, attraction or quality of user generated content. Pellikka suggests that these findings should be used as a baseline when developing new gamified social media services. (Pellikka, 2014).

2.7 Positioning

According to Harmon and Laird, the marketing function in an organization has the ability to develop a better understanding of customer value requirements and therefore enable the delivery of customized innovative solutions to customers. This is done by establishing a knowledge-based relationship between the organization and its customers. (Harmon & Laird, 1997).

In their article, Harmon and Laird (1997) describe positioning as a strategy that reflects an organization's decision of how to best use its distinctive value creating competencies. A positioning strategy can be implemented by using a wide variety of communicational or promotional channels. However, a positioning strategy must be developed after the

organization has accurately determined customer value requirements and there is confidence in the ability of the organization's products or services to deliver value. (Harmon & Laird, 1997).

They continue to describe the features of good positioning, which are, (1) the identification of the relevant value drivers, (2) the assessment of the relative importance of each driver in the customer's buying decision process, (3) making a comparison between competing products on the important value drivers and (4) determining the information needed by the customer in order to reach the conclusion to purchase. (Harmon & Laird, 1997).

In his article, author Roger Brooksbank (1994) divided the definition of positioning strategy into three interrelated sub-categories. These sub-categories are: (1) customer targets, (2) competitor targets and (3) competitive advantage.

Brooksbank goes on to explain that building up a picture of the marketplace while thinking creatively about the interrelationship of these three sub-components gives an organization the ability to satisfy its customers' needs as well as or better than its competitors by virtue of the organization's distinctive strengths. (Brooksbank, 1994).

Authors Mulvey and Padgett from the University of Ottawa describe a marketing research theory named the means-end tradition, which emphasizes how effective positioning can be achieved by communicating how specific product attributes deliver important consequences and value requirement satisfaction to customers through the consumption experience. This approach suggests the importance of identifying and communicating specific linkages between the product and customer values. (Mulvey & Padgett, 2007).

3 RESEARCH METHODOLOGY AND DATA COLLECTION

Author Kothari describes qualitative research as research that concerns phenomena that is related to quality or kind, such as research that investigates reasons for human behaviour. (2004) Martin Brett Davies (2007) describes qualitative research as an activity that locates the observer in the world and consists of interpretive practices that make the world visible. According to Davies, qualitative research does this through a series of representations such as interviews, conversations, photographs and recordings. According to Academic Research Strategies (Tampere University of Applied Sciences, 2016) qualitative research is more flexible than quantitative research, and therefore information is allowed to come in more creative forms. Qualitative research assumes that knowledge is subjective or relative and that it can only be acquired by entering the world of the knower, for example by in-depth interviews.

Since the purpose of this thesis is to investigate and get a clear understanding of human behaviour, in other words, to explore and locate the customer value for a typical user of a collaborative social learning mobile application, there emerged a need to examine subjective viewpoints and gather data that was qualitative in nature. For that reason, the qualitative research methodology was chosen.

3.1 Implementation

3.1.1 Research design

The purpose of this thesis is to gain knowledge on collaborative learning and gamification in social media. The objective is to design a value proposition for a gamified collaborative learning mobile application. These two concepts required the research study to be structured in a way that would answer the research question, which is: What is the application's value proposition to its users, and how do we position the application most effectively in the market?

In order to gain clarity on the background concepts, secondary data collection in the form of literature review was performed. In order to gain in-depth knowledge on the experiences of potential customers, interviews were conducted as a way to collect primary data.

According to ‘An Introduction to Content Analysis’, (2004) content analysis is a research tool that can be used for determining the presence of certain concepts within texts. These texts can come in diverse forms such as interviews, essays, books or discussions. When conducting a content analysis, a text is divided or coded into controllable categories in a variety of levels. These categories can then be examined by means of conceptual analysis, which simply means that concepts are chosen for examination, their presence is quantified and marked.

A content analysis was done for both literature review and in-depth interviewing. The result was a collection of key observation points and insights that served as the basis for the design of the concluding value proposition.

3.1.2 Literature review

In data collection, two methods were used. The first method was a broad literature review that spanned the topics that were covered in the conceptual framework. These topics are Customer Value, Value Propositions, Value Proposition Design, Gamification in Learning, Gamification in Social Media and Networks and Positioning. In addition to providing a large base of background knowledge, the literature review provided data that supports the solution to the research question that was formulated in the beginning of this study.

3.1.3 Primary data collection (in-depth interviews)

Primary data was collected by method of in-depth interviews. The interviewees were chosen on the basis of their familiarity with the topic of student collaboration and teamwork. All the interviewees were either former students or are currently studying in a higher education institution. The questions were about their personal experiences in reference to teamwork dynamics and student collaboration while studying.

In their book ‘Value Proposition Design: How to Create Products and Services Customers Want,’ Osterwalder et. al. (2014) introduce a concept known as the ‘value proposition canvas’. The value proposition canvas has three major parts. They are the ‘Customer Profile’, the ‘Value Map’ and ‘Fit’. For the purpose and objective of this study, only the Customer Profile section of the value proposition canvas is considered.

According to Osterwalder et. al, the Customer Profile is a collection of information that is gathered about potential customers of a service or product. The authors divide this information into three separate sections; Customer Jobs, Customer Pains and Customer Gains. (2014) Customer jobs describe the things that the customers are trying to get done in their lives. According to the authors, it is important to also understand the context and significance of each customer job.

Customer Pains refers to the problems or obstacles customers face before, during or after trying to do customer jobs. Pains also include risks or potential bad outcomes related to doing a job badly or not at all. Here, the significance of the risk is again something to be considered. (Osterwalder et. al, 2014)

Osterwalder et. al. list the third component of the Customer Profile as Customer Gains, which they describe as outcomes or benefits that customers want. These gains can be required, expected or desired gains, and some gains may surprise customers. Gains can be functional, social or they may elicit positive emotions from customers. According to the authors, the relevance of a gain is important to consider. (2014)

Using the Customer Profile template provided by Osterwalder et. al. in their book 'Value Proposition Design: How to Create Products and Services Customers Want,' the interview questions were formulated to relate to the jobs, pains and gains that were experienced by the interviewees.

3.1.4 Limitations to the primary data collection

This study aimed to collect primary data from university students about their experiences with collaborative learning. However, there were some limitations placed on the sample size and type of students chosen as interview candidates. Due to time and resource constraints, a small sample of respondents were chosen, only 11 adult former or current students of male and female gender. Furthermore, all respondents were studying or had studied in international Bachelors and Masters degree programmes in the Business Administration field. 10 of the respondents gave descriptions of their experiences in Finnish

universities and one respondent described their teamwork experience in a central European university. All degree programmes in which the interviewees participated require a substantial amount of teamwork to be completed as part of the studies.

The researcher notes that the study sample was quite homogenous when it came to the type of assignments, teaching and environments that the respondents were working in and therefore the answers given to the study questions might have a homogeneity bias that is related to that fact. To create a broader understanding of university students' collaborative learning experiences for purposes of developing a gamified mobile application, a study with a broader disciplinary scope as well as a broader geographical scope should be conducted in the future.

3.2 In-depth interviews

3.2.1 Interview structure

The interviewees were asked to answer questions relating to their experience with teamwork during their study period in university. The questions that were asked were based on Osterwalder et. al.'s (2014) Customer Profile section of their Value Proposition Canvas. The interviewees were asked to give detailed and concrete answers to questions about the jobs, pains and gains that they experienced as students working in collaboration with each other.

The questions were divided into three subdivisions that represent the three stages of teamwork: (1) finding collaborators, (2) group working and (3) finishing teamwork, in order to give a more in-depth view on the reality of group work dynamics. The section about finding collaborators focused on the activity of locating potential team members and agreeing to collaborate. The second section, working, focused on the working dynamics that took place once the members had organized into teams and had received their assignments. The last section, finishing teamwork, focused on questions about the dynamics of finalizing the team work, the results, final practicalities, presentations, conclusions, feelings and observations after the teamwork had ended.

The interviewees were also asked to give their general overarching reasons for choosing to study in their chosen university or degree programme. They were asked to elaborate in order to cover both personal and professional sides of their answers.

3.2.2 Analysis

Altogether 11 interviews were conducted resulting in 8 hours of recorded interviews and 71 pages of transcribed data. After the interviews were conducted, a thorough content analysis of the results was performed. The answers were coded according to the aforementioned three stages of teamwork; finding collaborators, group working and finishing teamwork, as well as according to the experienced pains and gains during those three stages. Furthermore, general observations that could not be classified under the categories of teamwork stage, pains or gains, but were useful and important to take into consideration, were made.

4 RESULTS

4.1 Pains of finding collaborators

The interviewees gave the following responses to questions about the pains they experienced while finding collaborators. Pains refer to problems, obstacles or risks. (Osterwalder et.al, 2014)

4.1.1 Fear of the unknown

The interviewees experienced a series of problems during this stage, the first being sheer awkwardness when it came to approaching other students for collaboration. There was a sense of unease towards people whom they perceived as strangers. Students tended to stick to groups of people from their own cultural background, so there was very low intercultural interaction taking place. A risk for many students was the unpredictability of the potential future team member's performance due to them being previously unknown.

4.1.2 Communication problems

The second set of problems described problems in communication. These ranged from the inability or unwillingness to express one's true feelings to miscommunication about some important and practical contextual issues, such as the level of one's interest in a subject, one's preference for certain topics, one's personal motivation level or one's personal working style. It has been noted that this problem during this phase can lead to severe dysfunctions within the team in later stages and can therefore impact the results of the teamwork negatively.

4.1.3 Connection problems

Some students experienced problems with initiating action from their fellow team members at the beginning of teamwork. In some cases, there were clear mismatches between members in terms of skill, knowledge and motivation level. In other cases, the reasons for the lack of enthusiasm was less evident. It was noted that the inability to make personal connections with fellow team members in the beginning phases of team work led

to bad working dynamics within the team and impacted the level of commitment, activity and participation. Furthermore, it was noted that making deliberate effort to personally connect with future team members in such a way that their ways of working and characters would become clear prior to the start of the teamwork was too time consuming and took a significant amount of energy.

4.2 Gains of finding collaborators

The interviewees gave the following answers to questions about the gains they experienced while finding collaborators. Gains can be defined as benefits or outcomes that are required, desired, expected or pleasantly surprising. (Osterwalder et.al, 2014)

4.2.1 Ability to choose collaborators

All the interviewees were happy with the ability to choose their future team members. By having freedom of choice, students were able to pick the team members that they wanted into their team. Being familiar with one's team members, such as in the case with a group of friends, for example, meant that the students already had good awareness of the team members' working methods and personalities and therefore they could anticipate higher levels of commitment, smoother workflows and more control over the final results. Prior positive collaboration experience therefore translated into higher anticipation for a good teamwork experience. Interviewees reported that reputation or word of mouth made the decision making process easier and faster.

4.2.2 Opportunity to form new connections

Interviewees were also happy to have the opportunity to work with people whom they were not familiar with previously. The reason for this was the afforded opportunity to learn new social skills, make new friends and learn about new personalities. This was seen as an advantage because forming new connections was perceived as beneficial when one is trying to grow professionally. Interviewees also reported satisfaction in the opportunity to be pushed out of their usual comfort zone during this phase. Some students described encountering 'random good luck' - being delighted by the performance of a pre-

viously unknown team member, who exceeded their expectations by demonstrating outstanding dedication, engagement, enthusiasm and work ethic later on during the actual teamwork.

4.3 Pains of team working

The interviewees gave the following answers to questions about the pains they experienced while working in a team.

4.3.1 Unfamiliarity

As mentioned earlier in this chapter, according to interviewees' recollections of their teamwork experiences, a significant pain that emerged during teamwork is unfamiliarity with team members' ways of working. Although some aspects of this pain would become evident already in the first phase of collaboration, the phase of finding collaborators, many more of them remained hidden or unexplored and surfaced later when the actual teamwork had already begun. Some team members were too shy or did not speak up due to unfamiliarity with fellow members, leading to situations where bolder, stronger personalities would take on an overbearing leading role. In many situations, this resulted in actual or perceived exclusion of some of the more withdrawn members.

4.3.2 Barriers to effective communication

Communication barriers continued to be a hindrance to smooth team dynamics during the working phase. The problem of language use surfaced in many cases in which a common agreed language that was supposed to be used as a working language was not used frequently enough. Sometimes there was direct unwillingness to use the agreed common language. This happened in groups where the majority of the team was from the same cultural background and shared the same native language. The result of this was a general feeling of exclusion from group dynamics for the members that were in the minority.

4.3.3 Negative attitudes

According to interviewees' recollections, once a student was working within a team, they found it difficult to switch teams if they found the working dynamics to be subpar due to

a variety of contextual reasons. Many students found themselves ‘stuck’ in positions where teamwork was extremely unpleasant, but chose to continue despite of it, in order to achieve their desired study goals. In some cases, it was reported that some team members were unaware of their damaging behaviour towards others or there was an unwillingness to change that damaging behaviour if there was awareness of it.

A variety of damaging or toxic behaviour was reported, the most severe being the direct lack of cooperation or refusing to participate in teamwork. Examples of this include team members not completing tasks, not communicating and not showing up to meetings. Lack of support, unwillingness to share opinions and lack of empathy are other examples of damaging behaviours that were mentioned by the interviewees. In addition to toxic behaviour and negative attitudes, some teamwork situations were crippled by conflicting opinions, difficulties to come to agreement on critical issues and the unwillingness of some team members to work with people from different cultural backgrounds.

4.3.4 Organizational issues

In addition to attitude and behavioural issues, organizational barriers to teamwork emerged during the working phase. One organizational barrier was the issue of leadership, or the lack thereof. In the cases where there was little to no leadership within a team, no proper strategy emerged and there was poor organizational structure when it came to tasks, roles and responsibilities. It was also found difficult to schedule meetings due to fellow team members’ unknown personal commitments that were not clearly communicated. It was reported that in many cases, there was a low level of communication about the progress of the teamwork, and that some team members did not make any effort at all to keep themselves updated about the team’s progress.

4.3.5 Differences in values

As teamwork progressed, differences in the team members’ values started to surface. Some interviewees reported dissatisfaction with the quality level of work that was delivered by their fellow team members or with their team members’ time management. However, they did not feel comfortable with actively requesting improvements in quality level or time management from their teammates. Rather, they took the initiative to either improve the quality of the work or complete the task by the deadline themselves,

resulting in the said team member doing more work and putting in more effort than was originally agreed. It was reported that some students regularly had to do extra work in order to make up for the lack of effort from other members. In some cases, two versions of a task, or ‘overlapping tasks’ were done due to the lack of communication or inactivity from team members. Many times, these situations resulted in feelings of one’s effort and time being disrespected by fellow team members.

Although cultural differences did not always affect the working dynamics of the team, some culture-based differences were noticed that were clearly detrimental to the team in a way that a mismatch in expectations related to quality levels or certain standards became apparent. This caused stress in some teams.

4.3.6 Lack of support from staff

Overall, the interviewees described experiencing feeling a lack of support in relation to teamwork dynamics from teachers and other university staff.

4.4 Gains of team working

The interviewees gave the following answers to questions about the gains they experienced while working in a team.

4.4.1 Learning useful skills for professional development

According to the interviewees’ responses, learning through team work produced many beneficial experiences and results. For example, students were satisfied to have learned the soft skills that can be later utilized when interacting with people from different cultures and different disciplinary backgrounds. They also appreciated learning the many skills related to managing the delivery of good results as a group and achieving harmonized ways of working in the process.

To be more detailed, organizational, planning and time management skills were learned, along with social interaction skills, relational skills and skills relating to how to function as part of a group and how to perform in different roles. Interviewees reported perceiv-

ing the teamwork environment in university as a chance to experience a simulated modern working life environment, in which one has to work with different types of people towards a common goal. Also in some cases, interest in previously unexplored topics became discovered as a result of collaborating within a well-functioning team. The interviewees perceived all these results to be useful for their overall professional development.

4.4.2 Fun and pleasant experiences

All the interviewees described having fun or pleasant experiences during teamwork. Some respondents reported that it was easier and more pleasant for them to work in groups and that they enjoyed it a lot. The respondents reported experiencing a feeling of satisfaction that resulted from the smooth work flow of a well-functioning team, which was enabled by the efforts of committed, active team members that valued good communication.

Respondents described good leadership within teams as one factor that made teamwork pleasant. Good leadership resulted in proper distribution of work according to the team members' skills and knowledge, good organization and time management.

4.4.3 Efficient and smooth teamwork

Another factor that made team working especially smooth was that individual team members took responsibility in those areas in which they are stronger and also were willing to help others in areas in which they were struggling. This made the work flow easier and more efficient for the whole team. According to the respondents, sharing opinions, having an encouraging attitude, valuing good communication, giving support, being engaged and delivering high quality work resulted in good teamwork experiences.

4.4.4 Social benefits

Respondents also considered the social benefits that were experienced as a result of working in teams. These benefits were becoming closer with teammates, forming new relationships and friendships as well as creating a basis for professional network expansion for the future.

4.5 Pains of finishing teamwork

The interviewees gave the following answers to questions about the pains they experienced while finishing teamwork.

4.5.1 Bad results and a feeling of injustice

According to the respondents, reaching a conclusion within the group was not always easy. Sometimes this resulted in a disastrous situation where a ‘team fail’ occurred, in which the entire team received bad grades for poor team performance. This situation was felt to be unfair towards those members who put in a lot of effort and did their best to sustain good working dynamics. It was also seen as unfair to the active members that when the team received a good grade as a whole, the inactive members received a good grade as well due to simply being included in the team, even though their effort was lacking.

4.5.2 Unprofessional presentations

The bad working dynamic or negative attitude was sometimes reflected during the final presentations. In some cases, the presentation itself was of low quality due to bad working dynamics. Sometimes this was due to having to present work that one is not familiar with because of inadequate organization of work or inadequate communication between team members. There were also reports of cases where team members who had agreed to take part in the presentations did not show up on the day of the final presentation and provided no communication about their absence prior to the presentation. .

4.5.3 Embarrassment over poor quality of results

Interviewees reported feeling embarrassment or lack of pride over the final results of the teamwork. Some students did not appreciate having their names associated with poor quality work or they felt uncomfortable about delivering assignments of bad quality. In some cases, interviewees reported that results of teamwork were not applicable to real life situations and that their team mates had not taken the assignments seriously enough.

4.6 Gains of finishing teamwork

The interviewees gave the following answers to questions about the gains they experienced while finishing teamwork.

4.6.1 Feelings of accomplishment and satisfaction

As part of finishing teamwork, the interviewees described their positive experiences. These were, generally, a feeling of accomplishment or excitement due to a successful outcome and feeling of satisfaction with the team's achievement and with one's own activity.

4.6.2 A sense of professionalism

Interviewees reported that among the gains of finishing teamwork together was the sense of having learned new methods of working as a result of collaborating with exchange students and foreign students as well as students from different universities. Furthermore, an image of others' and one's own professionalism was built.

4.6.3 Social bonding

In addition to feelings of accomplishment and gaining a solid sense of professionalism, another gain experienced by students was the opportunity for fun and playful situations as a result of finishing teamwork. Many students reported bonding situations that happened outside of formal working activity, which they reported to have enjoyed.

4.7 Reasons for study

When asked to give the general overarching reasons for choosing to study at university or in their chosen degree programme, the interviewees gave the following answers.

4.7.1 Expanding one's personal experience

Many interviewees expressed their main reason for study as pure interest in the country of study, interest in the country's culture and everyday life and interest in learning the local language. Expansion of personal experience seemed to be a major theme for many respondents.

4.7.2 Freedom

Another important reason that emerged was the desire to achieve a sense of freedom. This included financial freedom as well as access to new opportunities and the opportunity to do many different things with one's degree.

4.7.3 Professional and personal development

Professional and personal development emerged as another major theme. Respondents reported that they wanted to earn a degree in something useful, they wanted to find good jobs, to learn new skills, to have the opportunity to see how people and things work and to be able to complete further studies.

4.7.4 Social reasons

Social reasons for study also emerged. Expanding one's social network and the opportunity to see and meet people regularly were stated as reasons for study.

4.8 Observations

As part of the content analysis of the results, some observations were made. These observations were selected from the interviewees' responses and represent the viewpoints of the interviewees from their perspective. The observations support the design of this study's concluding value proposition and they are referring to details concerning teamwork dynamics, such as leadership, organization, communication, motivation and enthusiasm.

4.8.1 Leadership

The presence or lack of good leadership in a team significantly affects how the team-work proceeds. Looking at the information that emerged, a team leader takes on a role that includes many important responsibilities. Sometimes a leader is publicly declared but many times a natural leader emerges. A natural leader furthers the progress of the team, anticipates risks and tries to mitigate them and communicates about what needs to be done. He or she takes the initiative within the team and spends time with team members, is inclusive and encourages the more introverted or isolated members to share their ideas. However, a good leader is also able to stay in the background in order to give others space to express themselves.

4.8.2 ‘Natural’ selection of team mates

From the data gathered, ‘natural’ selection of collaborators seemed to be the most popular way of finding collaborators, meaning that the selection process was either based on how the physical sitting areas were divided or whether or not one belonged to a particular group of friends. Other ‘natural’ bases for decision making were having previously collaborated with someone already or having a particular cultural background. In some cases, the decision for choosing a team member was based on one’s personal preferences about the character of the person. Other important criteria for choosing members included motivation and ambition level of the student.

4.8.3 Markers of successful team dynamics

When it came to team dynamics, it was noticed that the combination of being familiar or friendly with team members and having high motivation was a significant precursor of team success. Making connections early and getting to know one another seemed to be important for easy and pleasant collaboration. Being familiar with each other also enabled more straightforward communication. It was also noted that students try to emulate the values of the people that they enjoy working with.

In many cases, no apparent leader was apparent or emerged. In these cases, group discussion was used as a way to make decisions. In all well-functioning teams, division of responsibility happened in a clear manner and in a way that served the whole team.

In well-functioning teams, students either adapted to each other's ways of thinking or they had similar ways of thinking to begin with. The personal attitudes of students affected the type of workflows that emerged.

Within well-functioning teams, the assignments and tasks were either divided into individual parts for completion or they were entirely collaborative, with every member contributing to the production of the material. Internet applications such as Facebook, Google Docs, Google Calendar, Skype and Slack were used for communication and storage. Due dates for assignments within the team were set before the final deadline so that all the members could revise the assignments. Students usually reminded each other about deadlines. Agreeing together on final presentation details prior to the presentation was useful in terms of delivering a good final presentation.

4.8.4 Motivation issues

It has been noticed that there was more randomization in relation to levels of motivation and enthusiasm when it came to working with exchange students. Many interviewees reported a perception of exchange students having a 'bad' reputation due to the characteristic 'laziness' that is associated with them. Many interviewees were of the opinion that exchange students should be paired up with students that have similar personalities or ways of working rather than being randomly paired up with degree students.

The interviewees reported that they expected team members to already be motivated prior to the beginning of teamwork. It was not seen as the responsibility of the team members to motivate fellow members. Under stressful or frustrating situations, it was perceived as extremely difficult to be encouraging to fellow members. In some cases of low motivation, re-distribution of roles or tasks had been used as a strategy to deal with inactivity.

4.8.5 Relational issues

It was perceived as extremely important to understand team members' skills, insights, motivation level, professional expertise, personality and preferences in order to fully

utilize their efforts during teamwork and after teamwork as well as in relation to leveraging one's professional network in the future. It was also observed that if personal conflicts between members within the team were overcome, social bonds between members could be strengthened. However, if they were not overcome, the results could be disastrous.

4.8.6 Environment

Many interviewees reported that co-working in the same physical space resulted in a more efficient teamwork dynamic, as this meant that all members were available for interaction at the same time and place. This combined with similar levels of interest in the topic led to more successful results. It was also reported that changing the location or working environment brought new and fresh perspectives, which was experienced as beneficial. In relation to the environment, it was noticed that themes such as gamification, general positivity and relaxation helped to create an overall more comfortable atmosphere.

4.8.7 Lack of teamwork-related support

It was reported that team dynamic problems were rarely communicated to teachers or other school staff. Interviewees felt that there was a lack of support from the university's side concerning planning for students' future and their professional development. It was noted that students would have liked to receive team building support from their university, for example in the form of courses or workshops, and they would have wished for support from their university in planning for the future.

5 CONCLUSION

5.1 Discussion

It can be seen from the results of the study that university students experience many issues relating to collaborative learning during their studies. The data shows that both positive and negative outcomes were experienced and this gives us a wealth of information on how to create a facilitating gamified application for student collaboration.

The most pressing issue seems to be the lack of support from the institution's side when it comes to teamwork, meaning that students are left on their own to discover the best ways to collaborate, even though they are not given adequate training for this. It seems to be expected that students will develop teamwork skills through the simple requirement of having to work in teams. However, the study results show that students' pre-learned behaviours and attitudes impact team working dynamics heavily in either negative or positive ways and that many of these attitudes are very difficult to change.

As study results show, students tend to naturally organize into groups of like-minded people. It can be assumed that the difficulty or unwillingness to change some of these pre-learned attitudes and behaviours increases when this type of self-organization occurs, due to the enabling effect of like-mindedness between individuals in such groups. Therefore it is safe to assume that the increase in teamwork skills that could take place due to collaborative learning remains minimal in those teams which are made up of naturally occurring social groups such as groups of friends.

On the other end of the spectrum, working with completely previously unknown people, such as in cases where students are picked at random to form groups, can add a significant amount of stress and could also impact the teamwork and its results negatively, even if some new knowledge is retained, as the study results show. There could be disastrous levels of mismatch between students on multiple levels and the mismatch could also impact negatively the knowledge transfer and knowledge retention of the students.

According to the study results, the problems that emerge most frequently are communication problems (some of which are language and cultural issues), connection problems due to significant differences in personality and style and harmonization problems which

are due to differences in working styles and values. A gamified application which is meant for student collaboration would be able to tackle these issues by encouraging and rewarding pro-social behaviours and activities that aim to solve these problems.

The study results also reveal that many positive outcomes have occurred as a result of student teamwork. Students describe many positive experiences during the teamwork itself as well as afterwards, such as the retention of tacit knowledge that had been learned as a result of working in teams. Some students describe pleasant experiences from working with previously unknown people that were sometimes randomly chosen. In many cases, both the experience of working and the results were equally good. Also in these cases, the aforementioned students had pre-learned attitudes and behaviours that they brought with them into the team working situations. However, the attitudes and behaviours of these particular students, such as open-mindedness, willingness to learn new things and enthusiasm, actually benefited the collaboration instead of hindering it.

A gamified project management platform in the form of an easy-to-use application could encourage its users to pursue and develop these beneficial traits in the hopes of creating not only better collaboration experiences, but getting better results for themselves during the entirety of the studies and developing a professional identity during their studies.

5.2 Gamified project management platform

In the previous section of this chapter, it has been established that a well-designed and easy-to-use gamified project management platform for the purpose of social collaborative learning in universities is a viable way to both alleviate the problems and enhance the benefits of teamwork.

For such an application to have maximum impact, as many students as possible must have access to the platform for free or for a very low cost, it must be accessible via the internet and also accessible as a mobile smartphone application. It should have a foundation that is based on project management tools. It must also include social network and content creation features as well as gamification features including full playable games. The platform and its virtual spaces should be accessible to students, teachers and other administrative staff such as facilitators in varying degrees according to their impact and usefulness.

Users (students) must be able to create a profile page, such as is done usually in social network sites, complete with personal bios and other possible content. Upon creating a profile page, users may start to earn reputation points. The reputation points should be on public display and they should add up to a rating, which will be a way to showcase an individual user's reputation and abilities. Being able to see this information should benefit other users in their search for suitable collaborators.

The profile page is the starting point of the user experience for the students. Here, any content containing information that the user wants to reveal about themselves can be created. This information is useful to potential collaborators who are looking to be matched to the ideal team mates.

Table 1 contains some of the possible features that can be displayed on a user's profile page.

Table 1. Profile page features

Profile page features	
<ul style="list-style-type: none"> • Personal bio • Profile picture • Skills • Working style • Personality type • Languages • Interests • Degree programme • Achievements • Hobbies 	<ul style="list-style-type: none"> • Dislikes • Personal viewpoints or opinions • Cultural background • Country of residence • Miscellaneous information • 'Would like to learn [subject]..' • 'Would like to improve [area]..' • Plans for the future • Hopes for the future

5.3 Features of the gamified platform

5.3.1 User types

When describing the features of the platform, three kinds of users are involved. It is also important to talk about the roles each type of user has, since they impact the type of activity and relationship each user type has with the platform. Student users are the core target audience and the core users. Student users take on the ‘learner’ role, through which they consume and create content with the purpose of development and education. Facilitator users act as support persons or moderators in the case of any potential problems within the platform, major team dynamics issues, in cases of misuse of the rating system and other such cases that require human intervention. Staff users are teaching staff and administration staff that require access to various kinds of information about students as part of their normal activities. Facilitator and staff users take on supporting ‘observer’ roles and create or consume content only when it is required as part of their normal activities.

A more detailed description of the roles of different user types can be found in the Table 2 below.

Table 2. User types, their roles and objectives

User type	Role	Objective
Student	Learner	To develop and educate oneself through collaborative learning
Facilitator	Observer	To offer teamwork support when needed
Staff	Observer	To offer educational support when needed

5.3.2 Spaces

Within the platform, there are different areas to which different types of users have access. The public space is available to all users. The virtual working space is a project management area with project management tools that is accessible to the users who have joined

specific projects. The personal development space is a virtual meeting place that is designed for self-development and team-building activities.

A more detailed description of the spaces, accessibility, some of the activities that take place in them and the objective of the activities can be found in Table 3 below. Please note that the activities shown are only a partial list of all the possible activities that could be available and which could yield reputation points.

Table 2. Virtual spaces, their accessibility by user type, and activities carried out in those spaces

Space	Accessibility	Activities
Public space	<ul style="list-style-type: none"> • Students • Facilitators • Staff 	<ul style="list-style-type: none"> • Profile creation • Profile viewing • Connect with other users • Browse and find projects to collaborate in • Create projects • Invite users to join projects • Advertise projects • Join projects
Virtual working space	<ul style="list-style-type: none"> • Students • Facilitators (partial access, must be invited) • Staff (partial access, must be invited) 	<ul style="list-style-type: none"> • Project related task completion • Organize activities • Time management activities • Poll creation and voting activities • Communication and engagement activities • Quality assurance activities • Availability activities • Activities related to keeping oneself up to date with progress of the project

Personal development space	<ul style="list-style-type: none"> • Students • Facilitators (partial access) • Staff (partial access) 	<ul style="list-style-type: none"> • Creation of portfolios • Viewing portfolios • Show development or progress in personally relevant areas • Display recommendations from other users • Display reputation points • Display ratings from other users • Manage projects according to professional trajectory • Take personality tests • Play self-development games • Play icebreaker or team building games • Create or join team-building events
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5.3.3 Reputation points and rating

Reputation points comprise the major part of the gamification in the platform. Reputation points are given to student users automatically when they complete different activities within the platform. The activities are designed with the objective of encouraging students towards positive, collaboration enhancing behaviour, such as harmonizing ways of working and communicating frequently with team members. In practice, this could mean clearly marking one's own availability in the virtual workspace calendar so that the rest of the team can view it and therefore organize their work pace around it, for instance. Reputation points are awarded to the student for an action such as this. Another example activity for which reputation points could be awarded is checking the progress of the team's tasks and commenting on them, for instance. These reputation points combined with their attached activities are used as sort of engagement hooks in order to guide the user to voluntarily participate in teamwork in pro-social collaborative ways. Reputation points may be displayed in a user's profile page as well as in their portfolio. The objective of displaying reputation points is to enable easier locating and decision making for potential future collaborators.

The other major form of gamification comes in the form of rating from fellow users. Once a user has joined a project, they automatically agree to be rated in a variety of sectors. An example of a sector could be, for instance, time management. The individual user may choose which sector to be rated in, but they must choose at least one sector. The team members then have an obligation to rate the said user after the project has been completed. The rating is permanent unless the user wishes for it to be changed for some reason, in which case, a facilitator should be invited to resolve the issue. The objective of the rating system is for the individual users to get a realistic idea of their own skills and how others perceive their skills. An additional objective of the rating is to enable easier locating and decision making for potential future collaborators. Ratings may be displayed on a user's profile page or in their portfolio.

5.4 User flow within the application

As mentioned earlier, the profile page is the first point of activity for a student user. After the user has created their profile page, the platform will suggest the most ideal collaborators for the user. They may be displayed as a list or as locations on a map. With this information, the user may then view information about suggested collaborators by viewing their profile pages or interacting with them in a variety of ways. The user may also search for collaborators with a search function imbedded within the public virtual space.

Within the public virtual space, it is possible to create and advertise one's own projects. This is also one way to find collaborators, as the user is able to invite collaborators to join their project once it is created. The user may also search for interesting projects that have not yet started.

Results from the study showed that students wished for a way to get familiar with their collaborators prior to the collaboration itself and that bonding and interaction before the collaboration was a crucial factor to the success of teamwork. To offer a solution to this need, the personal development space was designed. The personal development space is a virtual space designated specifically for connection and interaction activities prior to the start of any collaboration. This space includes team building activities and games, and is also a place to organize and view details of any social events that may take place.

Before entering a collaboration, the user may take advantage of the services offered in the personal development space to become more familiar with potential collaborators, for example, they may choose to complete personality tests and to compare results with potential collaborators or they may choose to play an icebreaker or team-building game with potential collaborators. The objective of this activity is to facilitate making a decision about choosing the future members of a team that would be most ideal for smooth teamwork experience and teamwork success.

Once enough collaborators have joined a project, team work may start within the virtual working space, which is a project management space with project management tools imbedded in it. The collaboration continues until the project is finished and all the activities have been concluded, after which the results from the project may be published in the users' individual portfolios located in the personal development space. The collaborators will then rate each other's performance in at least one area.

5.4.1 Description of a typical user flow

A typical student user flow is depicted in Figure 1 and will be described in this section. The user experience begins with the user logging into the platform for the first time. After they log in, they must create their profile page. Information about possible candidates for collaboration, their locations and availability is supplied to the user. The user will then decide on the next actions, which can include contacting the collaborators directly, creating a project and inviting potential collaborators or engaging in activities in the personal development space. Here, the user has a variety of options of how to proceed. They may choose to enter into a collaboration directly with a potential collaborator or they may choose to interact with potential candidates for collaboration by participating in activities in the personal development space, which are designed for the purposes of getting to know future potential collaborators better.

In the next phase, the collaborators agree to work together. A team is then formed and a project is officially started. The team then proceeds with the normal teamwork activities until the collaboration is done. The results of the collaboration may then be published in team members' portfolios. The individual user must then rate their fellow collaborators according to their performance within the team.

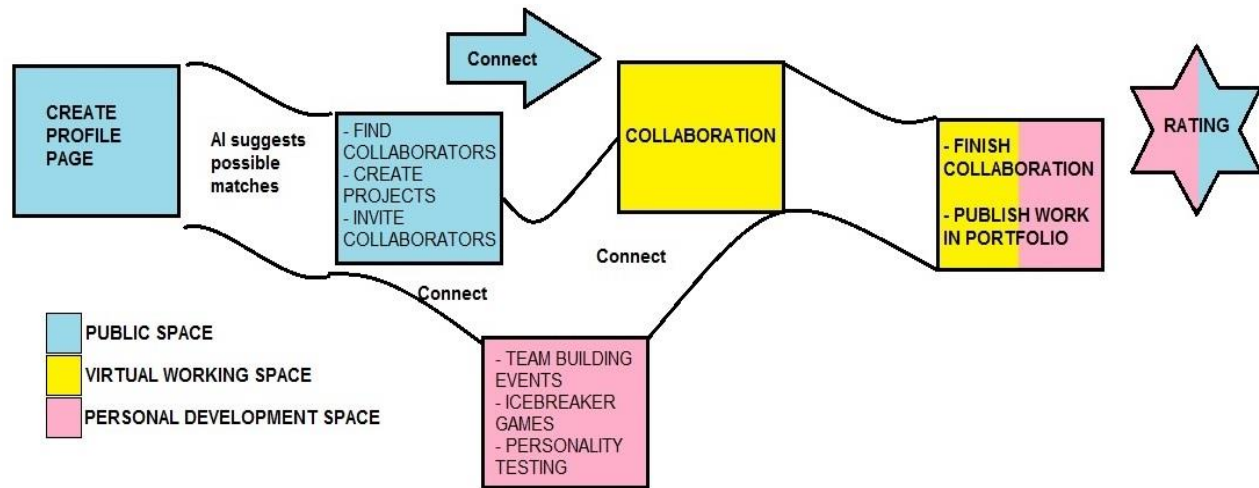


Figure 1. User flow for a typical student user

5.5 Value proposition for a gamified collaborative learning application

5.5.1 Incorporation of literature review analysis into value proposition design

The analysis of the literature review provided many insights that assisted in the design for the value proposition of the aforementioned gamified collaborative learning platform. They will be listed here in this section.

Customer value

Quality metrics are important for measuring customer value. (Gibbert, M. et al, 2008). In relation to student collaboration, quality metrics include the quality of results of teamwork and grade points. It also includes students' social network expansion, skill and knowledge acquisition as well as satisfaction with the experience of teamwork.

It is the customer who ultimately defines customer value. Customer value is defined as the emotional bond that is established between the customer and the organization after the customer has used the product and has found the product to provide value. (Goodstein & Butz, Jr., 1996). In relation to student collaboration, the value of the teamwork lies in the level of emotional satisfaction students have experienced during their collaboration.

Value propositions and their design

A value proposition should be concise, easy to understand and it should communicate clearly the reasons why a particular service or product would satisfy a customer's demands in order to appeal to the customer's most powerful decision-making drivers. (Investopedia 2017).

Using the Service-Dominant Logic within the co-creative paradigm, customers are seen as prerequisites to the creation of value. (Kowalkovski et al, 2012). In relation to the solution for student collaboration, potential customers, in this case students, are seen as prerequisites to the creation of value, in other words, the value of a gamified platform for collaboration is non-existent without the active participation of the customers. Therefore the active participation of the customers is taken into consideration when designing the value proposition.

Gamification in Learning

Learning is an aspect of individuals' changing participation within changing communities of practice. (Lave, 1996). In the case of student collaboration, communities of practice may be defined as the teamwork environment and the institutional environment itself. The gamified platform may serve as an enabler and supporter of this changing participation as well as the steady background for the change that happens in the communities that use the platform.

It is generally stated that what is learned while learning a particular subject should also be how to learn that subject. (Gee, 2005). In relation to MOOCS, it has been found that peer-to-peer interaction means that the teacher stops having the traditional role of lecturing to students, and that emerging, advanced students take on this role. Gamification technology has the power to enhance participants' motivation through the use of game mechanics and increase participation, commitment and loyalty in students. (Gené et al. 2014). By using this platform, advanced students will be able to leverage their skills in peer-to-peer tutoring or mentoring roles in a variety of ways in order to help fellow students who are struggling in an area as part of teamwork. As different students have different ways of learning, leveraging the shared knowledge in a diverse team could lead to

better ways of learning different subjects for different types of students. This set of activities will be further enhanced through the use of gamification mechanics known as engagement hooks.

Challenge and learning are a large part of what makes games motivating and entertaining and humans intuitively enjoy learning. (Gee, 2005). If we use Gee's argument, it can be safely assumed that students enjoy a large part of their educational activities. By deliberately placing gamification features into a learning platform, students' intuitive enjoyment of learning can be enhanced or stimulated.

The principles of good gamification are as follows: Identity, Interaction, Production, Risk-taking, Customization, Agency, Challenge and Consolidation, Just in Time, On Demand, Systems Thinking, Distributed Knowledge and Cross-Functional Teamwork. (Gee, 2005). A well-designed gamified collaborative learning platform may be able to combine all of the abovementioned principles into one system to fully utilize the power of gamification mechanics in a learning environment.

Gamification in Social Media and Networks

The majority of social media services employs little or no gamification at all. However, in the social media services that do employ game elements, gamification is widely used to ensure the appeal, attraction or quality of user generated content. These findings should be used as a baseline when developing new gamified social media services. (Pellikka, 2014).

Positioning

Positioning is a strategy that reflects an organization's decision of how to best use its distinctive value creating competencies. (Harmon & Laird, 1997). Effective positioning can be achieved by communicating how specific product attributes deliver important consequences and value requirement satisfaction to customers through the consumption experience. This approach suggests the importance of identifying and communicating specific linkages between the product and customer values. (Mulvey & Padgett, 2007). If the results of this thesis' research study are used as the basis for defining students' customer

values, the information under the 'Reasons for study' section reveals the direction of students' general values. Students' values include access to employment opportunities, financial freedom, self-development, access to an international experience, expansion in personal experience, learning foreign languages, educational development and expansion of social networks.

5.5.2 Value proposition

The platform will enable the students to experience good quality teamwork and successful results. Through the platform, students will have fun while developing themselves professionally through collaborative learning and forming unexpected social connections that may propel the students into careers that fit their personality perfectly. The application aims to disrupt subconscious habits that hinder personal growth and promote habits that encourage personal growth by combining principles of gamification and teamwork dynamics. By combining a social network, virtual project management tools and communication tools, a students' activity is able to be quantified, gamified and leveraged to create an enhanced learning experience. Students are able to turn school into a game where they can earn reputation points for being active and having good character, which they can easily leverage into real-life opportunities.

5.6 Positioning a gamified collaborative learning application

In order for the platform to have the kind of impact it's supposed to have, many students must be using it. Therefore, intra-organizational use should be possible, so that students from different universities can locate each other and collaborate. The platform should also be free or very low cost for students to use and should be accessible also to teachers and administrators of organizations. Ideally, the application should be offered as a platform to organizations that in turn offer it as a service to their students. It is assumed that ideal student users of this application are those who want to consciously or deliberately transform themselves through the development of skills and who consciously want to prepare themselves for a professional career of their choice.

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