The design and the effects of gamification to study results and engagement

Course Study: Financial Management

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Description

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Abstract

The assignor of this study is Jyväskylä University of Applied Sciences (JAMK).

Education systems need to be developed constantly to keep up with the everchanging world and to ensure that all new information and methods are reaching the students. Thus, implementations systems need to be updated with new techniques, such as gamification. Gamification has not only been proven to be valuable for marketing actions, but also for education sectors and institutions in terms of adding an additional tool to enhance the teaching experience and quality to accompany the traditional teaching methods.

The study researched the effects of gamification in Financial Management -course at Jyväskylä University of Applied Sciences. The objectives were to study the learning curve of the students during the different sections of the course as well as to gain knowledge on their experience and perception of gamification during the course. The tasks to achieve these goals included observing the classroom and the virtual environments of the students, conducting qualitative interviews from participants, and analyzing the gathered data with specific methods. The method used was qualitative research (QLR) where data is obtained through open ended questioning and conversational methods. The goal was to describe individual experiences as well as gather new information on the phenomenon and surrounding beliefs.

The results of the study show, that the students perceived the gamificated method of teaching as more beneficial when compared to theoretical lectures. They gained valuable knowledge through gamificated methods and all reported improvements in their learning during this experience. Students also felt more engaged to their studies when using gamification. Only small percentage of the students reported opposite experiences as well as stated to have benefitted from the theoretical lectures more.

Gamification as added method of teaching can be highly valuable to students and the teacher in terms of gaining motivation, holding engagement, and learning through social experiences. However, the students state and the results also show that there is still great need for both theoretical and more practical methods in teaching. These results can be used to further enhance the experience of the students when gamifying educational settings and classrooms.

Keywords/tags

gamification, education, motivation, engagement, qualitative research

Miscellaneous

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1 The origins of the study

Gamification has been in the public talk and in the practical use in education systems for over a decade. The use of gamification overall has been around for multiple decades. *The Game of Work: How to Enjoy Work as Much as Play* by Coonradt in 1984 inspired businesses throughout the globe to consider how to make work more pleasant while also boosting engagement and productivity. The phenomenon has been around us for quite some time and the practical effects have been researched in the learning environments. However, this research has not been conducted in Jyväskylä University of Applied Sciences (JAMK) specifically before.

Education systems need to be developed all the time to keep up with the everchanging world and to make sure all new information and methods are reaching the students. Thus, implementations in the education systems need to be reviewed and compared with the statistics of how the students are ultimately doing. To offer the best possible level of education to its students, the university has obligation to measure whether the current education systems are useful and sustainable and act when these systems need to be improved (Degree Regulations of JAMK University of Applied Sciences, 2022). Gamification has not only been proven to be valuable for marketing actions, but also for education sectors and institutions in terms of adding an additional tool to enhance the teaching experience and quality to accompany the traditional teaching methods (Babic & Vigato, 2021). This is also supported by Alsawaier (2018) as they state gamification to be a partial solution in learners' declining motivation. Furthermore, they believe that college environment could utilize gamification in designing their course contents and curricula.

All in all, Hammer & Lee (2011) state that well-designed and implicated gamification system can make the development of a new identity playful and enjoyable. By correct rewarding systems in place, the students might see opportunities in school which they would otherwise miss. They can understand their potential and gain more courage to strive for success. Ultimately, gaining more useful information on the educational methods in JAMK will enhance the students' experience and give them bigger chance to thrive in the environment.

1.1 Objectives & Purpose

The aim of the study is to research the use of gamification in the University of Applied Sciences in Jyväskylä (JAMK) and what effects it has on the student performance. As previously stated, this type of research has been done in different study settings before, but never about JAMK or its systems. Ultimately, the purpose of the research is to improve the quality of education in JAMK, or at least to see if the previous implementations of gamification in JAMK have been productive.

More in depth, the objective of this thesis is to study the results of the students in the Financial Management course from February of 2023 to May of 2023. This will give more detailed information on the exact methods of gamification used in JAMK and offers a possibility to interview the students in the class, gain valuable data and inspect the use of gamification firsthand.

1.2 Structure

The structure of this thesis can be seen in the Figure 1. It is divided between six different sections, all of which have a specific purpose to the study. Those are called introduction, theory, implementation, results, discussion, and conclusion.

Figure 1 - Structure

The thesis begins with an introduction, which includes discussing the relevance of the topic, going over the objectives and the purpose of the study as well as stating the research questions. After this, the theoretical framework of the thesis is defined by going over previous research data and introducing the key elements of the study. In this section, the thesis hypothesis is formulated and further explained. Next, the implementation of the study is discussed, where details of the research method, data collection and data analysis are considered. After the implementation phase, the results of the study are revealed and analyzed further. Following that, is the discussion section,

which includes discussing the reliability and ethicality of the study. Lastly, the conclusion of the research and its results is conducted. The last section also includes the problems and future study proposals for this topic.

1.3 Research Questions

Many studies have revealed that gamification has a huge potential to motivate and engage the students for better study results. According to Deif (2017), gamification not only can engage and motivate the students in their learning process, but also gives the teachers a greater variation of tools to educate the students, as well as encourage the students to contribute their very best in their studies. JAMK has already taken steps to include gamification in the study programmes and their design. However, for this technique to work, thorough research needs to be done to determine what the current systems are and how those are affecting the students.This problem forms the research questions for this study.

The questions are formed as:

1) How is gamification used in the implementing of the Financial Management course?
2) How gamification affects the results of the students in the course?
    a) What is the level of learning before the gamification?
    b) What is the level of learning after the gamification?
    c) How do the students perceive the gamification in their course?
    d) Do the students feel any benefits from the use of gamification?

2 Theoretical literature review

This section introduces the theoretical information of the thesis topic and its surrounding concepts. In the first section, the education sector in Finland is introduced, to give a better understanding of the education systems in place and naturally, the environment for this thesis. In the second section, gamification and its different aspects are considered. Next, the different environments where gamification can be applied are introduced. After this, a deep dive into the different gamification features is performed. Lastly, the theories, methodologies, and forms of introducing

gamification into educational environments is explored. This will conclude the base knowledge for this thesis.

2.1 Education-sector in Finland

Finland's education system consists of childhood education and care, pre-school, comprehensive school, upper secondary education, higher education, and adult education. Upper secondary education is split between general upper secondary and vocational upper secondary, both of which have different areas of expertise and way of learning. Higher education includes universities and universities of applied sciences, where universities are considered to be more academic focused. (Ministry of Education and Culture, n.d.)

Finnish children enter the education system on the year they turn 7 years old, by starting pre-school. The compulsory school ends when the person reaches the age of 18 or when they complete an upper secondary education by qualification. Thus, the higher education and adult education in Finland is voluntary to attend. (Ministry of Education and Culture, n.d.) Under is attached a demonstration of the Finnish education system.

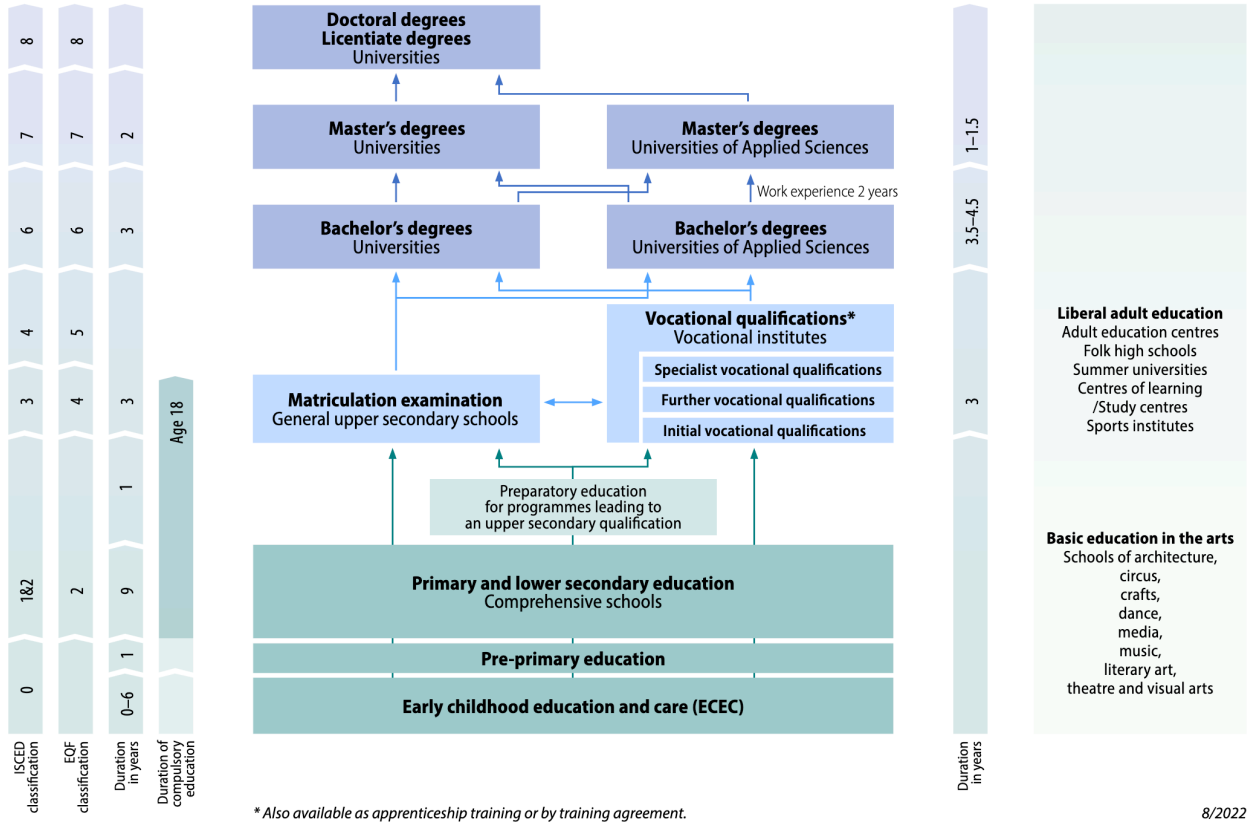


Figure 2 - Finnish Education System, Finland's Ministry of Education and Culture

Finnish education system has been complimented to be one of the best in the world. Since the Programme for International Student Assessment (PISA) examinations began to give comparison statistics on student performance in the Organisation for Economic Co-operation and Development (OECD) countries, the Finnish educational system has developed a reputation on a global scale. (Saarivirta & Kumpulainen, 2016) Thus, there has been an interest to study how the education system works and what makes it different from others. Finnish Ministry of Education and Culture define the special features briefly. According to their analysis, Finnish people have a positive attitude towards education and educating themselves, Finnish teachers are highly educated, and motivated, nationwide application is only used in the design of core curricula, learning and wellbeing of individuals is supported and cared for, multi-professional cooperation is conducted, assessments and evaluations are designed to be supportive and encouraging and the Finnish library system is efficient and high in quality. (Ministry of Education and Culture, n.d.) These are arguably the forces leading to Finland's good PISA results.

International Business

Jyväskylä University of Applied Sciences defines the learning outcomes of the bachelor's degree in international business as gaining knowledge and essential business management abilities needed to succeed in the global marketplace. The degree is fully studied in the English language, which is essential when considering international topics and to practice international customs for the future workplace. (JAMK, n.d.)

The study contents are said to include managing international teams, communicating in fluent oral and written English, communicating in multicultural environments and settings, combining, and analyzing corporate data, using strategic thinking, running successful global firms, and conducting business with ethics and sustainability in mind. (JAMK, n.d.)

The professional growth of the students is managed by tutoring process, which aids the students to their favored future working lives. The process consists of the student making personal learning plans and targets for their whole degree, which then acts as a base for their curricula choices in the degree. Studies consist of academic courses held by lecturers, writing a thesis on based on the student's specialty track, gaining international experience on exchange, and practicing for the future working-life in practical training. Courses offered can aim the student into multiple different directions inside the business industry: innovation management, cross-cultural management, marketing management, technology business, economics and sustainable development, finance, and sport management. (JAMK, n.d.)

According to previous student Monika Niznik, the international business degree in Jyväskylä has many advantages. Some of the things listed as unique for this school are that the university focuses on practicality rather than theory, the campus life and the courses are very international, the English level of students, teachers and almost all Finns around the area is strong and used in practice every day and lastly the attitude of the teachers and students is welcoming and noble, rather than strict and cold. (Niznik, 2012) These features are what makes the International Business degree in JAMK so appealing to the students these days as well.

2.2 Gamification

Gamification means using gamified elements mostly found in videogames to promote engagement and motivation longevity in contexts or environments where those would not naturally appear (Alsawaier, 2018). These environments can be for example education, businesses, marketing, training and development, analytics and many more. The use of gamification offers approaches to solve various issues, provide more interesting experiences and create more engagement among its users. To give a concrete suggestion, education facilities such as colleges could benefit from gamifying their internal process strategies, course contents as well as course curricula's (Alsawaier, 2018).

The Basics

However, gamification is not just different functions added to environments. Dale (2014) emphasizes, that it is about understanding human psychology and behavior, while also influencing those. He continues, that to change the behaviors of individuals or groups, three factors need to be considered: trigger, ability, and motivation. The latter two do not usually exist at the same capacities. When ability of a person is low, they need high amounts of motivation. On the contrary, when the motivation is low, the ability of the person needs to be high. This might mean cutting down the objectives into smaller pieces or having more discipline rather than enthusiasm. (Dale, 2014)

Motivation and Engagement

A hypothetical idea called motivation is used to describe what inspires people to start and stick with activities. It involves working towards a certain goal, which is fueled by the individual's "promotion of internal processes" (Zhang, 2022, motivation). Motivation is often regarded as something either self-induced or gained from outside sources. While engagement is very similar idea concept to motivation, these terms are said to be different in a relevant manner. Despite their similarities, their existence does not require the other's. (Alsawaier, 2018) The relevant difference is that the psychological factors that influence behavior and decision-making are connected to motivation, whereas engagement is seen more as an "energy" linked to various actions and behaviors

(Brooks et al. 2012). In gamification context, motivation and engagement play a huge role. Essentially, one reason why gamification can be an effective tool to educate or share knowledge is the motivation and engagement prospects it offers.

Emotional aspects

One factor that encourages video game players to engage in playing games and return for more is fun. Gamification takes inspiration from video games and uses the element of enjoyment, which is often found in games, to engage students and boost their motivation. (Alsawaier, S. 2018) Thus, emotional effects of the gamified studying environments need to be researched thoroughly to understand the overall effects to the students' associations with it.

Numerous studies show that adding gaming components greatly raised student engagement levels (Alsawaier, 2018). Hammer & Lee (2011) accentuate, that a carefully designed gamification system can help players take on roles that are advantageous to learning. Gamification can influence students to rethink their potential when it comes to education and what school could entail for them. This occurs by making the identity-building exercises fun and enjoyable as well as rewarding it appropriately. In addition, Hammer & Lee (2011) suggest, that applying gamification to the course teaching methods appear to provide educators with the tools they need to assist and motivate their students, making learning fun. As previously stated, having that element in the games engages the players more, which could be applied to education as well.

Researchers that executed empirical studies about the use of gamification components concur that gamificated cooperation and immediate feedback have a good impact on students' commitment, motivation, and overall accomplishments (Hamari & Koivisto, 2014). Some writers suggested that the introduction of gamification aspects will provide favorable effects with increased likeability ratings. Furthermore, their attitudes towards gamification being in the education environment was positive. (Arieli-Attali & Attali, 2015) Introducing gamificated elements to school environment raises the positive attitudes towards studying and makes the learning experience more fun for the student. This encourages students to keep up with the learning.

However, there are also problems in introducing the mechanics to studying environment. According to Nicholson, (2015) the gamified challenge needs to be proportionate to the taught topics, but not overextend to the point where the student feels overwhelmed or overpowered. This poses a possibility where too complicated challenges can even lower the student's motivation and engagement, causing them to feel uneasiness and irritation.

2.3 Gamificated environments

The environments other than education and the different applications and integration methods of gamification in those environments are now introduced.

Marketing

According to multiple studies, gamification can be used to develop marketing analytics, help designing marketing strategies and creating more engaging marketing content. Most popular techniques used in enhancing digital marketing strategies are loyalty programs, educational games, and reward systems (Marinova, 2018). These are used as different elements though out the marketing system, in forms such as "experience points, level bonuses, etc.; challenges; synchronization with the community, result showing; time; luck, etc." (Marinova, 2018, p.2). In turn, these create more engaged, loyal, and brand aware customers.

Results from the study of Alzyoud (2020) confirmed, that consumer loyalty is enhanced using gamification in the marketing context. In addition to encouraging word-of-mouth sharing and purchasing intentions, consumer loyalty also acted as a mediator in the relationships among gamification and those behaviors. The evidence suggests that the reason for the effectiveness lies in the competitive drive of the customers and their gained motivation. Tembulkar (2021) emphasizes, that everyone's competitive spirit is sparked by the chance to play a game and succeed. Furthermore, gamification encourages motivation, which leads to better engagement rates with the marketed contents. Tembulkar (2021) also suggests, that gamification helps marketing by raising aware-ness through viral marketing. It enables users to share their achievements on social media and challenge their friends and colleagues to outperform them, which motivates others to play the game and interact with the business in turn. As a result, the business can gain more attraction and enhances brand awareness.

Several researchers have studied the effectivity of marketing for decades. The results collectively show that effective marketing is also targeting the correct audience. Research by Herger & Kumar (2014) was conducted to study the importance of knowing your player types and their needs to better tailor your offerings accordingly. In their book, they bust some myths related to gamers and their behavior. It was conducted to change misconceptions around the target audience, which in turn enhances the effectiveness of marketing (Herger & Kumar, 2014). Marketing attempts may fail when wrong tools and practices are applied.

In addition, all company divisions can benefit from using gamification as a marketing technique. In her conference paper, Marinova (2018) explains how gamification is used in all business units as part of their marketing strategy. According to them, in a small scale, gamification is utilized by small startups for product promotion. They want to develop a product that offers customers an engaging experience. Mid-sized businesses use gamification in their main marketing tactics to draw in new clients from their target market and keep them interested in the brand and its goods. Lastly, according to Marinova (2018), large businesses prioritize gamificating office solutions and training systems.

Training & Development

According to researchers and experts, all business actions are done to enhance the competitive advantage the firm has on their peers. However, the effectiveness of competitive advantage and enhancing corporate performance de-pends on employee learning. Thus, using gamification when planning and executing the training and developing of the employees can be an advantage on a firm's success. (Pacheco et al., 2020) In order to succeed in keeping the employees motivated, engaged, and productive, the organizations need to consistently work on the employees learning plan to maximize the performance (Khodabandelou et al., 2022).

Pacheco et al. (2020) researched how predictive gamification changes the sales performance of a large-scale global company. The study focused on using gamification to train over 17,000 personnel directly linked to the company's sales area. According to the results, the implementation of

predictive gamification in the training progress enabled for the mitigation of future issues on average four months before the new goods arrived for sale. It is evident, that the use of analytical gamification enabled them to predict the future issues months before their possible realization.

Khodabandelou et al. (2022) conducted a systematic review of gamification and its effects on organizational learning. Their study provides a more general overview of the impacts of gamification to the capabilities of the employees and the organizations. According to the results of the analysis, gamification increases the mental engagement of the staff, which in turn enhances learning capabilities as well as increases the employee effectiveness. Khodabandelou et al. (2022) state that the reason behind the effects is that gamification turns the boring and serious topics into more fun, which motivates the staff into more continuous learning.

Brand loyalty

Research into gamification and its connection to brand loyalty has been done in recent years. According to the results, gamification creates fulfillment, brand mindfulness and more reliable customers in all business-areas. For example, Mandankandy (2021) researched the effects of gamification in different digital marketing elements used in tourism sector by going over case studies. The results indicate that to attract tourists, gamification and digital marketing are crucial. Especially feedback and loyalty points were mentioned to be essential for creating following in digital platforms in tourism (Mandankandy, 2021). These forms of gamification are often used to enhance the user's engagement in the business.

2.4 Features

Player types

To understand why gamification works for some people better in certain form and to others not so much, the approach method of the person needs to be determined. In his 'Bartle Test of Psychology' the famous Richard Bartle defined four simple categories to use when dividing people according to their personality. As mentioned by Kumar et al. (2022), these categories go by "the Achiever, the Explorer, the Socializer, and the Killer." (The Psychology of the Player). These player types are next examined closely.

The Achievers main goal is to gain as many points, badges, and abilities as possible, or grow their status to the maximum. Their enjoyment for the game comes from progressing in their games and being able to share and compare said statistics among their friends. (Kumar et al., 2022) Their engagement level responses highly to in-game features such as collectable badges, where every badge is a sign of an achievement and recognition. According to Kumar et al. (2022), around 10% of people belong to this type.

The Explorers are all about discovering and unlocking new areas, content, or goals. They don't get discouraged or frustrated with repetitive tasks, but rather push through them to unlock a new area or content in the game. For them, the discovery of new is the main goal. This 10% of the players feel strong engagement levels when feeling at walls inside the game to find secret tunnels or pathways. Unlike the achievers, they don't see comparing statistics with their friends to brag as something interesting. (Kumar et al., 2022)

The Socializers thrive from connections and friendships inside the game. Kumar et al. (2022) estimates that they consist of around 80% of the players, making them the biggest category. Their playing style depends on joining forces with other players to achieve something bigger than they could alone. This group rarely finds competition as fun as others might, but rather focus on the ambition they have. Engaging tasks for them are about helping each other in exchange to gaining something needed for themselves. (Kumar et al., 2022)

Lastly, the Killers are described to be very similar to the Achievers with a small difference. As they pursue achievements, status, and victory, they do it to beat others, rather than to be the winners. Their motivation comes from seeing other players lose. Their main goal is being the best at the game, which means that everyone else must be defeated. (Kumar et al., 2022) According to Kumar et al. (2022), this group of player consists of less than 1% of the players, making it the smallest category.

Now that different player types are familiar, it is important to note that not all players will fit directly to these categories, as some are a mix of them. However, this is not to discourage designers to include better targeted gamification into their work, but to rather remind, that not everything is straight forward. A game designed to engage the Achievers should also have features interesting

to the Explorer or the Socializer. This is to engage as big group of the people as possible. As Kumar et al. (2022) states, it is important to do the research, as stereotyping will rarely attract the right target. Through that experience, it is possible to cater to their exact needs.

Traditional gamification features

Traditional gamification features used inside the games and learning platforms include badges, points, rewards, levels, progress bars and leaderboards. With a little imaginative power and customization options on top, the users can be engaged highly effectively. Pappas (2019), introduces these features in his Growth Engineering -blog.

Digital badges should always be designed to be as sensational as possible to gain the interest of the viewer. In addition, the steps needed to gain the badge should be clear and strategically aligned with the whole objective. This way the badges are seen as a natural thing to pursue, whether it is in the workplace or in education. Badges can be used for instance to award top performers or to check the completion of a mandatory course or action. (Pappas, 2019) An example of the digital badges in use can be seen underneath.

Figure 3 - My personal account, Badges in Apple's Fitness app

Another great way to include gamification are rewards and points. These two systems align strongly. Point-based awarding system is connected to the people's instinct to start, pursue, and complete objectives. However, the point-based system needs to be thoroughly designed form the ground up, as the users need to be able to gain points for all completed actions, but behavior which does not support the wanted objectives can not be rewarded. In addition, the point system needs to be just the pathway for rewards and other accomplishments to motivate the user. (Pappas, 2019)

Level system works similarly to the point-based system, but rather than seeing each task as individual objectives, the tasks can be joined together to form clear entities. This type of technique also leans on the users wish to gain more access and to complete actions. Getting the "level up" can mean rewards, more open access and new content available for the user, which is highly desirable. Pappas (2019) states, that the users move through the levels after completing a set of tasks

or meeting some predefined requirements. Under is an example of level system in use on an app. Exciting words and happy pictures are a big part of user experience and engagement enhancing.

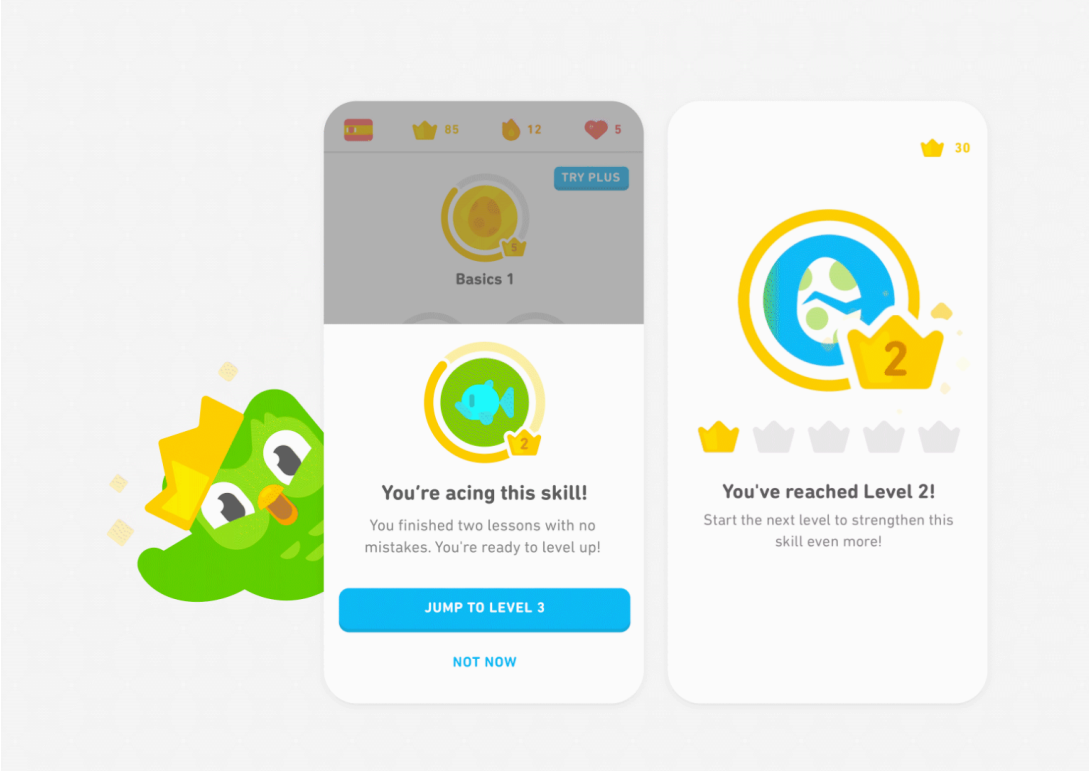


Figure 4 – Noh, (n.d.) Higher levels, more crowns!

Progress bars can be used on their own to track the points and levels achieved or those can be made more interactive to ensure better engagement. Interactivity in progress bar can mean for instance being able to go back to the earlier objectives and completed content, but also being able to see the future content and the possible rewards ahead. Visualizing the progress of the user is engaging and pushes the viewer to reach for the next level, more points or even complete the whole bar. (Pappas, 2019)

Leaderboards are based on competition and competitive thrive in the users. The main goal is to achieve objectives and gain motivation by peer pressure and by proving their competency to each other. However, leaderboards require a carefully placed level or points system to be able to rank the players against each other in clear and cohesive way. For instance, the user must achieve a certain number of points to move up the board. (Pappas, 2019) Leaderboards are a good way to give incentives to employees, users, or customers by placing rewards to the top performers.

Giving out optimization possibilities and being able to adjust the features according to the user's environment and personality is crucial (Pappas, 2019). This is best done before implementing the features in the space, as user preferences can affect the decisions greatly. That is where the player types need to be considered.

2.5 Gamifying education

Gamification theory in education is based on the fun and addictive elements of games, which is in turn integrated into the learning objectives and methods (True Education Partnerships, n.d.). As in any other areas, there are numerous techniques and mechanisms to include the exciting new elements to learning. However, even with great research, strict policies need to be met when it comes to the education sector. Next, some precautions are introduced.

Preemptive actions

Before any actions can be made and new mechanics introduced to the students, the meaningfulness, communication, and conditioning of the gamification need to be considered. According to Spinify (2022), being purposeful is critical and when it comes to adding gamification to education, specifically focusing on the fun aspect is important. At the base, gamification should always be used cautiously, so that it fits the end goal of the user and creates no distractions. For a student, the mechanics should closely correlate with the contents and the information being studied. (Spinify, 2022)

Communication is another important aspect to consider in gamification. Spinify (2022) states, that gamification is proven to be enhancing internal communications in businesses. It has been improving the involvement of the employees, increasing the amount and quality of the feedback, and generating cohesion. With adjustments to the style of integration, gamification has the potential to carry out the same effects in the classrooms.

Lastly, conditioning is big part of gamification. The whole system runs on habits and consistency, without which it would not be nearly as effective. Conditioning in this context includes tweaking the system when needed and constant updating and progressing of the system. The challenges and tasks which come with gamification should not be too easy to accomplish (Spinify, 2022).

Challenges hard enough not to bore the user but also easy enough to be clearly achievable should, according to Spinify (2022) require time, knowledge, logical thinking, perseverance, and agility. In addition to these requirements, constant updates and progression are needed, as those are vital to drive the engagement (Spinify, 2022). With all these precautions mapped out and carefully structured, the benefits to gamification can fully blossom in the education.

Earlier studies

Earlier studies on integrating gamification into the education sector have been done in the recent years. The results have so far indicated very positive outcomes among the students, which is in line with this study's assumptions. For instance, Durán-Rosal et al. (2022) studied the effects of using gamification when studying machine learning. The study was conducted over a two-year period, where the main goal for students was to solve a real problem while also co-operating and competing with each other. According to Durán-Rosal et al. (2022), the results indicate that the students gained substantially better competences to face work life after their studies, while also being more motivated and having more capacity for constant learning and adapting of information.

Another study by Hassan & Yusof (2019) studied the effects of gamified assessment on the student learning. Their purpose was to research how gamified assessment affected the students' accomplishments, engagement, and motivation by group comparison. The research results revealed a significant difference in the achievements of the students between different groups. In addition, Hassan & Yusof (2019) concluded that there also was a considerable variation in the student motivation and engagement levels between these groups. Thus, gamified assessment was concluded to have a positive effect on these education metrics.

Zainuddin et al. (2023) researched the effects of gamification in adult learners during an online class. The data was collected from the time during COVID-19 pandemic, which meant that most of the learning happened through online methods of teaching. The study found that using gamification instead of conventional ways increased the engagement of the students and was more effective. In addition, the students told that using gamification boosted their motivation to learn and achieve objectives, which made learning more fun. An interesting finding in this study was that the

students also reported lower level of anxiety and frustration during the class, despite being around scoreboards and competition. This could mean that making learning fun can also reduce the stresslevel of students, which in turn makes it easier to focus on the topic and just learn as much as possible. After all, a relaxed mind could be more accepting of new information.

There has also been analyses of the earlier studies and the results of those to students and their learning processes. Bagheri et al. (2020) concluded a systematic literature review on gamification and its effects on entrepreneurship education. The analysis concluded that the majority of the research had retrieved positive results in the students' learning outcomes when introducing gamification to the entrepreneurship education. However, they had found a limited literature on the relation between entrepreneurship and gamification, for which future studies on the topics are requested.

2.5.1 Features

According to True Education Partnerships (n. d.) the theory behind including gamification to education lies in the effects of making studying fun, while also striving for goals and achievements to reach the target. As technology is part of our everyday lives and activities more and more all the time, the wish to utilize the full potential of that technology has sprouted many helpful innovations. One of these innovations was to connect the addictive elements of games to the natural intrigue of wanting to learn more by making learning more fun (True Education Partnerships, n. d.).

As said before by Babic & Vigato (2021), gamification is not only valuable to marketing and other business actions, but also for educators and education institutions by providing new tools to accompany the traditional methods. These methods include points, barriers, competition, measuring progress with levels and checkpoints, badges, roleplay, feedback, and social connections (True Education Partnerships, n. d.). Alsawaier (2018) introduces further features, such as avatars, quests, and challenges.

1. Point-system

According to Alsawaier (2018), points are seen as required feature of gamified structure. This is because giving out points and rewards encourages progress, which can trigger motivation. As Zichermann & Cunningham (2011) state, waiting for intrinsic motivation is not a good idea. Thus, features to push that motivation are needed.

Point can be given for different reasons. These can be passing academic objectives or non-academic, more practical objectives. According to True Education Partnerships (n. d.), giving points for example when answering simple questionnaires can make the experience much more fun. Adding the element of evidence and extra points for more diligent work can influence the students to work harder. These are called academic objectives.

Non-academic or practical objectives can be much more flexible. These can be given out for example for cleaning in the classroom, initiative actions, and unprompted help (True Education Partnerships, n.d.). These types of points are good for educating the students on the importance of non-academic achievements next to the academic ones, as building the environment for better learning experience is important to student motivation and outcomes.

However, rewards such as points work to reinforce wanted behaviors, but once those behaviors are achieved, they stop working. In fact, Nicholson (2015) states, that rewards might have little to no effect on already motivated learners and sometimes those effects can even turn to negative ones. Thus, rewards might only be effective to learners with low intrinsic motivation.

2. Progress

Progress in education can be measured with numerous features. These can be for example levels and checkpoints. These symbolize a level of progression, which can give the student motivation and focus on its own, but also create competition (True Education Partnership, n. d.). Checkpoints work with the same logic as levels. The important aspect is, that students value the system and see the levels as something to aspire for. However, as introduced before, the students need rewards for gaining the needed motivation (Alsawaier, 2018). Figure 5 shows a progress bar example from Moodle.

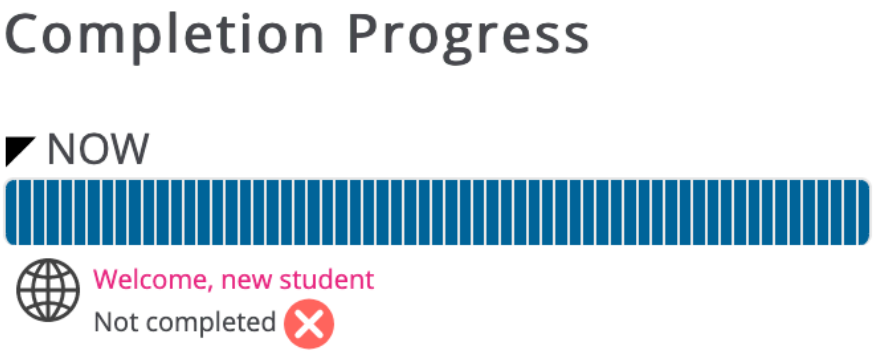


Figure 5 - Progress Bar, Moodle

To increase the level of engagement and thrive to "level up" in students, competition can be added to the mix. Leaderboards are a great way to measure progress in a class level, but also track the differences between the students or classes. The students can affect their placement on the board by gaining levels through studying and achieving set goals. This also gives an opportunity to gather more detailed data of the students' capabilities, their challenges and more. According to True Education Partnership (n. d.), teachers could utilize this information to maximize the motivation when tailoring their challenges and rewards to their students.

3. Barriers

Challenges and quests are a good way of implementing playful barriers to the students learning. These challenges can vary greatly by being educational, cognitive, innovative, practical, personal, or social (True Education Partnerships, n. d.). These barriers motivate the student to overcome the obstacle, while also acquiring new information on the studied objective. The end goal of the barrier can be acquiring new level, status, or prices, which are in place to enhance the motivation.

Quests can be defined as a series of challenges or tasks for the person to perform, which require critical thinking and problem-solving skills (Whitton & Moseley, 2012). These series are often time-bounded or require a specific solving order, which constitutes the whole quest. The meaning of having quests in gamified environments is to give out a sense of direction or purpose to the student (Zichermann & Cunningham, 2011). This limits student's possibilities, which in turn makes de-

cision making easier and the process more straight-forward. As stated by Dale (2014), having challenges and quests embedded in the learning environment supports the sense of adventure as well as activates more critical thinking behavior in the students. These encourage better learning outcomes and engages the student to their studies.

The important factor when introducing quests or challenges to educational environment is that failures do not have the same scale of effect in the gamified world, as it does on the perceived "real" world. Instead, failure is seen as a change to measure the actions that were done, learn from the mistakes that were made, and simply restart (Alsawaier, 2018). This way, there are no bigger failures, but instead small, failed attempts. These are easier to see as just one small challenge instead of a big, devastating endings which would destroy motivation.

4. Sociality

Immediate feedback is one clear way of adding gamification to education. In games, this feature means receiving real-time feedback as features such as scores or by getting a new badge immediately after overtaking a specific challenge. Feedback and motivation can have negative or positive influence on each other (Sobh & Martin, 2011), which can be a tricky to balance. Often the same feedback can cause different reactions, as its effectiveness is based on the receivers view of the topic. Sobh & Martin (2011), continue, that positive feedback indicates faster progress rates than expected, however, people tend to decrease their efforts in order to match the expectations. That is why ensuring an effective and truthful feedback in correct places can be used as a motivation tool.

Another tool to increase motivation with gamification is the use of social connections. As stated when introducing the player types, one group of people like the connections and social part of the games. Being able to share their experience or solve a problem together with a classmate can improve the engagement and highly motivate students to learn. After all, humans thrive from social connections and need interaction to be able to evolve.

In addition to the need of social connections, the need to express oneself in one way or another is deep within human behavior. Avatars are a great way of including the power of expression and

roleplaying to education. This helps in understanding oneself, evolving the persona and analyzing own performance. They can also give the students very creative opportunities to express their talents and differences among themselves.

Over the last decades, traditional teaching methods have been challenged with more active, imaginative techniques. One of these is roleplay, which might seem like a weird way of teaching students. However, experience in real-life situation generates knowledge which is formed first-hand (Feinstein et al., 2002). The critical difference to the traditional methods is that those rely on hearing about other's experiences. Learning through active experimentations not only leaves more concrete memory of the learned concept, but may also increase the engagement of the students, which enhances the studying outcomes.

2.5.2 Theories

The connection between gamification, motivation, and engagement is next elaborated. From the research, different theories rise as to why or how these factors are connected and how they affect the studying results. These theories are introduced and discussed in this section.

Self-determination Theory (SDT)

Cherry (2022a) defines self-determination as ability to manage life and make informed choices. It means being in control of your own actions and control of your life. This term is usually paired with a person being self-determined or non-self-determined, which is how the term manifests in people. According to the self-determination hypothesis, people become self-determined when their demands for independency, proficiency, and connection are met. The theory itself aims to explain how being self-determined affects the motivation of that person.

There are two key assumptions behind the self-determination theory (SDT). First is, that people have a natural need for seeking growth and developing themselves. The second is, that intrinsic motivation is important and needed to gain new skills and knowledge. Intrinsic motivation means having a motivation come from within the persons needs and wishes, whereas extrinsic motivation is driven by outside factor, such as money or rewards. (Cherry, 2022a)

According to Baard et al. (2004) competence is linked to motivation for overcoming challenges and reaching success. Additionally, the need for autonomy is related to one's volitions and their pursuit for choice-making and being responsible. Furthermore, the need for connections is about having meaningful social relationships, a social status and feeling a sense of respect and interdependence. These three elements correspond with the basic human needs to make individual choices, compete, and cooperate with each other. In addition, all of these can be achieved via gamified environments (Alsawaier, 2018).

The key element here is the intrinsic motivation and the effects gamified environment can have on it. The connection between those elements has been established by researchers. By willingly inserting themselves to games to feel the fun or enjoyment, players gain intrinsic motivation. This enables them to come back to the root of the motivation again and again, without any conditioning or suggestions. (Alsawaier, 2018). This would be the optimal way of introducing gamification to educational settings, according to the self-determination theory.

Behaviorism

Behaviorism is formed by the belief, that all our actions are shaped by our environment. The common consensus is that behaviorism is driven by conditioning, which happens when interacting with environment. (Cherry, 2022b) For gamification, this theory could mean that it might work only because of the environmental conditioning that is created for the students. On the other hand, if it makes the students more motivated and excited about their studies, the reasoning is not as important. However, understanding of this theory is still needed to understand the basic logics around the phenomena.

According to the most strict behaviorists, any person with any background, genetics, features, or personal interests can be taught to perform any tasks within the limits of their physical possibilities (Cherry, 2022b). In this regard, behaviorism completely disregards the meaning of player types or different personalities from the equation, as the ability of the person is only limited on the way this conditioning happens.

There are two main types of behaviorism. Methodological behaviorism was first mentioned by a psychologist called John B. Watson, who declared psychology to be the science of behavior (Lim, 2019). His view is that behavior should be studied with scientific methods. Methodological behaviorism does not consider the mental state or cognitive processes of the person being under study. Radical behaviorism on the other hand, was created by the psychologist B.F. Skinner, who believed that behavior can be understood solely based on the persons past and present environments. (Cherry, 2022b) This means that everything could be explained by the environment and its effects on the development of the subject under study.

There are also two ways of conditioning. Operant conditioning is defined by subject learning behavior by associating it with the consequences that follow right after. In classical conditioning however, the subject learns a behavior by associating two or more unrelated stimuluses with each other. One widely known example of this is the Pavlov's Dogs experience, where the dogs learn to salivate from the sound of a bell. (Lim, 2019)

Behaviorism is still evident in today's classrooms, where operant conditioning is employed to reinforce behaviors. A teacher, for example, may provide a reward to students who score well on a test or penalize a person who misbehaves by placing them in detention (Lim, 2019). This is what connects gamification and behaviorism together. The students learn to wait for the positive or negative effects of their actions. However, the way of conditioning can vary a lot and it can be said, that some ways of conditioning are more acceptable than others.

2.5.3 GBL versus Gamification

A term not to be confused with gamification is game-based learning (GBL). For the sake of clarity and comparison, this section explains what GBL is and why gamification is better way to engage students. GBL is teaching 21st century skills in many ways already (Miller, 2012). As an example, the University of Washington has created a puzzle-game called Foldit to teach anyone in the world about protein folding. While the player feels like they are just playing a videogame, they are simultaneously making science, as they are seeking for cures to many current health issues such as HIV and Alzheimer's. (Hickey, 2008) These types of games have been utilized in many fields of research and classrooms already with great results. It took only 10 days of playing to produce an accurate

model of the virus causing AIDS in monkeys, which had been a problem for scientists over 15 years (Cooper et al. 2010).

However, GBL can be used to solve much easier problems as well. Specifically, it can be used to teach some more distinctive and practical skills needed in the 21st century lives, such as collaboration, communication, and critical thinking (Miller, 2012). Massively multiplayer online games (MMO) play a huge part in creating collaboration and teaching collaborative thinking and skills in its players. Games such as World of Warcraft are built to encourage the players interacting with each other, as they rely on teamwork to overcome obstacles and achieve their goals. Many challenges faced in the game are meant to be played with a team of players which often means reaching out and collaborating with the nearest players on the server. This type of collaboration can be used in and outside of classrooms to teach students the elements of successful collaboration (Miller, 2012).

Another skill possible to teach by GBL is communication. While collaboration is needed to solve obstacles, no collaboration can happen without communication. Miller (2012) clears, that games create a clear goal and an authentic feel of purpose, which encourages the players to communicate actively throughout the experience. Through games, the same emotions could become part of the classroom activities as well, which promotes effective communication skills to students.

Lastly, great games include puzzles or problems which require good problem-solving or critical thinking -skills. As an example, the game Angry Birds teaches not only perseverance, but also evolves to progressively challenge the players evaluation-skills, analyzing, planning, and techniques (Miller, 2012). As these skills are greatly needed in the 21st century workplaces and research more and more, teaching them through as engaging methods as possible could ensure a better learning experience and outcomes.

However, it is argued that gamification is much better way to enhance the learning process compared to the GBL. As described before, GBL is about making learning into a videogame or using direct videogames to teach skills. As opposed to that, gamification is more of adding a designed layer of gamificated elements to enhance learning process and encourage positive behavior (Al-

sawaier, 2018). The important difference is that gamification is about involving the elements outside of digital games or platforms (Keeler, 2014), rather than making all learning digital and into games. Isaacs (2015) analyses it further by stating, that gamification is focused on creating an atmosphere associated with gaming, whereas in GBL the learning content provided by the game on itself. Simões et al. (2012) continue to elaborate the differences in these two phenomena's. As they explain, gamification relies on the most effective tools and factors of games to add the level of fun and engagement to learning without committing to a specific game, which might have other effects than needed ones aswell. This creates a long-term effect of motivation and high engagement, rather than making the student live in short-lived highs of engagement when playing the specific game. This is because after completing a game from start to end, many players lose their interest to come back to that game, as they know there's nothing new. This problem does not exist in the gamificated education. For these reasons, utilizing gamification over GBL could be argued to be more effective way to engage students.

2.6 Forming hypothesis

Based on the theoretical background, the hypothesis for this study can be formed. That is a statement which can be tested by scientific methods in research (McCombes, 2022). Therefore, the main objective of the research is usually to test a hypothesis of any subject. However, the hypothesis is not required to be the truth or the correct end result of the research. Instead, as stated by Cherry (2023) "the goal of the research is to determine whether this guess is right or wrong" (The Hypothesis in the Scientific Method). Therefore, the result can be something totally unexpected compared to the hypothesis.

Forming the hypothetical answers (H1, H2) to my research questions:

1. How is gamification used in the implementing of Financial Management courses?

H1: According to the results of the theoretical literature review, gamification in educational settings relies on point-systems, measuring progress, including barriers, and enforcing social actions. Based on this knowledge, it is likely that the gamificated features used in the Financial Management -course are shaped around these methods. Easy methods, already used in many of the courses, are progress measurements in Moodle, as well as implementing a lot of social activities

such as competitions and group assignments. These are likely to appear in the results of the study. The difficult part would be to implement sufficient barriers and challenges for all the students, individually designed study paths or a well working point-system. According to the previous research, gamification could be implemented in the assessment of the students as well.

2. How gamification affects the results of the students in the course?
    a. What is the level of learning before the gamification?

H2a: As the theoretical teaching methods have been in use effectively for centuries, it is likely that all the students will have sufficient level of learning at this point of the course. However, as students' style and preferences may vary, the outcomes might not be as straightforward for all. After all, this is the reason to include gamification in education.

    b. What is the level of learning after the gamification?

H2b: Based on the theoretical literature review, the results of the students after the gamification in the course should be higher than before. This was concluded as the result in many other studies, as well as explained through psychological factors visited in theoretical section. According to these findings, there should be a clear difference in the learning motivation as well as the perceived learning compared to the levels before the gamification. However, there can be differences among individual students. As stated in the theoretical research, sometimes gamification can affect students differently. For example, too difficult barriers or overcompetitive environment do not work for everyone.

    c. How do the students perceive the gamification in their course?

H2c: Students will likely experience rise in motivation and engagement towards the course contents. According to the studies, gamification has been perceived positively throughout its implication in different settings. However, there were also reported problems such as demotivation when facing too difficult challenges. In addition, the personality and the "player type" of the student will affect the way they perceive the used methods. If these methods do not meet with their needs, strengths, and weaknesses, they will likely experience irritation and frustration. However, the number of these experiences in a controlled and accepted university level course design should be low.

d. Do the students feel any benefits from the use of gamification?

H2d: As stated in the previous hypothetical answers, the students will highly likely feel more motivated and engaged to the course contents due to gamification. This will help them perform better in the end, which will benefit them. Thus, hypothetically, the students should feel as though the gamified sections of the course are beneficial for them.

3 Implementation

In this section the implementation phase of the research is described. This includes explaining the method of the research, as well as giving more in depth picture of the data collection process and the analyzing process of the study results. Figure 7 describes the timeline of the implementation.

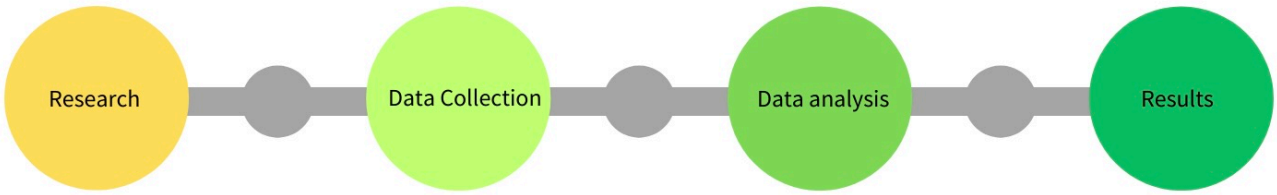


Figure 6 – Timeline

The object of this study, a Financial Management course is held from February 2023 until the May of 2023. During this four-month period, the students will learn about different financial aspects of business management in different ways. The participant observation starts at the early stages of the course, which will continue until the closer interviews are conducted in the end of the course. After this, the data is analyzed and formed to be the results of the research.

3.1 Method

The method of this study is mostly qualitative, but it also includes features of quantitative research. Qualitative research (QLR) can be defined as a form of market research, where data is obtained through open ended questions and overall, more conversational methods (Bhat, n. d.). This method has the potential to produce more descriptive data, compared to the raw numerical data produced by quantitative research methods. The focus of the QLR method for the research is to

describe individual experiences as well as gather new information on the phenomenon and surrounding beliefs. In turn, quantitative method is focused on numerical data and describing closely restricted characteristics of a specific topic.

The reason why this study used QLR method, is because there are a lot of open-ended questions needed to ask, to gather the important data. The views and the experiences of the students are an important piece of the study, which need to be included. An in-depth interview is conducted to a group of students, as their learning process is gathered. In addition, gathering the data of different gamification methods used in the course depends on participant observation, which is a well know QLR method (Bhat, n. d.).

3.2 Data collection

The data collected for the research comes from multiple varying sources, with numerous data gathering methods. Data of the course and its contents are partly gathered by hand from the courses Moodle-space online, as well as from the more detailed course descriptions in JAMK's school pages. The information needed of the course include data such as the key learning points, assessment type, course tasks and possible exam-information, teaching-methods, length of the course and more. Another method used to gather data of the course is by observing the classes as they are performed during the course. This gives deeper understanding of the class contents, as well as better view on the teaching methods of the teacher.

The other part of data, gathered from the students comes from conducting qualitative interviews in the end of the course. These interviews will measure the learning curve of the students, their experience during the course and their thoughts on gamificated course contents. The interviews are conducted so, that each student will have to evaluate their level of knowledge in the course topics before the course, after the first section of the course and then after the gamificated section of the course.

Needed number of interviewees is around 10 to achieve enough data for qualitative research. In addition, to gather as universal data as possible, acquiring interviews from different perspectives is important. To achieve the needed criteria for the interviews, perspectives of different genders,

ages, nationalities, and premises are all needed to be included. Turner (2010) adds that the participants should be willing to share their experience with full honesty. To help ease the mind of the interviewee, the discussion should take place somewhere comfortable and peaceful. This helps the participant to be more relaxed and open during the process.

According to Turner (2010), one of the most crucial aspects of creating an interview is creating effective questions. For this reason, the interviews for this study are formed to be semi structured. This allows for more detailed numerical questions when specific data is needed, but also keeps the possibility to have more open-ended conversations of the course and the gamification aspects. The questions for the interviews can be found as an appendix 1.

3.3 Analysis of data

According to University of Pretoria (2023), one of the most important parts of research is analyzing the data. The objective for analysis is to summarize the collected data as well as develop it. As University of Pretoria (2023) states, “it involves the interpretation of data gathered through the use of analytical and logical reasoning to determine patterns, relationships or trends.” (Research Guide: Data analysis and reporting findings). The analysis of the data in this study is performed in NVivo -software. After recording the interviews, the data is transported to the used software. Next, the data is organized by questions and answer categories to draw a better understanding of the connections between answers and to gather more generalized results for the study.

First step of analyzing the data is cleaning it. This involves checking whether the data is collected correctly, that there is enough data overall, that no data has gone missing, and that the data has potential to answer all research questions. Next, the data is further analyzed by sorting it to categories, by forming charts, tables, or graphs, by identifying main results, patterns, and correlations as well as by testing the hypothesis set in the research. (University of Pretoria, 2023) Through these concrete steps the data can be turned into the research results and used to assist future research.

The final analysis of the interviews focuses on comparison and finding connections or similarities between the answers. The main focus is on their results of the course and understanding their learning curve, but another important aspect is to gather knowledge of their experience during the

course. Though out this, further analysis of the students' views on gamification and how it changes their studies can be done.

4 Data protection methods

In this section of the thesis, the data protection methods of this research are considered. The main objective is to guarantee a fair, safe research experience to all the participants and the researcher, as well as to introduce the factors influencing these topics. First, the reliability of the research is discussed, after which the ethical standards are considered.

4.1 Reliability

Assessing the reliability of research requires judging the reasonableness of the research in relation to the applied methods of research and the integrity of results. Qualitative research has its problems of reliability, as it often lacks transparency, has poor justification of the methods and the findings mostly consisting of personal opinions which are analyzed under research bias. (Noble & Smith, 2015). These problems must be solved via justifiable solutions and clear and cohesive methods of research.

Most of these challenges, according to Noble & Smith (2015) can be defeated by:

1) Measuring and minimizing personal bias in all stages of research,
2) Recognizing bias in sampling and reducing it by critically choosing the methods to ensure a needed depth and precision of data,
3) Deliberately and carefully finding similarities and differences to include all perspectives,
4) Including specific descriptions and direct quotes to support the findings,
5) Using respondents' validation for the interview transcript to ensure the information adequately reflects their thoughts and feelings of the topic, and
6) Keeping accurate records of all actions and demonstrating transparency and consistency when reporting the findings.

One of the methods used in this study is relying on perceived learning, which is why researching the topic and its' weaknesses is utmost important. According to Bacon (2016), perceived learning can be defined as the student's own perception of the learning they have acquired, and the self-

report formed by it. In contrast to that, the term actual learning means separating the real learning from the perceived learning. Actual learning can be strictly measured and thus proven by numbers and statistics. What is important to notice, when measuring student performance is the difference between these two data types. However, Bacon (2016) reveals that the level of correlation in student evaluations of teaching (SET) and perceived learning in University of Denver has been studied to be .76. This indicates, that with quality questions and quality measurements in actual learning, the perceived learning can give a strong indication of the students learning curve. This does not mean it is a factual truth, but it can help in making general hypothesis of the student's learning in total.

4.2 Ethicality

Ethics are generally considered to be the overall rules of behavior and the code of conduct when interacting with the world. Usually the word "ethics" is associated with the general knowledge and understanding of good and bad. According to Resnik (2020), ethical standards are applicable to anyone who engages in scientific research as well as other scholarly or artistic endeavors. They also assist the purposes or goals of research, as they are promoting truth and avoidance of error. This in turn minimizes the possibility of falsifying results. In addition, the ethics make sure that the research is done promoting collaboration, can be held accountable for the public eye and follows the moral and social values affecting it. (Resnik, 2020)

When it comes to conducting research, there are handful of steps to make to ensure that the ethical standards are met. First, there is a need of consent every time any data is collected of or from human participants (Fleming & Zegwaard, 2018). This includes for example informing the participant about what will be asked from them, where and how the data is utilized and what is expected to come from it. This ensures transparency in the data gathering process and promotes the ethicality of the data.

Secondly, the anonymity, confidentiality, and security of the participant and their input is to be assured. Technically it means, that either the identity of the participant must stay unknown for the researcher or because the identity is known for the researcher, they have the obligation to keep that information confidential by de-identifying the participant. (Fleming & Zegwaard, 2018). This

ensures that the potential harm to the participant and everyone in and around the research is considered. These risks then need to be minimized.

Lastly, the conflict of interest in research should be considered. It's critical to openly disclose any links or past actions by the researcher that could potentially result in a conflict of interest (Fleming & Zegwaard, 2018). This could mean for example removing some tasks of the researcher to third party, if those tasks too closely align with topics or people of interest to the researcher.

In this research all these ethical standards are considered. The participants are required to give a written down consent to the researcher to gather, use, analyze and store their data for specific amount of time. Utmost transparency is required when explaining the research aim and for example different questions asked from them. In addition, all the participants will join the research anonymously, as their specific names are not required. However, data such as nationality and gender are to be recoded, but safely stored until the end of the research.

5 Results & Analysis

This section covers all the results and the analysis of the study. It opens the gathered data and points out differences and consistencies. To be able to further explore and analyze the results, the interviews have been transcribed. From here, it has been checked that no data has gone missing, that the data is collected correctly, there is enough data, and that the data has potential to answer all the research questions. Next, the course contents and its gamified elements are visited, as well as summaries of the interviews are done and analyzed by using NVivo. The focus is on the results of the course and understanding the students learning curve, but another important aspect is to gather knowledge of their experience during the course.

5.1 The course insights

The course under the examination is the financial management course. It is worth of five (5) credits, which accumulates to around 135 hours of studying. (JAMK, n.d.) This course is a part of those International Business -students learning curve, who are interested in finances.

During this course, the student should learn to comprehend, explore, recognize, and analyze numerous financial topics and aspects in the corporate sector. In the areas of corporate risk management, quantitative financial analysis, investment analysis, corporate finance, global finance, accounting analysis of information, strategic managerial accounting, financial predicting, financial companies and markets, personal finance, etc., the emphasis is on comprehending theoretical factors and their practical implications for investors and financial managers. (JAMK, n.d.)

Course contents include corporate level risk assessment and management, quantitative financial analysis, financial institutions and markets, strategic management accounting, financial forecasting, sustainable finance, wealth management, behavioral finance, and investment analysis to mention a few. These aim to provide skills in understanding financial topics and concepts. The student will comprehend and be able to support the elements resulting from corporate financial activities as well as risks and problems related to global financial trends that have an impact on business operations, strategy, and planning. (JAMK, n.d.)

The course is held in a hybrid mode, consisting of online classes and in-class lectures. The lectures held online consist of going over basic information and theoretical topics, whereas the in-class lectures include practical tasks relevant to the taught topics, individually and in groups. The learning materials used in the course are PowerPoint presentations, spreadsheets, books, journal articles, videos, homework assignments, and internet resources etc. (JAMK, n.d.)

The assessment of the course is based on an exam and presentations given on the class. Both elements have 50% impact on the final course grade. If the student can show good proof in the Intended Learning Outcomes (ILO), such as Analytical Business Skills (IBBUS) and Critical Thinking (IBCRI) with more detailed numerical and illustrative representations, the student will receive a grade of ‘five’ from the exam section. To receive the grade of ‘five’ from the group presentation, the student will also need to present an excellent knowledge of Collaborative Skills (IBCOL). (JAMK, n.d.)

5.2 Gamified elements

Throughout the Financial Management -course, different methods of gamification are used. Most notable is the utilization of teamwork and use of common target. The course also uses a tracker,

similar to the one described in Figure 5. This helps the students to keep up with their study plan, check if they have upcoming deadlines and compete to finish as first. These are both general gamification methods, which are explained more in depth in the theoretical literature review.

The course is generally divided to two parts. First, the students learn the basic information and gather some general knowledge of the course's contents through informative lectures held by teachers. This is where they get to familiarize themselves with the needed methods and tools used in finance, as well as get to know the basic terms used in this field. This is done usually in class, but the information is also available in online videos.

After completing the first part of the course, the students start applying learnt theoretical aspects in the real-life scenario by gathering data and using analytical tools. This also includes positioning their results and making comparison with theories. Their results may be in accordance with or opposite to the popular theories, however, the outcome of their results is obtained through gamified technique help to understand theories in a better way.

To make it easier to follow and understand, the second part of the course is described as "groupworks" sometimes in the interview. This is to make sure, that the interviewees clearly understand the context of the question and can correctly place the question in the timeline of the course. From here on onwards, the interview questions and the answers from the interviews are summarized.

5.3 Question analysis

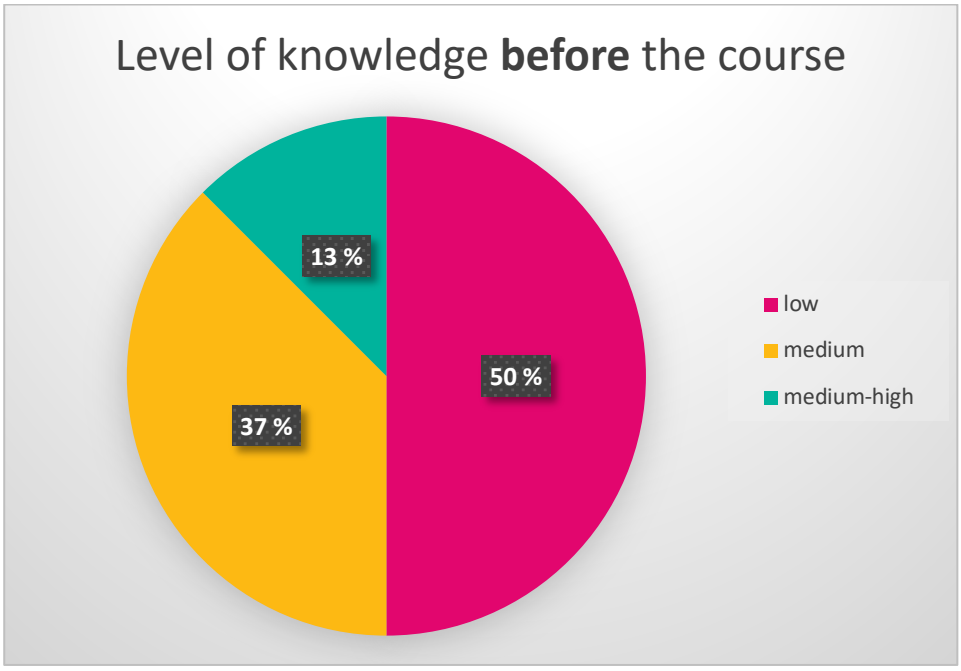
Q1 – How would you evaluate your knowledge in the course contents and your skills in this area before the course began?

The answers for this question can be categorized to three levels. They are low, medium, and medium high. Four (4) out of all the interviewees felt, that their level of knowledge in the course contents before the course was at level low. This meant, that their answers consisted of words like "poor", "one (out of five)", and "small, medium level". One person also commented that they "didn't know a lot, honestly". This category consists of 50% of all answers, which makes it the biggest answer group for this question.

The second category of answers are in the level of medium. Their answers emphasized on having some knowledge, but also left room for improvement. Words used to describe their knowledge were “five (out of ten)” and “three out of five”. This clearly demonstrates that they felt like being in the mediocre section when it comes to their knowledge. This category consisted of three (3) answers in total, which makes up for around 37% of the answers. This is the second largest answer group.

Only one person felt that their level of knowledge was around medium high. They described their level to be “quite good”. This indicates that their confidence was good before the course began, but also leaves some room for improvement. This answer group formed the last 13% of the answers. All of these categories are visually demonstrated below.

Table 1 - Knowledge before the course



These answers give the research a baseline to follow, when determining the student’s learning curve. Here it is important to notice, that majority of the students felt that their knowledge before the course was lor or medium. This shows the effects of the following methods clearly, which means that the research question regarding gamifications effect on student’s performance can be answered through this analysis.

Q2 – How would you evaluate your knowledge in the course contents and your skills in this area after the theoretical lectures given by the teacher?

Here every one of the interviewees reported improvement in their level of knowledge, compared to the answers given to the Q1. The level of improvement varied a lot, from “a little bit” to more drastic changes in the knowledge of the course contents. Here the answers can be categorized to small, medium, and high improvements.

Three (3) out of all the interviewees experienced a small change in their level of knowledge after the theoretical section of the course. They described their level to have improved by “a little”. Most notably, there was not a big drastic change in the level reported, when comparing it with their previous Q1 answer. As an example, a person describing their knowledge as “three (out of five)” in Q1, reported a level of “maybe 3,5 or 3,75, out of 5.”. This shows that some, small improvements were made. This group consists of 37,5% of all answers.

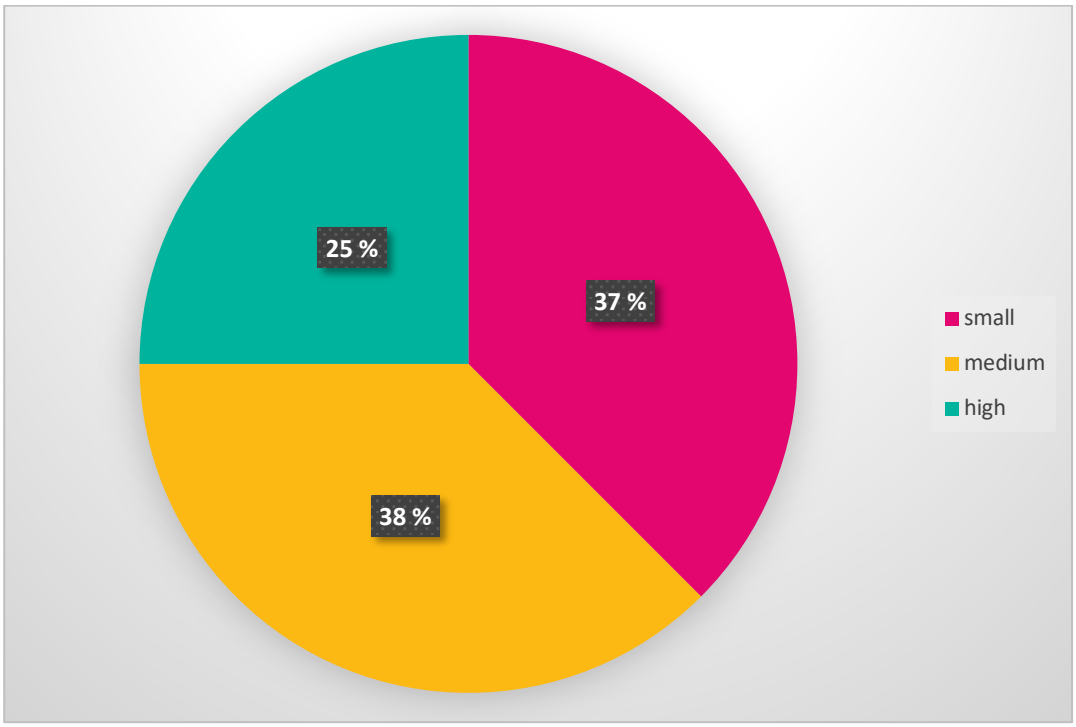
There were also people reporting medium-level changes in their learning. Three (3) of the interviewees reported changes that represent a notable change. For example, “poor” changed to “mediocre” and “I didn’t know a lot” changed into “I know much more”. In numbers, this was also described moving from five to seven out of ten. One person specified, that they “learned many things, but - didn’t get (inaudible) all the theoretical knowledge.” These indicate that the interviewees had experienced reasonable level of change in their learning. This answer group consist of another 37,5% of all answers.

Two (2) of the interviewees reported high improvements in their level of knowledge compared to the Q1. These were clearly bigger improvements, numerically going from one all the way to four out of five. They also reported understanding “everything”. This group makes up for the remaining 25% of all answers.

Some interviewees were also asked to specify clearly, if this section of the course improved their knowledge, compared to their knowledge before. All these questions got a positive “yes”. Two people also said that they have mastered or maximized their level of knowledge at this point of

the course. All in all, everyone reported gaining knowledge from this section of the course. 62,5% reported medium or high improvements in their learning.

Table 2 - Changes in knowledge after lectures



The end results of this question can be seen from the chart above. This section was important to research, as it can now be compared to the Q3 answers and results. For this study, it is important to know, whether the traditional theoretical lectures are better or worse method of teaching compared to the gamificated methods. From this analysis it is confirmed, that all of the students benefitted from the theoretical part of the course, which indicates that keeping this method in courses is important.

Q3 – How would you evaluate your knowledge in the course contents and your skills in this area after applying the theoretical aspects in more active way?

All the answers for this question suggest, that the later, more gamificated part of the course helped them to apply their skills and knowledge to enhance their learning in the course. Some concrete examples are stated in numbers – “seven (out of ten)” turned into “I would say eight (out

of ten)" and "3.5 or 3.75 out of five" now reported "4.25". This shows a clear numerical raise in the learning of the students.

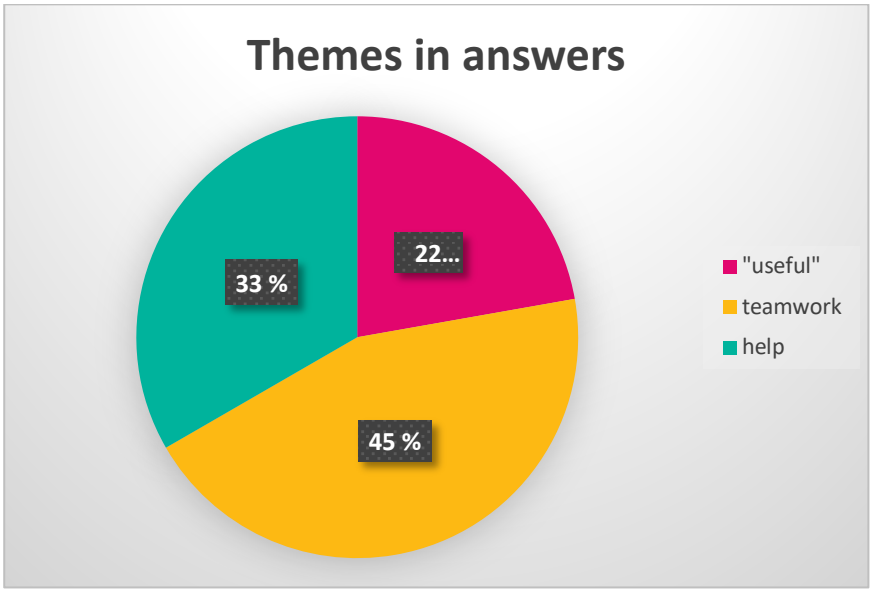
Many simply used the word "better" to express their learning in this section of the course. "Definitely better" and "even better" were some of the expressions taken from interviews. What is interesting, is that even the interviewees stating that they had either "mastered" the course contents or reported full points in the previous question stated that they had gained valuable knowledge from this section of the course. This would suggest that even students who can learn all the needed details of the course by sitting in theoretical lectures, can still learn more by applying gamification into their learning experience. The most important factor is, that the students themselves felt that this part was useful for them.

At this point of the interviews, some comments were already made about the second method in this course. Some interviewees simply stated the method to have been "quite good" or "nice" experience for them. Others already commented on why the method was working for them. They said it to have been "more practical" and "more visual", but also underlined the importance of helping each other throughout the tasks. One person also declared it to have helped them "understand the process more". These added comments show that the students were willing to comment positive feedback on this part of the course without asking about it. This could be a sign, that the students felt the need to either back up their claims of learning more, or that they just felt very positive about the method itself. However, all the comments were positive, and all the students felt that they had gained even more knowledge during this period.

Q4 – How did you perceive the later teaching method of the course / Was this teaching method useful or wasteful?

The answers to this question can be share into three themes. There were two (2) mentions of the method being "useful" for the interviewee, four (4) mentions of the methods teamwork-aspect and three (3) mentions of the help that was available for the students in this section. This creates the chart demonstrated below.

Table 3 - Distribution of the answers



Two very interesting themes rose from this question. The students were mentioning teamwork and help very often – teamwork being the biggest theme of the answers by 45%. The students really enjoyed the possibility to work together and help each other in their tasks. It was said to help them learn and to improve the experience. This is also a huge factor in many other gamificated settings. As stated in the theoretical literature review, being able to share their experience or solve a problem together with a classmate can improve the engagement and highly motivate students to learn. This was clearly one of the biggest influencers in this class as well.

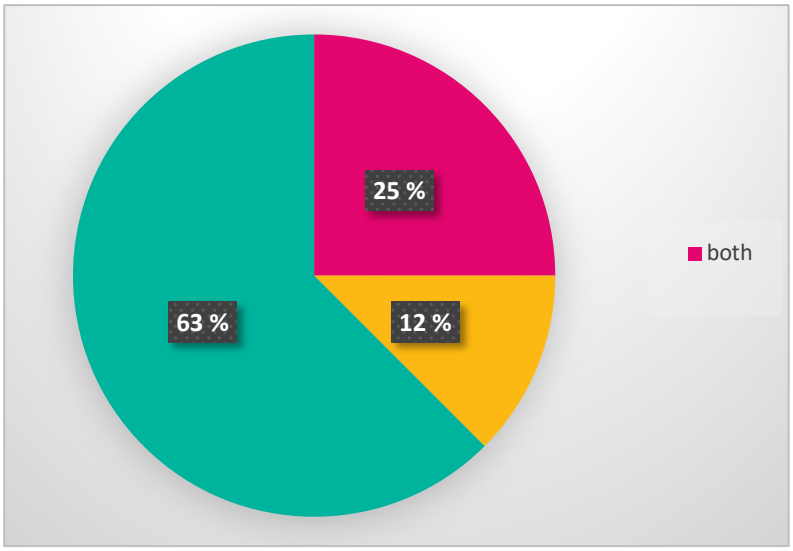
Another theme, emerging in 33% of the answers was about the available help. The students stated that it was really helpful to have the teacher “answer our questions if we had some”. One interviewee used an example of not finding data during their task. After being faced with this problem, he continued to explain how the teacher was there to help them and push them forward with their goal. This can also be connected with another important gamification method: instant feedback. As stated in the theoretical literature review, positive feedback can enhance faster progress rates than expected. If the teacher is able to give out suggestions and feedback immediately, the students are more likely to keep their interest in the current task and progress at faster rates. This was reported to have been the experience for many students.

As final comments, some interviewees also stated this to have been the “best part of the course” and commented on how good method it was for them to learn. Overall, the feedback on this method was positive and shows a clear importance of it in the course design. More interestingly, it was said to “complement” the theoretical method of this course. This suggests that these methods are both needed to complete the whole course. After this comment, some students were also asked if they feel like these methods could have been used on their own – without the support of either one. The answers suggest that it could be possible, but in their opinion the synergy of these two methods will give better results. Thus, using the methods on their own would not be as effective. All in all, the students enjoyed this method of learning and gave reasonable arguments for it.

Q5 – What teaching methods did you benefit the most from, regarding your

a) learning abilities

Table 4 - Distribution of methods concerning learning



As the graph made of the results above show, most of the students reported the practical, gamified method to have been more beneficial for them, regarding their learning. The students choosing this method mentioned, that they prefer to practice the learning materials themselves. One person also emphasized on getting immediate feedback and being able to further hone the skills that you are still lacking in. These support the idea of the gamified method being more personal and beneficial to learning for most students.

One in four also reported to have benefitted from both methods equally. They emphasized on learning by both listening to theoretical information and then applying this theory to practical examples. To them, theory is thus also an important part of the learning and enabler which helps to apply their knowledge later. One of the answers also mentioned, that they usually prefer mostly theoretical lectures, but they did enjoy the later method as well. This might be due to liking the teachers' style, but other factors, such as culture and learnt habits can also have effects here.

One of the students found the theoretical method to be more beneficial for them, regarding their learning. They enjoy reading the course materials and learning on their own. For them, the classic theoretical lecture is the best learning option, as they can fully focus on the taught information and research the topics themselves. They might need to do some of the tasks as well, but rather not in the group settings. As that was the only option in the gamificated method, their learning was not as easy there.

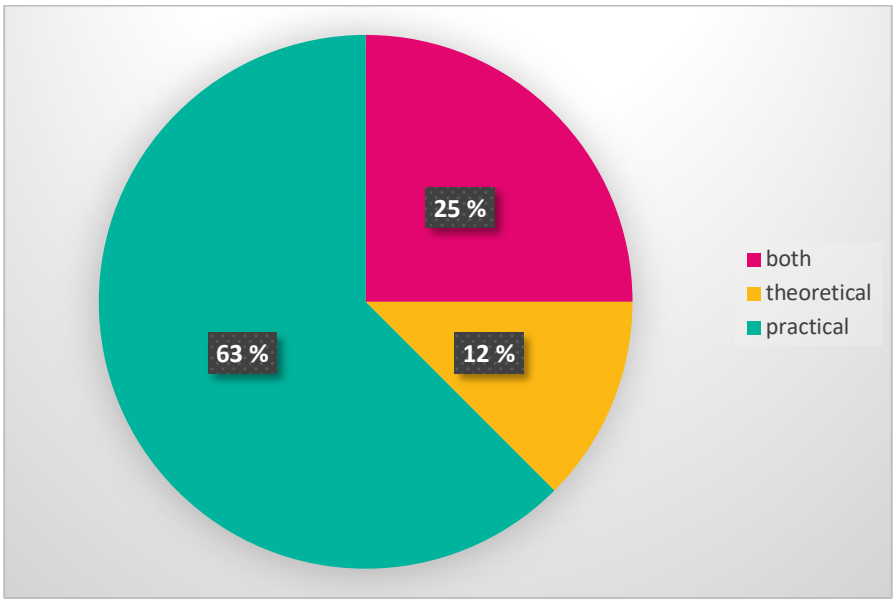
What is interesting here, is that these answers also correlate with the answers given to Q2 and Q3. After the theoretical lectures, only 25% of the students reported high levels of learning. This correlates with the 25 – 37% (people who answered theoretical and/or both for the Q5a) of the answers stating that they benefitted most from the theoretical lectures. What is more, is that all the students reported that they still learnt more about the topics during the second method. These discoveries indicate that they were correlating with the other answers, thus giving the results more proof behind them.

b) engagement?

The results for this question are really interesting. They clearly indicate that students clearly learn the best when using a method that engages them best way possible. This is one of the important themes in gamifying education or other areas. As stated in the theoretical literature review, introducing gamificated elements to school environment raises the positive attitudes towards

studying and makes the learning experience more fun for the student. This in turn encourages students to keep up with the learning. These findings support that theory.

Table 5 - Distribution of methods concerning engagement



Above is a graph made of the answers of students. The numbers match with the numbers on the Q5a exactly. This is likely due to the fact, that students generally either learn, or at least feel like they learn more with methods that are more engaging for them. The theory found in this research heavily supports this finding, and other way around.

As an example, the student reporting to have enjoyed and learned most through the theoretical method backed up their experience with specific differences. They enjoyed the possibilities given in the theoretical lectures and utilized the tools and sources more effectively during that time. They enjoyed the method; thus, they had more motivation and engagement to learn and study the materials. This learnt to better learning experience and better outcomes as well.

As already established with the Q5a, these answers correlate with the answers given in Q2 and Q3 as well. This further explains why their learning experience was differentiating individually. One or the other method seems not to be most beneficial for all, rather they need to be adjusted to individual needs. This is something important to consider in the future when designing learning material.

Q6 – Was there anything negative about the teaching methods regarding your learning abilities or engagement?

Four (4) of the eight (8) participants in this study reported something they did not like about these teaching methods. This makes up for the 50% of the people. Some other answers also commented on the used methods, but with rather curiosity than criticizing. These made up for 13% of the answers. One person, also making 13% of the answers, emphasized how the methods together were beneficial for them and had nothing negative to say. The rest of the interviewees simply stated "no".

One of the answers was clearly more focused on the theoretical method than others. The student reported on having difficulties during the theoretical lectures because the environment was not suitable. This was due to noise pollution and outside stimulus created by other students in the classroom. This distracted them from the topics itself, which made their learning process more difficult. They concluded, that "it just took so much away, because I know that (the teacher) is a really great teacher." Maybe this is one of the challenges faced in creating good environments and possibilities for students to learn with theoretical methods.

Other criticism retrieved was either directed at the gamified method or a general mention. Students wished to have more precise and consistent materials when doing their tasks and completing their goals in the latter method. They also would have wished to have more examples of how to do accomplish their goal. To challenge this critic, as mentioned in the theoretical literature review, having challenges and quests embedded in the learning environment supports the sense of adventure as well as activates more critical thinking behavior in the students. These encourage better learning outcomes and engages the student to their studies. However, it is important to make them still clearly reachable and not too difficult, as this might demotivate the student. In this case, overcoming the uncertainty and trusting their own sense of direction would create more satisfaction in the end. This was likely the reason for not having specific examples of the outcome.

One of the answers was more generally directed to pointing out differences. The student had noticed how different the lecturing and teaching style was compared to their home schools'. As an example, they stated that in their school they "don't really do exercises in, during the lessons or

don't really, um, ask some questions". This is interesting because it shows that the cultural differences also shape the learning experience. In the end, the student cleared that they adapted to the new method and were able to learn despite the difference. However, it might take additional strengths to first adapt to new methods, while already being pushed new information. This tires out the students coming from different educational cultures faster, which might affect their learning progress.

Q7 – Do you have anything to add?

This question got three different kinds of answers. One person wanted to emphasize on the ethnic background of the teacher as something positive. They stated, that having a teacher from another cultural background as opposed to themselves, gave the topics new perspective. They justified their thoughts by continuing, that "it's like international finance, and he's an international teacher, it's good because we have like overview, ehh, all the business and financial management into the entire world". This is yet another factor contributing to the success of the students. Maybe not a big one, but still, it can influence the variety of perspectives the students adapt from the courses.

Couple of the students also wanted to emphasize on how much they enjoyed the course. They "learnt a lot" and felt like the classroom was always a "safe space" for the students to ask questions. This created an environment where the students and the teacher have a good connection, which directly also influence the student's motivation and outcomes from the course.

One big theme discussed after this question was the methods overall and the student's feeling about those. Three (3) of the students mentioned how important having both types of methods (theoretical and practical/gamified) in a course like this is to learn. Getting some specific reasons for this would have been good, but in this research those were not asked for. Thus, it can be just stated, that the students feel the need to have the theoretical as well as more engaging and gamified method of teaching in courses. This correlates with the Q2 and Q3 answers, as all the students were gaining new information and skills throughout the course, never mind the method.

5.4 Diversity & reliability

This section goes over the reliability of the study outcomes concerning the resources, outcomes, and analysis. First, the diversity and the generalizability of the data is explored, which leads to the reliability of the study. Here, everything regarding the data variability, reach and general reliability is measured.

Result diversity

The diversity of the study group is sufficient. Among the students, were people from five (5) different countries – Finland, France, Russia, Spain, and Ukraine. This brings the study perspective of five different cultures and backgrounds, which makes the result easier to generalize.

The study also included students from both sexes of females and males. To be exact, 38% of the students were males and 62% of them were females. This way both perspectives and study styles of women and men are accounted for in the study. This ensures better possibilities of generalization for the study in terms of the differences between genders.

The only portion where the study is lacking in diversity is the age distribution. All but one of the students reported to be aged 20 to 25. Only one person was around the age of 15 to 20. This gives the study the age distribution from 15 to 25. Generally, people around that age are the ones starting in colleges and universities. However, Haapamäki (2018) reported, that the age of people starting in Universities in Finland is around 25 – 29 years old. This would suggest that the people researched in this study do not represent the whole group of university level students according to their age.

Result reliability

Going into the reliability of the study, the number of participants is ought to be discussed first. The studied group consisted only of one specific course, taking place in the spring of 2023 in Jyväskylä University of Applied Sciences. This brought down the number of available students to 26. This was the amount of people that had enrolled to the course and started the classes in the early

spring. At the end of the course, 23 people successfully completed the course and were rewarded with the credits. To this study, eight (8) students in total were interviewed. This makes up for 31% of all the people in the course. However, there is a high chance that the study only consisted of people passing the course, as the chances of interviewing the student who did not pass is only 11.6% (23 : 26 = 88,4. 100 – 88,4 = 11,6). In this case, the study consisted of 35% of the students in all the available data. This amount of data can be used in a qualitative study to do a general conclusion and it can be used to form generalizations.

Other aspects of the reliability of study also need to be considered. As Noble & Smith (2015) introduced, the biggest challenges in qualitative studies are measuring and minimizing personal bias, finding similarities and differences to include all perspectives, including specific descriptions and direct quotes to support the findings, using respondents' validation for the interview transcript, and keeping records of all the actions and demonstrating transparency and consistency in findings.

Many of the challenges were completed and minimized to ensure best reliability. The personal bias of the researcher accounts for the general interest in the topic. However, as the researcher was not involved in the course themselves or did not benefit from the students' successes or failures during the course, the effects of personal bias are likely minimal. Including all perspectives in the study was completed with broad variety of answers from different backgrounds and cultures as well as including students who did not agree with the hypothesis of the study and including the voice of those, who had participated and failed the course previously. In addition, many direct quotes from the respondents were used to clearly show the origins of the analysis and the direct connection or difference in the results. These were just some of the things completed to ensure the reliability of the study.

As one of the methods used in the study is relying in perceived learning, the subjectivity of the answers needs to be analyzed. The students were asked to reflect on their learning during the different sections on the course. Many forces can shape those answers; memory, self-reflection skills, confidence, current emotional state, perception of personal skills and more. These forces can tilt the answers to either better or worse direction, depending on the state of the participant. For this reason, it is important to know that the outcomes might be different every day. However, as previously mentioned, the level of correlation in student evaluations of teaching and perceived learning

has been studied to be .76. This means that the results can still yield a strong indication of the actual learning results. Thus, these results can be used as an indicator of what the actual learning experience and outcomes were.

6 Conclusions

This section concludes the results of this thesis and reveal the overall answers to the research questions. All the data from the Results & Analysis -section is used to make a conclusion and answer the research questions. In addition, research problems and future research needs are discussed.

1. How is gamification used in the developing and implementing Financial Management courses?

The Financial Marketing course uses multiple methods of gamification to ensure more engagement and motivation to the students. One practical example is the use of a progress tracker, like the one pictured in Figure 5. This was predicted to be part of the answer in the hypothesis of the research.

Another important part of the gamificated methods was the use of sociality. The students were practicing learnt topics with tasks including teamwork and the use of common target. The use of social aspects was also predicted to be part of the answer in the hypothesis. The social aspects were used together with theoretical lectures.

Students were also faced with obstacles that incentivize use of critical thinking, or “barriers”. These were in form of difficult tasks that demanded creativity, researching, and making decisions. The possibility to include these barriers in the course was mentioned in the hypothesis but recalled as “difficult” to implement. However, the teacher had been able to include these naturally.

During the interviews, the students were focused on the sociality and the immediate feedback -aspects of the gamification. These were the most noticeable and enjoyed features in the course. This can be observed in the answers of Q4.

2. How gamification affected the results of the students in the course?

a) results before gamification

The study researched the level of knowledge and skills of the students before the gamification in the course. Due to the design of the questions used in the interviews, there is no direct answer to this question. However, some things could be analyzed. All the students reported to have learnt during the theoretical section of the course, which was before the gamification. The results show, that 50% of the students had little to now knowledge of the course contents before the course began, 37% had some knowledge and 13% were already familiar with many of the course concepts and skills. After the theoretical lectures, 37% reported to have learnt a little, 38% had reported to learn some or many things and the rest reported to have improved a lot.

Some people also used scales from 1 to 5 to describe their progress in learning. To the question of their learning after the theoretical lectures, one answered with 3,5 to 3,75 and another with 4. These suggest, that their knowledge is on medium to high level.

These findings suggest that many of the students had mostly small to low level of knowledge of the course contents before the gamification, whereas only few reported medium to high level of knowledge. However, the hypothesis suggested that the level of learning would be “sufficient” for all students. Thus, the answer is different from the hypothesis. In addition, only 12% of the students reported to have benefitted more of the theoretical section in the course.

b) results after gamification

The results of the students did all improve after the gamificated, more active part of the course, as predicted in the hypothesis. However, the results did not improve drastically. In terms of numbers, the results changed from seven out of ten into eight out of ten. This is only one tenth of a difference. In addition, many students used words such as “better” or “definitely better”, which are not accurate measures to show how much improvement there was. Thus, it can be challenging to define the exact level of learning.

When asked which method suited the students best, 63% of them communicated to have learned more during the practical, gamificated parts. In addition, 25% of the students reported to have benefitted equally from both methods. This means, that majority of the students felt as if they benefitted the most from the gamificated sections. All in all, the students' results were higher than average after the gamificated section. However, because this is all measured with perceived learning, it is difficult to say if it enabled better learning outcomes for the students.

c) perception and other comments

The students perceived the gamificated method positively. Very strong themes coming up in the interviews were the ability to socialize and solve problems together, having the help of the teacher and others available and the whole method being useful for the students. These all affected the students' motivation and engagement and made the experience enjoyable. What's more, is that the students preferred the gamificated method over the theoretical lectures. These are correlating with the hypothesis as well.

However, there were also some negative moments and experiences for the students. Answers mentioned having high barriers, problems with precise materials and getting used to the new way of teaching. These problems can be fixed with precision and carefully balancing the difficulty with the expectations of the students. In addition, the students will get more comfortable with the method as they get familiar with it over time.

Lastly, the students wanted to specify how important creating a "safe space" to ask questions and a good connection with the teacher was. This was a big part of creating successful learning experience. In addition, the students feel that there is still a need for both theoretical and gamificated methods. According to one student, these methods "complement" each other.

6.1 Problems

There are some problems when it comes to introducing gamification to educational settings. Alsawaier (2018), mentions differences in environments, topics, teachers' characteristics, and implementation styles as some. As seen in this study, these can truly shape the learning experience for the student. As an example, all the students found the teacher to be easy to follow, exciting and

generally approachable. They felt that the teacher had been able to create a comfortable and open space for the students to ask questions. This affected the perception of the students for the better. Vice versa, it could affect the outcome negatively. This makes it harder to define whether the results are due to the good gamification methods or if the environment or the topics itself are to thank for.

In addition, differences in the characteristics of the students, their prior experience with gamificated settings and readiness to engage with gamified elements influence the results (Alsawaier, 2018). As an example, one student mentioned that they had to adapt to completely new learning method when starting this course. This can create unintentional barriers for individuals with different backgrounds, thus harming their experience and lowering their ability to learn as much as their peers. These can result in varying outcomes when introducing this method to different groups.

Another important aspect of building working gamificated methods is the design. Herger & Kumar (2013), mention, that despite having huge potential, many gamified applications will fail due to bad design. This also shows up in this study. One person had trouble succeeding in the gamificated sections, as they felt that they were faced with too high barriers. This can be due to design flaws and makes the efforts of the student highly unmotivating. Thus, paying attention to individual experiences and perfecting the design is important for the gamified elements to thrive.

Some other problems that have been studied to come up in gamifying environments are unmotivating the students with too many extrinsic incentives (Dale, 2014) and having little to no support in gamifying the courses as a teacher (Sobocinski, 2017). However, these were not encountered or measured in this study. All in all, there are huge number of factors contributing to educational progress and success, especially when adding gamification. Thus, it can be difficult to track all the different ones and the effects of those to the outcomes. This makes studying students' results less reliable when going into specifics.

There were also some more specific problems faced during this study. Due to timing issues, the interviews had to be short, which means those were recorded and then transcribed. For this reason, some of the comments were left out of the study results, as the recordings were not completely clear and there was no time to go into more specific details with each student. With

broader timeline and more willing participants, the results could have been more specific and give out more information on the individual experiences.

Another problem was faced after the interviews were done, as it became clear, is that the interview questions were formed deficiently. Thus, they did not provide good answers for all the research questions in the end. This problem can be solved with better design of the interviews and by possible specifically addressing the research questions in the interview. As an example, there was no clear measurement method to measure the learning of the students. As a result, some answered with numbers, whereas some used descriptive words. This makes analyzing and comparisons a lot harder in the end.

6.2 Future study proposals

There are some good directions to go in the future research of this area. As many studies have been done to specific educational settings, researching it in a bigger context could be beneficial. As an example, studying the results and the effects of gamification in schoolwide research. There are some applications of gamification in Jyväskylä University of Applied Sciences as well, which could be studied.

In order to do such research, better look into the gamified elements in courses should be administered. Defining the successful and unsuccessful methods of integrating gamification in educational settings might lower the bar for other schools and educational centers to try them out. This in turn creates more results of the effects and can be used for future development.

Difference between each gamification method and their direct effects could also be studied. As this study only revealed few different methods, comparisons between those methods and their effects specifically in these settings was not considered. To make sure, that the used methods match the environment and the topic, more research needs to be done for this area.

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Appendices

Appendix 1. Interview Questions

1. How would you evaluate your knowledge in the course contents and your skills in this area before the course began?

   (Rating 1-10, words, feelings)

2. How would you evaluate your knowledge in the course contents and your skills in this area after the theoretical lectures given by (the teacher)?

   (Rating 1-10, words, feelings, comparison to the last one)

3. How would you evaluate your knowledge in the course contents and your skills in this area after applying the theoretical aspects in more active way?

   (Rating 1-10, words, feelings, comparison to the last one)

4. How did you perceive the later teaching method of the course / Was this teaching method useful or wasteful?

5. What teaching methods did you benefit the most from, regarding your

   c) learning abilities and

   d) engagement?

6. Was there anything negative about the teaching methods regarding your

   a) learning abilities

   b) engagement?

7. Is there anything else you want to add regarding the courses teaching methods?

Appendix 2. Cover Letter

Safety measures and data collection

This paper is used to go over important safety measures and data collection information with the interviewed subject before the interview. This is to ensure a safe environment for the interview and to maintain transparency with the said subject. Only after this document is read by both parties, the interview can begin.

Understanding

The student understands the reason for this interview.

> *Reason: Conducting interviews for the thesis regarding gamification and its use on financial management -course in JAMK.*

Consent

The student has agreed to take part on this interview on their own.

The student has given consent to the interviewee to record their voice for the better analysis of the results.

The student has given consent to recording knowledge of their home country, gender, as well as estimate age (15-19, 20-24, 25-29, 30-34, 35-40) for the purpose of statistics in this thesis.

Rights

The student's identifications, such as name or specific age will not be documented in this thesis to protect their identity.

The student has the right to end the interview at any time.

The student has agreed to answer the interview questions truthfully and with the most accuracy possible.