

HONOURS PROJECT DISSERTATION

Litir gu Gàidhlig

Using games to create a feeling of connection to endangered
language and encourage learning

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ABSTRACT

This project focuses on learning Scottish Gaelic through a conceptual video game – set in a fictional island where the player works in a post office. This dissertation discusses the concepts, how a final version of the game would function, and the process of the creation, and how this has been influenced by research into language learning games. This project seeks to encourage an uptake in learning Scottish Gaelic by providing an interactive way to learn which provides a simulated immersive environment.

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INTRODUCTION

In the 2011 census, it was revealed that only 1.7% of Scotland's population (aged 3+) reported having any Gaelic ability. (Learning Directorate, Scottish Government Gaelic Language Plan 2016-2021, 2017). This is a drastically low percentage, and this project aims to encourage an uptake in new learners of the language by providing a way to practice and learn, alongside raising awareness of the slow death of a minority language.

My project is centred around language learning through the medium of video games. This has been realised through the creation of a conceptual game where players navigate working in a post office on a Gaelic-speaking Island. This game is not intended to be a substitute for more focused learning materials such as Duolingo, but rather to be an engaging way to practice things in context of a real-world scenario. It is not expected that this game would have enough repetition and drilling of vocabulary and grammar that it would be enough to learn solely through this format.

Through working on this project, I came to understand the importance of connection with other speakers while learning a new language. Many current language learning systems have great repetition and grammar exercises, but do not provide context for using the language. Often phrases in these programs will be somewhat random, just there to provide grammar exercises and teach vocabulary – a story game-based learning system allows for players to use their Gaelic in a more natural way, which aids in real life conversation by providing opportunity to practice appropriate responses.

RESEARCH

CRITICAL FRAMEWORK

This project will be self-assessed through a number of different criteria. The most important criteria that I have used is a very personal one - do I, as a learner myself, feel that this game would help me to improve my Gaelic? I will also consider whether the art style is comforting yet engaging. It is also important that the Gaelic be at the forefront in the project, with interesting ideas centred around this.

METHODS

The project has mainly been created through artistic experimentation and iterative design. I took a very art-based approach to creating this project, and allowed experimentation to inform all aspects of the project. This intuitive method allowed me to create work in a very natural way and explore many different options. My creative practice generally begins with sketchbook work, focusing on very quick sketches and experimentation with different media, with no expectations of anything polished at this stage. After spending some time on this, I will move onto digital work – mainly using procreate on iPad - and begin to further explore ideas developed within the sketchbook stage. For this project I filled 2 sketchbooks and have over 300 files in my folder in procreate. It has also been influenced by traditional research from academic and journalistic sources. I also took a survey of some Gaelic learners and used the responses to influence different aspects of the game.

PRACTICAL CONTEXT

The project takes influence from multiple sources. *Papers, Please* (Pope, 2013) is a game which really influenced the intended playstyle of the game – the player spends most of their time at work, interacting with different characters through the job, and must get to know aspects about the fictional country in order to get good at the game. The character of Alasdair in this project took influence from Jorji, a persistent character who often tries to cross the border with the wrong documentation. Despite this character being so persistent, he is loveable, and the player begins to feel fond of him. I liked this idea, and it informed the idea for Alasdair continuing to return to the post office to try and send strange items.

The game *KeyWe* (Stonewheat & Sons, 2020) was also interesting to look at in terms of having the player running a post office – in both this project and *KeyWe*, the player has to overcome a handicap to perform the job, learning Gaelic in this one and being a Kiwi bird in the other.

In terms of Gaelic media, *Bannan* (Young Films, 2014) has influenced the project in the way that small communities interact and work. This show has been very useful in displaying realistic characters who all feel distinct from one another. The programme *Miann na Maighdinn-Mara/Mermaid Tales* (Macleod, 2021) has also been valuable in developing characters, as it follows a young persons' perspective on island life. Getting perspective on island life and communities has been very valuable for this project.

The project has also been inspired by discussions with the co-founders of *Eclectic Synthesis* about their game *Red Rampant* (*Eclectic Synthesis*, unreleased), who have plans in the works to include language learning aspects in their game. These talks helped to validate that

there is industry interest in a project like this one, and a demand from the public for accessible and engaging learning materials.

The project was also inspired by the Kilted Otter Initiative, which I was involved in as a mentor. The Kilted Otter is a game jam which aims to bring Gaelic into games. Involvement with this project has been a great insight into the true demand for Gaelic content – in the first year of the project there were 52 teams signed up, with plans for expansion going forwards. Seeing the language used in something considered modern really highlights that it is still alive in Scotland and not simply based in the past. The Kilted Otter was one of the most important sources for inspiration and showed that Gaelic and games can co-exist and complement each other well.

LITERATURE REVIEW

My initial research centred around using art for preservation, looking at ways other artists have used endangered languages. One of the first examples I looked at was a Moroccan artist who incorporates ancient, endangered script into his paintings and literally has them become art (Hartnett, 2013). This presents an interesting concept of what constitutes preservation, this is a very stand-alone method which does little more for the language than a museum, and really solidified that my project should be more interactive.

I have been influenced by research on RPGs for second language acquisition (Harbord, 2019) which focuses on the aesthetics of characters, and which characters players would feel most comfortable talking to in the target language. This has been very interesting and influential in terms of my own character designs, as I want the player to feel comfortable talking to the NPCs. Through this research it was discovered that players are more likely to interact with human based characters over non-human. This implied a preference for characters the player could relate themselves to.

This research has been very important in terms of both understanding how language learning through games works, and looking at designing the art for a game with this intent.

Another source (Moffitt, 2016) discusses bridging the knowledge gap of games which are simply translated. The author discusses learning through RPGs and how he felt that this was a valuable tool. I was worried that the game could be too frustrating for absolute beginners if it is too hard, so this research will definitely be referenced within my project in order to make it accessible enough for learners of all levels. This was also reflected in responses from one of the learners who commented that there are a variety of resources for absolute beginners, but there is a gap in the intermediate section. This paper also covers the fear-of-failure that can arise during traditional language learning and how video games can reduce this feeling by providing an environment which allows for mistakes without any repercussions in the real world.

Interactive methods of learning seem to be much more important for revival of a language for daily use, such as the use of scrabble as a language learning tool (Voinov, 2010). The following quote from the paper “Words should be fun: Scrabble as a tool for language preservation in Tuvan and other local languages” was very influential for me in deciding that I would be creating the concept for a game “Adults enjoy playing (and learning through play) as well, and board games seem to be just as popular among the adult population of the United States as they are among children”. My project is looking to meet a wide target demographic, but primarily focusing on adults at this stage of development. This has been helpful in showing that games can be a good learning tool for all ages.

Following on from research on players’ preferred avatars to interact with, I looked at character design to create characters which feel comfortable to interact with (Plass et al., 2014), such as softer face shapes and warm colours making an audience react more favourably towards a character.

I also investigated how different characteristics are more associated with either protagonist or antagonist characters (Ekstrom, 2013), and am applying this to understand how to design a character who is approachable. As my project has a large focus on creating characters which allow the player to feel comfortable practicing the language, this research will inform the character designs.

SURVEY RESPONSES

I had originally intended to undertake a series of interviews, but as the project progressed, I felt it would be useful to consider a wider range of opinions and understand more about the potential audience who would be interested in the game. In order to do this, I created a survey using Google Forms, and shared this to the Facebook group “Scottish Gaelic Duolingo”. These responses were collected in a fully anonymous way at collection, with no way to link participants to their answers. This means that there were no data protection concerns. After questions confirming consent and that the person was over 18, I asked the following questions.

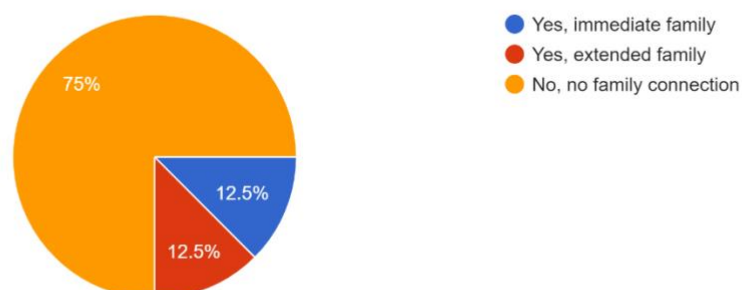
- Where are you from?
- Do you have any Gaelic in your family?
 - Yes, immediate family
 - Yes, extended family
 - No, no family connection
- How long have you been learning Gaelic?
 - Native speaker
 - Less than 1 year
 - 1-2 years
 - 3-5 years
 - 5-10 years

- 10+ years
- Why did you choose to learn Gaelic?
- What methods do you use for learning and practice?
 - Duolingo
 - LearnGaelic
 - SpeakGaelic
 - Textbooks
 - Classes/Formal Education
 - Other language site (Mango etc.)
 - Other...
- Of the above, which has been the most successful for you?
- Is there anything you feel is missing from the way you learn?
- In a game designed to create an environment to learn and practice in, what do you think would be useful to include?
- Any other comments?

I was mainly interested in the open questions which provided suggestions about learning and what may be useful in a game. However, I am pleased with my decision to include demographic questions as these results were surprising.

Do you have any Gaelic in your family?

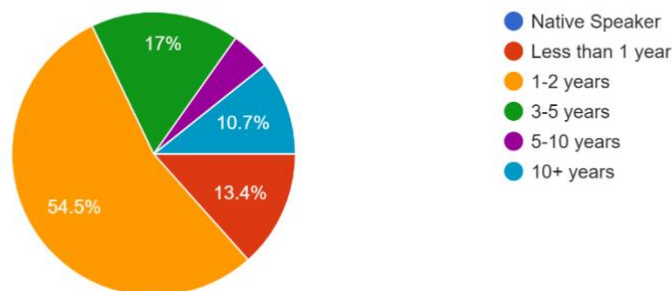
112 responses



I found it very interesting that 75% of responders had no family connection to Gaelic. I myself have no familial connection to the language, but I hadn't expected to see that this applied to a majority of others too.

80 people answered the question of where they were from, and only around half of these participants were from Scotland. This was an interesting statistic as I had imagined that they would be mostly Scottish, with maybe a few Americans. Among the other responses were other UK countries, Canada (which had been expected due to the Gaelic in Nova Scotia), the USA, France, Australia, New Zealand, Italy, Portugal and even Myanmar. Many people who answered from further afield had indicated either an interest in minority languages, or a wish to reconnect with heritage.

How long have you been learning Gaelic?
112 responses



In response to the question “how long have you been learning Gaelic?”, over 50% said 1-2 years. It is unclear the reasons for this, but Duolingo was launched in late 2019, meaning Gaelic learning became more easily accessible around that time. The SpeakGaelic course has also been released within the last 6 months, and this was well advertised within Scotland. I also feel that the lockdown due to the COVID-19 pandemic may have been a factor in this as people had more time to take up a new language. It is however important to understand that data may be skewed due to more advanced learners and native speakers being less likely to use Duolingo and have moved onto other materials, and thus not be in this group.

The question “Why did you choose to learn Gaelic?” was a very insightful one, and provided a lot of clarity to others’ motivations, rather than just my own. Fortunately, there was a good amount of overlap here. The most overwhelming answer was that it was to reclaim their heritage and culture. Many people chose Gaelic as it is a minority language and they wanted to help in the efforts to keep the language alive. Some users sounded angry at not having Gaelic already and felt that it should be much more involved in modern Scottish culture. The responses here showed a great passion for learning and saving Gaelic, which only solidified why a project of this nature is so important.

There were many interesting responses to “Is there anything you feel is missing from the way you learn?” The main responses focused on a lack of immersion, needing more resources for advanced learners, conversations with other speakers and opportunity for practice. Many people indicated a need for more audio content to get used to pronunciation. This is something that Duolingo has, but only in short phrases without context.

The final two questions invited the most opportunity for opinions to be shared, and I found these responses very valuable and informative to my work. These were “In a game designed to create an environment to learn and practice in, what do you think would be useful to include?” and “Any other comments?”

There was a great demand for speech recognition technology to correct pronunciation and to allow the player to answer verbally within the game. This would be a fantastic addition to the game, but unfortunately there is still a way to go with the technology. University of Edinburgh researchers are working on a Gaelic voice recognition system for systems such as Amazon Alexa, so it may be possible to integrate functionality with this in the future. This would have to be assessed based on the quality of the technology however, as inaccurate text-to-speech systems may be more frustrating than helpful. English voice recognition

systems can also be inaccurate, especially with Scottish accents, so I personally remain a bit sceptical all about the effectiveness of this sort of technology at this time.

Another thing which was suggested was a way to interact with other people. This becomes difficult as it brings in the problem of community moderation, and traditional multiplayer formats may be difficult to adapt to the storyline and theme of the game. For this reason, the non-player characters have been designed to be engaging and realistic to allow players to feel a connection with them. Removing the aspect of player-to-player conversation also helps with a fear of failure which often arises with language learning. It can be scary to have real conversations before feeling fully prepared. This game aims to give a space for practice with replying to conversation without the fear of saying the wrong thing with a real person. I was greatly inspired by the opinions of people who responded to the survey, and these opinions helped inform the project.

PROJECT DISCUSSION

SUMMARY

This project is centred around conceptualising a game which would encourage players to learn and give opportunity to practice using Gaelic.

In its current form, the project exists as a conceptual piece — including character designs, environment works and concepts for how the game would be played. This has been showcased in the form of an animatic demo. This has been created through Microsoft PowerPoint for demonstration purposes. In a final version of the game, there would be animations, and it would be created in a more game-focused software.

The game is set in a fictional Scottish island, where the player has taken over management of a post office from a family member. They will have to navigate running the post office while dealing with eccentric characters who don't like to speak much English. This is intended to give players a simulated experience of Gaelic as a community language.

APPROACH



Figure 1. Board Game I created as part of a Kilted Otter Event

In the beginning of this project, before I had decided that this project would be game-based, I knew I wanted to incorporate Gaelic somehow. I considered an art piece which would aim to raise awareness for the language – and would be placed (responsibly and in an eco-friendly manner) in the real world to create a conversation around the language. It was around this time while considering potential ideas that I became involved in the Kilted Otter Initiative. This really helped show me that Gaelic and games can co-exist. Being involved in community groups on social media about learning Gaelic helped to show the need for an engaging learning material in the absence of being able to get together with other speakers. Many people found it difficult to move on from something like Duolingo, due to its methods of teaching phrases out of context being hard to translate to real world conversation. I felt that it would be interesting to design a game which would allow people to learn within the context of conversation first.

I worked on defining the rough storyline first. Knowing I was working towards a game set in a post office first helped me to define the theme that I would be working towards. I had considered a darker theme to the game with there being some kind of mystery to solve, but in the end decided that it would be better to have the game be more grounded in reality and focus on community and island life. The story at this stage had no complexities and was simply focusing on a rough outline to base the initial artwork.

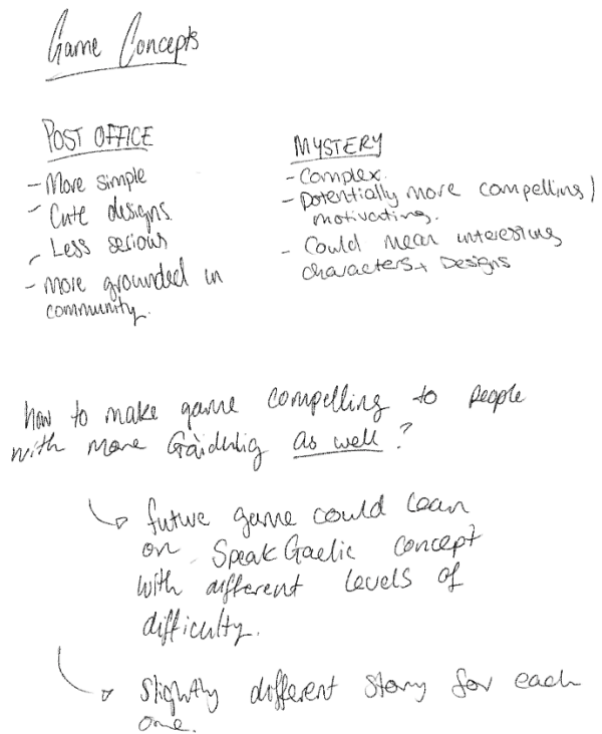
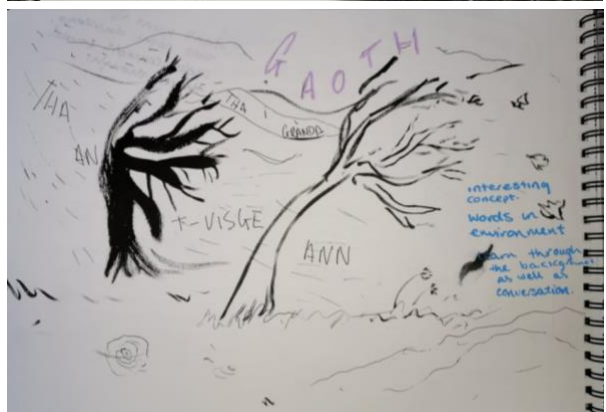
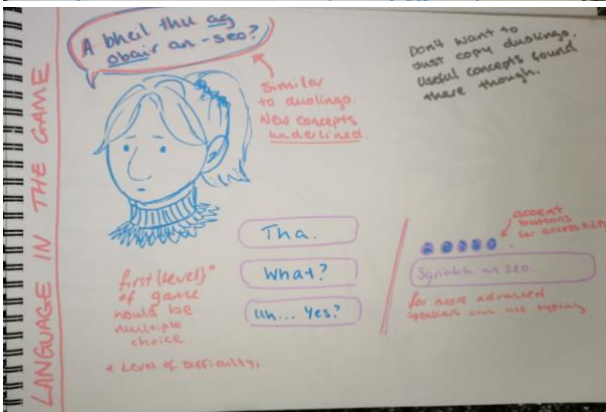


Figure 2. Notes from the initial story planning

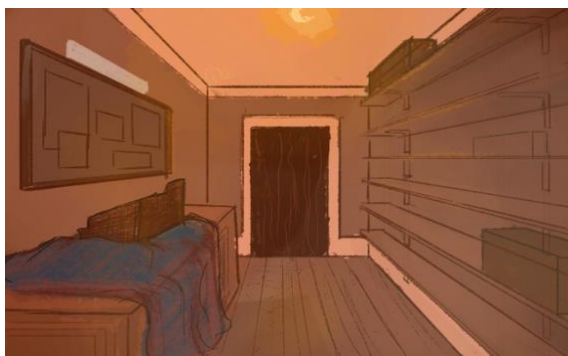
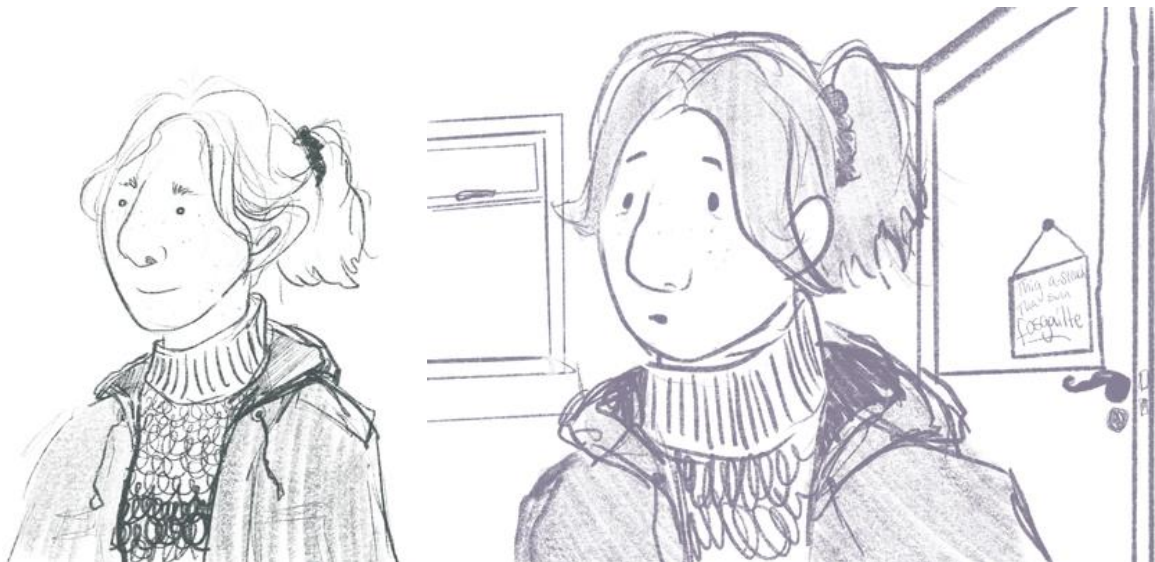
After defining the general themes and settings for the story, I moved onto sketching and experimentation. I had at this stage no set ideas for specific plot and chose to be guided by following any ideas that arose through experimentation. I began my sketchbook work with character sketches, and as I created new characters, I would define aspects of their personality. I feel that for a game which heavily focuses on interaction with NPCs, this was a good approach which allowed me to get a feel for how the island would be, and how the characters might interact with each other. This stage of development can seem like organised chaos, as the sketchbook and notes jump around between different ideas and

aspects of design. I prefer to be led by the artwork and develop story specifics through different ideas which may arise through this.

3. Sketchbook pages

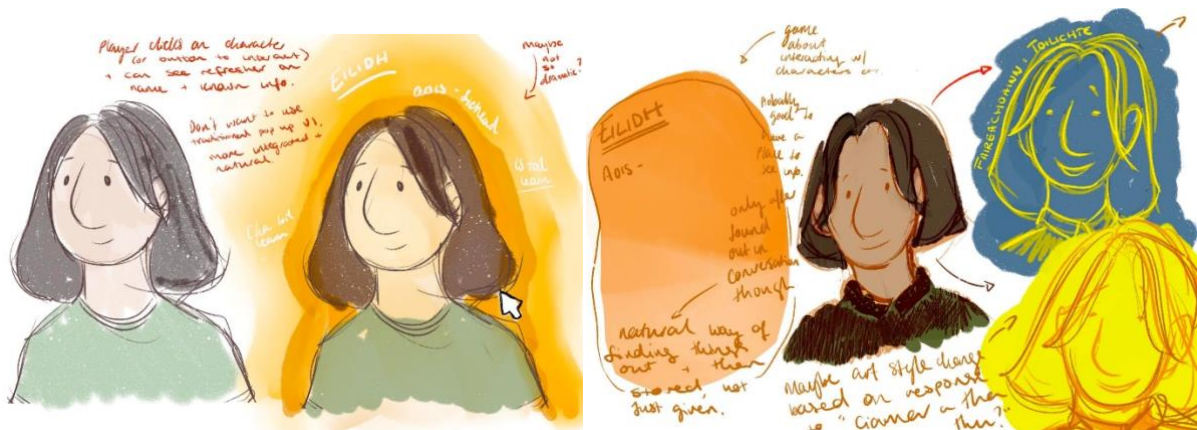


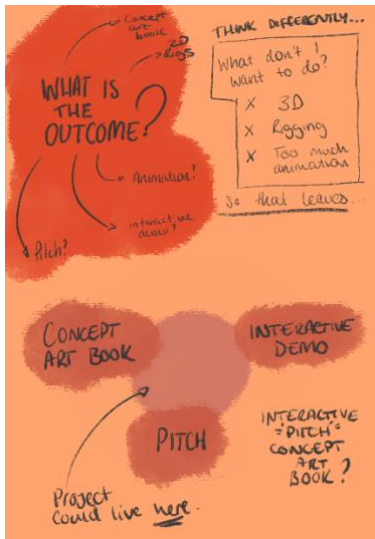
Following, and sometimes alongside, the physical sketchbook work, I began working digitally. My program and hardware of choice are Procreate for the Apple iPad with the Apple Pencil. With my background in traditional art, I prefer this method of working as it most closely resembles working with physical materials.





I began to define potential game mechanics and ways to incorporate the Gaelic, through both conversation and interactive elements of the environment. I was also very interested here in using the art—style to communicate getting to know the characters. This would have the art style becoming more dynamic and colourful as the game progressed and the player befriended the islanders. I decided against this as I felt that it could be demoralising in the beginning if the art was too plain or lacking in colour. I also didn't want to portray any negatives to being a beginner, so as to encourage continuation with the language.





I had spent quite a while in this ideation stage and decided I should begin to narrow my focus into a final outcome for this project. I spent some time with mind maps, notes, and more sketches to try and decide what to do. I had a few ideas, creating a website, animatic, or focusing on a pitch for the game. In the end I decided to focus on showcasing the potential game, how it might be played and what a potential storyline might be.

I took some time separating different stories into complexity level, and what level of Gaelic they might be suitable for. I then chose two from this ideation, focusing on the very beginning and an intermediate level scene. I incorporated ideas from research, considering ideas from Moffitt, discussing the difficulty level within language learning games. I used this to develop the sliding scale idea for the difficulty, so that the game did not become another beginner resource with no support for those who are hoping to progress further with the language.



I then created some rough storyboard concepts and then began drawing the scenes. I chose to have this in the form of still images, so that they would be fully rendered, rather than focusing on animation. This was also so that I would have time to show the entire scenes as planned. I chose to create two scenes, the first being the beginning scene for the game, and the second being Diomhair stealing a letter. I chose the first scene as I felt it would be good to show the initial setup for the game and introduce the players arrival on the island. I chose the second scene as I felt it showed a good level of Gaelic, incorporated all the characters, and had the player seeking out knowledge from characters, as well as being a fun scene which I felt would show the characters' personalities and roles within the game.



After my initial mock-ups of this scene, I received some feedback on the art which I agreed with and made changes based on.

The issues here were mainly with composition, as both the characters and background were similarly saturated, and fought for focal points. It was also pointed out that the speech bubbles were not clear enough, as they seemed too similar to the backgrounds and were lost. This was a very important point as the speech is one of the most important parts of the project. I then sought out some comic book lettering references and made changes to the speech bubbles based on what I had learned here. I was focusing on using the text styles to give context clues to the player. This was through the use of font sizes, punctuation, and the style of the speech bubbles. I used the font Jack Armstrong in procreate, which I felt was effective in being informal yet readable.

I also made changes to the saturation levels, lowering the background, and increasing the foreground respectively. This made the characters the focal point and muted the background. In some of the scenes I added Gaussian blur (around 3%) to the background to further increase the focus on the characters and text. After these changes I was much happier with the images overall and felt they were successful in the goal of showcasing what the potential game may look like.





4 Updated versions vs. Old Versions

I had planned to show these images as a video, but since there is a small aspect of interactivity, I felt it would be best to make this functional for demonstration purposes. For this I planned out where each screen would go in the form of a graph. After this I implemented the buttons using Microsoft PowerPoint. I had considered using more game-specific software for this, but PowerPoint was able to communicate the same point.

GAMEPLAY/STORY

The beginning of the game would be the player arriving on the island and being greeted by the main NPC (non-player character), Màiri. She begins to speak to them in Gaelic, before realising she should ask if they speak any. The player is then presented with different options to self-assess their Gaelic ability.



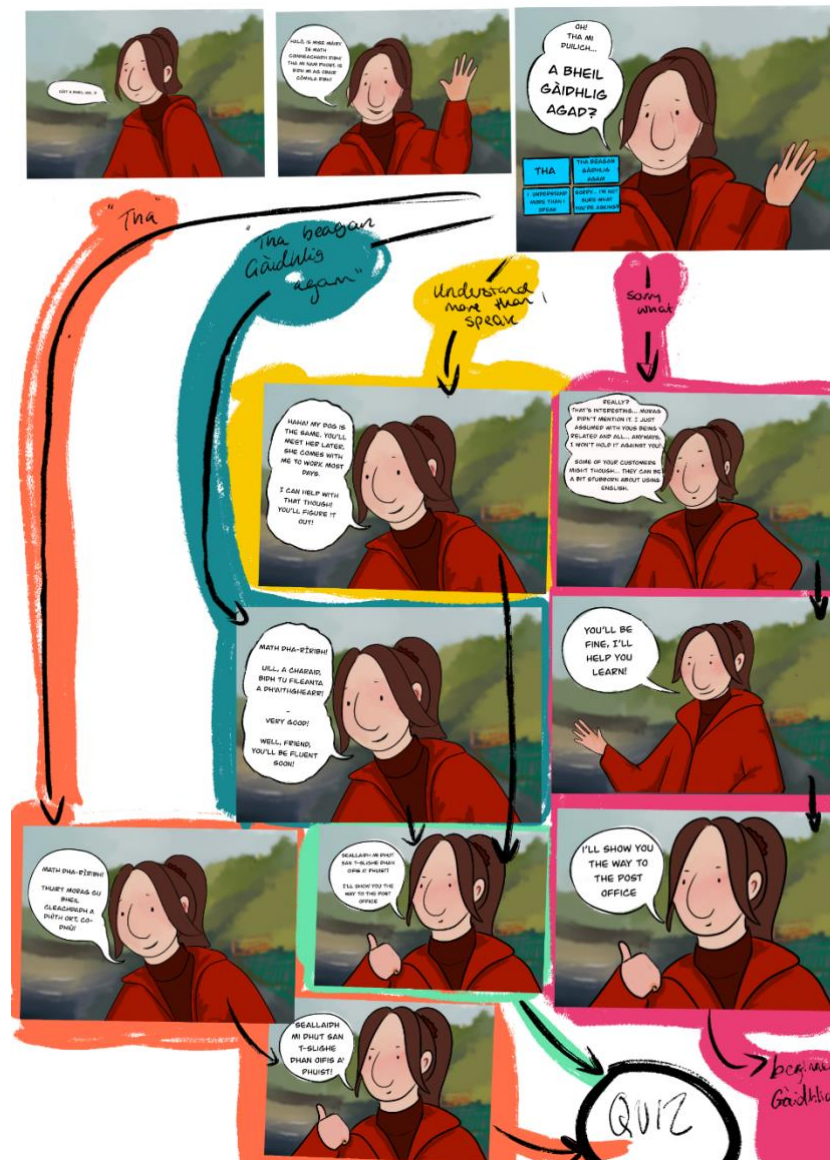
Here there are 4 options, the first being “THA” (translates as yes in this context). If the player chooses this option, the commencing scene will be fully in Gaelic, as Màiri then offers to show them the way to the post office.

Option 2 is ‘THA BEAGAN GÀIDHLIG AGAM’ (Translates as ‘I have a little Gaelic’). If the player chooses this option, they will see Gaelic content first and then English translations. This idea is based on a conversation I had at the Mod in Inverness in 2021, where upon noticing that not everyone in the room spoke Gaelic, a woman spoke in Gaelic first and then offered the English translations. This stuck with me, as she could have just spoken English

and known that everyone would have understood but chose to use her Gaelic and put it at the forefront.

Option 3 is 'I understand more than I speak it'. This leads to the same outcome as option 2, but with an added joke about Màiri's dog being the same.

Option 4 is for those who are entirely new to the language, 'sorry... I'm not sure what you're asking?'. This leads to a surprised reaction where Màiri comments that she hadn't expected them not to have any. Here she explains that most of the island's inhabitants prefer not to speak English but reassures the player that she's happy to help.



Each of these options lead to Màiri offering to take the player to the post office, and it is on the way there that the player would be either be introduced to the first basic concepts or tested on Gaelic ability. It was important to me that everything within the game felt natural, and that this quiz mechanic wouldn't feel like a separate test, but rather be within the natural flow of the game. This quiz would be in the format of a conversation with Màiri. This will involve the player getting to know about the island and focuses on building a rapport with Màiri. Following on from the proficiency test, the game would have a few different difficulty levels, and the complexity of interactions would scale with the difficulty.

Included in the concepts is a scene where Diomhair the dog steals a letter from the post office. This scene then involves Màiri noticing it missing, searching through her bag for it and asking the player to phone her if they see it. Alasdair then comments that he has seen Diomhair at the beach with it. We then see Màiri chasing the dog through the island, with the player going out to help. The player realises that Diomhair doesn't speak English and asks Iseabail for help with the Gaelic. The scene then follows the player getting the letter back from Diomhair, and realising it is for Iseabail, and we then see Iseabail's reaction to the clearly chewed and ruined letter, with her coming to the post office to complain.



Initially the game was planned to be just following character interactions, but research showed how important repetition is for learning a language. For this reason, the concepts include a space for the player to practice what they've learned. This will be integrated into the story, as the in-game character is also learning. This would be done through flash cards and lessons on the concepts they have learned. It would be presented as the previous post office employee having done the same learning process and left a book with notes on their learning and a few sets of flashcards. The flashcards would follow a similar system to Anki, which allows users to rate how difficult a card was and shuffles the deck to repeat the most difficult ones more often. Ideally if the game were to be developed further after the conceptual stage, I would look into a partnership with one of the existing learning tools such as Duolingo or SpeakGaelic, and the game would follow alongside those in order to contextualise more traditional learning. Despite this, it would be important that the game could stand-alone and wouldn't rely on other resources. It should be able to introduce core concepts and vocabulary independently.



I was at one time considering a point – based system here for the number of correct answers, but I feel that the motivation should be in the conversations with characters, connection with the language and progression in that way rather than a focus on points and high scores. This was reflected in the responses from the survey, where a few responders had commented that a single player experience maybe more conducive for learning, rather than a focus on competitive gaming. One very useful response commented that “Gamified learning is off-putting to me. It implies points, scores, competition. These encourage people to rush & focus on the wrong things just to earn a point/win a game...instead of focusing on what you are actually trying to learn”. This really informed the choice not to have a leader board or competitive aspects such as Duolingo has. I do feel that some kind of online space within the game to have real conversations with other learners would be a useful tool, but this is not a focus at this stage in the development. It’s unclear what form this might take as it would need to be fitting with the theme of the game and not just be an external space. This may take the form of a perpetual Mòd, or as some kind of meeting place like a pub or café on the mainland.

It is important that in a final version of the game there would be spoken and written forms of the language. The voices used for characters have to be clear but varied to give Waiting here represented sample of the diversity of modern spoken Gaelic. In And a final version of the game would be good to get native speakers the voice characters for accurate phonology. Every instance of spoken Gaelic would be accompanied by Gaelic subtitles. This is something that is often lacking in Gaelic media, as the most common subtitle language on BBC ALBA is English. This is good for picking up a few words, but often the spoken language can be ignored where there are English subtitles.

CHARACTERS

For this current iteration of the project, I designed 3 characters, with the intention to add a varied cast were the project to continue. These characters are ; Màiri, Alasdair, and Iseabail.

Màiri



Màiri is the main NPC (non-player character). She is there to be a guide for the player, and was given the role of post person to give her a reason to be around fairly often to introduce ideas and vocabulary to the player. She is intended to be a comforting figure to the player, and should be a positive influence within the game. She is the first character that the player will meet, and introduces the other characters. Màiri also has Dìomhair the dog, who also only understands Gaelic. Dìomhair is inspired by my own dog – of the same name – who has been great for my own Gaelic development as teaching her commands in Gaelic means consistent use of the language every day.

Based on findings from research, Màiri was designed to have very soft shapes, especially in the face and the nose. This was intended to make her appear very friendly to convey the message that she is there to help the player. All of the colours used for the characters are on the warmer side of the spectrum, in order to further emphasise a feeling of comfort.



Alasdair

The character of Alasdair is there to introduce some items that are useful to know but that might not come up in conversation naturally. He does this by attempting to post strange items, such as; a swarm of bees, a single cup of tea, a big rock, and many others. Alasdair is mischievous but ultimately friendly. He has been designed to look very friendly in order to offset the potential irritating nature of his attempts to post strange items. This character is intended to be endearing to the player. He will try to make friends with the player, in hope that they will let him post things.

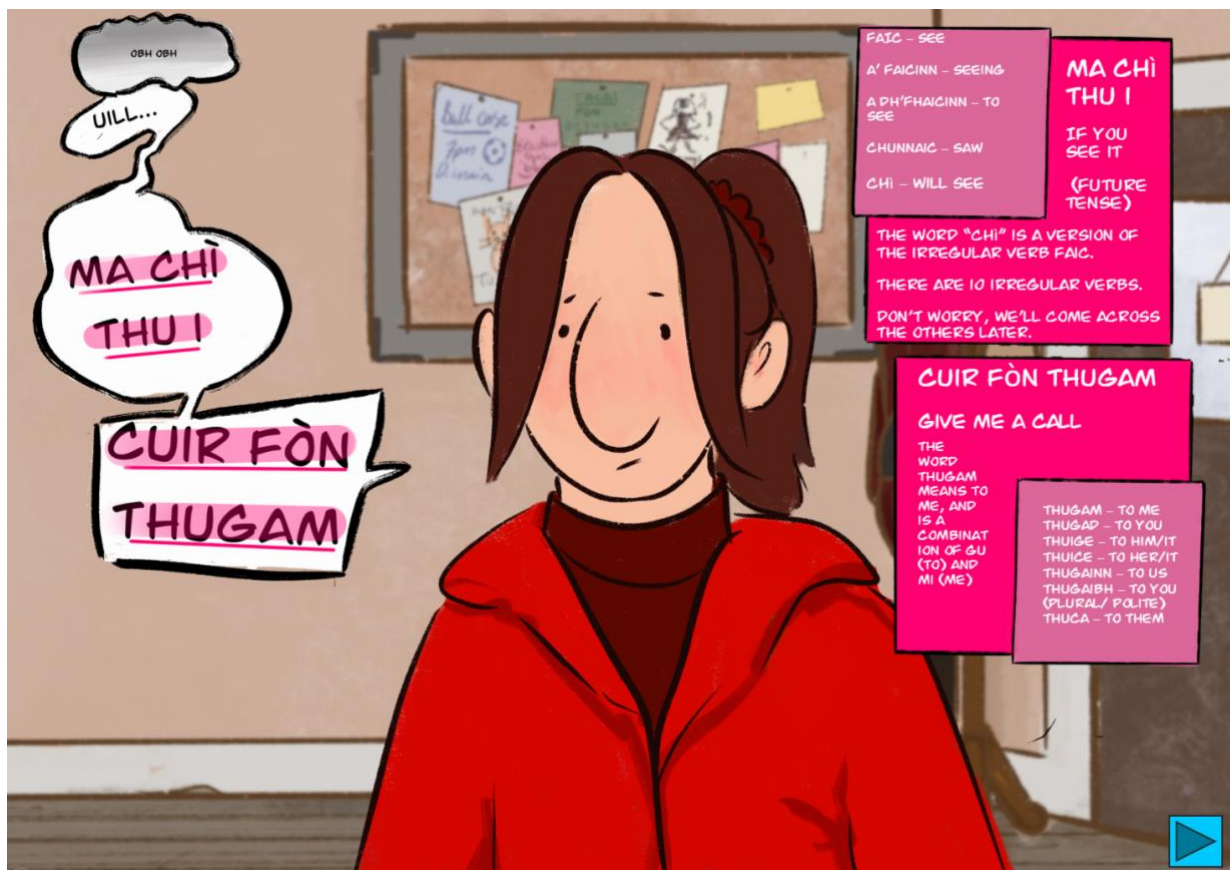


Iseabail

Iseabail is intended to be stoic, yet still has a soft spot for her community. She can be stern at times, but has good intentions. Her design focuses on communicating an attitude of righteousness. Iseabail clearly has money. She has relatives on the mainland and frequents the post office as she is too impatient to wait for Màiri to deliver her letters. She will insist on the formal pronouns as a sign of respect, and will help the player to understand the difference between informal speech and formal.

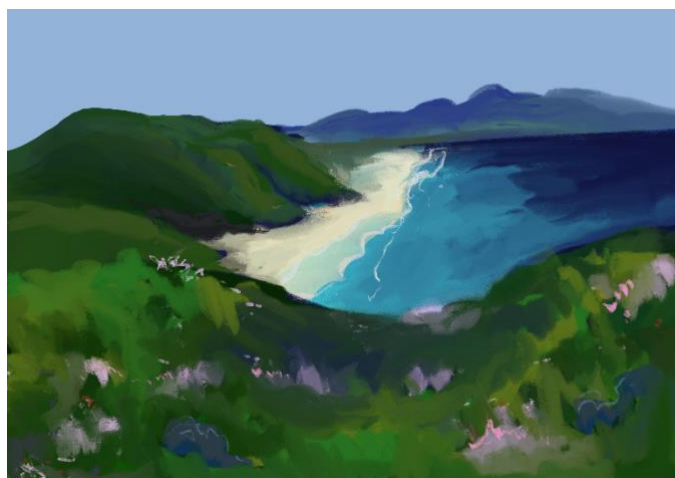
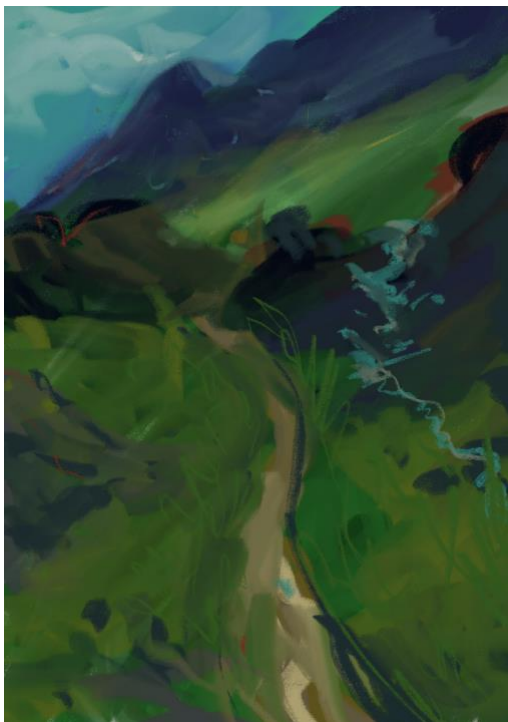
ENVIRONMENTS /IMMERSION

This project aims to simulate immersion into Scottish culture and Gaelic Speaking communities, there is a huge focus on learning through the environment itself as there would be when asking the word for something to a native speaker. For this reason, the concepts include plans for a mechanic which allows the player to click on an item in the environment to hear and see the Gaelic translation. This will include the plural form, and whether the word is masculine or feminine. Essentially this will be a visual dictionary. There are also concepts where the player will be able to see the environment with added translations for a full scene. This translation mechanic also applies to the speech, where new concepts will be highlighted and interactive within the speech bubbles. Clicking on highlighted text will reveal a hint box, which either helps with translation, explains grammar notes or gives examples of the word used in different contexts. This is a very useful mechanic which allows for context to be given and new concepts to be explained in a natural way, without having to leave the game and look things up.



The visual research for this project was centred around the Scottish islands to help lend authenticity to the designs. I considered that the setting would be by the sea and so any exterior environments would have to include the effects of coastal erosion. This was achieved by studies taken from the environment around Scotland's west coast.

The quickest and most effective way to learn a language would be to fully immerse yourself into the culture and live solely using that language. As the opportunity for full immersion to the culture and to the language is not possible for all learners, it was important to make the environments as believable as possible. I used a very loose style of art for the backgrounds, and feel that this works well to communicate the overall feeling of being in this environment, rather than trying to be entirely accurate. I feel this gives a good contrast with the cartoon style of the characters.



CONCLUSION

Ideally, this project would continue from the conceptual stage and become a produced game in order to apply these concepts on a real level. As it currently exists in conceptual form, my next steps would be to create a demo level with animations and more complex decisions for the player to make – perhaps as part of the Kilted Otter Game Jam – and then use this for pitching it to relevant authorities in Gaelic media to hopefully achieve funding to fully develop the game. I feel that the project has been a success as I feel it would be a useful tool for practicing the language. I am happy with the character designs and feel I would be comfortable practicing my own Gaelic within the game. I think the mechanics I have designed are interesting, and the incorporation of the Gaelic has been at the forefront throughout this project. I feel I have met my aims for this project, and hope to be able to continue with it soon.

Throughout this project, I was not focusing on creating a new language learning software such as Duolingo, but rather focusing on the culture which goes alongside the language. The introduction of Gaelic to Duolingo did wonders for the language, and is a very useful software for learners. As a supplemental material, I think this game is successful in putting the language in context.

As of the time of writing, the census results for 2021 (conducted in 2022 due to the COVID-19 pandemic) are not available. However, the Duolingo for Scottish Gaelic recently reached 1 million sign ups (The Scotsman, 2022) with 431,000 active learners on the course. The launch of the SpeakGaelic course has brought more accessibility to the language, and there are more Gaelic Medium Education provisions in schools. Hopefully with continued revitalisation efforts, and projects such as this one, we will see an increase in the next census, and those to follow.

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