UiA University of Agder

Master

Distributed Online Course in Game Modification

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Acknowledgements

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At every point throughout the process I have encounter problems and difficulties between myself and what is expected of a masters project. I believe that this project that I deliver is flawed and considered somewhat thin, I am still personally satisfied with my efforts, despite all the different challenges throughout.

Abstract

This thesis consists of the production of a distributed online course hosted on Discord, the communication platform that is about game modification skills, and tests this course against a similar course about the same subject matter for a different game hosted on Skillshare, an online course platform. The rationale for the research is to attempt to understand how these two different online game modification courses affect the perceived learning experience. The research used an quantitative approach with a test of a quasi-experimental research design. Two groups consisting of 5 people each participated in a pre-test and two post-test surveys to measure their satisfaction toward different categories of course design with 1-5 likert-scale, and open ended questions. Category examples are: course structure, learning materials and additional resources. The testing and analysis found that each group was more positive toward the Skillshare course, and one group had a tendency to answer positive of the Discord course. There is small or weak indications that a greater perceived learning experience toward the Skillshare course due to the quality of the different aspects of the course design.

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Chapter 1

Introduction

1.1 Introduction

Modifying or creating modifications is an activity that is spread throughout a variety of different contexts, for example: Household appliances, vehicles, personal computers, and video games. Making a "mod" (short for modification) or "modding" (the act of modifying) is a popular way to change things to ones needs or desires. Some modifications drastically change the way something may function.

For video games, modding has existed for as long as the medium of video games, and popular modifications have often become new video games on account of the changes that have been made to them. However, there is little information available for people interested in creating modifications for different video games. Often, knowledge of the topics of the different modding professions, like programming, texturing and modeling are relegated to people which have had some experience with creating proper video games already. Programming, texturing and modeling would change a games code, images/graphics and objects respectively. These are not the only kinds of changes one can make to a game, but are just an example of what someone can do. These skills can also be applied to similar contexts. A "modder" (someone who does modding) can be multidisciplinary, and many skills and concepts are game-agnostic, and could work for other games with either similar designs or a similar game engine, which is what platform the game is built off of. One method that people use to learn about these skills and concepts is to get help through Discord, the communication platform.

On Discord one can join community "servers" and interact and chat with different people who are a member of the same "server". These servers can be dedicated to many topics, and there are also modding or game modification servers. Specifically, for the video game series "S.t.a.l.k.e.r" or "Stalker" there is an official server created and maintained by the game publishers and developers dedicated to the series where users can chat about the series and subsequently, discuss modding. In addition, there are also fan game mods for the different entries of the game series. When people are interested in either playing these mods, or interested in creating ones own mods, people ask for assistance in these servers. Since the game series developer and publisher is Ukrainian, many of the games fans are of Slavic descent. This means that many of the people who have become modders for "Stalker" speak Russian or Ukrainian. This means there are less learning resources available in English, and many users need to communicate and learn via Discord servers.

There are many people who are interested in learning these skills, since they have experience with the game and actively use modifications in their game. If there were more learning resources available for people to learn about game modification skills and concepts, what factors would affect how learners create modifications and how satisfied would they be learning experience? If a course or learning resource is created and hosted through a Discord

server would that be beneficial to learner satisfaction? What would the benefits and downsides? For course designers or people working with creating learning materials it is valuable to understand how the design of different elements of a course and how learning theories change the design and impact the learning experience.

1.2 Background

The project revolves around creating an online course on the Discord communication platform. Other platforms for the course were looked into, however Discord was decided during the planning phase as a recommendation from modders who are active in the "Stalker: Anomaly" modding community. The course includes modules, tasks, and different learning materials like written instructions, community curated resources and course curriculum based on those resources in addition to a Discord Bot that acts as a helper. Specifically, the research would involve testing two similar groups that both experience two similar modding related learning resources or courses. These groups consisted of young adults/adults who showed some interest into learning game modification skills.

This project intended to get a closer look toward the interplay between learning game modification skills, using Discord as the learning platform, and how this interplay affects the percieved learning experience. Research has been on game modifications, and using Discord as a platform for learning. One article uses Discord as an educational platform for two study programs during the Covid-19 pandemic, which also uses a Discord Bot that assists with many different use cases like; Attendance Tracking, Online Classes, Homework Assignments and taking exams (Vladoiu, M., & Constantinescu, Z. (2020)). In addition, another article attempts at replicating a classroom environment using Discord (Wiles, & Simmons, (2022)). However, there is a lack of research specifically examining the use of Discord as a course platform for students to learn about game modification skills. The motivation behind the Discord course is to address the lack of available resources for people to gain the necessary modding skills.

Early in the design process of what the course would be some questions were asked towards people with a high degree of experience with modding the same game. The rationale of doing this was that this audience would be likely to create a similar resource and be able to provide important feedback to consider creating a learning resource in the context of game modifications. Permission was asked for and once approved; a Google Forms survey was made with five questions in total and published in a specific discord server for modifying Stalker: Anomaly. The questions cover different considerations for the course design:

- "How valuable to the stalker community do you think a course dedicated toward modding skills would be?"
- "If the course were to be made, which aspect of modding would it cover? (Every answer would include the entire workflow, from nothing to having it working in game)"
- "If you were to participate in the course about modding, what are some things/topics/tips you would expect to be a part of it?"
- "What platform would you expect/want a modding course to be hosted on?"
- "Anything I haven't thought about that I should? (Optional)"

These questions served to answer several questions about a potential modding course, and helped to further the initial motivations of creating a course, what topics it should cover, what methods it should use and where it should be hosted on. This was ultimately why

Discord was the chosen platform for the course. After this point, the development of the server had begun. In addition, Unity Learn was another source of inspiration for different design decisions during development of the course.

1.3 Theoretical Background

The section of the chapter covers the theoretical background of the research which was done during the early phases of the thesis. The theoretical background covers the literature influenced and inspired the topic and subject matter of this thesis. The theoretical background is thematic and will cover the different relevant themes of the research.

Introduction

The lack of proper learning resources available to the stalker modding community prompted some thought into how a course or learning resource could be made for that context. Many young adults learn modding skills individually via Discord communities dedicated to the game series or for specific/popular game modifications for the game series. This review examines different research done with game modification and learning, and using discord as a learning environment or platform.

Theme 1 - Game Modifications in Research and Learning

Research done on the phenomenon and topic of video game modifications has been done since the early 2000's. This research has been dedicated toward many different viewpoints and subtopics. One study explores the usage of game modification to help develop computational thinking skills by using a digital tool that allows for game creation and modification. This study found including the process of game modification when using the digital tool, had a beneficial effect toward learning computational thinking skills, and acted as scaffolding (Grizioti & Kynigos, (2018)). Another article examines how past historical events are represented in video games through game modifications, and how modders are motivated to create these modifications for the game "Mount and Blade". This study examines different modifications that represent different times and places in history that are relatively unrepresented in terms of contexts in the games industry. The study concludes that modders can be motivated through 7 different categories of motivation, that range from identity/historical representation to artistic expression and co-operation (Weeke, C. (2020)). Yet another article covers game modification, but uses it as a means to teach, specifically computer science skills. The study goes to mention the "Constructionist" approach inspired by constructivist theories, and how the constructionist approach aligns with how students design and modify games in an educational context. The article concluded that using game modding motivated students and helped them learn the concepts of computer science (El-Nasr & Smith, (2006)). There is much more research related to how to use the concepts of game modification or broader modification to enhance different aspects of the learning experience, but not much toward the ideal settings for people to learn modding skills. Likewise, there is little research toward fully fledged courses dedicated to the skills needed to become a modder.

Theme 2 - Experiments with Discord

There have been many attempts at using Discord in the context of education, and these were important in terms of motivation and inspiration of how Discord can be used for learning. Using Discord as an online education community for formal and informal learning is one key example. This article sees the usage of Discord as more of a learning management system (LMS) or educational platform rather than just to facilitate a course. This platform was to support students in both bachelor and masters level, and the platform facilitated many

aspects like communication, online classes and the usage of a custom Discord bot to notify and evaluate homework. The article concludes that the system helped during the Covid-19 period and was overall beneficial, however that more work was needed in terms of evaluation of such a system (Vladoiu, M., & Constantinescu, Z. (2020)). In addition to this article, another also uses Discord to address problems brought by the Covid-19 pandemic. Instead of a platform, this article set out to create an "active learning community" by using Discord. Discord was used to facilitate synchronous online classes and hybrid classes which relied on group work. The article concluded that other platforms with a similar nature could not achieve the same things that Discord could do all at once, and that Discord could supply an environment that was most similar to a classroom Wiles, & Simmons, (2022).

Background Conclusion

While research has been done toward both the phenomenon of game modifications and using game modifications in learning, it is clear that there is little research toward how to teach the skills of game modification itself. In addition, there is little research done that aims to understand course designs that facilitate teaching this topic and skills. In comparison to Discord, where there is plenty of research related to applying the communication platform to several different teaching contexts. Many modders use this platform for communication, leisure and to get help with their skills, so there is a clear sign that some research can be done within the space of teaching game modification skills on Discord.

1.4 Problem Statement

The overall aim of this research is to explore what aspects of an online course hosted on the chatting platform Discord affects the perceived learning experience. The course focuses on teaching game modification skills for "Stalker: Anomaly" specifically. The thesis intends to use different learning theories used in the design of the course on Discord paired against a modding related learning resource on a different platform to assess how learners perceived their learning experience to each resource. Studying the potential of learning material on Discord outside of a Covid-19 context and how learners feel about that experience could help understand how or why Discord or similar applications could complement educational material or yield valuable criticism of online courses and the subsequent learning theories used in the design. Quantitative methods will be used during the research. The research is related to the perceived learning experience of users when they use the different learning resources.

Specifically, the research will compare two similar online courses that are about game modification skills for different games. Doing this may help to answer what factors play into improving the learning experience. In addition to comparing the learning experience between these groups, the intention is to also examine how these groups are satisfied with the different aspects of each course. The rationale for the examination is to figure out how learners interact with such a resource, and whether it will positively affect their the learning experience. Furthermore, would the Discord bot be perceived as a knowledgeable other? This research may also lead to the identification of different design problems based on the testing feedback of each group and each resource. This could lead to design choices teachers can make in their course designs to improve satisfaction. Prior research shows that Discord can be a benefit when developed thoroughly as a learning environment or facilitation tool. Based on the following reasons and goal of the research, the following problem statement was drafted for this research:

"For Young adults, does the use of Discord provide a greater perceived learning experience in comparison to a similar platform?"

1.4.1 Research Questions

The study intends to answer the following research questions based on the problem statement:

- RQ1 - Which aspects of the online courses seem to be preferred?
- RQ2 - What are the major differences between the two platforms and implementations?

1.5 Limitations

Limitations in terms of the project are related to the Discord course length and amount of content. Because of the time constraints the course was cut from the originally planned 4 modules covering the entirety of the workflow of "porting" a weapon model. This workflow consisted of what tools are necessary and how to use them, model manipulation, texturing, config settings, and implementation into the game with assignments, and evaluations. In addition, the Discord bot developed for the project also was limited in terms of the main functionality. Originally the bot would have several other commands to better achieve the role as a course assistant. For example: Answering simple questions when prompted, and reminding students about evaluation deadlines.
Limitations were also put on the type and amount of data intended to be collected for the thesis. The focus of the thesis is towards the usage of the different learning theories in the design of the Discord course. Furthermore, due to the time constraints, the research population was limited to aspiring game modders with little or no prior knowledge or experience with making game modifications.

1.6 Structure

This thesis is covered in seven chapters. The introduction establishes the nature of the research. Furthermore the background and theoretical background are presented before the problem statement and research questions are presented. At the end of the introduction there are limitations which are mentioned to center the scope of the research. The second chapter is about the development of the Discord course on game modification, what the components are and some insight into how these components were developed. Next, the third chapter is the Theory used for the research. The theory chapter consists of learning theories, and motivational theories. The forth chapter is the methodology used for the research. The chapter highlights the research design, and specific method used for data collection purposes. The fifth chapter is a combination of results and analysis. This chapter presents the data collected from the research and analyzes it based on the specific questions asked during data collection. Moving on, the sixth chapter is the discussion chapter. This chapter covers the results and analysis chapter and intends to draft an answer to the research questions. Specifically, each theory is contextualized with the analysis and design decisions of the Discord course. Finally, the seventh chapter is the summary and conclusion of the research. The chapter provides a brief summery and conclusions based on the prior discussion chapter, in addition to recommendations for further research.

Chapter 2

Discord Course

This chapter covers the different stages of development of the project course. The course would exclusively be held on Discord, which introduced unique problems during designing and implementing the course. This chapter explains the course structure, modules, assignments, learning materials or resources and the implementation of a Discord bot.

2.1 Game Modifications

In the game modification community for Stalker: Anomaly, there are very few learning resources in English, those that exist are not in the form of a course. The work done in this project is to provide a course in English that teaches aspiring modders skills related to creating game modifications. The course design and rationale is partly informed by the different learning theories used as the theory.

2.2 Discord Server

Discord is a popular chatting application, and Discord servers are community spaces in the platform. These can be specific communities or for general topics. Generally Discord servers are usually oriented toward video games and gamers, but others do exist. Many video games and by extension video game modders use Discord to discuss, get assistance with or publish their work. A server will generally subsist of different channels organized by category, and a channel can either be a voice or text channel. Communication on Discord is both asynchronous and synchronous which allows for users to communicate in their own time and pace. The Discord server made for the course uses the same structure and outline as standard Discord servers. Figure 2.1 provides a visual example of a typical Discord server.

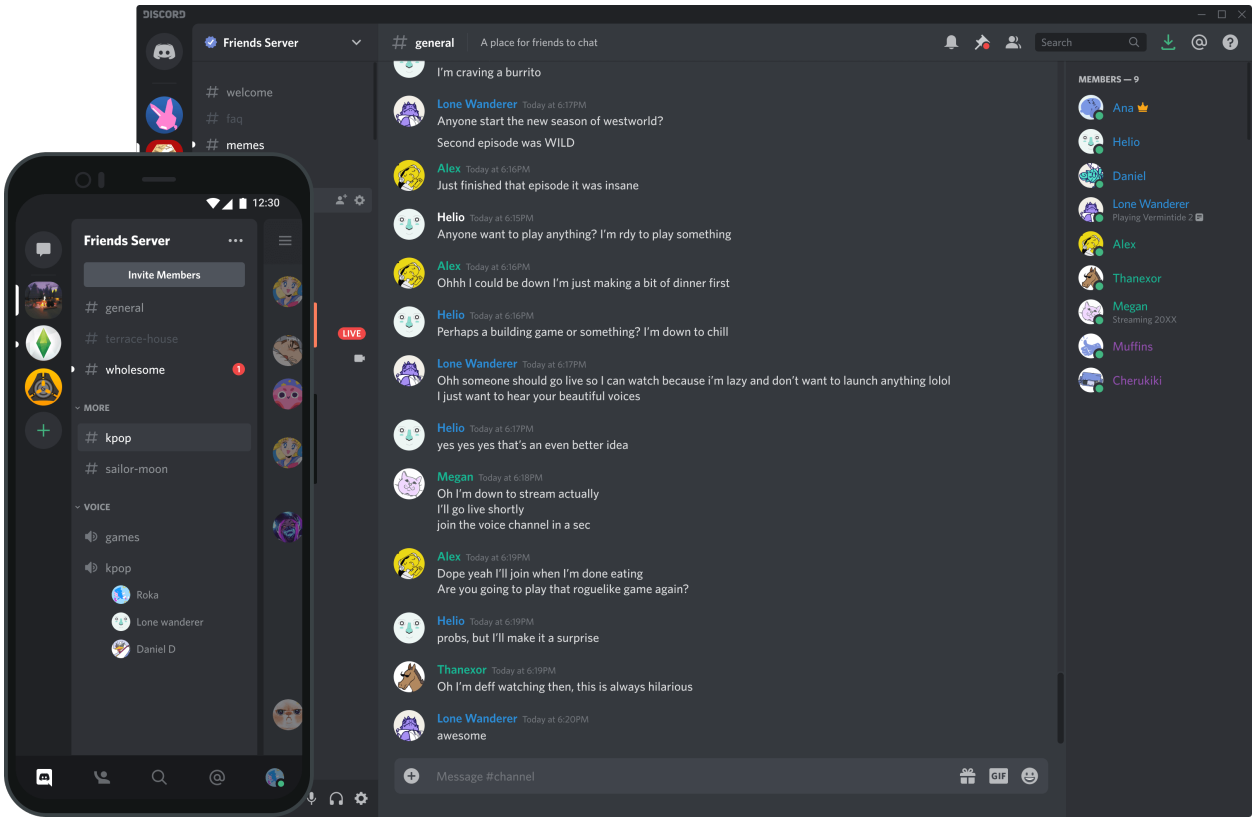


Figure 2.1: Appearance of a typical Discord Server. From: What is Discord: A Guide for Parents and Educators. Discord. https://discord.com/safety/360044149331-what-is-discord By: Discord, (n.d.).

2.2.1 Course Server Structure

The course server was to include several channels worth of course modules with tasks. Firstly, an empty server had to be populated with both categories and channels. After deciding that the scope of the course would cover a certain portion of the workflow of "porting" a weapon model into the game, a structure was planned where users would start at the top and work through the modules towards the bottom. This structure is partly inspired by Unity Learn courses. Figure 2.2 gives an overview over a typical Unity Learn course. In a Unity Learn course, learners would follow the course with video material in addition to written instructions step by step. These steps would follow a path moving down toward the bottom of the page.

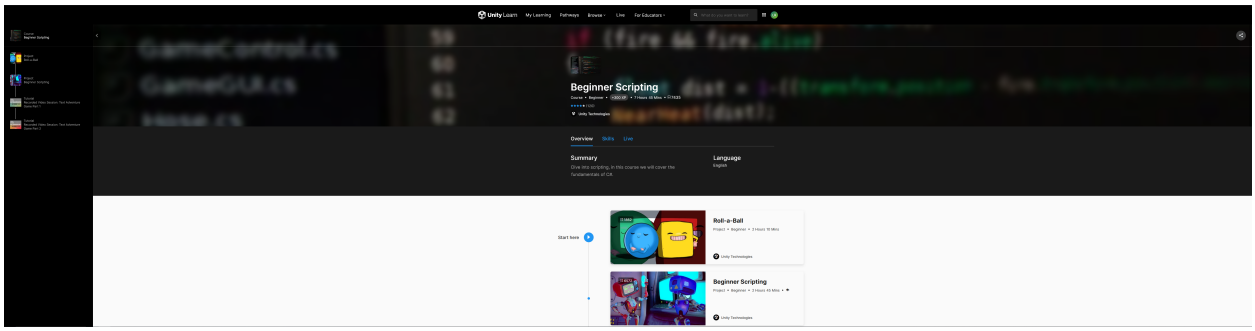


Figure 2.2: Overview of Beginner Scripting Course on Unity Learn. From: Beginner Scripting - Unity Learn. Unity Learn. https://learn.unity.com/course/beginner-scripting By: Unity Technologies. (n.d.).

2.3 Course Modules

The server uses 4 categories which give structure to the different modules of the course. The first category acts an introduction to the course and provides some rules and general information about the course, like a study guide, how to navigate and use the course, in addition to channels dedicated for asking and answering questions about the course. The first category is the course's on-boarding before users move on to the learning material. In Figure 2.3 we can see the study guide page as a part of the first module.

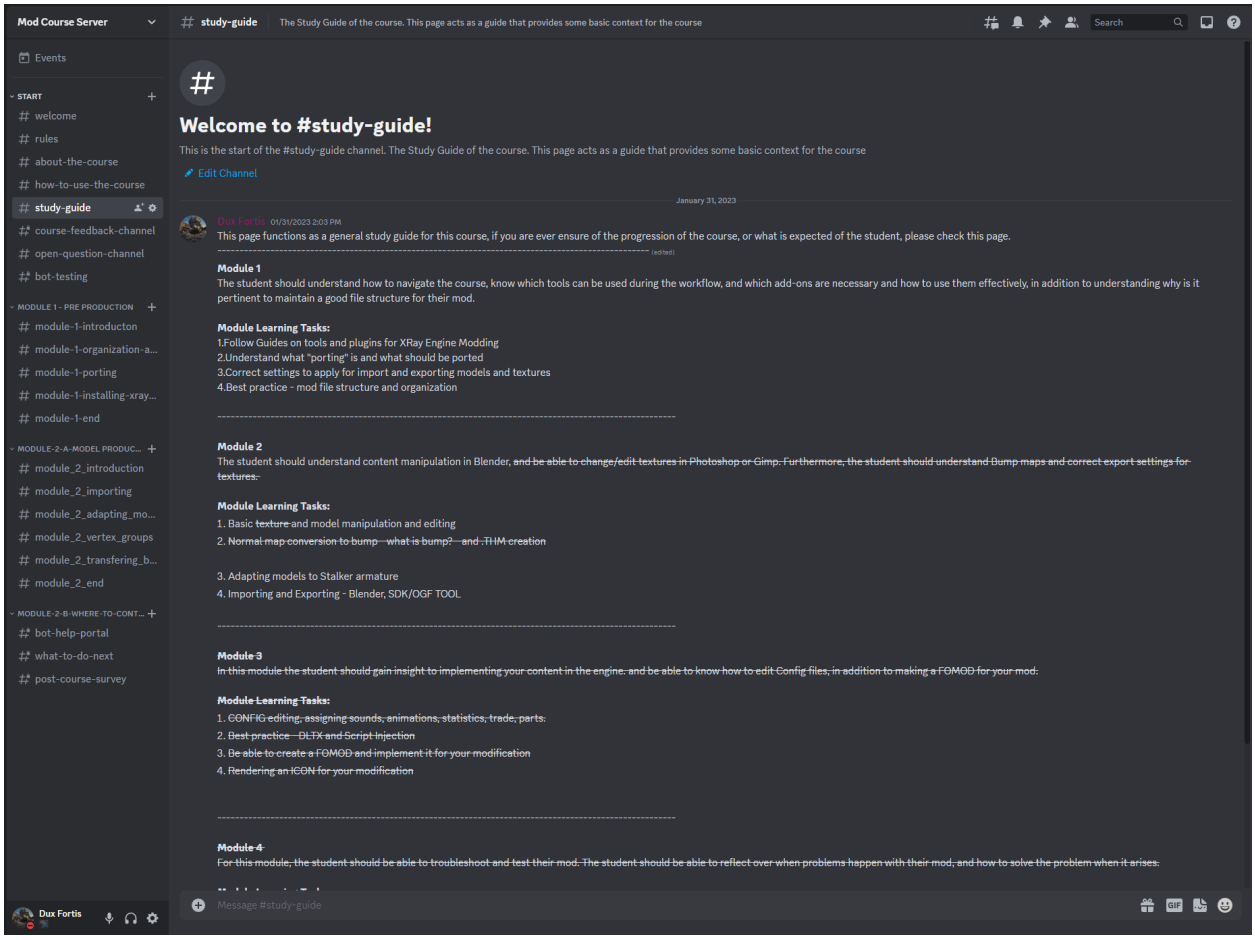


Figure 2.3: Study Guide Page of the Course of Module 1

The remaining modules are step by step written instructions on learning about the different development steps of "porting" a weapon model to the game. The second module covers what tools are necessary for creating game modifications, what "porting" is, a free model to use for the course and how to install and use a community plugin for Blender. The third module of the course covers the process of how to work with 3D models, and adapting that model to a set of bones and animations in Blender. Once the learner has completed this module, the course is over and the learn can view the final module, which is about where to find further learning. The figure 2.4 demonstrates an example of a module 2, specifically a task about transferring bones to the model.

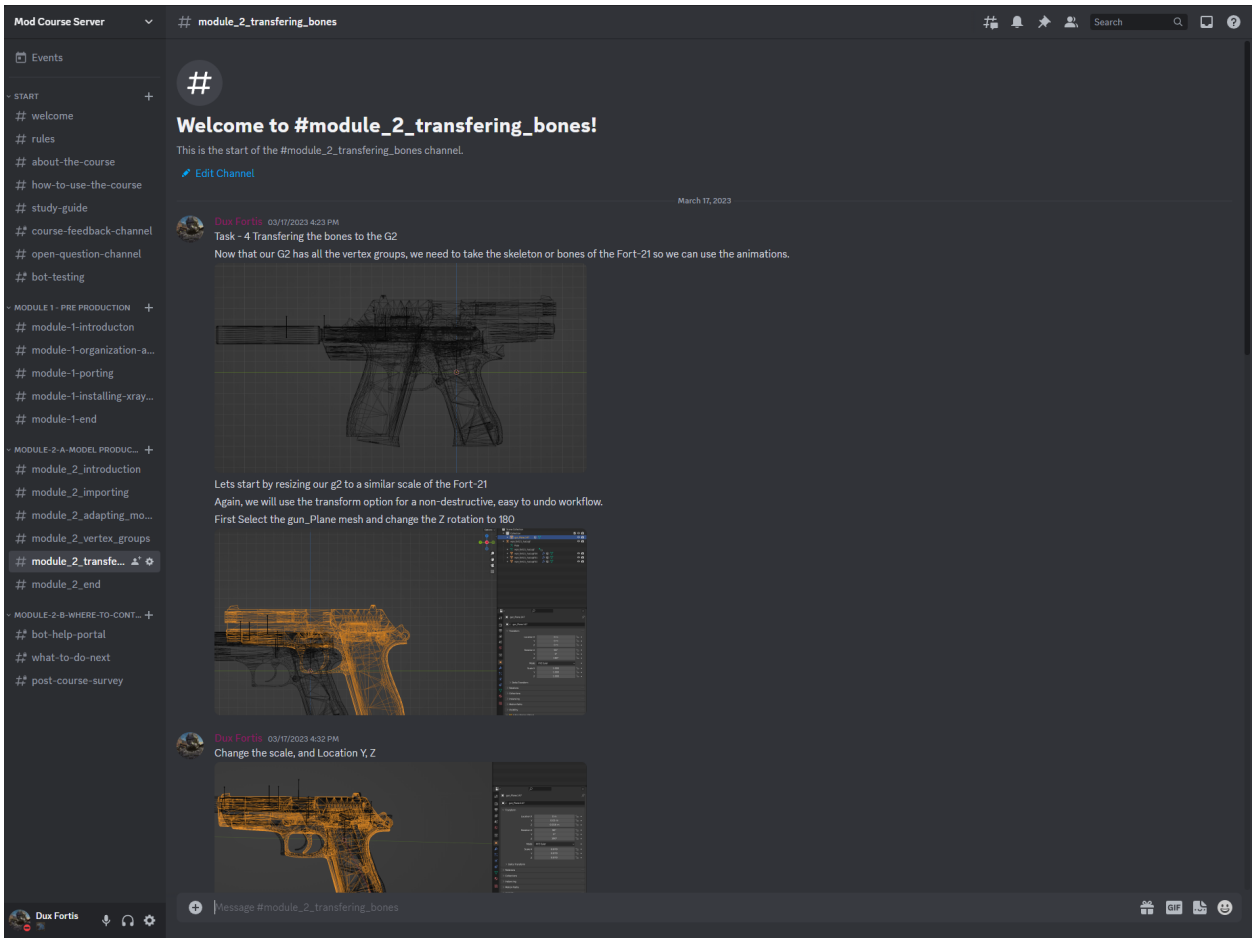
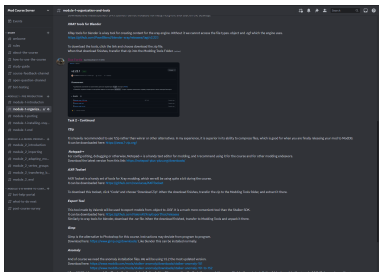


Figure 2.4: Transferring Bones Channel of Module 2

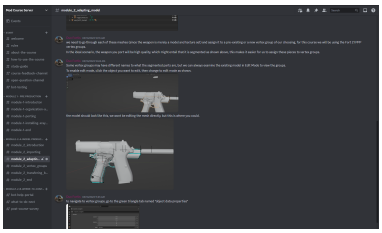
The final module of the course is where to find more learning material to continue learning about game modification skills. This includes where to interact with the Course Bot, in addition to a page where users can acquire an example mod based on the teachings of the course, and can be tested in the game to provide an foundation on how to implement the modification when the course is completed.

2.3.1 Course Assignments

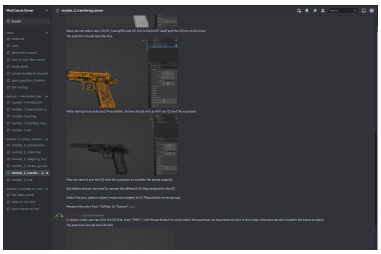
The different tasks of the course vary between step by step written instructions and some open tasks where users need to repeat a certain task several times after the instruction. Users follow the tasks from top to bottom and images of specific steps are included for most of the different tasks. Figure 2.5 shows us three different examples of tasks users would experience during the course. In the second module, while users learn about the different community tools and software necessary to preform modding, users must download and install these tools for usage in the course. Figure 2.5a gives an overview of the page where the different tools are listed. In the other modules, users must use these tools to start the process of "porting" the model and adapt vertex groups, and bones/armature to the new model, so that it may function within the game. Figure 2.5b and Figure 2.5c give us an idea of how the process looks to the user. If the course were to be completed in it's entirety, there would be more of these tasks related to texturing, "config" editing, and implementation into the game.



(a) Downloading and installing tools and software



(b) Adapting the model to existing vertex groups



(c) Transferring Bones to Model

Figure 2.5: Examples of different tasks

Most of the tasks revolve around using Blender with a community made plugin called: XRay Tools for Blender. This plugin is necessary to import and export files to the correct engine format. The course tasks use the plugin to import a weapon model with an armature and set of animations, which then are copied and moved to the new 3D model. The other course resources available cover other aspects of this workflow, like converting the texture to a format usable in the engine, in addition to creating a "bump map" and implementing the mod into a FOMOD installer, which will install the mod for the user.

2.4 Course Resources

The course uses a variety of different resources for the course curriculum. While creating the course modules written instructions were produced for this course, but the instructions were also informed by another community resource called the "Anomaly Modding Book". The Anomaly Modding Book is a online resource for learning about different aspects of modifying the "Stalker" series of games, specifically the popular modification: "Anomaly". The resource is platformed on GitHub which allows users to contribute to the page. Figure 2.6 shows the introduction page of the Anomaly Modding Book.

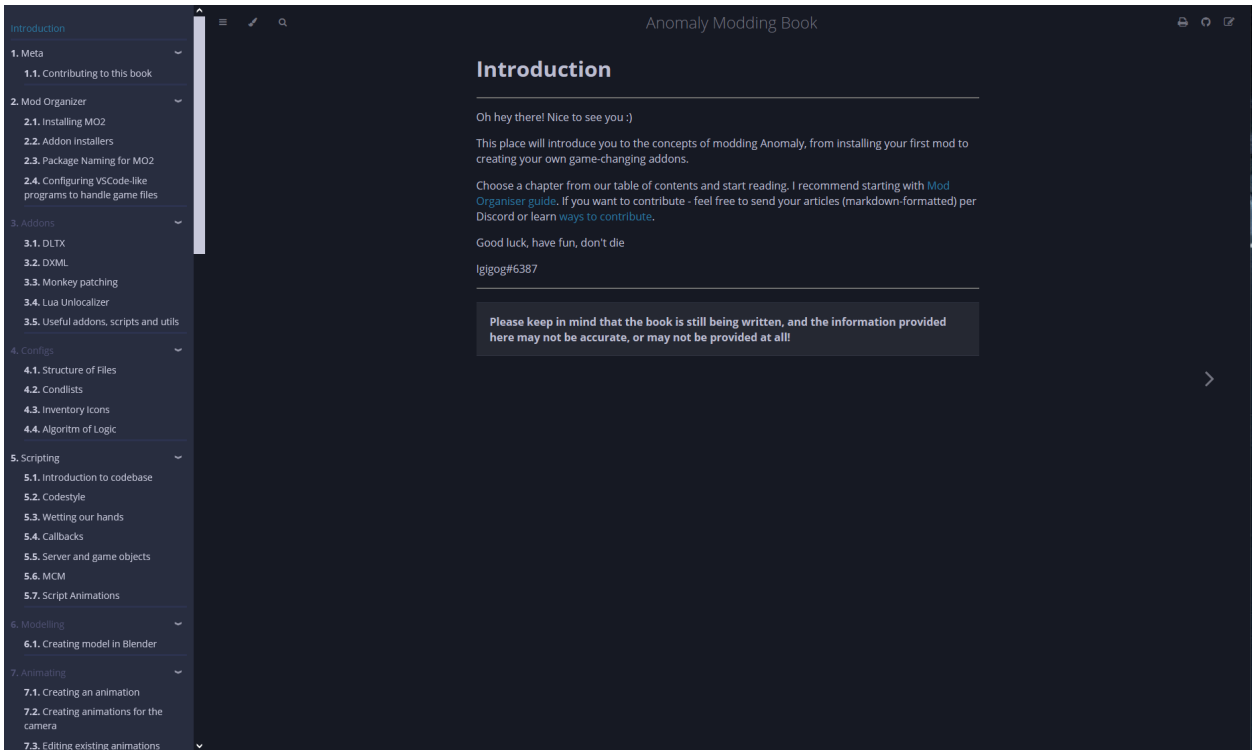


Figure 2.6: Introduction Page of Stalker Modding Book. From: Introduction - Anomaly Modding Book. Github. https://igigog.github.io/anomaly-modding-book/index.html By: Igigog, (2022, May 29).

In addition to the Anomaly Modding Book, some modding community resources were also integrated into the course as extra material for further learning once the course had ended. These resources consisted of specific guides toward specific topics, for example: how normal maps work in the Stalker series, how to adjust models in Blender to remove smoothing errors or links to video material on texture conversion. These community guides are important because of how these modding topics help address the limitations of the course itself.

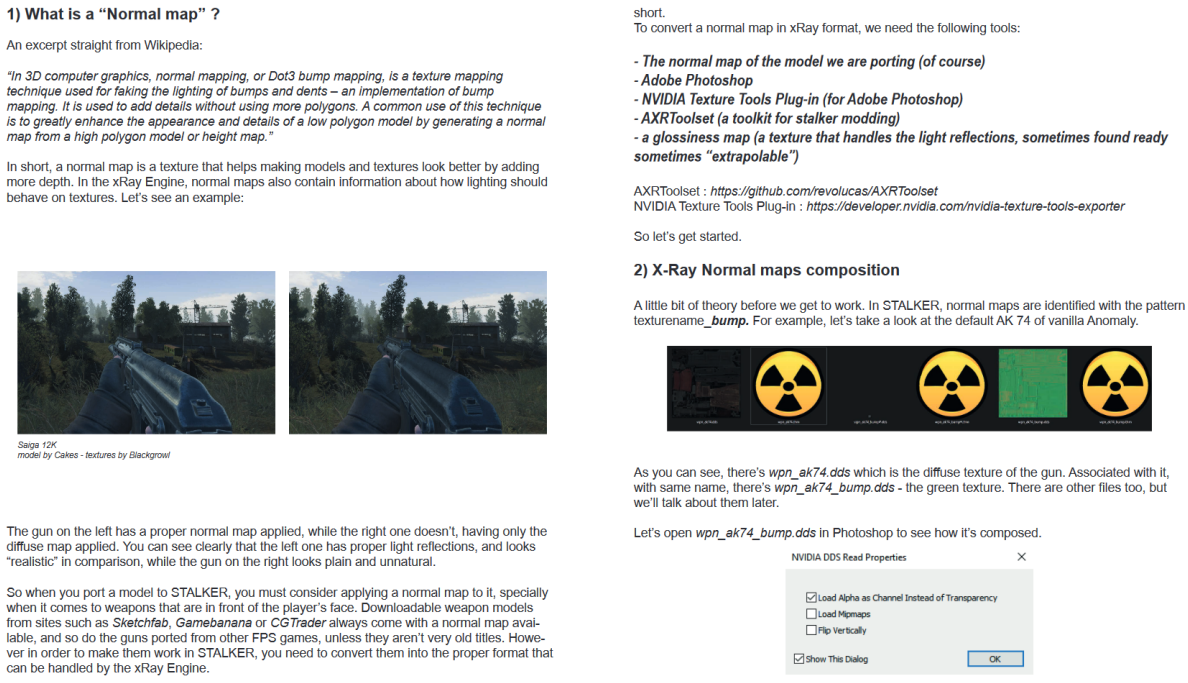


Figure 2.7: "Stalker Normal Map Creation Guide" Example.

Figure 2.7 is the first page of the "Stalker Normal Map Creation Guide" and a resource on how to learn about normal maps and how to create them for this specific game engine. Many other materials made by the modding community were also used in the course in addition to this guide and the Anomaly Modding Book, and these resources take the place of extra reading material like with other courses. These resources were made accessible through the course's Discord bot.

2.5 Course Discord Bot

Discord has the ability to host so called "bots" on servers. These bots can have different roles and functions depending on the creators intention. For this course, the bot role is that of a helper for the course, and provide extra learning material for learners who have finished the course's material and wish to know more. The bots design is very simple and can only provide the different learning material to learners. The bot is coded in JavaScript, and uses Discord's own library for creating bots: "Discord.JS".

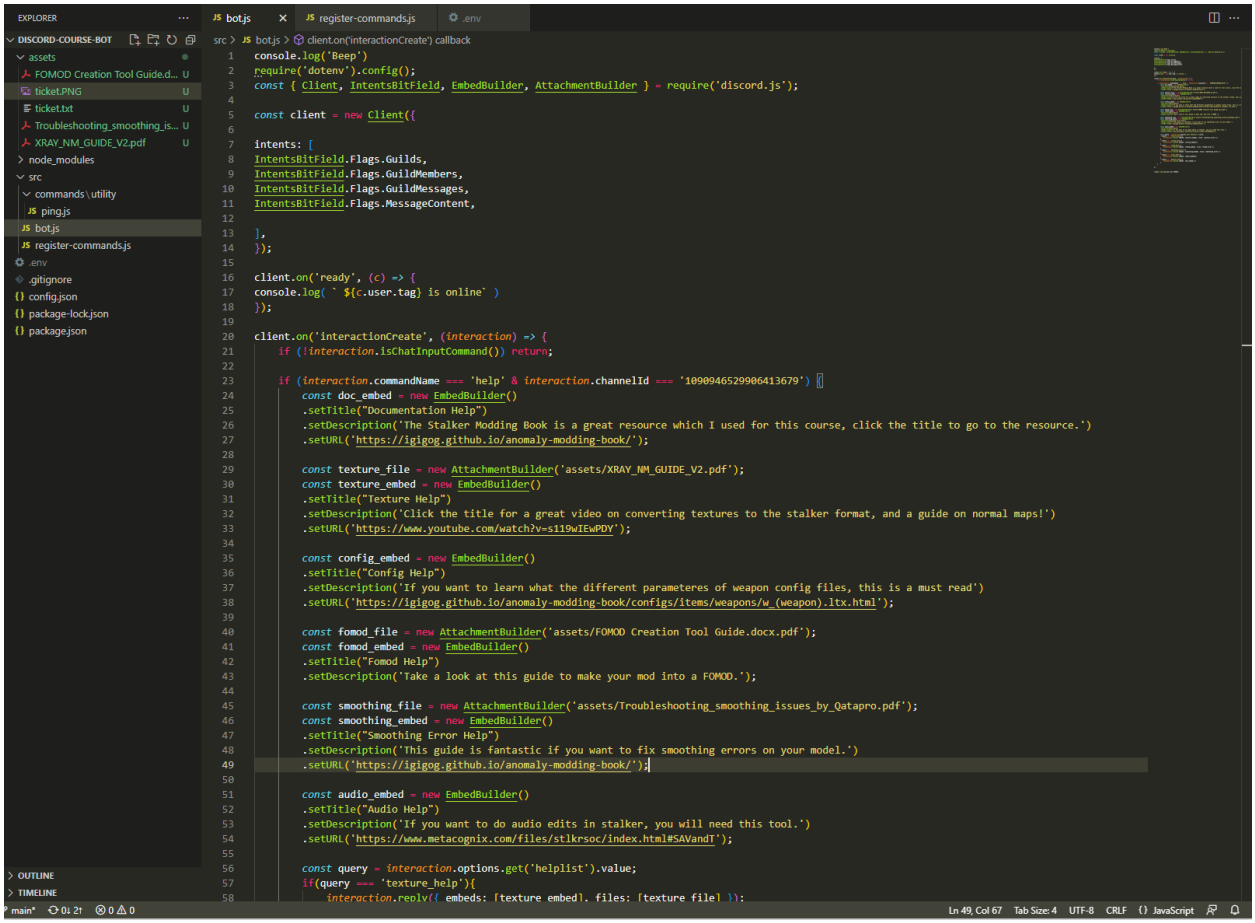
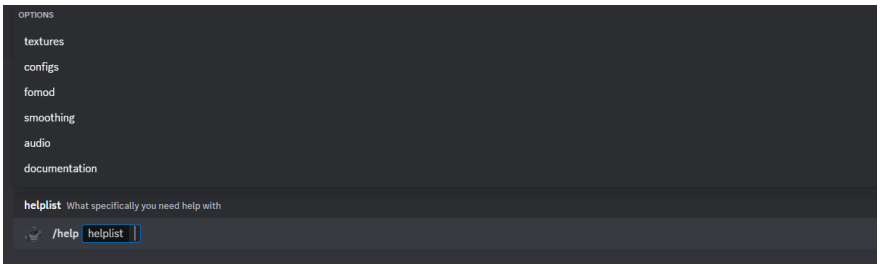
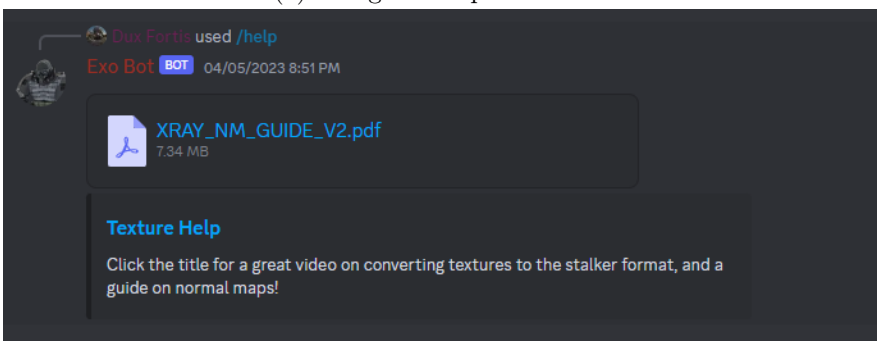


Figure 2.8: Excerpt of Bot.js file

Figure 2.8 is the file Bot.JS in Visual Studio Code and shows what the code looks like. The bot can provide specific learning material when a user executes a slash command in a specific channel of the server. After inputting the "/help" command, a list of options of different subjects are available. Based on what the user selects, learning resources related to that subject is sent to the user in that channel. This is also the extent of what the bot can do.



(a) Using the help command



(b) Result of using command

Figure 2.9: Process of using /help command

Figure 2.9a and Figure 2.9b is the "/help" command in action, and shows how users would use the command. Users would use this command to look for further learning material after the course was completed.

Chapter 3

Theory

3.1 Introduction

This chapter will cover the different theories involved in this project. Specifically the different learning theories used in the design of the course for learning how to modify game elements for a specific game. Additionally, this chapter covers the motivational theories that help understand how learners are motivated.

3.2 Constructivism

Constructivism is a learning theory where knowledge is acquired through reflection and construction in the mind. In constructivist terms; "the learner must consider the information being taught and based on past experiences, personal views and cultural background - construct an interpretation" (Brau, B. (2020)). There are two distinct variants of constructivism: Radical and Social. Radical constructivism focuses on that construced knowledge depends on an individuals interpretation of their experiences. Social focuses on that knowledge is constructed through interactions with others (Brau, B. (2020))). Constructivist learning theory was created due to a lack of representation towards the actual learning process itself, in comparison to behaviorism (Brau, B. (2020)).

3.3 Social Constructivism

The emphasis on the individual as a the sole constructor of knowledge led to the introduction of social constructivism. Social constructivism focuses on additional elements that affect the learning process. This can be things like the environment, other people, tools, and beliefs. Liu, C. C., & Chen, I. J. (2010) establish that: "Anyone who directly interacts with the learner under learning circumstances can be taken into account in the social world of learner "(pp. 64). Social constructivism itself is built upon Yvgotsky's social learning theory, and leans toward the psychological aspects and social interactions of learning (Liu, C. C., & Chen, I. J. (2010)). Building on Yvgotsky's design Imsen, G. (2014) states "A sentral point of Yvgotsky is that all intellectual development and all thought has a basis in social activity" (pp. 188). "Constructivist learning involves constructing, creating, inventing, and developing one's own knowledge and meaning" (Liu, C. C., & Chen, I. J. (2010))(pp. 65). According to social constructivism learners will not repeat information derived from teachers, so learners must analyze the information provided to them to construct their own knowledge and meaning to then combine it with their past experiences. The constructivist learning activites or process will rely on other people to inform the learner. More importantly, the teacher (Liu, C. C., & Chen, I. J. (2010)). The role of the teacher in practice is more akin to a guide or supervisor, someone who provides new information and creates learning activites to guide learners into the learning process. The social constructive teacher is more akin to a

"more knowledgeable other" (MKO). This means that in a learning context, there does not have to be only a teacher figure. There could be someone who has knowledge in a topic, or more knowledge than average individual (Imsen, G. (2014)), (Cicconi, M. (2014)), (Brau, B. (2020)), (Liu, C. C., & Chen, I. J. (2010)).

3.4 Sosio-Cultural Theory

Vygotsky's Socio Cultural Theory (SCT) studies and analyzes several different aspects of how the human mind develops. Specifically the theory examines four aspects: Firstly, sociocultural focuses on mediation and mediation tools in society. Mediation being third person/party intervention in problems. Secondly, ontogenetic studies the implementation and integration of the mediation tools during mental development. Thirdly, phylogenetic analyses the evolutionary development of mental organisms. Lastly, microgenetic examines the moment to moment construction of language and learning language (Shabani, K. (2016)). There are five main principles of SCT. Learning comes before development. Language is the vehicle of thought. Mediation is key to learning. Social interactions are the foundation for learning and development. Learning is apprenticeship where skills and knowledge are transferred from social to cognitive. The zone of proximal development is the space where learning takes place (Shabani, K. (2016)).

3.4.1 Zone of Proximal Development

The "zone of proximal development" or ZPD, is described as: " the current level of development of the learner, and the next level attainable with peer/adult assistance" (Shabani, K., Khatib, M., & Ebadi, S. (2010)). The main idea behind ZPD is that learning should be facilitated and targeted at what learners potentially could do, and not things learners are able to do independently (Silalahi, R. M. (2019). Through collaboration with individuals of higher skill or knowledge, learners internalize new concepts, skills and cognitive tools (Shabani, K., Khatib, M., & Ebadi, S. (2010)), (Brau, B. (2020)). Teaching with ZPD involves engaging with the learner throughout the learning process. Specifically, using tasks that are difficult or challenging enough that a more knowledgeable peer/teacher/other is required to finish the task. When the task is finished, the previous task should be able to be completed alone, and the process begins again with a new ZPD, and new task (Shabani, K., Khatib, M., & Ebadi, S. (2010)). ZPD is partly built around Vygotsky's interpretation and meaning of "imitation". Vygotsky's imitation is not directly copying or mimicing, but instead is a problem solving process used to understand during learning (Shabani, K., Khatib, M., & Ebadi, S. (2010)). Figure 3.1 by Kurt, S. (2020) visualizes the different levels of the ZPD.

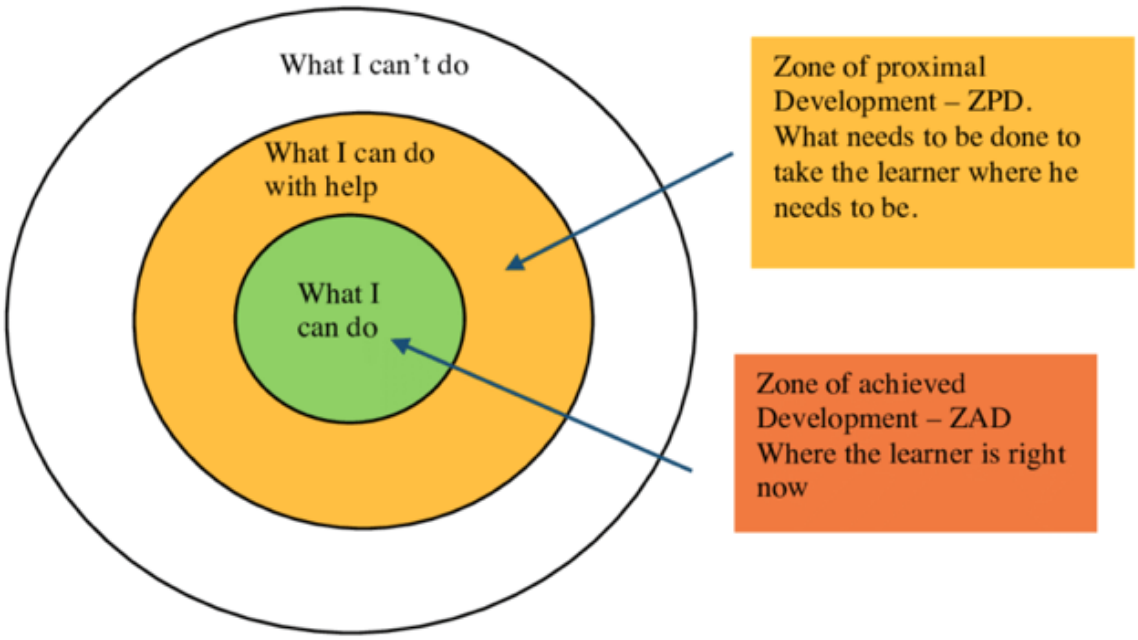


Figure 3.1: ZPD zones of development in learning. From: Vygotsky's Zone of Proximal Development and Scaffolding By: Kurt, S. (2020, August 18). Educational Technology.

3.4.2 Scaffolding

Scaffolding is a concept first developed by Vygotsky, with further development and coinage of the term are attributed to Jerome Bruner (Imsen, G. (2014)). The term describes its role in teaching contexts literally, a tool used in the construction of buildings. Scaffolding is described as a tool in different stages of learning to provide a foundation of the topic before learning takes place and providing learning sensitive support during learning. This means scaffolding represents learning supportive artifacts, tools and methods during learning. "Scaffolding" refers to the "process marked by dialogue and a sensitive adaptation of support so that the necessary skills and knowledge are internalized" (Puntambekar, S. (2022)). Conversely, a "scaffold" is a tool that provides support towards completing a specific task (Puntambekar, S. (2022)). Learning first takes place on a social level before the individual level (Van de Pol, J., Volman, M., & Beishuizen, J. (2010)). This is important to scaffolding because "... the concept of scaffolding is generally considered as a teacher-initiated, directive instructional strategy..." (Margolis, A. A. (2020)). Therefore, in most applications or examples of implementing scaffolding, the tutor figure is interacting with the learners in some level. Scaffolding can understood as: "a fluid, interpersonal process where both participants are active". Particpants will build common understandings or "intersubjectivity" through communication with one another, and subsequently the perspective of the knowledgable other will provide learning to the learner (Van de Pol, J., Volman, M., & Beishuizen, J. (2010)). Scaffolding will usually be implemented differently, depending on the learning context. Scaffolding's goal as a teaching tool is to support learners through the ZPD, and eventually shift the responsibility of tasks toward the learner (Shabani, K., Khatib, M., & Ebadi, S. (2010)), (Van de Pol, J., Volman, M., & Beishuizen, J. (2010)).

3.5 Connectivism

Where other learning theories or frameworks establish learning as a personal experience, and there is measured change in the in individual or disposition. Connectivism, is about looking at how "knowledge is distributed across a network of connections and therefore that learning consists of the ability to construct a traverse those networks (Downes, S. (2022))..

Even though connectivism is about the connections of knowledge, "The individual is the starting point of Connectivism". The main principles of Connectivism say that learning and knowledge takes place outside the individual. The learning process itself is connecting nodes of information. This means that learning in connectivism takes place in your personal neural network, and is developed by interacting with different entities in a network or the world. Similiarly, teaching in connectivism is about providing these interactions (Downes, S. (2022)).. In connectivism, learning can take place or reside in non-human appliances for example; books, artifacts, websites, and the world around us. Learning in connectivism happens via networks. A network can be defined as a connection between different entities. Networks can be typical networks like computer networks or social networks like forums, power grids, and online groups (Siemens, G, (2005)), (Siemens, G. (2017)). Connectivist knowledge is not the information transferred to the individual, knowledge is itself a network that improved by other individuals of that network and the world around it (Downes, S. (2022)).. Connectivism has been summerized as “to teach is to model and demonstrate; to learn is to practice and reflect” (Downes, S. (2022)).. Connectivist learning begins when "knowledge is activated by learners connecting to and particpating in a learning community" (Goldie, J. G. S. (2016)). Learning communities is a community that has similar interests and ideas that result in collaboration (Goldie, J. G. S. (2016)). In addition, collaboration or conversations within a learning community are not limited to only words, but also multimedia content such as videos, images, and audio (Goldie, J. G. S. (2016)). Connectivism is further described as a "non-respresenational theory". This means there is no inherent concept of knowledge being manipulated or created in any way. Connectivism sees learning and the acquiring of knowledge as a process that happens in the brain (Downes, S. (2022)).. Just like how the brain communicates via neurons, in connectivist learning, in either a social network or personal learning network, connections form and signals are sent between them (Downes, S. (2022)).. Continuing with the brain analogies, neurons are not all in one place, just how networks to not all exist in one building. Distributing networks means one failure does not cause the network to entirely fail (Downes, S. (2022))..

3.5.1 Networks

The concept of a network is important in connectivism. Networks consist of nodes, which are learning communities. These nodes are created from connection points found on a network. Nodes can also be sources of information. Generally, networks are made of two or more connected nodes that share resources. Nodes can vary in size and strength depending on the amount of information and how many individuals use a given node (Goldie, J. G. S. (2016)). There are four characteristics that encompass successful networks: Diversity, Autonomy, Openness and Connectivity. Diversity is having diversity in points of view, building on the principle of that learning and knowledge rest in diversity of opinion. Autonomy is where participants of the network have a sufficient amount of autonomy. Openness is openness to allow different viewpoints to enter the system. Lastly, connectivity refers to the connections between the networks nodes.

3.5.2 Principles of Connectivism

There are eight core principles of connectivism. Connectivist learning exists within networks, and the strength of a network is that information comes from more than one source, therefore: "learning and knowledge rest in a diversity of opinions". Networks rely on diverse sources of information, however, learning itself is the process of connecting several nodes or sources of information to achieve that diversity of opinion. In this process of learning, personal learning and social learning encompass a larger learning network, where learning may reside in non-human appliances. Learning is not simply acquiring new information or content, it is explicitly the way we view, understand, and interact with the world, consequently:

"The capacity to know is more critical than what is currently known. The learning process does not stop when new connections in a network are made, "nurturing and maintaining connections is needed to facilitate continual learning". In connectivism those connections must be maintained to continue the learning process. Since connections are core to learning "the ability to see connections between fields, ideas and concepts (patterns) is a core skill. As a result, social connections between experts in their own fields result in even stronger networks. All connectivist learning activities aim to provide "currency" to the learner, which is accurate, up-to-date knowledge. Outdated information or outdated networks are not considered strong and are to be avoided but can still be used to create connections with currency. Making decisions is an action that uses the nodes of your network to inform your decision, which is a learning process in itself. Learning in connectivism is a process that never stops. (Goldie, J. G. S. (2016)).

3.6 Constructive Alignment

Constructive alignment is a teaching system that aligns teaching method and assessment to the learning activities of a course. This is to ensure that all aspects of a course are supporting student learning (Hailikari, T., et al (2022)). It is based on the principles of "constructivism in learning" and "alignment in teaching" (John Biggs, (2007)).
The two major principles of constructive alignment are these:

- "Knowledge is not transmitted by a teacher but is constructed by students through their own learning activities" (Biggs and Tang (2015)).

- " The intended outcomes of teaching need to be stated upfront, and teaching methods and assessments need to be aligned to what those outcomes require if they are to be met"(Biggs and Tang (2015)).

In comparison to other teaching methods of the past, Biggs integrated constructivism into a model of teaching design in relation to curriculum. In addition, a connection and common thread between learning outcomes, learning activities and assessment: alignment (Loughlin, C., et al (2021)). In constructive alignment learning activities are verbs that learners are expected to perform (Hailikari, T., et al (2022)). John Biggs, (n.d.) describes learning activties as verbs further: "That verb says what the relevant learning activities are that the students need to undertake in order to attain the intended learning outcome". Constructive alignment can be applied to all types of teaching, like individual courses, degrees and institutionally (John Biggs, (n.d.)). Constructive alignment is also a form of outcomes based education, which can be seen as two versions, one where institutional outcomes such as performance, and quality outcomes are in focus. It could also be directly toward student learning and teaching, in program and course levels (Biggs and Tang (2015)). A core component of outcomes based learning is that learners "should not be assessed according to how their performances compare with each other and then graded according to a predetermined distribution such as the bell curve" (Biggs and Tang (2015)). This means individual learner success and subsequent assessment is less important than the individuals understanding of the underlying curriculum.

3.7 Motivation Theory

This portion of the theory chapter goes through two different motivational theories to provide two different viewpoints to understand how learners may be motivated during learning.

3.7.1 Self Determination Theory

Self determination theory (SDT) is itself a macro theory comprised of six different mini theories about human motivation that have been applied to a variety of different contexts. The different mini theories represent the progression of the research into SDT, and the concepts of SDT split into these mini theories (Ryan & Deci, (2022)). SDT treats the concept of motivation not as a single thing, but split into autonomous and controlled motivation. These different types of motivation differ from each other. Autonomous motivation comes from controlled, personal actions or will, and controlled motivation comes from outside, external actions or factors. SDT also covers the motivational aspect of psychological needs, and social behavior, and how these can increase or decrease growth, integrity and wellness (Ryan & Deci, (2022)). The key needs are: Competence, Autonomy, and Relatedness.

Cognitive Evaluation Theory

Cognitive evaluation theory (CET) concerns itself with intrinsic motivation. Specifically, CET explains the effects that different social contextual conditions have on intrinsic motivation. Intrinsic motivation is a form of self determination, where if you are intrinsically motivated, you can perform a given activity on your own accord without needing a reward or consequence (Ryan & Deci, (2022)). Intrinsic motivation for a given activity can be lowered if punishing extrinsic motivational rewards are used instead of giving autonomy like through choices or acknowledgement of someones feelings which would increase intrinsic motivation. Feedback is a form of competency need, and if positive feedback is given that will support the need for competency resulting in positive intrinsic motivation. The opposite is true for negative feedback, which negatively impacts intrinsic motivation by not supplying competency (Ryan & Deci, (2022)). Moreover, the more someone is intrinsically motivated, the more growth, integrity, and wellness is demonstrated. This means that supporting competence and autonomy plays an important role in creating and maintaining intrinsic motivation.

Organismic Integration Theory

If CET is about intrinsic motivation, then Organismic Integration Theory (OIT) is about extrinsic motivation. OIT covers the different types of extrinsic motivation which has their own characteristics. Some types of extrinsic motivation can be more advantageous the more autonomous it is. The different types of extrinsic motivation that can be distinguished are: External regulation, Introjected regulation, Identified regulation, and Integrated regulation. These types are ordered in how autonomous they are, so external regulation is the least autonomous and integrated regulation is the most autonomous type of extrinsic motivation (Ryan & Deci, (2022)). External regulation is the typical example of extrinsic motivation, where there is an potential event between an action and an external consequence. The carrot and stick is a type of external regulation. When extrinsic motivation is internalized but not of an individuals own accord, then this type of extrinsic motivation is introjected regulation. Introjection is when an individual is working toward avoiding potential guilt or disappointment and seek approval from others. When individuals internalize and personally agree with an action that is considered to be worthwhile, then that is identified regulation. Identified regulation is more autonomous than introjected regulation because of the approval of the action. If the personal identification connects with more than just the approval of the action, like needs, feelings or beliefs, then this is considered integrated regulation (Ryan & Deci, (2022)). The main difference between intrinsic motivation and integrated regulated extrinsic motivation is that intrinsic motivation comes from self interest in an activity and integrated regulation is when an activity is deemed important for achieving something. a benefit of extrinsic motivation is the more autonomous the regulation is, the more awareness of emotional behavior there is. OIT also contains a taxonomy of the different sources of extrinsic motivation, in addition to the different regulation types that decide the level of

autonomy. The figure 3.2 is a visual or schematic representation of the taxonomy included in OIT. The taxonomy is useful to distinguish the different factors of SDT and OIT.

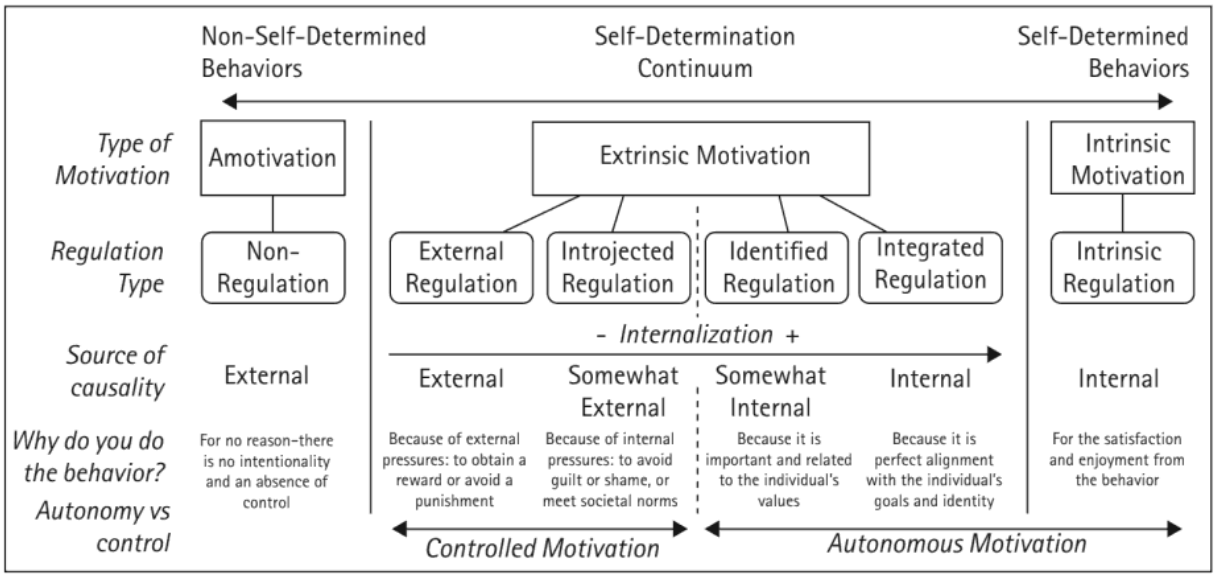


Figure 3.2: Visual Representation of OIT Taxonomy. From: Organismic Integration Theory: A Theory of Regulatory Styles, Internalization, Integration, and Human Functioning in Society. By: Pelletier, L. G., & Rocchi, M. (2023). The Oxford Handbook of Self-Determination Theory, 53.

Causality Orientations Theory

Causality orientations theory (COT) describes the differences in how people will adjust their environment and behavior based on their own orientation. An individuals orientation will be associated with one of the three causality orientations of COT. The three orientations of COT are: Autonomy, Control, and Impersonal orientation. Acting out of personal interest and valuing ones own actions is the result of an autonomous orientation. The more autonomous the orientation the more an individual will perceive that place of autonomy internally, and acting autonomously will spread to other contexts and scenarios. The autonomous orientation is more intrinsic. A controlled orientation is more extrinsic, and leans toward both external and introjected types of motivation. Controlled orientations will act to gain rewards, and gain approval from others. Individuals may feel that the control comes externally in most contexts. An impersonal orientation will be the result from fear of incompetency, or other concerns of not being enough. Impersonal orientations move toward conclusions that will confirm these fears and concerns. Where autonomous and controlled orientations stand with their own types of motivation, impersonal orientations are amotivated. Individuals with an impersonal orientation will feel no control over the outcomes of their actions (Ryan & Deci, (2022)). In COT, people will generally have each orientation in some combination, and that different situations can provoke a specific orientation more forward. The different orientations also result in matching outcomes to personal psychological and physical health. The most ideal orientation is an autonomous orientation, because it leads to more effective performance, and stronger feeling of mental and physical health. Controlled orientations are in the middle where people will act more defensive and non flexible attitudes, and generally feel worse. Impersonal orientations lead to poor performance and lead to very poor mental and physical health. These orientations are the result of an individuals social environment. If an environment supports the needs for autonomy, competency, and relatedness, then this leads to an autonomous orientation. If there is little support for these needs, it may result in a controlled orientation. If there is no support whatsoever, then it will result in a impersonal orientation (Ryan & Deci, (2022)).

Basic Psychological Needs Theory

Basic psychological needs theory (BPNT) is about how the psychological needs of autonomy, competency and relatedness evolved and how they effect psychological health and physical health. There are three important points of BPNT. Autonomy, competency and relatedness are considered universal and critical for all people. Satisfying or frustrating these needs will impact a persons wellness based on if those needs are satisfied (beneficial) or frustrated (detrimental). Social environments or contexts that support these needs will result in positive health and effectiveness, and the opposite is true. If a social context does not support or interferes with these needs, it will result in negative health and effectiveness (Ryan & Deci, (2022)). When BPNT is applied to the previously mentioned mini theories, it can answer how satisfying these needs will result in positive outcomes based on the mini theory that it is applied to. Satisfying needs in the context of CET will result in greater intrinsic motivation and competence. In the context of OIT, there is greater internalization, and emotional regulation. In terms of COT, it results in a greater autonomous orientation. All of these benefits regardless of applied theory will also improve personal mental and physical health (Ryan & Deci, (2022)).

Goal Contents Theory

Goal contents theory (GCT) is about the importance of goals and how those goals affect the satisfaction of the three basic needs. GCT has to categories of aspirations or goals: Intrinsic goals and Extrinsic goals. GCT also considers goals in specific contexts or situations because some goals are appropriate for certain contexts and some are not, based on how they supply the basic needs. Intrinsic goals consist of personal growth, having close relationships, and community involvement that all satisfy the basic needs. Conversely, extrinsic goals consist of gaining wealth, appearing attractive and becoming popular or famous. The extrinsic goals in this case do not come from the satisfaction of the basic needs, but from anxiety as a result of the basic needs being frustrated. Specific goals will differently support the basic needs. Intrinsic goals in the context of learning and performance was better suited than extrinsic goals because of how the intrinsic goals could positively support the basic needs (Ryan & Deci, (2022)).

Relationships Motivation Theory

Relationships motivation theory (RMT) is about how interactions with other people can satisfy our basic needs and support the sense of self. The need of relatedness pushes people to have relationships that can satisfy that need. However, satisfaction of autonomy within a given relationship is required to have high relationship satisfaction. There is also a difference between independence and autonomy, because some people may be autonomously dependant on the other person in the relationship. Furthermore, autonomy and autonomy support can be mutual in a relationship. One part of the relationship could provide autonomy, but also receive it. Altruism is also considered in RMT, because volunteering to help can satisfy both the helper and the recipient (Ryan & Deci, (2022)).

3.7.2 Social Cognitive Theory

Social Cognitive Theory (SCT) examines the human function between three main points: personal, behavioral and environmental influences. SCT believes in human agency, and that change to behavior is is done by an individuals sense of control or agency. In addition, another important component of SCT is the concept of "outcome expectancies". Outcome expectancies are "beliefs about the consequences of ones action." (Luszczynska & Schwarzer, (2015)). Outcome expectancies are important because of their role in how the three different influences of SCT interact with each other. In SCT there are capabilities that help define

what human agency entails. These consist of being able to: symbolize, use forethought, learn vicariously, self-regulate, self-reflect, and self-regulate (Schunk & Pajares, (2009)). Self-regulation can be used to assist individuals through examining their experiences, beliefs and mental processes (Schunk & Pajares, (2009)). Self reflection is one of the more important capabilities in SCT, and allows individuals to change their personal and behavioral influences. The concept of being able to control ones outcomes or make changes based on personal control are key to SCT and the concept of "self-efficacy" (Luszczynska & Schwarzer, (2015)), (Schunk & Pajares, (2009)).

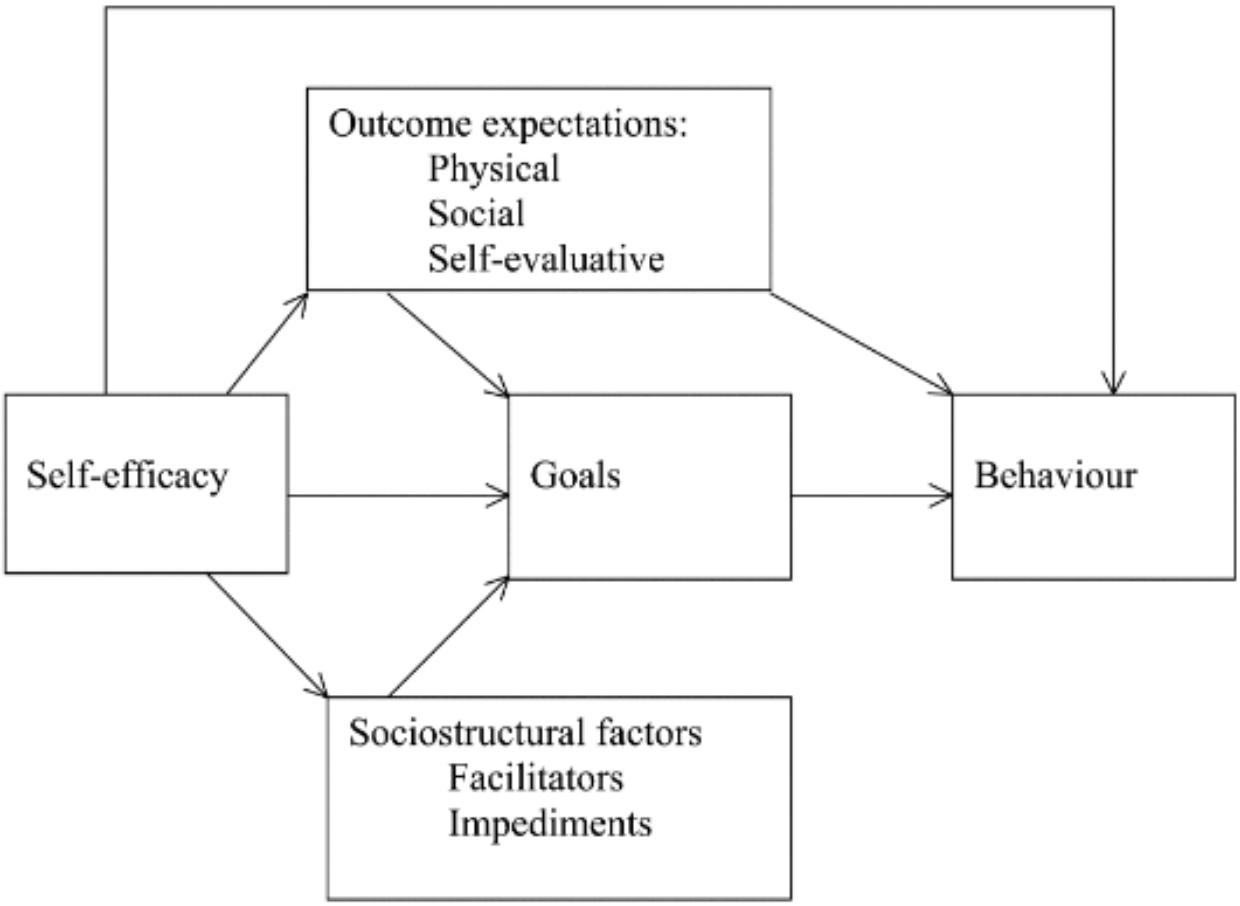


Figure 3.3: Visual Representation of SCT From: Social cognitive theory. By: Luszczynska, A., & Schwarzer, R. (2015). Fac Health Sci Publ, 225-51.

Figure 3.3 shows the interplay between the different aspects of SCT and how they ultimately can affect an individuals behavior.

Self-Efficacy

Perceived self-efficacy is the first factor in SCT which is personal agency that influences behavior. Self-efficacy is the belief that a person can cause events, which subsequently will result in a more self-determined life. Specifically, the belief revolves around someones belief that they can perform a task and achieve an outcome they desire. Outcome expectancies is intertwined with self-efficacy because efficacy is the belief of whether or not an individual can perform an action, but outcome expectancy is the belief of potential consequences of an action (Luszczynska & Schwarzer, (2015)). self-efficacy affects but also is affected by the same three influences of SCT, in the same way as self regulation. The three different influences of SCT function as a feedback loop where the different beliefs or human agency abilities will affect each other and also result in each other taking place. For example: self-efficacy or being

efficacious will result in more self regulation. If a person is unable to feel like they can perform a task, this would result in the opposite happening, leading to less motivation. It is recorded that individuals with high sense of self-efficacy have better mental, physical health, and live more active lives. (Flammer, (2015)), (Schunk & Pajares, (2009)). There are different types of self-efficacy and context specific sub-types to the main types of self-efficacy. The two main types consist of individual/personal self-efficacy and social/collective self-efficacy. The differences comes from that self-efficacy adheres to a single individuals belief, and that collective self-efficacy refers to the belief among an entire group of individuals. Furthermore, there are context specific sub-types for both personal and collective self-efficacy. One could distinguish between self-efficacy for performance and self-efficacy for learning to examine the specific beliefs of those contexts. Additionally, there can be specific types of collective self-efficacy. In a learning context there could be a collective teacher self efficacy or a student collective self efficacy. These would represent the different groups in the learning context, and how they belief they could perform their tasks (Schunk & Pajares, (2009)).

Chapter 4

Method

4.1 Introduction

This chapter covers the experimental design of testing two different online learning materials. The design includes the quantitative approach, and experimental research design. The sampling method, inclusion and exclusion criteria, data collection methods like pre-test and post-test questionnaires, the procedure used for the test, and the analysis strategy are also a part of this chapter. There are many different types of quantitative research. This research uses this design because of the intention of the thesis is to view the relationship between two online courses on game modification skills and how these affect the perceived learning experience . This is done by using an experimental quantitative approach (Bhandari, P. (2023, June 22)). In addition, due to the limitations of data that I can collect within the time frame of the thesis.

4.2 Experimental Research Design

This research uses a quasi experimental research design. However, this is not a normal quasi experiment. This research design represents a test for a quasi experimental design. A quasi experimental research design is used when researchers want to manipulate one or more variables and measure the impact of that manipulation (Creswell & Creswell, (2018)). The difference between a quasi-experimental design and a true experimental design is that a quasi experiment uses a non-random sampling method (Thomas, L. (2023, June 22)). Specifically, this quasi experimental design is a "two-way design" with two levels. This is because there are two fixed independent variables to be tested and two groups testing (Margulieux, L. (2022)). Additionally, the participants in both levels are testing both independent variables, this design is also "within-subject design" (Margulieux, L. (2022)), (Bhandari, P. (2023, June 22)). This means both groups are testing both variables, but in different orders.

4.3 Quantitative Method

The approach used for this thesis consists of a quantitative approach. The quantitative research approach is used when researchers are testing theories by studying the relationship between two variables. These variables are then measured on instruments which are then analyzed as numerical data using statistical processes. Researchers using a quantitative approach must consider bias, different explanations for findings and ensuring that the results can be generalized (Creswell & Creswell, (2018)). The main data collection methods used for this research would consist of survey questionnaires with likert-scale questions, and open-ended questions.

4.3.1 Quantitative Questionnaires

A pre-test questionnaire and two post-test questionnaires would be used as the main data collection method. The pre-test questionnaire would be used to collect demographic data about the participants. The post-test questionnaires would collect data related to participant satisfaction towards the different aspects of each learning resource. Once groups are created and organized, the pre-test survey is distributed. This survey will be the same for both groups, and will collect demographic data to later differentiate the groups in the analysis. The post-test survey will be distributed to test participants when they are finished testing one learning resources, and again once the groups finish testing the other resource. The questionnaires would be created and hosted on "SurveyXact".

Survey Question Design

The majority of the questions designed for this research are closed ended and pre-determined by the type of survey being taken, either pre or post-test. Participants will also be given open ended questions in the post-test surveys to help understand why the test participants made their decisions. The pre-test survey will consist of 10 questions measuring the familiarity of Discord, Skillshare, online courses, and game modifications. After this pre-test survey is completed, participants will test the respective learning resources. Inspired by the CSAT (Customer Satisfaction Score) the post-test survey consists of 9 likert scale questions. The post-test surveys also have open ended questions asking why participants answered the way they did on the likert scale questions. These likert scale questions measure the participants satisfaction with the different elements of each learning resource on a 1-5 scale from "strongly disagree" to "strongly agree". For example: "I feel satisfied with the course structure". After answering the first post-test survey, both groups will proceed to test the next resource. When the final test is finished, groups will answer the second post-test survey. The second post-test survey will have one difference for the group that had begun testing the Discord course first, and specifically asks if having a discord bot-like solution in the Skillshare resource would increase their satisfaction with that resource.

4.3.2 Procedure

The experiment for this thesis consists of two groups testing two different online learning materials about game modifications. The rationale for the experiment is to attempt to understand how different online game modification courses affect the perceived learning experience between the two solutions. The first learning material is the Discord server course created for this research. The learning resource is the "Modding By Kaupenjoe: Forge Modding for Minecraft 1-18-1" which is a game modification course for the video game Minecraft hosted on Skillshare. Figure 4.1 shows the introduction video of the course on Skillshare. Upon recruitment test participants receive a short briefing on the nature of the learning resource, and are given a link to the learning resource they are testing, this also divides participants into two groups. Each participant was to test their respective learning material with a maximum length for each resource. All tasks in the Discord course, and for the Skillshare course, pariticipants have been told not to go further than lesson 43 "Solution 5: Block & Item". After the first learning resource has been finished, participants were sent the first post-test survey. Upon completion of this survey, groups then test the other learning resource. After finishing the second test, participants are sent the second post-test survey. Once participantion is complete, test participants were offered a Steam Wallet gift card as compensation for their time.

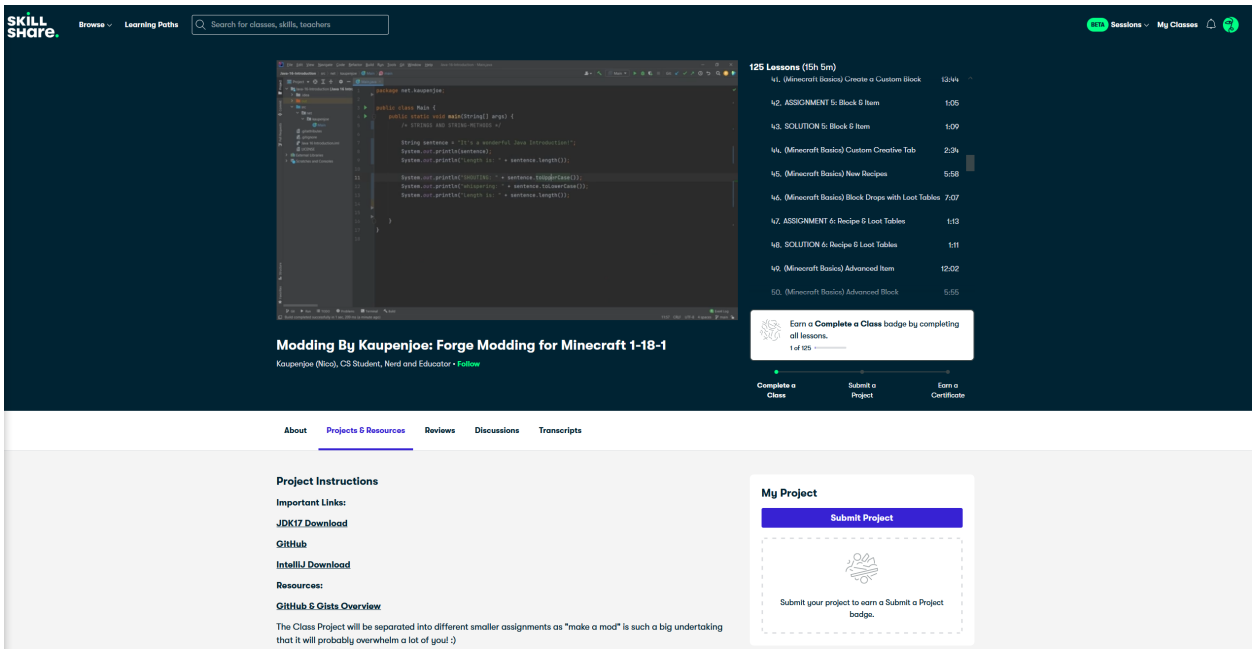


Figure 4.1: Introduction Page of the Forge Modding Course. From: Modding By Kaupenjoe: Forge Modding for Minecraft 1-18-1. Skillshare. https://skillshare.com/en/classes/Modding-By-Kaupenjoe-Forge-Modding-for-Minecraft-1-18-1/63347687/projects
By: Kaupenjoe. (n.d.)

4.4 Analysis

This part of the chapter covers the different steps taken in terms of population, sampling method, recruitment and considerations toward different types of bias. It also covers the data analysis strategy.

4.4.1 Research Population

For this research the learning resources are not specifically designed or produced for a certain level of education, so the population for this thesis will consist of people interested in video games, modding, and are interested to learn game modifications skills. The participants are gamers who have experience with video games and with game modifications to some degree, like downloading and installing modifications for their games.

Inclusion Criteria & Exclusion Criteria

Participants will be included in the study based on these criteria:

- 18 to 35 years of age.
- Has played video games in the last 3 months on a regular basis.
- Has some experience using game modifications in their game installations.
- Willing/Motivated to learn new skills on creating game modifications.
- Has sufficient experience to use a computer.
- Can navigate and use Discord without issue.

Study participants will also be excluded based on these criteria:

- Has created comprehensive game modifications that include custom models, textures, scripting or a combination of the three.
- Has unreliable internet connectivity to the point where participation would be inconsistent.

These criteria represent the ideal study participant. This population should also be able to use computers to the point where they can follow the instructions of the courses without misunderstanding how to perform tasks or not being able to understand how game modifications are made. By excluding people with some knowledge of creating game modifications and people without a stable and reliable internet connection, the test participants included would still be a large enough sample size of adults who play games, and have installed game modifications. Limiting those who cannot reliably participate and those who have plenty of experience will result in both testing groups being more similar, and that the sample will still be representative of the greater population.

4.4.2 Non-Probability Sampling

The sampling method used for this research is non-probability sampling. The rationale for using non-probability sampling is due to type of sampling: The sampling type used for this thesis is voluntary response sampling or volunteer sampling. Since the research population could be spread all around the world, non-probability sampling can ensure that potential participants are faster to reach than other methods. Furthermore, non-probability sampling allows researchers to narrow their focus to specific groups, this is ideal because of the game modification related research population. This sampling method involves study participants individually agreeing to take part in the research. The sampling would invite potential participants who fit the inclusion criteria and do not posses any of the exclusion criteria, to the study. Non-probability sampling and voluntary response sampling in particular is susceptible to sampling bias, particularly self-selection bias which could negatively affect the research results. (Nikolopoulou, K. (2023, June 22)).

4.4.3 Recruitment

All test participants will be informed that this research is related to online learning materials for game modifications during the sampling invitation process. Data collected during the test procedure will be anonymous and participants will not be able to be identified through participation or through data collection. Consent will be asked for during recruiting. Upon thesis delivery data collected will be deleted. Test participants will be made aware of this information before asking for consent to participate. Test participants will be recruited via game-adjacent or game-focused Discord servers.

4.4.4 Bias

Bias is what causes the research data results to be flawed in a research project. Researchers should be aware of the prevalence and importance in considering research bias throughout their research. Bias can take place regardless of research design, research stage/phase, or data collection method. Bias will happen to all types of research. This thesis pays attention toward several different types of bias.

Sampling Bias

Sampling bias is a type of bias that happens during sampling a research population. The result of sampling bias is a research sample that is not representative of the entire research population, because the sampling included certain members more than others (Bhandari, P. (2023, March 17)). Self-selection bias is when test participants have volunteered or have

had the ability to choose to participate in testing. Because these participants have chosen to be tested, this could affect the generalization of the test results. Since the sampling method used is non-probability sampling, the research sample could consist of people with the strongest opinions or are more engaged about the topic. The generalization of the results may not be valid as a consequence of the strongest opinions skewing the results. To counter this bias, asking participants why they chose to participate could help assess the impact of this bias during analysis of the research (Nikolopoulou, K. (2023, February 03)).

Selection Bias

Selection bias is another type of bias. In comparison to sampling bias, selection bias can happen at multiple different stages when interacting with study participants, including the sampling process but not limited to it. Selection bias can happen during population selection, sampling, and recruitment. Similar to self-selection bias, selection bias in general results in a research sample that is not representative of the entire research population. Subsequently giving results that do not coincide with the research population (Nikolopoulou, K. (2023, May 01)). The type of selection bias considered is social desirability bias. This is a type of selection bias where participants answer questions that "look good to others, concealing their true opinions or experiences." (Nikolopoulou, K. (2023, March 24)). Social desirability can take place in the context of this research due to the participants belonging to a similar social group as the researcher. Methods to reduce social desirability in this thesis consist of careful wording and self administered questionnaires (Nikolopoulou, K. (2023, March 24)).

Information Bias

Information bias is a common source of bias in research. In the context of this thesis performance bias would be the most relevant type of information bias. Performance bias for this research would likely be from the different groups being aware of who is part of which group, and modify their response based on that knowledge. This behavior or bias is also related to the Hawthorne effect, which is when participants are aware they are being observed or tested. The Hawthorn effect is a threat to the internal and external validity. Additionally, participants should be given ample time for testing and be given enough information about the testing procedures to ensure that other types of information or performance bias does not take place during testing (Nikolopoulou, K. (2023, March 03)), (Nikolopoulou, K. (2022, November 18)).

4.4.5 Data Analysis Strategy

The analysis method used for this thesis would be a statistical analysis. The data intended to be collected consists of the pre and post-test survey questionnaires. These surveys both collect ordinal data. Since the variables being collected are ordinal, descriptive analysis will be used for the pre-test results. Descriptive statistical analysis will also be used for the post-test survey results. For the open ended questions thematic analysis would be used to identify common patterns in the open ended responses.

4.4.6 Reliability & and Validity

Reliability and Validity represent consistency and accuracy respectively. These concepts are important in research to limit the amount of bias in collected data and should especially be taken into consideration for quantitative research (Middleton, F. (2023, June 22)). A reliable measurement and valid measurement can often be seen as the same thing since the same methods can be used to achieve both. However, the exception is that a measurement can be reliable while not being valid (Middleton, F. (2023, June 22)). To ensure both validity

and reliability, there are important steps that can be done before testing proceeds. Some of these can be done through ensuring internal and external validity.

Internal & External Validity

There is a trade-off between internal and external validity, and the type of experimental research done will decide the balance of internal versus external validity (Streefkerk, R. (2023, June 22)). Internal validity is related to how the causal relationship of the experiment is valid and that other variables are not affecting the measurement (Streefkerk, R. (2023, June 22)). External validity is how well can the results be applied to other contexts (Streefkerk, R. (2023, June 22)). For example: The testing period is short, so then many threats to internal validity will not have enough time to take place during research. For external validity, the pre-test survey does not reveal the intent of the research which is satisfaction. The population is also specialized toward beginners which should ensure that results can be generalized toward the rest of the research population that did not participate in testing. These internal and external validity considerations will contribute to the overall reliability and validity of the measurements (Middleton, F. (2023, June 22)).

Generalizability

The concept of generalizeability is connected to the results of the research. Generalizability is the same external validity. Results that are considered generalizable are results from a sample that can be applied to different contexts. Specifically, the sample and the population share the same characteristics. Generalizability is crucial to research because it is infeasible to conduct research on an entire population, so being able to generalize findings from a sample of that population is important for proper research. Generalizability for quantitative research helps to infer things about the research population. For this quantitative research, statistical generalizability can be used to collect information that can be mirrored to the population (Nikolopoulou, K. (2023, March 03)).

Chapter 5

Results, Analysis

This chapter goes through the results of the data collection of the research, the analysis of important data, and subsequently the discussion of said analysis. The results consist of a single pre-test survey, and two sets of two post-test surveys, one for each testing group. Groups were split based on their initial testing resource. The group that began testing the Discord course is the Discord group and the group that began with the Skillshare course is the Skillshare group. The pre-test survey consists of demographics and questions that measure the familiarity with different aspects of learning, games and game modifications. The post-test surveys consist of likert-scale questions with a scale from 1-5 where it scales from "Strongly Disagree" to "Strongly Agree". Additionally, the likert-scale questions are supplemented by open-ended questions after each likert-scale question to provide context for each set of answers. The analysis consists of descriptive statistical analysis. Additionally, for the open ended questions a thematic analysis will be used to gain an idea of what the test participants were thinking during answering and the themes of their answers. Finally, the last part of the chapter will discuss connections between the analysis and the theory.

To answer the research questions and subsequent problem statement, the analysis will cover some key questions taken from both post-test surveys, and the open ended questions for each questions from both groups.

5.1 Pre-Test

The first set of data is the pre-test survey results. These results consist of demographic data that helps give context to the research sample. During the pre-test survey, participants were asked about their age, gender, and levels of familiarity with relevant concepts of the research. These concepts consisted of game mods, specific games, Discord, learning on Discord, and other online course platforms. A total of 10 participants were recruited for testing. These 10 participants were between the ages of 18-29 where 4 of the participants identified as female, 3 as male and 3 as non-binary. Having an even distribution between these the different genders means the data is less likely to be skewed by one gender, and the sample thus covers a larger portion of the greater research population. Figures 5.1, 5.2, and 5.3 are visualizations of different sections of results from the pre-test survey. The participants also had prior exposure to game modifications as shown in Figure 5.1.

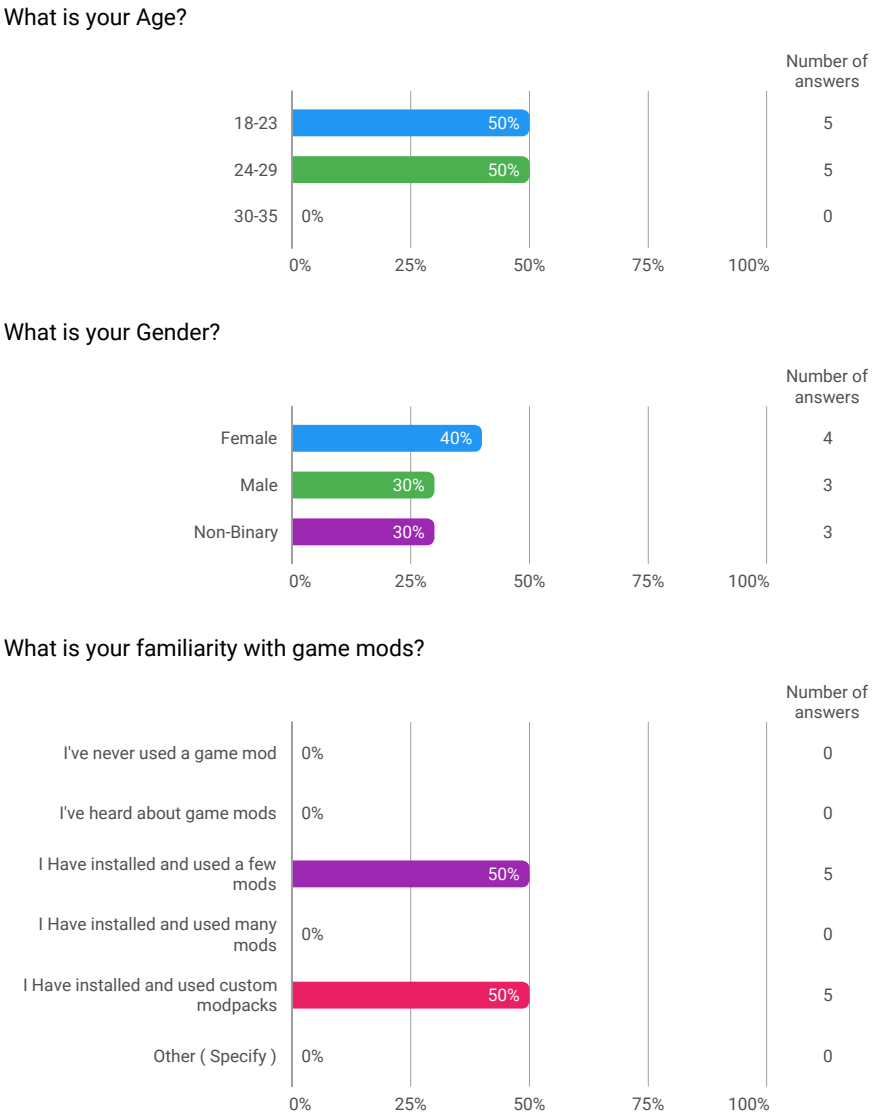
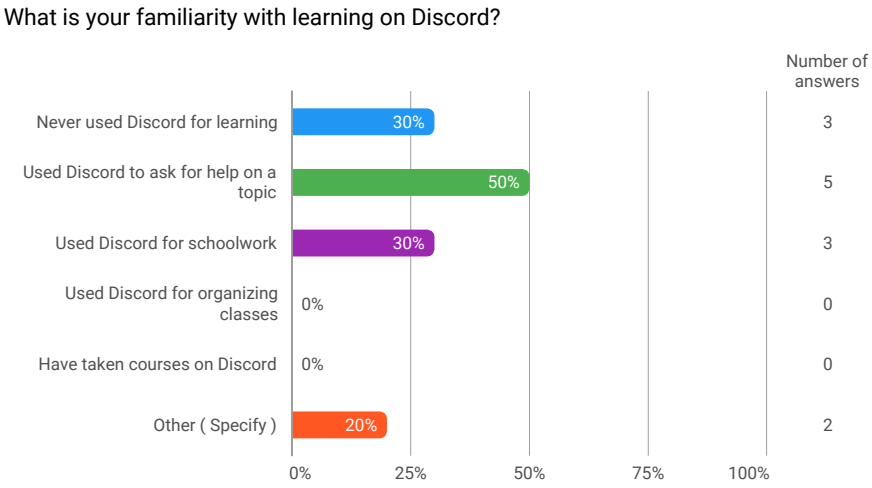


Figure 5.1: Pre-Test Results #1

Moving on, the participants were asked about their familiarity with the two game series which the learning resources cover as their subject matter. All participants answered they were familiar with the game series Minecraft and the majority of participants were unfamiliar with the game series Stalker, however two participants were somewhat familiar. Participants were also very familiar with Discord. This part of the pre-test survey can be viewed in appendix (a).

To further understand the depth of familiarity of Discord that the participants have, participants were also asked of their familiarity with learning on Discord. In Figure 5.2 the results of familiarity with Discord are visually shown. All participants had to some extent, used Discord for learning. Despite many answering that they have not used the platform for learning, many participants still chose to answer that they have used the platform to ask for help or for schoolwork. Two participants answered "Other", one of the participants answered with the following: "Have taken courses on discord on an event" and another answered the following: "Actively participate in QA support servers". For this question, participants were allowed to choose multiple answers.

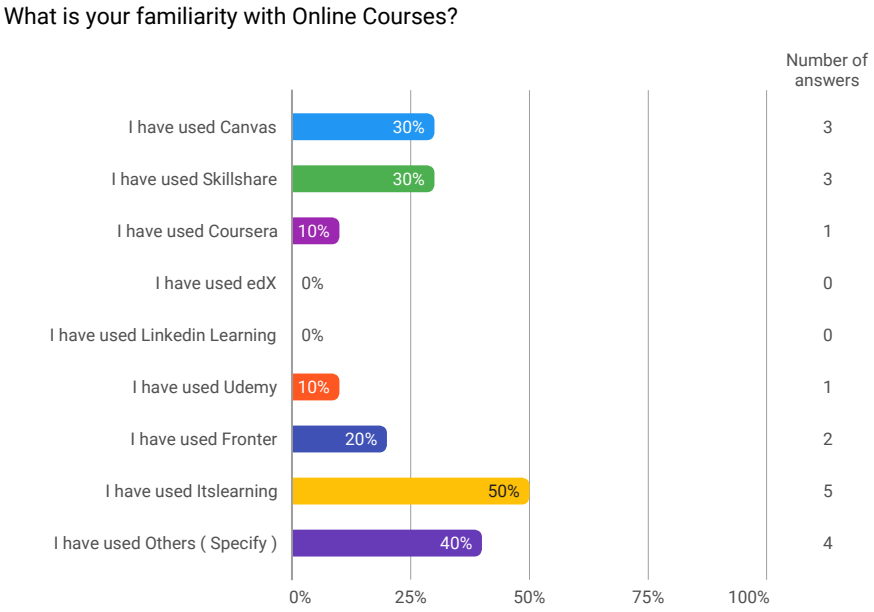


What is your familiarity with learning on Discord? - Other (Specify)
Have taken courses on discord on an event
Actively participate in Q&A support servers

Figure 5.2: Pre-Test Results #3

Finally, the pre-test survey measures what kind of learning platforms or online courses the participants are familiar with. Participants were allowed to choose multiple answers to gain an idea of how acquainted to established learning platforms the sample was. The majority of the participants have used different learning platforms or taken online courses before. Many were familiar with different learning management systems like Canvas, Itslearning and Fronter. In addition to these platforms, several participants specified other answers. These

other platforms were Duolingo, Flick, Teams, Iskole, FrontendMasters and Stepik. Interesting among these answers, Stepik is a Russian online learning platform, FrontEndMasters is a online platform to learn skills related to Front-End development, and Iskole is a Norwegian administrative tool for education. The pre-test results demonstrate that this research sample is somewhat euro-centric, and may not represent an international standing toward the research questions and problem statement. This concludes the results of the pre-test survey.



What is your familiarity with Online Courses? - I have used Others (Specify)
n/a unless Duolingo counts
i have used Flick
I've userd teams and iskole
FrontendMasters, Stepik

Figure 5.3: Pre-Test Results #4

5.2 Post-Test Surveys

The following section consists of the results from the first post-test survey where groups tested one of the learning resources. Each question features a likert-scale and open ended question. Group results are split between the Discord (Group B) and Skillshare group (Group A), this indicates which learning resource each group had began testing with. Groups consist of five people each. Each post-test is identical except for when groups test the Discord resource, participants are asked about their satisfaction toward the Discord bot component of the course, and why they feel that way. Key questions asked in the post-test surveys are analyzed with both groups answers toward both platforms.

5.2.1 Course Platform

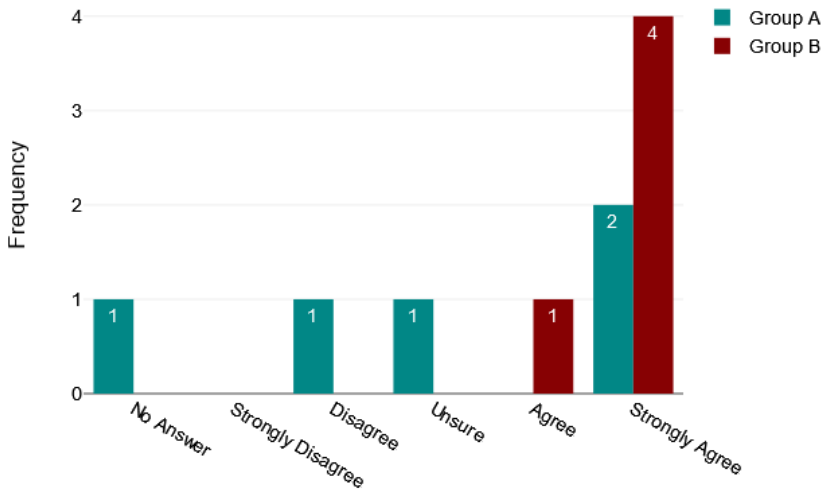


Figure 5.4: Satisfaction of Course Platform - Discord Chart

Table 5.1: Descriptive Statistics of Course Platform - Discord

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	3	3	5	2.12	5
Group B	5	4.8	5	5	0.45	1

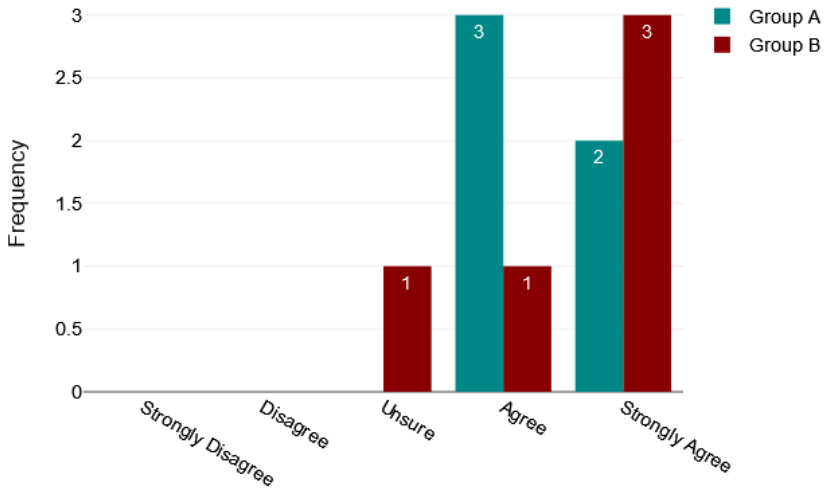


Figure 5.5: Satisfaction of Course Platform - Skillshare Chart

Table 5.2: Descriptive Statistics of Course Platform - Skillshare

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	4.4	4	4	0.55	1
Group B	5	4.4	5	5	0.89	2

When comparing the analysis of the satisfaction of course platform, Group A and B were more satisfied with the usage of Skillshare as a platform than Discord. Group B still favours the usage of Discord as the platform slightly more than Skillshare. Additionally, it appears that Group B has a tendency to answer positively throughout the post test surveys. Group A having tested the Skillshare course before the Discord course, seems to be more critical of the usage of Discord as the learning platform. However, the majority of participants seem to be satisfied with both Skillshare and Discord as a learning platform. It is clear from the open ended questions that Group B participants felt the Discord course structure was appropriate and enjoyed the asynchronous and synchronous nature of the communication platform for educational purposes. Group B also mentions that the prior familiarity and experience with Discord was a large influence in how Group B members were satisfied with the Discord course. In contrast to this Group A is somewhat satisfied with the usage of Discord as a platform. However, while some Group A participants come to the same conclusion as members of Group B, one participant did not agree that Discord as a learning platform is valuable without a teacher figure to follow. For the Skillshare course, Group A found the usage of Skillshare to be a logical, appropriate platform to host a course on. Group B also agreed that Skillshare was an appropriate platform, but many participants made mention of the paid aspect to Skillshare and that not being free was an important part to their satisfaction. Despite this Group B was still largely positive toward Skillshare as a platform.

5.2.2 Course Structure

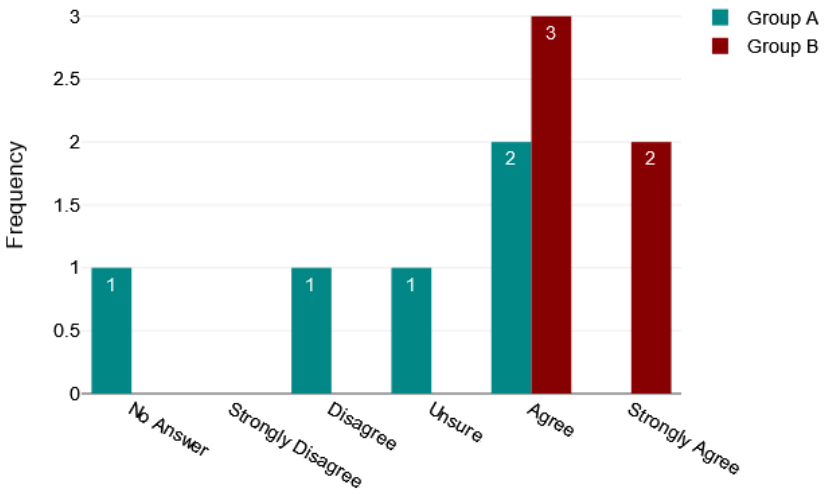


Figure 5.6: Satisfaction of Course Structure - Discord Chart

Table 5.3: Descriptive Statistics of Course Structure - Discord

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	2.6	3	4	1.67	4
Group B	5	4.4	4	4	0.55	1

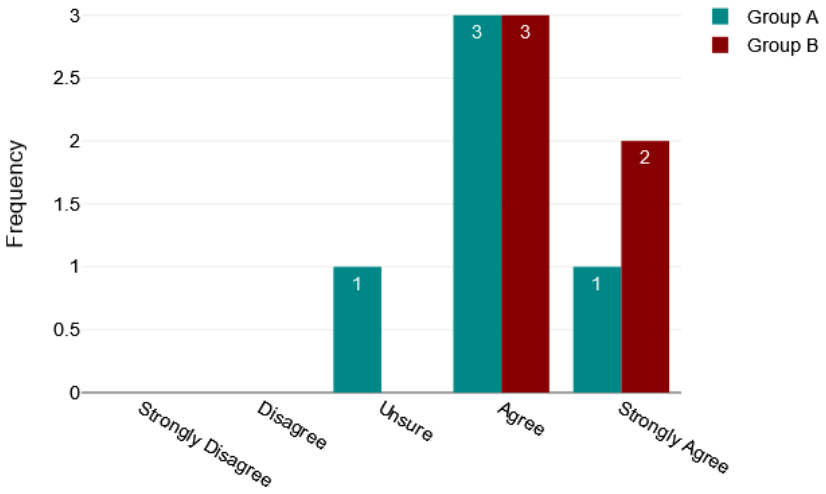


Figure 5.7: Satisfaction of Course Structure - Skillshare Chart

Table 5.4: Descriptive Statistics of Course Structure - Skillshare

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	4	4	4	0.71	2
Group B	5	4.4	4	4	0.55	1

Interestingly, in the results for the course structure, Group B answered the same for both platforms. Group A is also more satisfied with Skillshare rather than Discord. The positive satisfaction results continues between the group results. When examining the open ended questions, A common theme among Group B when answering about the structure of the Discord course, was that it was easy to follow. For the Skillshare structure, Group B participants found that it was very clear, and that each step in the process of taking the course made it very easy to follow. Group A found the Discord structure to be well organized. However, one participant found it to be confusing and not easy to understand. For the Skillshare course Group A was satisfied with the structure. Most did not go into depth why, those that did mention that it felt complicated at times or that it seems to be structured well.

5.2.3 Learning Materials

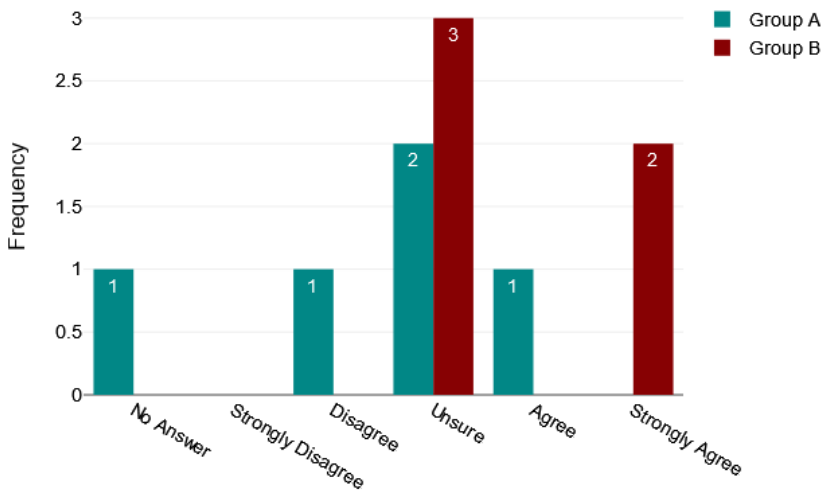


Figure 5.8: Satisfaction of Course Learning Materials - Discord Chart

Table 5.5: Descriptive Statistics of Course Learning Materials - Discord

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	2.4	3	3	1.52	4
Group B	5	3.8	3	3	1.1	2

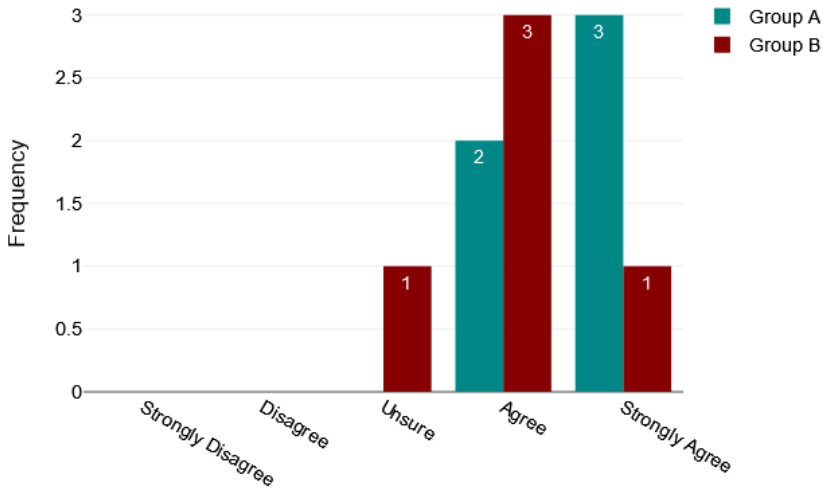


Figure 5.9: Satisfaction of Course Learning Materials - Skillshare Chart

Table 5.6: Descriptive Statistics of Course Learning Materials - Skillshare

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	4.6	5	5	0.55	1
Group B	5	4	4	4	0.71	2

For the learning materials, it is clear that both Group A and B were satisfied with the learning materials used by the Skillshare course. Participants of Group A responded with that the learning materials were easy to understand, that they were interesting, fun and the videos had subtitles and a transcript section which was good from a accessibility point of view. Group B also answered that the materials were clear to follow and explained what was required, the materials were also well paced, and relevant. To one participant of Group B, could have been confusing for a complete beginner. Group B felt unsure or confused about the learning materials present in the Discord course. Those who had a grasp of the content, felt that it was presented in a simple, useful way, that was well planned out. Group A preferred video materials over written instructions with images. Other answers simply say the content seems fine, or nice.

5.2.4 Additional Resources

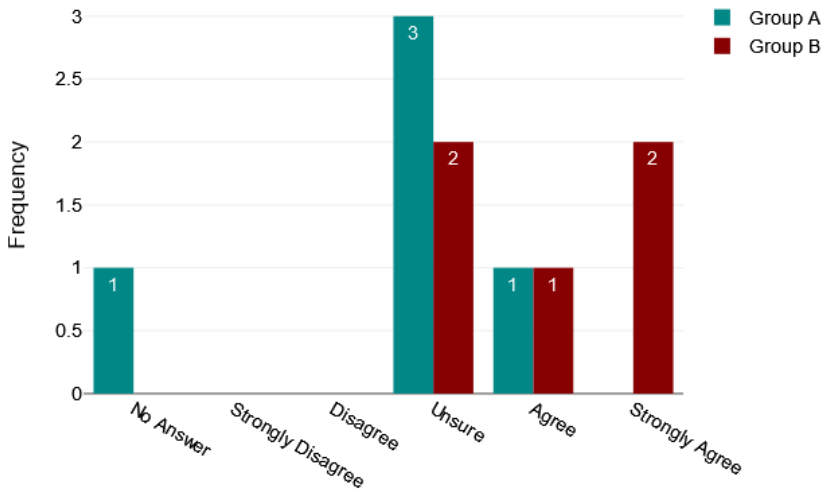


Figure 5.10: Satisfaction of Course Additional Resources - Discord Chart

Table 5.7: Descriptive Statistics of Course Additional Resources - Discord

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	2.6	3	3	1.52	4
Group B	5	4	4	3	1	2

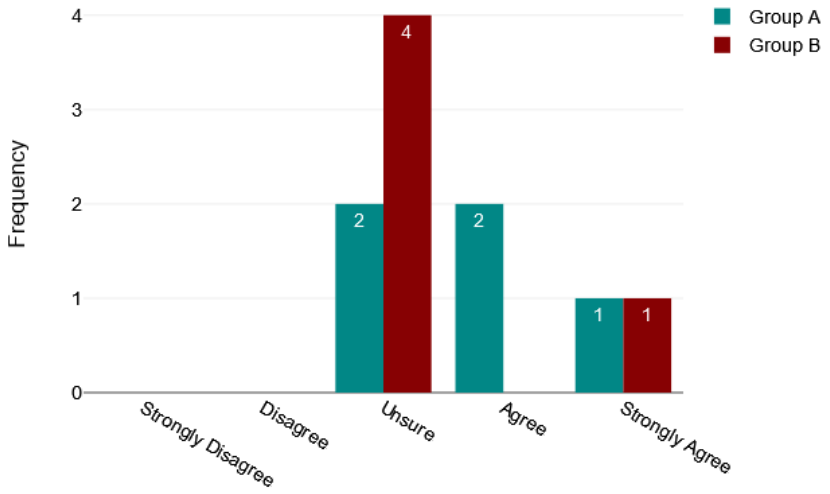


Figure 5.11: Satisfaction of Course Additional Resources - Skillshare Chart

Table 5.8: Descriptive Statistics of Additional Resources - Skillshare

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	3.8	4	3	0.84	2
Group B	5	3.4	3	3	0.89	2

For the additional resources made available by each course, Group B was more satisfied toward the Discord course, and less so for the Skillshare course. Group A Had some doubts about both Discord and Skillshare in terms of the additional resources. Especially toward the Discord course. A theme for both groups is that many seem unsure about what the specific resource available were in both courses. Often outright saying they do not know what "additional resources" means or not providing an opinion as an answer. The participants who did not answer the previous statements simply made mention that the additional resources were good. The ones that go further into detail answer that the additional resources are abundant or exhaustive.

5.2.5 Course Overall

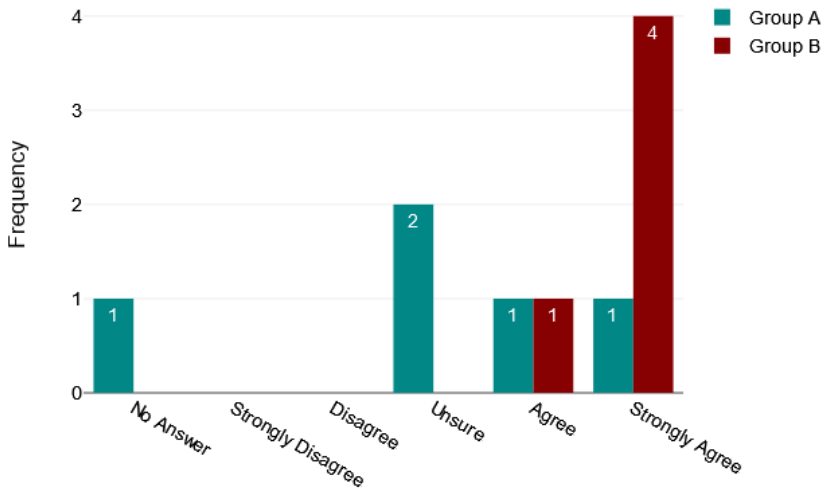


Figure 5.12: Satisfaction of Course Overall - Discord Chart

Table 5.9: Descriptive Statistics of Course Overall - Discord

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	3	3	3	1.87	5
Group B	5	4.8	5	5	0.45	1

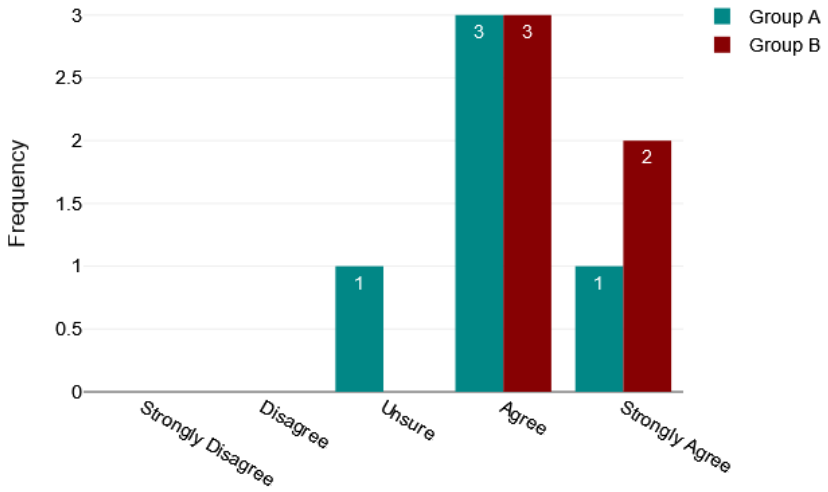


Figure 5.13: Satisfaction of Course Overall - Skillshare Chart

Table 5.10: Descriptive Statistics of Course Overall - Skillshare

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	4	4	4	0.71	2
Group B	5	4.4	4	4	0.55	1

Participants from both groups were more satisfied with the Skillshare course overall than the Discord course. However, Group B specifically rated the Discord course higher in many categories over the Skillshare course. By examining the open ended questions some insight can be found into the level of satisfaction for the course overall. Group B participants found the course overall to be well suited for individuals that fit the target audience or research population. Group B found the course to be detailed and that it had potential. Group B was also satisfied with the Skillshare course. A theme among answers is that the Skillshare course seems well suited for beginners. Additionally, Group B found the Skillshare course to be well planned and built. Moving to Group A, where participants were clearly favoured the Skillshare course overall. Group A answered that the Skillshare course was enjoyable, and that it contributed to their modding skills. However, for the Discord course Group A was far more critical. One participant wrote they felt outright conflicted with the course. Another wrote that the course would have been better on Skillshare. Otherwise, it seems a few Group A members were only somewhat satisfied with the Discord course.

5.2.6 Discord Bot

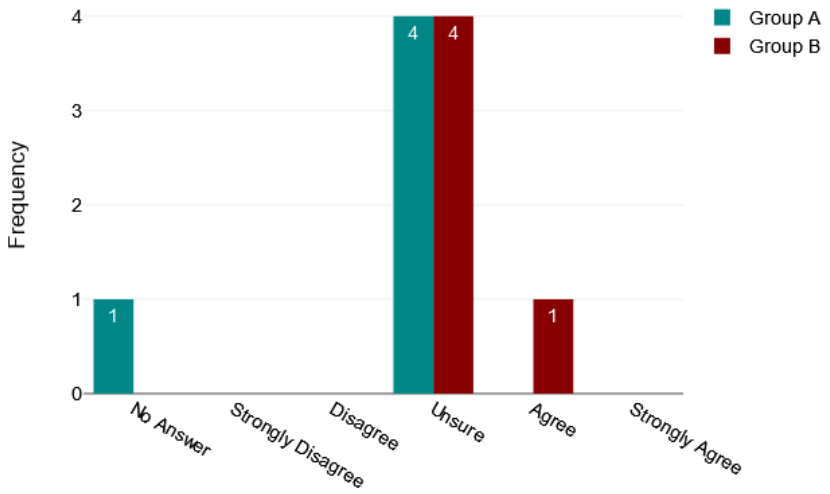


Figure 5.14: Satisfaction of Discord Course Bot

Table 5.11: Descriptive Statistics of Discord Course Bot

	Frequency	Mean	Median	Mode	Std. Deviation	Range
Group A	5	2.4	3	3	1.34	3
Group B	5	3.2	3	3	0.45	1

It is clear the majority of the test participants of both groups did not interact with the Discord bot during testing. Despite the majority of participants being unsure or not having used or interacted with the Discord bot, one participant answered that the bot was good, however this answer is likely toward the idea of the bot, rather than the implementation. Many participants wrote that they did not use the bot outright. Furthermore, one participant answered they did not notice it being a feature of the course. Another wrote that they attempted to use it, and it did not respond. This was likely because at one point the bot application was offline and gave no response when used.

Chapter 6

Discussions

6.1 Discussion

This chapter covers the discussion of the results and analysis, and connects these together with the theory. These connects should infer a conclusion to the two research questions which can address the problem statement.

6.2 Using Sosio-Cultural theory as tools to mediate learners

Using Sosio-Cultural theory (SCT) as a toolset to assist in the design of a course or learning resources may help in many ways. Specifically, the resource created for this research used the Zone of Proximal Development (ZPD) and Scaffolding. In terms of the context of this research, the learning content made available was partially informed by ZPD and Scaffolding. When learners are attempting to learn something for the first time, imitation is used in problem solving, and the source of what to imitate comes from the course teacher, teacher figure, or more knowledgeable other. The structure, learning materials, additional resources and tasks were designed with this in mind. As the course creator, content/tasks must be designed in a way that allows learners to reach out into the ZPD, where they can accomplish tasks with some amount of help. To do this, Scaffolding is also taken into consideration. Using Scaffolding in tandem with ZPD means that the beginning of the learning process, learners are slowly introduced to the concepts, executions and requirements of the learning activity or course. This way, learners can more easily reach the ZPD and achieve greater learning.

The course was designed to introduce all the tools and provide some tips and guide learners to what tools and ideas are necessary before learning game modification skills. As learners are introduced to the game modification skills, the written instructions follow some of the steps necessary to achieve a full game mod, however in some places learners are only shown a task once, and must repeat it several times alone. From the results and analysis in the context of the Discord course, participants were overall satisfied with how the course structure, learning materials, and tasks were implemented. However, this appears also to be the case for the other course used for testing. In addition, this other course dedicated to teaching game modification skills for Minecraft is also a more feature complete product, in comparison to the Discord course. In general, this difference can be seen in the overall satisfaction toward the Skillshare course, where more often than the Discord server, participants agreed that many of the components of the course were satisfactory. This is especially true for the aforementioned course structure, learning materials, and tasks. All of the different implementations of course structure, learning materials, additional resources and tasks between each course seem to coincide with and support Sosio-cultural theory. Ensuring that learners are well informed and

prepared for the learning tasks and outcomes seem to provide a greater perceived learning experience, when looking at both implementations.

6.2.1 Constructing knowledge through online courses

In the context of the Discord server design, social constructivism is used like a rationalization or way of thinking. Game modification skills are learnt when individuals seeking to solve a problem in the game. For example: to add a weapon or change a file in some way. These individuals then seek out assistance in Discord servers related to the game or popular modifications for said game. New or aspiring modders usually learn by constructing knowledge through collaboration with someone who knows more, which allows people to gain an entry to game modification skills. This is something the Discord course attempts to simulate through the course curriculum. When looking at the Discord server course, participants were satisfied with the platform and the usage of Discord as a learning platform, and many saw value of using it for that context. Another common theme in the results of the Discord server is that some participants specifically mention the ability to communicate directly with the course tutor on the same platform. This is beneficial because Discord allows for asynchronous and synchronous communication, so learners can communicate in their time, and receive necessary info on the same platform, in the same server. In comparison to a course hosted on Skillshare, which does not have the same communication ability as Discord. This aspect of communciation and recieving help appears to be preferred for learners. Another way that social constructivism has influenced the course design is through the additional resources. Learners can combine their prior course content and construct new knowledge based on the additional resources. Since the course was not completely finished according to the initial plan, the final module of the course asks learners to examine the additional resources made available by the Discord bot to find further learning. Participants from both groups seem to have answered that they were satisfied with the additional resources available in the Discord course, but the consensus on the Discord bot satisfaction points to that the participants have not interacted with the method to gain access to the majority of these resources. Groups seem to have answered based on the additional resources already made visible previously in each channel in the server.

The additional resources made available by the Skillshare course are very easily accessible and visible to learners at all times in the course. In this case, it seems the implementation of the addition resources was more satisfying for learners than how they are provided in the Discord course. In constructivist terms, both courses about game modification skills allow learners to learn slowly in the beginning by the implementation of ZPD and Scaffolding. Later in the courses, being able to diverge or change certain things to ones liking is given. The original plan of the Discord course was to also teach texture related skills, re-texturing. For example, instead of keeping the same colour, users could re-texture it to be two-toned instead of one colour. This way learners could make changes or adjustments to the texture of the weapon model to their liking with the knowledge that has previously been learned. This is also true but fully implemented for the Skillshare course, which allows learners to customize their items and blocks. This aspect is in line and supports both constructivism and social constructivsm, and using these seems to be an useful mindset while creating online course content. Especially for course curriculum about creation or teaching skills that emphasise something that someone can practice several times over.

6.3 Aligning the learning goal to the design

Constructive alignment is one of the key theories used to influence the design of the Discord course. The thread of alignment in the Discord course is between the intended learning

outcome, and the learning activities. The goal of the course is for learners to cover all the necessary steps to add a custom weapon model into the game S.t.a.l.k.e.r. where learners go step by step as required. By using constructive alignment the course is tailored to ensure that all of the activities throughout the course would align with the overall goal in a chronological way. Ultimately, the process of learning and interacting with each step in the process is more important than the overall performance of the learner. A better performance or result can come later through repetition. Like the structure, the tasks are paced where learners begin from the top of the server channel list, sorted into modules. As learners progress they go further down the list toward the last module and last pages of the course. The alignment of the goal is represented through the combination of the structure and tasks. Similarly, the Skillshare course has a learner go through video material in a similar way, but instead of a Discord server, a list of videos sorted by chapters continue to the bottom of a playlist. The course tasks made available in the Discord course, testing participants found descriptive, well paced, and relevant toward completing the goal of the course. This seems also true of the course task satisfaction of the Skillshare course, which has a similar pacing to the Discord course. Constructive alignment is also complementing the other constructivist learning theories used in the design of the Discord course. Moreover, the Skillshare course seems similarly built around the goal to construct ones own set of game items. Additionally, the pacing is also designed in a similar way to that of the Discord course. Further, the specific implementation of the tasks and structure in the Skillshare course seems to be preferred. This seemingly supports the findings of constructive alignment theory. For online course designs keeping constructive alignment in mind might assist other aspects of learning not just perceived learning experience, especially when used with other constructivist theories. Using both the Discord and Skillshare course as inspiration or a guide, ensuring that the overall goal of the learning outcome is in focus with the rest of the course content, learners will not be lead astray during learning, which might ensure that there is less learners that lose motivation and stop learning that specific skill.

6.4 Learning through social networks

The Discord bot was a key feature included in the Discord server course inspired by Connectivtism. The implementation of the bot is very simple, where learners are able to execute a slash command to ask the bot for additional resources that assist with further learning. The bot acts as an implementation of Connectivist and Constructivist theory. The goal of the bot is to act as a more knowledgable other (MKO) to help guide students forward after the course is finished. Because Discord functions as a social network, the more nodes in the network, the greater the network. The bot provides additional nodes of information from different sources (resources made by the modding community). The bot can be further expanded alongside the course with even more resources and different functions, because in connectivism to have continual learning the connections have to be maintained and new ones created. The idea of a discord bot that contributes to this role and context is proven from the results of Discord learning platform and the classroom environment/active learning community (Vladoiu, M., & Constantinescu, Z. (2020)), (Wiles, & Simmons, (2022)). However, the implementation of the Discord bot in context to the one created for this research is extremely limited in comparison. As a result of the implementation the Discord bot went seemingly unnoticed by test participants during testing, with only a few acknowledging the novelty of the Discord bot. It seems that Discord as a platform has many benefits, but the majority seem to prefer the Skillshare course based on the course platform and structure. The usage of Discord as a learning platform support connectivist theory. However, the implementation or usage of Skillshare is seemingly not equally supported by connectivism. Likewise, the implementation of the Discord bot cannot confirm the findings of connectivist theory due to the implementation and lack of attention from the participants. Furthermore, prior research

shows that Discord bots can boost or assist different elements of a learning environment and could function as a MKO to some degree if implemented correctly. In contrast to Discord, Skillshare as a platform is not a social network, but shares some characteristics of connectivist theory. Considering the platform itself as just a network, the courses on the platform created by other teachers function as nodes, and these nodes also have resources, learning materials, ect.

6.5 Two Views of Motivation

Self Determination Theory (SDT) and Social Cognitive Theory (SCT) make up the two motivational theories related to this research.

6.5.1 Self determined online learning

Specifically for SCT the concept of Self efficacy is taken into consideration. When individuals learn about game modification skills, these individuals are generally more intrinsically motivated or autonomously motivated. This is because according to cognitive evaluation theory (CET) the activity or desire to learn these skills comes from within. The Discord course can facilitate autonomy and further maintain intrinsic motivation by using the features in a learning context. The three basic psychological needs of Autonomy, competency and relatedness can be satisfied by the usage of Discord. Because the design of the course on Discord allows for each learner to take the course at their own pace, and some choices are provided at the end of the course in terms of further learning resources learners may experience more autonomy rather than learning outside of a course context. Having a course tutor available to communicate with during the course can also contribute to autonomy by acknowledging learners. In addition, a course tutor that can communicate asynchronously and synchronously can directly contribute to competency and relatedness more so than other platforms. By having someone responsible to help learners alongside the course, and provide feedback and giving a positive tutor/learning relationship will satisfy the psychological needs according to basic psychological needs theory (BPNT). Through satisfying these needs, it will result in learners having a autonomous orientation. According to causality orientations theory (COT), the type of orientation an individual has is the result of the social environment the individual is a part of. In this context, the social environment is the Discord course server. Another aspect of SDT that can be included is goal contents theory (GCT). Goals also affect how autonomy, competency and relatedness are satisfied. Like most of the subtheories from SDT, the ideal is to strive for autonomy/autonomous orientation and intrinsic motivation, GCT is no different.

The overall goal of the course is defined by constructive alignment where learners are to create a weapon modification step by step. By taking the Discord course, the main goal puts learners into a situation where learning each skill and process is necessary to continue to the next step, emphasising the more skills learnt, the more the learner grows in the course. Additionally, having the course tutor, discord bot and other students visible and available in the course will lead to different kind of relationships within the context of the course. However, the opposite can also be true if there is a situation where the bot is offline, the course tutor is offline or unavailable, and the other learners who participate in the course dislike each other or have disagreements. Then in this situation the basic needs would be frustrated resulting in poor orientations and extrinsic motivation. This is because of how relationships motivation theory (RMT) highlights that different kinds of relationships and interactions between people can satisfy or frustrate the three basic needs. It is also important to consider the different ways that the course design can support or frustrate the basic needs because of the ideal and effect of the autonomous or intrinsic motivation. Likewise, if these needs are frustrated, this

causes the opposite, a extrinsic motivation or controlled/amotivated orientation. Organismic integration theory (OIT) represents the different kinds of extrinsic motivation types. It is shown through OIT and CET that the greater self determined behavior, the greater the satisfaction, enjoyment of the task, in addition to increased growth, integrity and wellness. This also seems to confirm the findings of the different sub theories of SDT.

6.5.2 Cultivating self efficacy through course design

In contrast to SDT, SCT and self efficacy represents the other view of motivation in the context of the Discord course. By using Discord as a platform for learning game modification skills, emphasis is put on the learner and their personal agency while taking the course. The discord course also contributes to a self-efficacious behavior through the design. By establishing the overall goal of the course with constructive alignment and using scaffolding to ease learners into the first steps, learners are introduced to their own outcome expectancies which gives the learner an belief about the consequences of their actions. In the context of the Discord course, the actions are each step of the process, and the consequences are a learning outcome for each completed step. The level of self-efficacy is directly affected by the the outcome expectancy is defined by the learner. The different types of self efficacy can also be applied to the Discord server. The course contributes to individual self efficacy by the aforementioned usage of constructive alignment, and scaffolding, but also ZPD. Social self-efficacy takes place because of the Discord server itself, and allowing for a community to exist inside it. Finally there is also teacher/tutor self-efficacy and social learner self-efficacy between the two different roles in the server.

The Skillshare course also does this to a similar degree, since the course creator/teach follows the learner along as a teach figure in each video. Similarly to SDT, these different types and sub-types of self-efficacy can equally be affected negatively. If tutors do not believe they can assist learners in the course, and if learners believe they cannot interact with the course content created by the tutor, or the discord bot cannot provide what the learners expected in terms of further learning the perceived self efficacy will result in less motivation, less self-regulation, and the remaining abilities connected to SCT will also be lessened. One beneficial aspect of the Discord server design is that when most of the course content is already created and updated, there is much less of an expectation toward the tutor in terms of commitment. If the course content does most of the teaching, the tutor needs only to act as a guide or MKO. This is also technically true of the Skillshare course as well. By examining the open-ended question results of both groups in the satisfaction of subject matter and learning outcome, there is an indication that test participants had varied degrees of intrinsic, extrinsic motivation, different mixes of orientations and different levels of self-efficacy. There is additional an indication that these different degrees of motivation remained largely unchanged overall between each group and each course, with only a few feeling particularly satisfied with the learning outcome of each course. Because both courses do implement ways for learners to be slowly introduced to the material of the course, gradually increasing in complexity, it appears to confirm the findings of social cognitive theory.

6.6 Benefits and Drawbacks of Discord and Skillshare

In general, based on this research and other reflections, both Discord and Skillshare courses have similar benefits and drawbacks that support the usage of each platform. Likewise, both platforms share some design cues and inspirations despite not necessarily being developed for the same exact intention or people. Discord and Skillshare are online courses and are reliant on a constant internet connection. This makes the course content both accessible and inaccessible. For those who do not have proper internet access or infrastructure who want

to learn these skills, it may be difficult to learn through online courses. However, being fully online does enable anyone with that access to learn those skills and much more. Building on the online nature of these courses, the content or course itself being hosted on a website or application does mean if the provider of that service ceases that service, that content will be lost. Because the course teachers do not necessarily own the platform, that enables the risk of that content disappearing. In addition, having a course hosted on Discord which requires a Discord account can be frustrating for a few reasons. Firstly, creating an account itself can be annoying for some individuals, leading to learners choosing to go elsewhere or dropping the subject. Secondly, having the course curriculum on Discord prevents easy access to that information outside of that platform. The ability to search for game modification skills online and finding a website or forum page with the desired information acts as a stronger node in the network so to speak. This is less of a drawback for Skillshare which can be easily found through a web browser. Similarly to Discord, Skillshare also requires an account to be made, but also is a paid service. This is more of a drawback for Skillshare rather than Discord, since is it not a requirement to use the platform. Trials can be acquired to use Skillshare for a period, but ultimately is a paid service. Several test participants also pointed this out, and also felt it was a drawback.

Chapter 7

Summary & Conclusions

7.1 Conclusion

This project set out to create and test a distributed online course for game modification skills. The design of the course was influenced by several learning theories and motivational theories. The course was created and hosted on the communication platform Discord using a discord server. Using the features of Discord several modules and pages in the form of categories and channels served as the implementation of the different theories. Additionally, there is a simple Discord bot meant to distribute several resources for learners once the course is completed. While some research has been conducted on the usage of Discord in an educational context, and on the concept of game modifications, this research aimed to view these topics from a post COVID-19 point of view. The majority of studies on Discord stem from the rapid hybridization of education as of the result of lockdown. Furthermore, there is still little research dedicated toward the act of teaching game modification skills. Specifically, the project seeks to examine perceived learning experience when taking these online courses.

To complete this research, a total of 10 participants were sampled split between two groups. These groups were sampled out of a population that had relevant criteria of people interested in game modifications. Groups tested two courses dedicated to teaching game modification skills, one being the Discord course created for this research, and a Minecraft modding course hosted on Skillshare. A quantitative approach was used, in a test for a quasi-experimental design. Data was collected by sending participants a pre-test survey and a post-test survey after each learning resource was tested. The questions or aspects the courses were tested on are the same for each resource. Participants answered likert-scale questions from 1-5 and open ended questions to supplement the likert-scale answers.

There were two research questions created to address the problem statement of the research. The problem statement being: **"For Young adults, does the use of Discord provide a greater perceived learning experience in comparison to a similar platform?"**

Research Question 1: Which aspects of the online courses seem to be preferred? The results may point to the Skillshare course providing the most preferred solution, however knowing which elements or aspects specifically influence the perceived learning experience could yield valuable feedback for course creators to implement into similar contexts. Ultimately, from the results alone, when measured against the Discord course, it appears the Skillshare course about game modification skills for Minecraft has a greater perceived learning experience than the Discord. This conclusion comes from the descriptive statistics of the different answers from each question asked in the post-test surveys. Additionally, each chart representing the answers for the Skillshare course demonstrates that participants from both groups are more satisfied with the Skillshare course. This is the case for most of the

categories or questions asked in the post-test surveys. This is not representative of all the categories but the majority of them. Most important being the satisfaction of the course overall. The results of the tests appear to show that the central tendency, and variability for each category of the each course leans toward the Skillshare course providing a greater perceived learning experience in the context of the research sample. This can be attributed toward the implementations as each aspect of the Skillshare course, despite the drawbacks it has. To answer the research question: Each aspect of the Skillshare course during testing seems to be the preferred implementation.

Research Question 2: What are the major differences between the two platforms and implementations? There are a few central themes that can be drawn from the descriptive statistics and the thematic analysis. Despite the Skillshare course having implemented the preferred aspects of course design. the Discord course still has some elements that were deemed satisfactory by the research sample. Group B specifically had a tendency to answer that the different categories of the Discord course were very satisfactory. This includes the usage of the course platform, structure, and the course overall. Using Group A and B responses as criticism, one design change could be to implement video form learning materials instead of only written instructions and images, the participants struggled to grasp the learning materials. One aspect is Discord itself, many participants found novelty with asynchronous/synchronous tutor guided course. In addition, the prior familiarity with the platform also helped participants be onboarded or scaffolded as learners. This point is also relevant of the course structure, which also lends itself to prior familiarity.

A common theme for both groups was the satisfaction toward the additional resources made available by the Discord course, and subsequently the Discord bot which distributes them. It is clear that with the research sample, the implementation of the Discord bot was not satisfactory and did was not preferred by participants. This also means that the answers about the additional resources for the Discord course are brought into question. While many answered that they were unsure, some answered that they were satisfied with them, it could be that this a potential bias where participants simply chose a answer that appeared the best or that participants answered based on the additional resources that were already visible in the course, and not based on receiving them by the Discord bot. Based on the results from the Discord bot, all participants did not feel satisfied or dissatisfied because they did not interact with it. Moving on, the other aspects that were not equally satisfactory as the Skillshare results may still provide an idea of what specifically may affect satisfaction. Some of the categories and their theoretical design decisions could also be applied to the design of the Skillshare course.

The Skillshare course is a finished course product available for individuals to purchase, so it is clear from a quality standpoint it will be more satisfactory than the Discord modding course which is not a complete course. However, in terms of the Discord server design, there are some conclusions that can be drawn. The structure, learning materials, and tasks informed by sosio-cultural theory were deemed satisfactory. Self determination theory, social cognitive theory and constructive alignment which informed the design of the course goal, tasks and learning outcomes was somewhat satisfying. The Discord bot and usage of Discord inspired by connectivism is mixed. Using Discord as a learning platform was satisfying due to the different benefits of using a communication platform for learning. The Discord bot did not have an effect on the perceived learning experience because of the lacking implementation. In conclusion, when looking at all the different categories and the courses overall, the aspects of course platform, structure, and learning materials and how these are designed are the aspects that affect satisfaction specifically.

Neither of the research questions appear to not support the problem statement of the research

and rather point to the problem statement to be false in this context. Ultimately, there is an small indication that the Skillshare course has a greater perceived learning experience because it being more preferred than that of the Discord server. Furthermore, the specific aspects and implementation of the course platform, structure and learning materials seemingly affecting the preference the most. Finally, the major differences in implementation between the two courses is that the Skillshare course uses video learning material with a short duration for each concept and task, has clear additional resources available, and is generally a more finished product. There are many similarities between these courses that can be attributed to the theories mention, like the goal oriented pacing and progression, in addition to the way learners are scaffolded and eased into the ZPD. Some of the downsides being Skillshare is a paid service, that cannot rely on the same prior experience of using Discord, unless a learner has previously used the platform, which was the case with one participant. This does not necessarily indicate that the Discord course could not and did not contribute positively to the perceived learning experience as Group B had a tendency to answer favourably to each aspect. In the context of motivation, it is difficult to say whether or not the Discord course or the Skillshare course had any difference toward the motivation of learning game modification skills, considering many of the sample participants made it clear that they were not equally motivated to learn the skills to begin with. However, it seems that in end the Skillshare courses implementation of each aspect was preferred overall. However, it must be noted that since the research sample is so low for quantitative research, a definitive answer cannot be drawn from these conclusions, only inclinations and potentials.

7.2 Recommendations for Further Research

There are many faults and limitations around this research, which can provide many paths for researchers to take moving forward. One path is to do a similar test but with more equal resources that have been designed with the same or opposing learning theories. Another path is testing with a better implementation of the Discord bot. Research dedicated or focused purely on the Discord bot would provide a better answer in the context of using connectivism in online courses. Ideally, this research would have used a mixed method approach, and gone into depth with additional data collection methods to have a greater understanding of the research into these learning theories and their implementation into a Discord course.

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Wiles, A. M., & Simmons, S. L. (2022). Establishment of an Engaged and Active Learning Community in the Biology Classroom and Lab with Discord (A. Pike & M. Segura-Totten, Eds.) [Number: 1]. *Journal of Microbiology & Biology Education*, *23*(1), e00334–21. https://doi.org/10.1128/jmbe.00334-21

Appendix A

Appendix A - Test Results

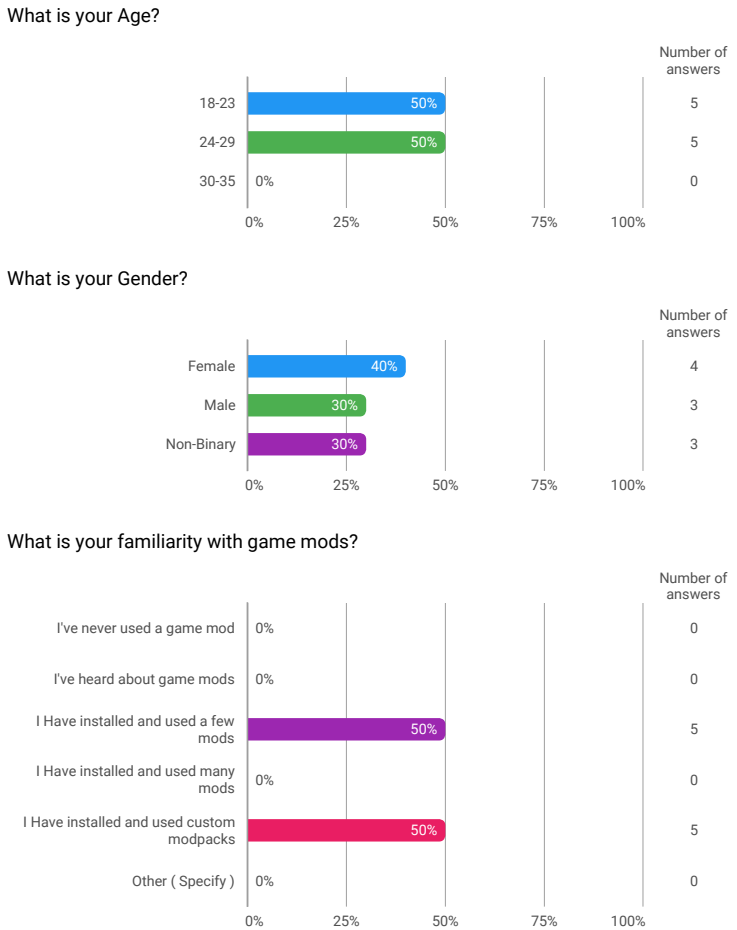
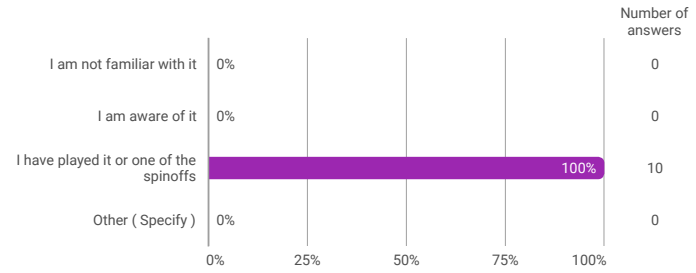
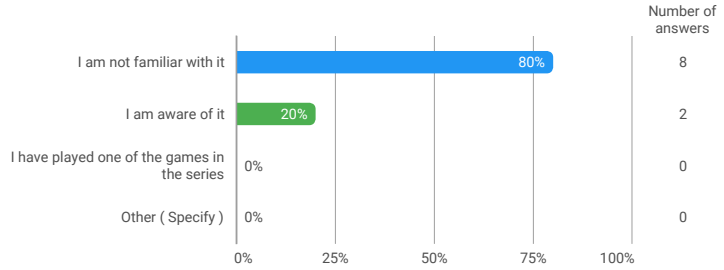


Figure A.1: Pre-Test Results # 1

What is your familiarity with the game "Minecraft"?



What is your familiarity with the "Stalker" Game series?



What is your familiarity with Discord?

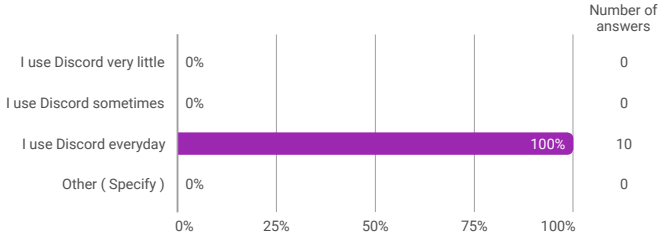
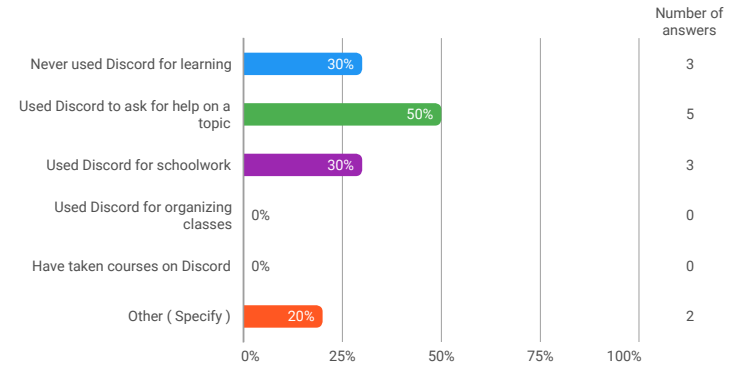


Figure A.2: Pre-Test Results # 2

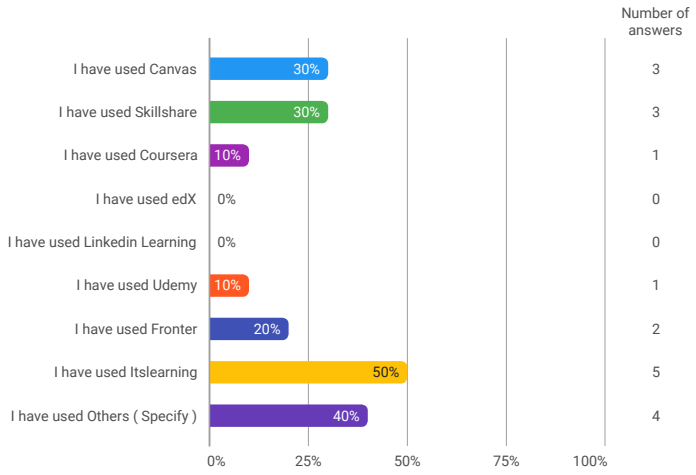
What is your familiarity with learning on Discord?



What is your familiarity with learning on Discord? - Other (Specify)
Have taken courses on discord on an event
Actively participate in Q&A support servers

Figure A.3: Pre-Test Results # 3

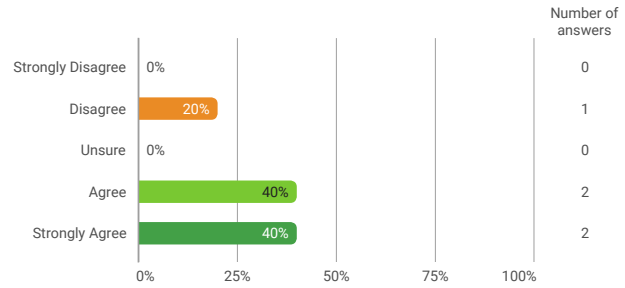
What is your familiarity with Online Courses?



What is your familiarity with Online Courses? - I have used Others (Specify)
n/a unless Duolingo counts
i have used Flick
I've userd teams and iskole
FrontendMasters, Stepik

Figure A.4: Pre-Test Results # 4

I feel satisfied with the course Subject matter?



Why do you feel that way about the Subject matter?
its very interesting, i am just not very smart
interesting to see how this type of modding can be done
The subject of this course is not within my scope of interests unfortunately.
New game for me and some new software, but the step by step was detailed and easy to go along with
Game modding is a thing that benefits the whole ecosystem, and can be either a fun hobby for enthusiasts, a gateway into a game development career, or a decent job in itself

I feel satisfied with the course Structure?

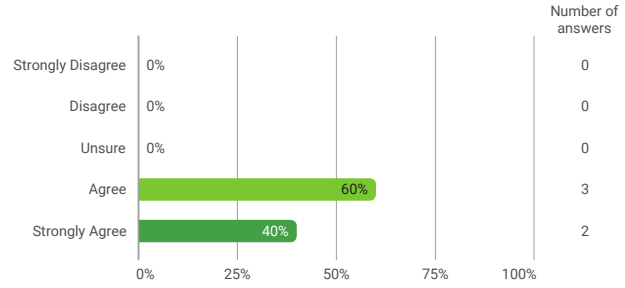
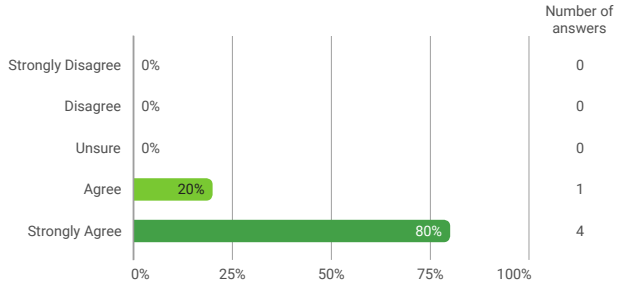


Figure A.5: Post-Test # 1 Page # 1 - Group B - Discord Course

Why do you feel that way about the Structure?
very well put together, easily followable
structure feels intuitive, with a clear progression
Very detailed and easy to follow
There's a pretty lengthy setup process pre everything. Of course, all of that needs to be set up, but I'm wondering if it could be dispersed throughout the course so you set things up as they're needed
The structure of the course was neat, orderly, and easy to follow.

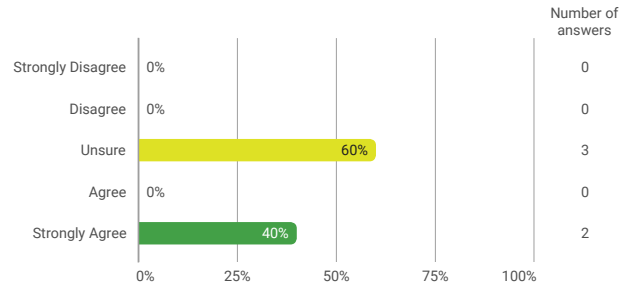
I feel satisfied with the course Platform?



Why do you feel that way about the Platform?
discord is very familiar, which makes navigating easier and less daunting than using a program or website i am unfamiliar with
am used to discord, so the way modules and sections are set up works well for me. nice to have all needed info as well as feedback/question channels in the same place
The platform used for this course feels relevant and adaptable. I enjoyed how visual media were incorporated for clarity.
Discord is a nice platform to organise this, and could be made perfect with a custom bot for unlocking sections, creating private support threads, "homework check" threads and open discussion channels for everyone who's reached the specific points in the courses
Discord is a good platform because you can easily get in contact with the right people if you need help etc.

Figure A.6: Post-Test # 1 Page # 2 - Group B - Discord Course

I feel satisfied with the course Learning Materials?



Why do you feel that way about the Learning Materials?
walks you through the required steps in a manner that is beginner friendly, i think this is about as simply as this workflow could be explained. very useful to have screenshots of steps
ngl it seems very good, but i am not smart or knowledgeable in this so it was quite confusing for me
While it is incomplete, from the existing material it is clear that there is a thought through plan, and the existing content gives just enough info to not have to create a "just another course" while still being comfortable enough for the person taking it.
I don't have a lot of opinions on this
I am unsure what is meant by 'Learning Materials'

I feel satisfied with the course Tasks?

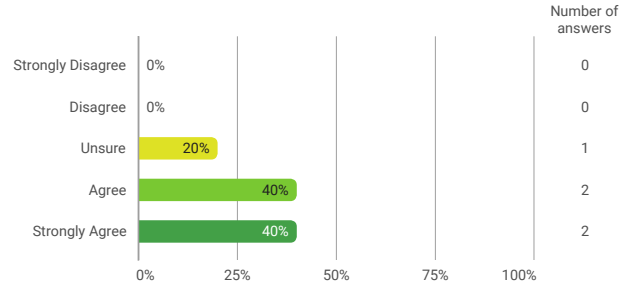
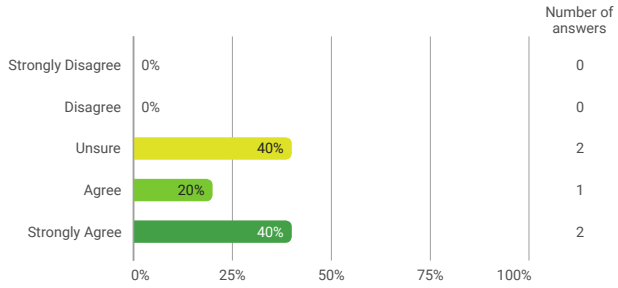


Figure A.7: Post-Test # 1 Page #3 - Group B - Discord Course

Why do you feel that way about the Tasks?
they were pretty well explained and short to do, for someone who is more computer tech savvy i think it would have been a great experience and explanation for them
the blender tasks in module 2 were a bit tedious, though i assume the process would be much smoother after some practice (and perhaps a bit earlier in the day)
They were alright. As I have stated, the subject of this course is not within my interests.
They look and feel very representative of the actual work done during the mod development process and teach things immediately relevant to the subject matter
The tasks weren't too "long" which is good because then it feels like you progress quick and are not stuck in the same thing for too long

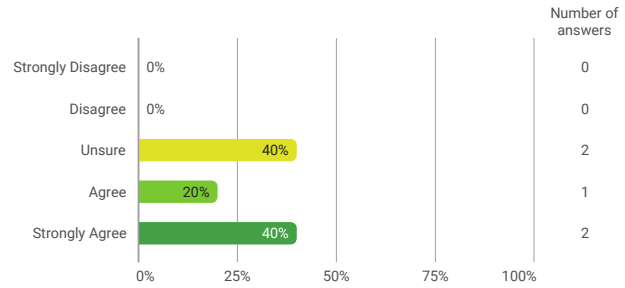
I feel satisfied with the course Additional Resources?



Why do you feel that way about the Additional Resources?
lots of added extra stuff to help out, and we could contact dux with any further questions without the feeling of being judged
is that everything not in a module category? if so, thought they were nice to have:)
They're very exhaustive
Not really sure what this is
I am unsure of what is meant by 'Additional Resources'.

Figure A.8: Post-Test # 1 Page #4 - Group B - Discord Course

I feel satisfied with the course Learning Outcome?



Why do you feel that way about the Learning Outcome?
i am honestly as confused as i was when i started
course taught me things
I feel like some of this can be extracted and used in other games too, if not just slightly different
I believe that such a course would have a better learning outcome for persons with a higher interest within the field.
After completing the course I'm confident that with some practice I'll be able to apply things I've learned in an actual project

I feel satisfied with the course overall?

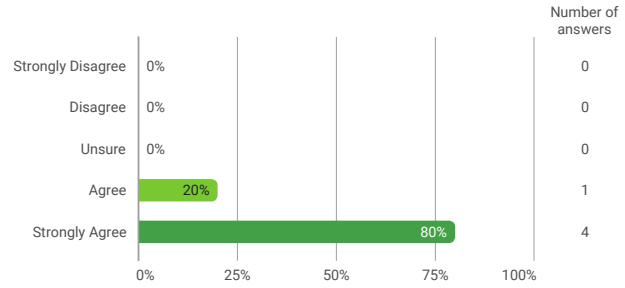
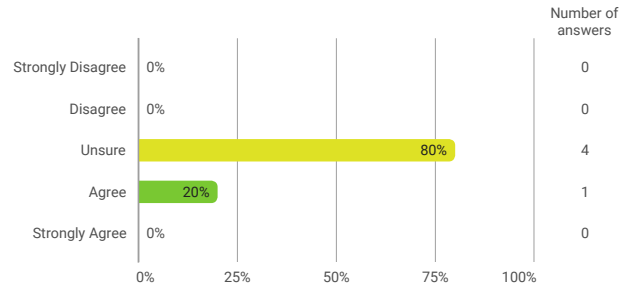


Figure A.9: Post-Test # 1 Page #5 - Group B - Discord Course

Why do you feel that way about the Course Overall?
well made course in a learning format that suits me well
it was interesting!!! i can see a lot of good potential
The part that's complete is very thorough, I'm happy with it, but: There's a pretty lengthy setup process pre everything. I understand that all of that needs to be set up, but I'm wondering if it could be dispersed throughout the course so you set things up as they're needed
Not too tedious, very detailed and easy to follow
It was a good course. For someone else.

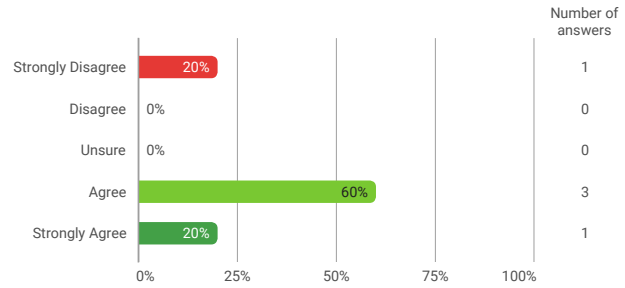
I feel satisfied with the course Discord Bot?



Why do you feel that way about the Discord Bot?
i dont think i saw the bot in use
did not use
Refer to the Platform answer for bot suggestions
No thoughts on this
It was good.

Figure A.10: Post-Test # 1 Page #6 - Group B - Discord Course

I feel satisfied with the course Subject matter?



Why do you feel that way about the Subject matter?
it was very informative and easy to follow as a beginner with little to no knowledge, everything was explained in detail but still using understandable language
i like minecraft mods and knowing how they're made is cool.
It was interesting, got extra satisfied when I started to understand the subject as well.
I am not interested in modding
Feel like it was interesting and it was easy to understand

I feel satisfied with the course Structure?

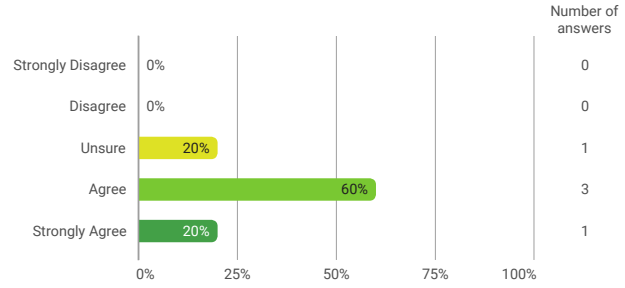
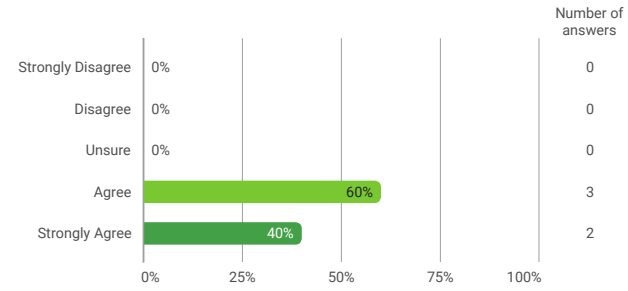


Figure A.11: Post-Test # 1 Page #1 - Group A - Skillshare Course

Why do you feel that way about the Structure?
short form content is easier for me to follow, so more videos of 5-15 minutes as opposed to less videos that are 45-60 minutes is preferred
it's alright
The structure was very nicely set up
From what I've seen, the course seems to be structured well, both in the titles of the courses and the content! Kaupenjoe seem to go over the easier stuff (base knowledge) and then the more difficult things later, which is nice for learning
Felt complicated sometimes. Felt like there was more I needed to know before starting to understand sometimes in the start of the course.

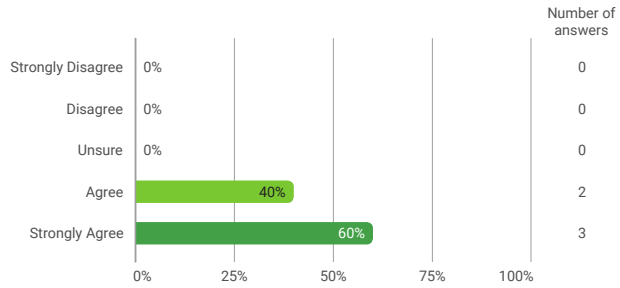
I feel satisfied with the course Platform?



Why do you feel that way about the Platform?
it is very easy to find courses that is of interest
i already use skillshare often, so i am familiar with the platform used for the course, and can navigate it easily
The platform was pretty good
Skillshare seemed alright platform to have the course on.
Skillshare is the most logical place to host a course, as it is dedicated to learning, so it makes total sense why it's on that platform.

Figure A.12: Post-Test # 1 Page #2 - Group A - Skillshare Course

I feel satisfied with the course Learning Materials?



Why do you feel that way about the Learning Materials?
i found the extra resources linked in the lectures to be very useful and helped me to further my knowledge alongside the course
fun to learn new things
The videos' have an option for sub titles which is nice, as some people may find it easier to read rather than listen (also good for accessibility reasons)! There is also a transcript section which I really enjoy. Kaupenjoe shows what he is doing which makes it easy to follow, and good for people who learn by watching others do things.
I felt the way I felt because it was intersting but it's hard to focus sometimes in the course
Because I feel like I understood the learning material

I feel satisfied with the course Tasks?

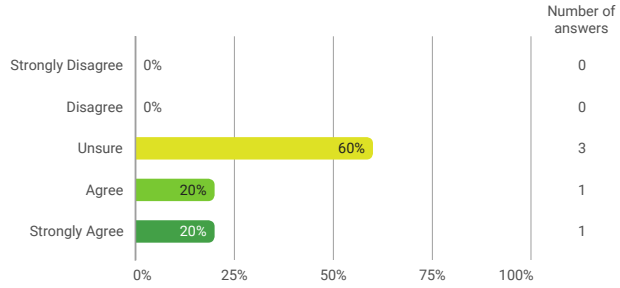
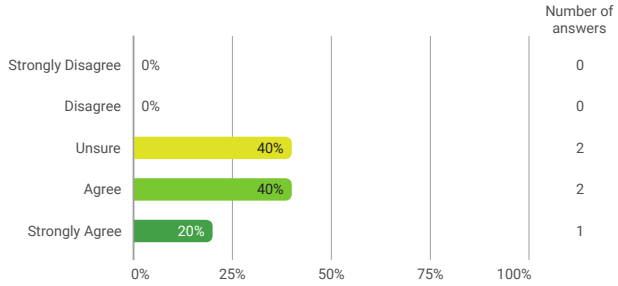


Figure A.13: Post-Test # 1 Page #3 - Group A - Skillshare Course

Why do you feel that way about the Tasks?
i don't know
i did the "create a simple trivia game" task and found the instructions easy to follow, and i was able to complete the task successfully :)
Nice tasks! Not to hard and fun to do
I did not get far enough to do any of the tasks really
I did not do any assignments

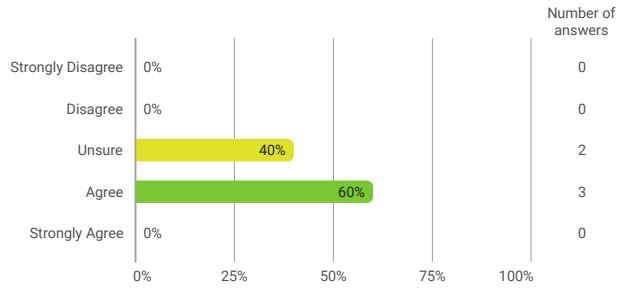
I feel satisfied with the course Additional Resources?



Why do you feel that way about the Additional Resources?
no opinion
i felt they were very informative and helped to expand my knowledge
Kaupenjoe has listed a bunch of resources and downloads and overall everything seem very organized and nice!
I liked them
I didn't use any of the additional resources so can't say anything about it.

Figure A.14: Post-Test # 1 Page #4 - Group A - Skillshare Course

I feel satisfied with the course Learning Outcome?



Why do you feel that way about the Learning Outcome?
interesting
although modding is not something i have tried before, i feel as though i now have a better understanding and ability to do it
I feel like i didn't get far enough to do much but got me bit more interested to try more.
I did not get to learn much as I didn't take a lot of the course
.

I feel satisfied with the course overall?

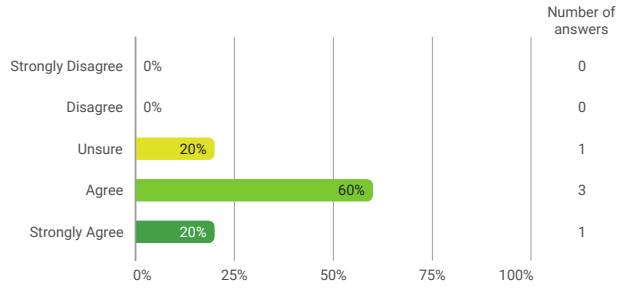
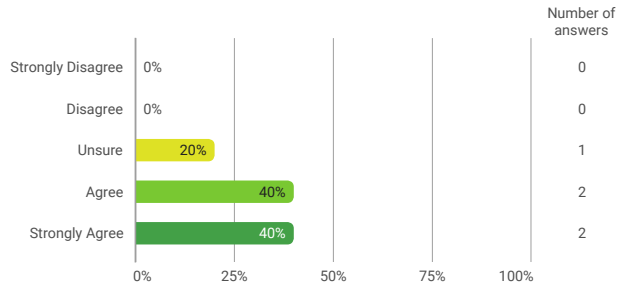


Figure A.15: Post-Test # 1 Page #5 - Group A - Skillshare Course

Why do you feel that way about the Course Overall?
the language was clear and concise which made the course easy to follow, and i definitely feel as though my skills have improved
not in my field of interest, but it was okay
The course seem like a good start on learning Minecraft modding.
It made me understand a bit more about coding and make me wanna try more of it
I enjoyed it! It was interesting

Figure A.16: Post-Test # 1 Page #6 - Group A - Skillshare Course

I feel satisfied with the course Subject matter?



Why do you feel that way about the Subject matter?
wanted to know what a minecraft modding workflow may look like
it was interesting, but quite confusing for me
Something I have a little experience with from earlier in a game I enjoy playing
Minecraft modding is a great thing, it not only lets players customize their gaming experience, but also can be a powerful tool for education, engineering, etc. Making and using mods can also let people find community, new friends, and while it can be a hobby, it can be a good way to make money and hone programming skills.
I'm not really interested in modding, but I enjoy minecraft so it was cool seeing how that stuff works.

I feel satisfied with the course Structure?

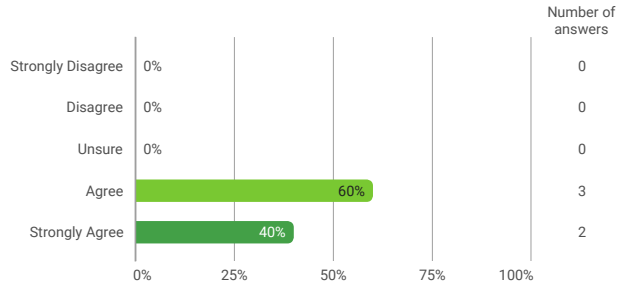
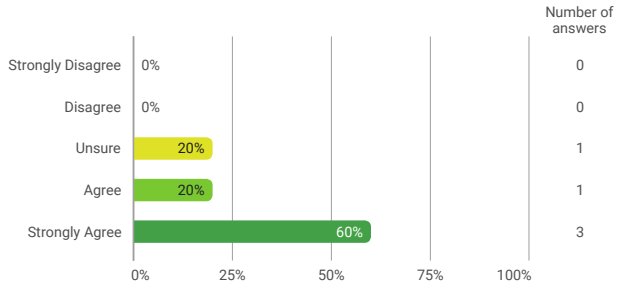


Figure A.17: Post-Test # 2 Page #1 - Group B - Skillshare Course

Why do you feel that way about the Structure?
very well sectioned and clear what needed to do be done and when
very detailed and easy step-by-step
good that the course includes lessons on java before getting into the modding specifics. videos work well, though i do wish transcripts were available to make it easier to find specific parts of a lessons or just quickly check something again. the lecture -> assignment -> solution structure is nice.
The course gives the viewer all the info necessary to proceed at every step, without putting them into a situation where they could stuck on an assignment because some topic wasn't covered yet or wasn't covered enough. Each lesson builds on top of previous ones, making for a nice ramp up in complexity.
It was nice, I enjoy watching videoes in this type of format.

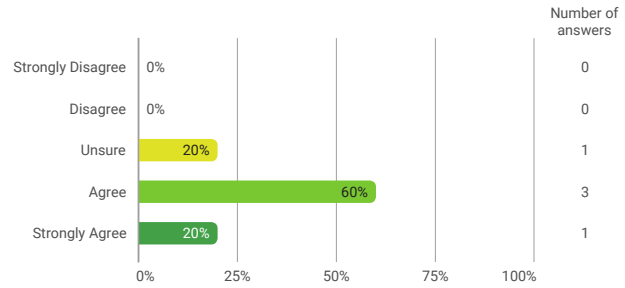
I feel satisfied with the course Platform?



Why do you feel that way about the Platform?
discord was familiar, and is easy to navigate. much easier than learning a new platform
Skillshare is a good platform for programming courses - the video nature of it allows the user to learn by example and follow along. There are ways the course can be set up to make taking the course an involved activity instead of a passive watching experience, making it easier for the information to stick and become a usable skill.
It seems like a good platform, but I don't agree with the payment system (Even with the free trials)
I enjoy skillshare, if that is what you mean. If it was the video-format, I also enjoy that, since it is obvious that this person is an experienced video-editor.
All around good, but i prefer platforms that are completely free

Figure A.18: Post-Test # 2 Page #2 - Group B - Skillshare Course

I feel satisfied with the course Learning Materials?



Why do you feel that way about the Learning Materials?
everything was well explained and clear. all easy to follow
as I do have experience in java I don't know how well the java lessons would work to teach a beginner, but to me it seems to cover most of what's needed. lessons 38-43 taught me what they intended to in a way that worked for me, but would likely be confusing to a beginner. perhaps more time could be spent on building an intuition for the methods?
The course gives a decent Java foundation, very much enough to start making mods and not get confused and frustrated because the modding engine requires you to use some language feature that wasn't covered in the course. All of the information in the course at the time of filming is relevant, not relying any outdated approaches or tools. The Minecraft-specific portion of the course gives not just a guide on how to do commonly needed things, but also teaches good practices, like helper methods for commonly needed tasks, like registering a block, which is a multi-step process.
I am unsure what you mean by 'Learning Materials'
Good videos explaining the basics and what you need

I feel satisfied with the course Tasks?

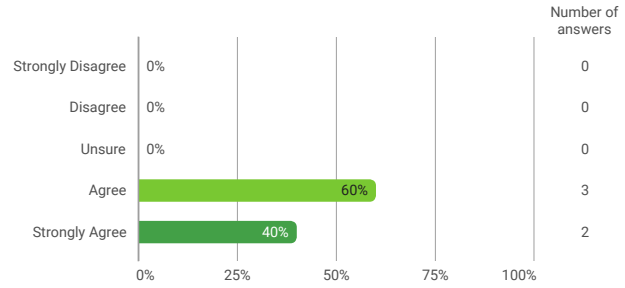
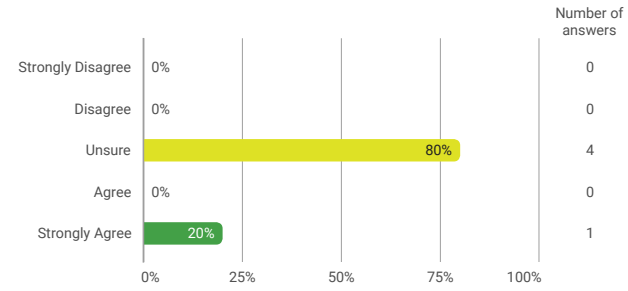


Figure A.19: Post-Test # 2 Page #3 - Group B - Skillshare Course

Why do you feel that way about the Tasks?
relevant, very useful for getting an understanding for the topics discussed
fairly simple, if not time consuming
They were probably fine, I did not do any tasks as I do not really have the time.
The assignments in the course are based directly on the material taught before the assignment without requiring the student to look up information outside of the course or get stuck because something wasn't explained. Some assignments require the student to think a bit and some to just repeat the actions shown in the lesson directly preceding the assignment, which are both good techniques when used appropriately, which is the case here.
Seems to cover most of what you need to make a mod

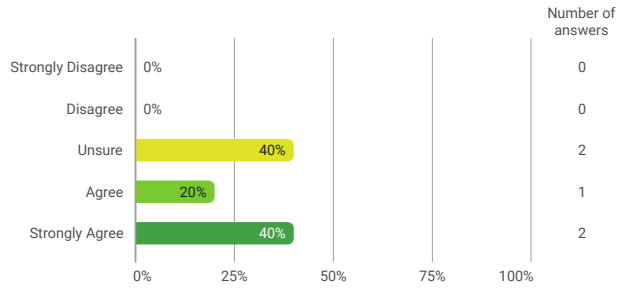
I feel satisfied with the course Additional Resources?



Why do you feel that way about the Additional Resources?
unsure what the "additional resources" are (?)
i didnt really use any additional resources
did not check them out
The additional resources are ABUNDANT, they seem to cover almost any topic that would come to mind when working on a mod, and for most topics there are reference implementations that the student can use even much later after completing the course.
I am unsure what you mean by 'Additional Resources'.

Figure A.20: Post-Test # 2 Page #4 - Group B - Skillshare Course

I feel satisfied with the course Learning Outcome?



Why do you feel that way about the Learning Outcome?
this is not something i really have any experience in so it was quite confusing for me, but i do feel like i learned some things
learned what the lessons set out for me to do
The outcome is being able to work on simple and medium difficulty mods, and having a good foundation to build up the skills from there.
The learning outcome would be greater for someone interested in modding. For me, as I did not have time to invest into learning this stuff, the learning outcome was unfortunately low. If i gain an interest for modding, I would come back though.
Covering the basics for making a minecraft mod the learning outcome of this is good.

I feel satisfied with the course overall?

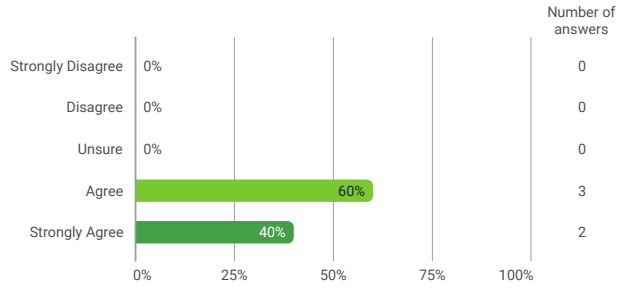
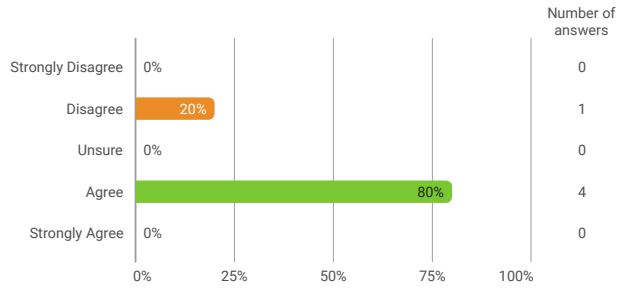


Figure A.21: Post-Test # 2 Page #5 - Group B - Skillshare Course

Why do you feel that way about the Course Overall?
it was easy to follow, well sectioned and felt well planned out.
all around good
The information is very accessible, doesn't require any skills before starting, the course teaches everything from scratch, in simple terms and in good detail. Nothing seems to be out of place or missing, every step is building up on previous ones. It doesn't rush skipping over details, and it doesn't overexplain irrelevant things.
I was unable to participate much into these courses. I thought this project would just need me to answer some surveys so I did not have the time to actually go into and participate in the courses. It does seem like something I would concider if I find an interest in anything like this in the future though.
Good step by step explainations even beginners can follow

Figure A.22: Post-Test # 2 Page #6 - Group B - Skillshare Course

I feel satisfied with the course Subject matter?



Why do you feel that way about the Subject matter?
whilst the subject matter is not something i am familiar with, i feel that it was presented clearly and the lectures were easy to follow and understand
it is good and fun to work with
Modding is not something that personally interests me!
Its not something i personally am interested in, but if I would probably feel like it was pretty good
It was alright, cool thing to learn

I feel satisfied with the course Structure?

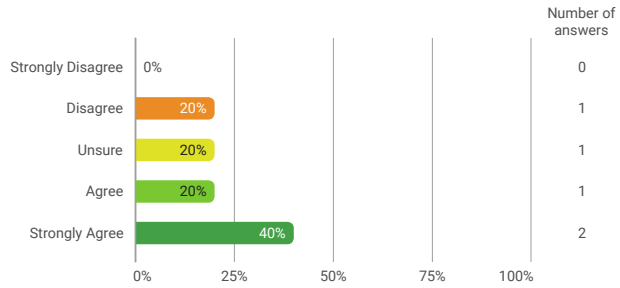
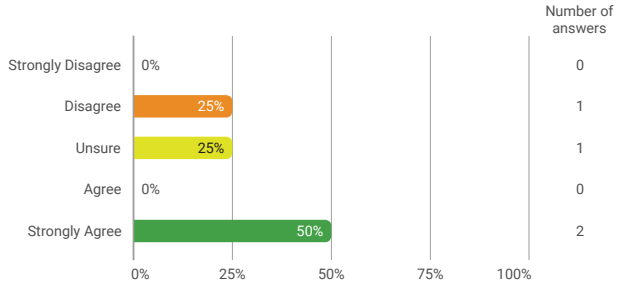


Figure A.23: Post-Test # 2 Page #1 - Group A - Discord Course

Why do you feel that way about the Structure?
yes, it was well made and described the subject well
it made the course easy to follow and therefore improved my understanding of the content
The course is structured well and organized too! The discord is neatly organized into separate channels with describing names and the course is set up in a logical way
It was quite confusing and didn't really understand it
I really like the way it is structured. Its easy to navigate

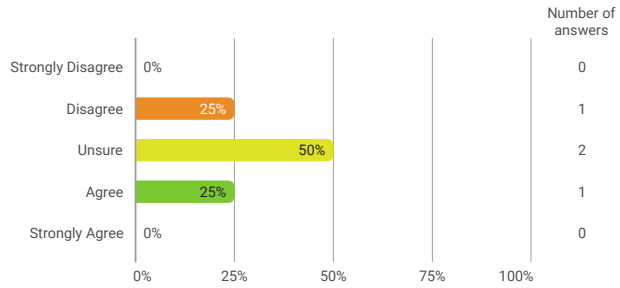
I feel satisfied with the course Platform?



Why do you feel that way about the Platform?
easy to use and work with
discord is and alright platform with many uses, just didn't really understand what to do or how to do it.
The platfrom works well and is easy to navigate to find the different modules + other information chats
I don't think Discord is fit for courses unless it is a course that is livestreamed in a voice channel. The lack of videos' made the course very text heavy and for a subject like modding being able to follow the teacher in real time would be very helpful!

Figure A.24: Post-Test # 2 Page #2 - Group A - Discord Course

I feel satisfied with the course Learning Materials?



Why do you feel that way about the Learning Materials?
it was fine
There were a lot of screenshots and text, but for an online course I think video and voice overs are needed
I prefer to listen and watch videos instead of reading text and looking at images
I didnt have time to properly try out the different tools, but they seem nice

I feel satisfied with the course Tasks?

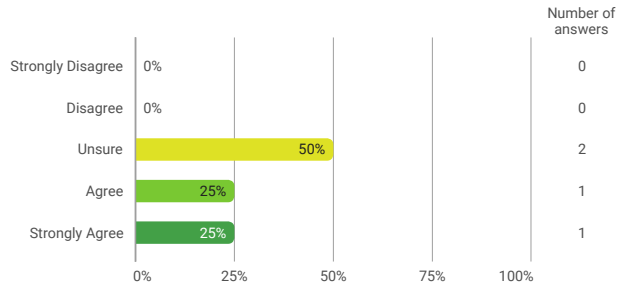
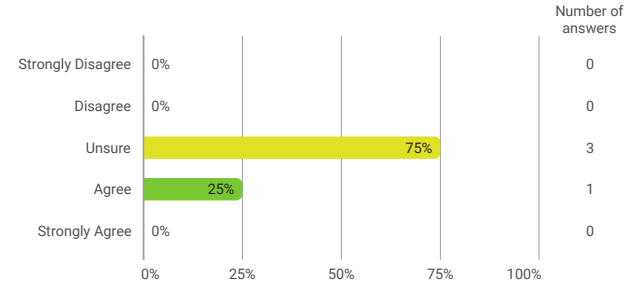


Figure A.25: Post-Test # 2 Page #3 - Group A - Discord Course

Why do you feel that way about the Tasks?
they are descriptive and easy to follow
The tasks were good. I didnt have time to try them out, but just reading through them I feel like I got a good understanding of them
It seemed fun in theory but didn't understand it
I dont have any opinion on the tasks

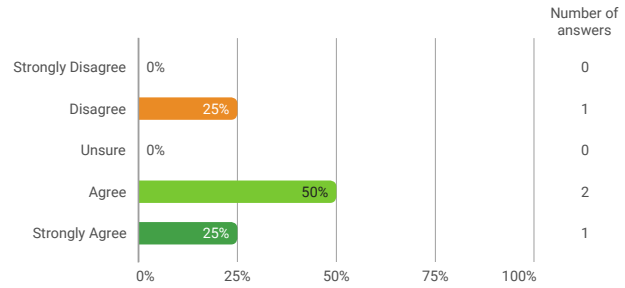
I feel satisfied with the course Additional Resources?



Why do you feel that way about the Additional Resources?
unsure
n/a
They were good
I dont have any opinion on this I'm sorry!

Figure A.26: Post-Test # 2 Page #4 - Group A - Discord Course

I feel satisfied with the course Learning Outcome?



Why do you feel that way about the Learning Outcome?
it is useful for me to know in the future
The course was very insightful and it was interesting to see a little bit of how modding works!
If this was something I actually was into learing about I feel like the learning outcome from this course would be really good! The whole setup works really well
I didn't understand

I feel satisfied with the course overall?

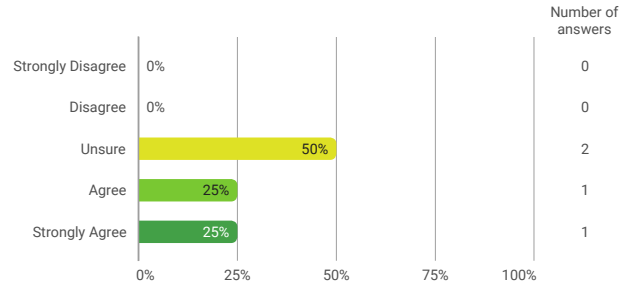
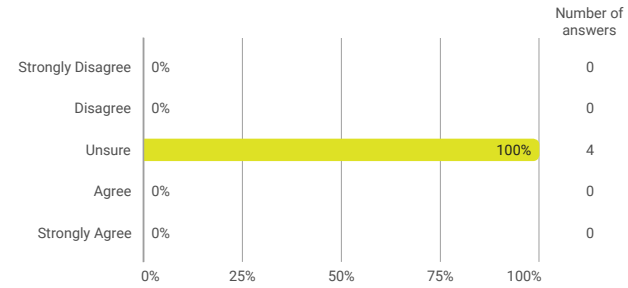


Figure A.27: Post-Test # 2 Page #5 - Group A - Discord Course

Why do you feel that way about the Course Overall?
it was a good course
I'm sure if I was a little bit more interested in modding then this course would have been fun! I also believe if the course was on another platform such as skillshare it would have been better executed, but the course instructor did well with the limited tools Discord has :)
I don't know, i feel a bit conflicted
Didnt have a lot of time, but I was very satisfied with what I had the time to go through

I feel satisfied with the course Discord Bot?



Why do you feel that way about the Discord Bot?
n/a
i did not notice there was one, my bad
I have not seen anything about a bot
I couldnt use the Discord bot. When I tried to do the /help command I was told that the application did not respond sadly. But from what I saw through other people doing the command it looks like it would be useful, if it works.

Figure A.28: Post-Test # 2 Page #6 - Group A - Discord Course