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Undersøkelse Av Handlingsmuligheter Fra Rolle/Skytespill
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I Konteksten Av Ekstramural Engelsk

Examining Affordances of RPGs And Shooters
For Developing Receptive Skills
In The Context Of Extramural English

Empirical study

30 credits

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Summary

This paper seeks to use thematic analysis to analyze video games (specifically shooters and role-playing games) for their applicability as extramural learning activities with a specific focus on the receptive skills, namely, reading and listening. In order to do so and to structure our research we split the two skills into multiple receptive sub-skills to determine what affordances the games within the two given genres offered in terms of promoting development of listening and reading.

Using a selection of games to analyze and a method developed especially for this task we determined that games in general could be considered useful as extramural learning. However as a caveat there are games that emphasize certain subskills over others simply by the way they choose to convey their narrative and occurrences within the game world. Our focus was on the interaction between player and video game, we did not use sessions where multiple players interacted with each other in order to achieve a goal, something that would be much more difficult to control and could be the subject of its own study.

A secondary goal of this paper is to provide a means for pre-service and in-service English teachers who have not had sufficient interaction with video games, to have a means of recommending games to a student who is learning English as a second language. This means is made in such a way as to minimize the amount of input from the teacher, as they might lack the time and equipment to give an informed recommendation. This means is through the use of the video sharing platform YouTube and Let's Play genre. Our hope was to create a method that would replicate the experience of a teacher going into a library, choosing from a shelf an arbitrary book, flipping the pages open to a random point within and reading a selected number of pages as a sample of the work as a whole, mitigating the need for a full in depth reading, or for a book's introduction to be something that provides a barrier to a fair judgement of the text.

The paper also touches on the general theory of extramural learning and the relevance of games in relation to the Norwegian learning curriculum kunnskapsløftet 2020 (LK20). Additionally, we address the potential influence games may have over the behavior of young people, as this is a topic of concern amongst educators who are skeptical of video games.

Sammendrag

Denne artikkelen bruker tematisk analyse for å analysere videospill (spesielt skytespill og rollespill) for deres anvendelighet som ekstramurale læringsaktiviteter med et spesifikt fokus på de mottakelige ferdighetene, spesifikt lesing og lytting. For å gjøre dette og for å strukturere forskningen vår deler vi de to ferdighetene i flere mottakelige underkategorier for å finne ut hvilke fordeler spillene innenfor de to gitte sjangrene tilbyr når det gjelder å fremme utvikling av lytting og lesing.

Ved å bruke et bestemt utvalg av spill for å analysere og en metode utviklet spesielt for denne oppgaven, fant vi ut at spill generelt kunne betraktes som nyttige i en kontekst av ekstramural læring. Det sagt, så er det visse begrensinger. Det er noen spill som legger vekt på visse underkategorier fremfor andre ganske enkelt ved måten de velger å formidle historien og hendelsene i spillets verden. Fokuset vårt var på samspillet mellom spiller og videospill. Vi unnlot å bruke økter/spill der flere spillere samhandlet med hverandre for å oppnå et mål (Flerspillermoduser), noe som ville være mye vanskeligere å kontrollere og kunne blitt et eget tema for forskning.

Et sekundært mål med denne oppgaven er å gi et middel for før- og etterutdannede engelsklærere som ikke har hatt tilstrekkelig interaksjon med videospill. På denne måten håper vi å legge til rette for at lærere skal ha en måte å anbefale spill til en elev som lærer engelsk som andrespråk. Denne metoden er laget på en slik måte at det minimerer mengden forkunnskap og arbeid krevd av læreren, da dette er noe de ellers kan mangle tid og utstyr til å utføre. Denne metoden tar bruk av videodelingsplattformen YouTube og Let's Play-sjangeren. Vårt håp var å lage en metode som ville gjenskape opplevelsen av en lærer som går inn i et bibliotek, velger en vilkårlig bok fra en hylle, åpner sidene til et tilfeldig punkt innenfor og leser et utvalgt antall sider som et utvalg av arbeidet. Denne metoden vil redusere behovet for en fullstendig dybdelesing eller at en bokinnledning skal være noe som hindrer for en rettferdig bedømmelse av teksten.

Oppgaven tar også for seg den generelle teorien om ekstramural læring og relevansen av spill i forhold til norsk læringsplan kunnskapsløftet 2020 (LK20). I tillegg tar vi opp den mulige påvirkningskraften spill kan ha på oppførselen til unge mennesker, siden dette er et tema for bekymring blant lærere som er skeptiske til videospill.

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1 Introduction

Nowadays the number of school pupils playing video games is considerably high, and still growing. Taking this fact into consideration there is an opportunity for additional avenues of English language learning. However, the means of tapping into these avenues are not as defined as one would hope, and we aim to develop a means to do so in this thesis as a means to demonstrate the affordances provided by different genres of games.

It is our perception that although there has been an improving attitude towards video games and their potential use as resources for learning, the means for recommending video games without previously having experienced a wide variety of both genres and titles, would mean that only a limited number of teachers could have the opportunity to provide an insightful and nuanced understanding of what they are recommending to the student.

One of the aims of the thesis was to design a resource for the educator who wishes to provide support to a student's extramural learning. A metaphor that we have used in describing this resource as we began writing this paper is, A teacher can walk into a library and choose a book from a shelf, flip to the middle of the book, then read a section of the said book. Doing this they can gleam the quality of the prose, the difficulty of the language, and to some extent the maturity of the subject and content within. We wished to provide a more structured form of this process and in doing so we turned to thematic analysis. This was done to provide a framework in order to study the potential that we saw in games as learning resources.

Jeremy Harmer (Harmer, 2015, p. 317) has outlined the benefits of extensive reading and listening, his recommendation is built on the idea that more exposure to English leads to an increased competence in the language itself; the more exposed the learner is to the language, the more they use the receptive skills of reading and listening, the better they will be at mastering the language. One of the reasons for this increased competence is that these skills are not passive, they require the receiver to take in the presented information and process it in order to actively pay attention to the movie, book, or audio they are engaged with.

Our general belief before writing this paper was that the education that a student receives is more effective if it is tailored and fitted to suit the learner rather than relying on a standard model that might fit within a traditional mold. Importantly, one of the aims of the LK20 is for teachers to be able to tailor the students' learning in order to better suit their learning style and general aptitude. This is not only understandable in a rational sense but also anecdotally observed by other educators. A student is also much more likely to learn if they are internally motivated by their interests and hobbies than they are with external rewards. "One of the keys to sustaining student motivation is to make the materials and activities we are using relevant to our students' lives and interests" (Harmer, 2015, p.93). This is doubly so with regards to neurodivergent students, and can be attested to with the personal experience, as the writer of this paper is diagnosed with Attention deficit disorder, a condition that dampens the effects of delayed reward pathways and causes them to experience difficulty in setting and executing long-term goals. As someone who plays games, we have been able to more actively and meaningfully interact with texts and, as games assign short-term and long-term goals that provide more tangible results and outcomes.

In the same way that we should encourage students to be passionate about reading books, it is the calling of the educator, especially one who deals with minors, to assist them in discovering and nurturing their passions. It is our belief that games should not be excluded as a potential avenue of development. We find the reasoning for their exclusion is primarily held as a biased prejudice born mainly out of ignorance and misconception. A lot of teachers worldwide may still seem to believe that games are exclusively for children and teenagers, or that games are an unhealthy influence on their psychological development.

We also wanted to provide a more tangible and long-term resource that could be used in the foreseeable future. While it might be beneficial to make a list of games that we subjectively find could be used in extramural study as part of extensive reading and listening, providing the resources for teachers and educators to determine future games as more or less beneficial is something that we find more valuable.

Providing the aforementioned resource would mean that rather than relying on third parties that would have their own biased slant for individual titles, a teacher would be able to use this method to determine the value of a game in language learning on their own. We are fully aware that the teacher would have bias in their own selection, however we hope the proposed method can reduce and limit that bias to properly differentiate and filter for games that can be said to be vectors for "effective extramural learning" so the student can use their hobby to further their exposure to English.

The expression above is our extrapolation of extensive reading . Central to extensive reading is the idea that any exposure to another language's written form can be beneficial to learning said language (Harmer, 2015, p. 317). As outlined, this principle is also what underpins extensive listening. This idea can be seen in various practices, such as full immersion teaching, when one purely teaches a pupil in the target language, or to a lesser extent when a language teacher insists on the class being primarily in the target language in the classroom. In such an environment the teacher wishes to maximize the exposure to the target language and to ensure that said pupil practices the language during the allotted time.

In the video games we discuss in this paper we observe that the overwhelming majority of titles contain extensive listening and reading opportunities. These opportunities are organically inserted into the gaming experience, giving a more cohesive and less artificial feeling to the text.

As stated earlier we wished to provide an easy means to determine the quality or suitability of a game for the use in an extramural setting. To provide an understanding of this process, what follows is a simplified version of our approach.

Step 1: determine the game that you wish to analyze

Step 2: Find a YouTube playlist of the game searching "let's play title of the game" will often give the desired result.

Step 3: Randomly select a 10-minute chunk of that playlist.

Step 4: Note down the number of times that receptive subskills could be used in the selected chunk

Step 5: Use those results and determine if you believe that there is enough "subskill density" to justify recommending the game for extra mural use.

Step 6: Recommend either for or against the use of the game as an extramural activity.

2 Theory/Literature review:

2.1 Topic:

An interesting effect of globalization is seen in different media engagement. People around the world are using the internet to browse content created in all types of languages. Seen within a context of Norwegian school, students are often "forced" to engage with English within the English subject, although they, in likelihood, engage with English voluntarily in their free time, whether it be through browsing different websites or watching TV.

Some studies show positive correlation between improved English skills and engagement in extramural activities such as reading books, newspapers, magazines, watching tv, surfing the internet, playing video games and more (Hannibal Jensen, 2016; Sundqvist, 2009; Sundqvist & Sylvén, 2014). Some of these studies also suggest a positive effect on motivation in language learning by engaging in extramural activities. If so, there is estimated to be over 2 billion people worldwide that engage with video games as a hobby (Newcombe & Brick, 2017), it would be safe to assume that there are a lot of people that engage with video games in their free time.

Although video games are shown to be one of many extramural activities that students engage with that suggest positive effects on language learning (Uuskoski, 2011), there are few to none that give insight as to how teachers can use video games as an extramural activity to promote English learning. Further research on this topic could prove beneficial to English language learning.

To narrow down our topic, we are going to focus on video games and their possible benefits when developing English skills. In aid of this goal, we will focus mainly on two types of video games genres – shooters and role playing games (RPGs). The former is a predominantly multiplayer experience within the medium of video games, whereas the latter is predominantly single player experience. Although there are some variances in this, as there are games of both genres that crossover to both single- and multiplayer experience. Additionally, there also exist video games that blur the line between both genres, such as *Tom Clancy's The Division*.

With the rise of free to play video games such as *Call of Duty Warzone* and *Fortnite*, shooters have seen an increase in popularity, so looking at possible benefits for language learning could prove to be beneficial for teachers. On the other hand, RPGs have a similar flow in storytelling when compared to other forms of fictional literature, indicating that it might be possible alternate learning route for those who dislike engagement with books, or prefer more interactable mediums and texts.

In an attempt to provide clarity, in the given paper we will refer to texts in the academic sense, a definition not limited to words and sentences on a page, but include such things as, spoken words like music and poetry, and visual stimuli such as film and painting:

> *... a text is anything that conveys a set of meanings to the person who examines it. You might have thought that texts were limited to written materials, such as books, magazines, newspapers, and 'zines (an informal term for magazine that refers especially to fanzines and webzines). Those items are indeed texts—but so are movies, paintings, television shows,*

songs, political cartoons, online materials, advertisements, maps, works of art, and even rooms full of people. If we can look at something, explore it, find layers of meaning in it, and draw information and conclusions from it, we're looking at a text.

—(Burnell, Wood, Babin, Pesznecker, & Rosevear, 2020)

Thus, we would assert that video games are eligible for the inclusion into the definition above.

2.2 Defining extramural

As mentioned in the previous section, playing video games as an extramural activity seems popular among pupils not only internationally, but also in Norway. This section aims at overviewing what extramural English entails. As with a good deal of such terms it is helpful to understand the etymology in order to gain a perspective. Extramural can be broken down into its Latin origin, "extra" and "murus", Extra can be translated into *outside of, beyond,* or *in addition to what can be expected, w*hereas "murus" is a simpler more physical concept, a wall. Incidentally this is where the Norwegian term for "protective walls" or "mur" comes from. The combination of these words therefore could be "outside of the walls" or more helpful for our understanding, "in addition to what can be expected [within] the walls". As this text is situated in a pedagogical context, we can understand that "the walls" indicated in this case refer to the educational establishment, or the traditional formal schooling.

Coined in 2009 by Pia Sundqvist in her study on 9th graders' English vocabulary in Sweden (Sundqvist, 2009), it is defined as "linguistic activities that learners engage in outside the classroom in their spare time" listing examples such as reading books, watching television, or listening to music. To conclude, extramural English (or for that matter any language) is engaging with authentic language constructions without them being assigned by a teacher or instructor.

2.3 Relevance to the LK20

Here we are going to list some potential competence aims that we could consider linked to the use of video games, these all come from the year 10 English language competence aims of the LK20 (Utdanningsdirektoratet, 2020):

- use different digital resources and other aids in language learning, text creation and interaction;
- listen to and understand words and expressions in variants of English;
- read, discuss and present content from various types of texts, including self-chosen texts;
- read, interpret and reflect on English-language fiction, including young people's literature.

These are areas that are connected to games with little effort. This is especially true for the first point as by definition games are a digital resource, whereas the last two are potentially useful if they can be supported by a friend group that is particularly passionate about games. Additionally non-extramural tasks could be constructed to provide additional support, potentially assigned by a teacher this would be something akin to the teacher assigning that the student review a book they have been reading in their spare time.

Outside of the specific aims of the English language section we can also look to the core curriculum for further reasoning to encourage and support videogames as a viable alternative (Utdanningsdirektoratet, 2020). One of said aims is encouraging "the urge to explore"; this goal recognizes that students have different means of exploring and creating, and that schools must recognize and nurture this. In addition, schools are meant to use "a broad repertoire of learning activities" (Utdanningsdirektoratet, 2020). Schools are meant to adapt their teaching so that it better fits that of the student in their means of learning.

2.4 Fears of the effects of media influence

It is common knowledge that behavioral patterns can be affected by exposure to media. The increasing complexity of videogames over the last thirty years has coincided with an anxiety that this unique medium has an especially unique and potent ability to influence behavior (Wilson, 2021). Combined with the perception that video games are more akin to children's toys than a medium of storytelling, this anxiety is exacerbated by the human parental instinct. This worry has been a constant but evolving debate for the past three decades if not more.

One area that has been of popular concern is the debate over the effects that video games have on the behavior of young people. One of the ways that this anxiety has manifested itself is a concern over videogame's effect on the aggression level of its players, or in a more layman and snappy expression "do violent videogames cause violence?" This question was especially popular in the late 1990s to early 2000s and was further influenced by the events of the 1999 Columbine shooting. The two mass shooters played the popular video game Doom and there was a popular conception that this was a contributing factor to their mindset in choosing to commit such a heinous act. To a large extent this conclusion was reached before there was any proper scientific study to indicate such tendencies, the conclusion was in large part a reaction to a new medium gaining popularity and is largely considered by enthusiasts within the medium to be a moral panic, in the vein of similar reactions to comic books, roleplaying games, and other similar overreactions.

However, due to the increased interest in this topic, a growing body of research is discussing the effects that the medium has on people in general and minors in particular. What has been found is that short-term exposure to aggressive video games does lead to a short-term increase in aggressive thoughts (Anderson & Dill-Shackleford, 2000). The study went on to speculate about the potential long-term consequences but did not study them in detail. However later studies (Ferguson & Wang, 2019) found that in order for there to be noticeable changes in long-term aggression that youths would have to spend 27 hours a day playing M-Rated violent games, an amount of time that is literally impossible.

Factoring in empirical data the observed crime rate since the nineties has been on a downward trend. This trend is observable both in the United States (Macrotrends, 2022b) and Norway (Macrotrends, 2022a). Combined with a growing games market this trend is counter to what we would observe if one factor was causative to the other one. The only exceptions to this trend have been major spikes in 2001 in the United States and 2011 in Norway. The data of these two years however were influenced by the terrorist events that occurred in those years and should not be representative of overall trends.

Additionally, there have been concerns over the effects that games might have on the young people's beliefs regarding gender roles and if they could lead to an increase in sexist attitudes (Anderson & Dill-Shackleford, 2000), with the most common example being the long running Mario game series, and a major character within them, one Princess Peach. Peach is not a complex character and is essentially a MacGuffin, existing nearly exclusively as the ultimate prize for the protagonist. At the start of most games Peach is abducted by the games' reoccurring antagonist Bowser, a dragon-like turtle creature, which is ultimately the final boss in the mainline series. Peach's depiction is a near textbook definition of a damsel in distress and could be exchanged for any object of value without having a meaningful impact on the events of the game. In addition, many games depict women in skimpy and sexualized outfits; something that has been theorized might lead to higher levels of misogyny, amongst those who consume the medium.

Once again however this concern is challenged by a longitudinal study from Germany that found there was no correlation between daily video game use or preference for specific genres and sexist attitudes, this held true for both genders studied (Breuer, Kowert, Festl, & Quandt, 2015). The study was a representative one of German players that were older than 13 years of age. The study found that when controlling for factors that are more typical indicators of sexism, the inclusion of video games had no long-term effect on the attitudes of the participants. The study was longitudinal in design, lasting for three years, as opposed to previous studies that used a single month an interval, something the Breuer study finds lacking.

However, there must also be an acknowledgement that the gaming industry has become more sensitive to the perception of the medium as a male space. In doing so they have attempted rectify this in order to appeal to a wider demographic. There is still a deal of toxicity within certain studios (Gach, 2021; Good, 2021) that as of time of writing continue to express themselves. Though the gaming culture has in large parts been vocal in their denouncement of these practices, the corporate structure has been slow to act in fixing problems within their ranks.

Ultimately, there seems to be short-term effects on the personality and behavior in regard to the stimuli that hat might lead to aggression and negative attitudes. In the long-term, games have a negligible effect on behavior and the evidence of them being a contributing factor to undesirable social behavior is absent.

2.5 Context

In the field of pedagogy, many search for possible sources to draw from when engaging in language learning. In earlier years video games have been seen as source of entertainment or, in some cases, a source of negative development, often seen as a violence inducer by media, for instance, in case of Anders Bering Breivik. Several media outlets have attempted to link his video game habits with his actions on July 22 (Hultgreen et al., 2016; Melgård, 2012). This point will be addressed later in section 2.7 of this paper.

However, not everyone views video games in the same light. In recent years, more research has been put into positive benefits of video games seeing as video games are items that are not uncommon in a Norwegian household, and more and more areas of engagement for video games are becoming more accessible through video game consoles, computers, phones, and other handheld devices. Researching the possible benefits of video games could prove useful for reaching out to the demographic of people that play video games. Said

demographic is one that encompasses over 75% of the under 18 population of Norway, and over 90% of boys under 18 (Statistica, 2020).

Due to the proximity of video games to children, there has been some investigation into their applicability as learning resources. Researchers have found video games to incorporate learning principles that can prove beneficial (Gee, 2005a, 2005b; Newcombe & Brick, 2017). Though there are several points that indicate video games to be sources for learning, more research is needed to provide solid evidence of their beneficial nature when combined with direct learning.

When looking at whether or not video games can be of relevant use in teaching, the new LK20 brings up the area of basic skills where interest in video games might be beneficial. The English subject of LK20 features several basic skills, one of which is "digital skills". Digital skills, as described in the LK20, entail "the ability to use digital media and resources to strengthen language learning, to encounter authentic language models and interlocutors, and to acquire relevant knowledge in English" (Utdanningsdirektoratet, 2019). Video games are a form of digital media and are one of the most profitable and widespread forms of entertainment, eclipsing both the music and film industries (Beattie, 2021). With over two billion gamers worldwide (Beattie, 2021), ignoring video games as a potential resource for language learning would be a missed opportunity, especially as games have the opportunity to reach so many people.

Learning, in and of itself, is not a standardized concept. What works for some might not work for others. This is particularly true when it comes to learners with disabilities, whether they are physiological or psychological. Some research has highlighted the customizable experience that video games bring, in that players are able to tweak options within the game to their liking (Gee, 2005a). Video games have shown to increase engagement when supplemented with other teaching material used to teaching students with learning disabilities, although no apparent differences in testing scores when compared to traditional teaching material (Marino et al., 2014). While some accessibility features have common ground, such as subtitles or color filter, others need to cater to the style of gameplay their game is designed around. Some games achieve this through option features those players can toggle on or off/change to their liking (Brown & Anderson, 2020). Although accessibility in video game should be a common concept, much like in school, financial and time restraints are areas of negative effect. A study on accessibility in video games found that accessibility in mainstream video games is often decided based on financial grounds (Bierre et al., 2022). This leads to possible obstacles if one were to use video games as a means of language learning. Further research into video games as a means of customizable accessibility in language learning could benefit different fields within the area of education, such as Practical Pedagogical Education (PPU).

2.6 Extensive reading and listening

To broaden our understanding of learning beyond the typical classroom, we can mention another avenue besides the standard "Intensive reading" that seems in vogue with contemporary educators. Jeremy Harmer has a quite a positive opinion on what he calls "extensive reading" that he contrasts with the previously mentioned "intensive reading" (Harmer, 2015, p. 305), extensive reading is something characterized as reading that is more leisurely and for pleasure, usually without the teacher's intervention, this is similar to what we have

defined as extramural reading. Harmer (2015, p. 317) asserts that students at almost any reading level can benefit from collecting, analyzing and discussing the linguistic landscape all around them. Extensive listening is also something that Harmer recommends, for the same reason he recommends extensive reading, that the more exposure pupils have to the language the more chances they will get to improve. As long as the language pupils are revering is comprehensible, they are going to resolve many of the language difficulties they start off with.

2.7 Prerecorded audio and video

Harmer also lists prerecorded audio as a potential avenue of learning. listing both advantages and disadvantages (Harmer, 2015, p. 342). In terms of advantages, he lists Different voices, Availability, Repetition, Specially produced materials, and Transcripts. As for disadvantages the listing includes Acoustics, All together, Interaction, "Unnaturality". Harmer is working within a framework of the audio/video being used in a classroom setting and must therefore be understood and adapted from said context.

Let us take a closer look at what the aforementioned advantages entail.

- **Different voices:** refer to how in most pre-recorded material there is more than one voice present, with different intonations, genders, and accents.
- **Availability:** refers to the extent of media available, with a near limitless supply especially on the internet.
- **Repetition:** is about replaying and rewinding the media to listen to or see again.
- **Specially produced materials:** there are also some media made with L2 learning in mind as their primary function, such as videos that demonstrate grammar or old cassettes that will ask you to repeat phrases in a second language.
- **Transcripts:** mean that it is feasible to read and listen to a media text, ether with subtitles or transcripts for the material.

However, it is going to be useful to mention disadvantages that he also lists, these are especially prevalent in classrooms.

- **Acoustics:** the space that you listen to it has an effect on the sound, and how far away you sit from the source.
- **All together:** if listened in a group with a single recording then there all the recipients might have difficulty keeping pace, it might be going to slowly some, in this case they are bored, or too fast, meaning they can't understand what's going on.
- **Interaction:** there is no real way to interact with the media in the same way as a conversation.
- **It's unnatural:** several people sitting in a room sitting listening to the same audio is atypical.

2.7.1 Harmer's list in relation to videogames

Harmer's listed advantages and disadvantages are made with non-interactive mediums in mind, primarily that of video and audio as presented within a classroom setting in mind. Here, however, we are going to repeat the

advantages but with videogames as the considered medium, as well as the way that it differs from Hamer's conception.

- **Different voices**: it is rare for modern games to not have professional voice actors lending their talents to the project, providing variance in the voices that the player hears.
- **Availability** is quite high and is easy to get ahold of especially through internet-based services.
- **Repetition:** games usually provide an opportunity to save and replay sections of either dialog or gameplay, though the player would have to consciously try to save (usually manually) beforehand. However, some games do not allow this. In either case whether or not this is available to the user is not consistent between games.
- **Specially produced materials:** some games are made with L2 learning in mind, though these are not as widely available as large studio titles.
- **Transcripts: g**ames will often have subtitle options or have the text crawl by during dialog.

Now we shall have a look at the listed negatives.

- **Acoustics:** the player is alone with the game, therefore will be listening either through a headset or his own speakers at a volume the player finds appropriate, negating this as a negative.
- **All together:** the player is alone with the game, and therefore will not be held back or dragged forward by any weaker or stronger language learners.
- **Interaction:** some games have the option to interact with the characters within in limited ways providing some level of interaction.
- **It's unnatural:** several people sitting in a room listening to the same audio is atypical. However, this is not what happens in a typical session of gaming. Unless a group is invited to watch with the player, or it is a game designed for multiple people to play simultaneously.

As we can see games share similar advantages from Harmer's classroom, but do not seem to share the same drawbacks. This is not to say that games are perfect, and there are concerns that teachers and the public have regarding video games' effect on young and venerable people.

2.8 Receptive and productive divide:

A common separation of skills within the English language is into receptive and productive skills. Productive skills are focused on language skills that produce different aspects of the language, mainly spoken and written skills, whilst receptive skills focus on listening and reading. We can find these four skills within the new Norwegian curriculum, although no mention of the productive/receptive divide is found written. Additionally, speaking and listening have been combined into "oral skills" (Utdanningsdirektoratet, 2019). Research on both receptive and productive skills suggests different styles of teaching to improve both skills. Some mention approaches that are more akin to more traditional classroom teaching, where receptive and productive skills are taught through activities such as: reading aloud or alone, storytelling, interviews, conversations; Harmer, 2015). Receptive and productive skills development are well established aspects of English language learning, and

there are many sources that can be used for further development of these types of skills. However, there is a lack of research on what different genres of video games can provide in terms of both these skills. In particular, we are focusing on receptive skills and subdividing them into sub-skills. These subskills are listed later in this paper.

2.9 Identifying possible receptive learning affordances in video games

Dr. Fadwa has suggested several subsets of listening and reading skills. For the purpose of analyzing receptive affordances within video games, these subsets bring to light different aspects to look for within the different video game genres (Al-Jawi, 2010).

From Dr. Fadwa's subsets, these three categories have been produced for the sake of video game analysis within this paper:

1. **Identifying the topic:** Dr. Fadwa describes this as listener's/reader's ability to quickly get an idea of what it is being talked about (Al-Jawi, 2010).

   In the context of video game analysis, this would be whether or not video games allow players to develop skills that let them identify different topics through either reading or listening to information provided by their respective games.

2. **Reading and listening for general understanding:** General understanding is described as the ability to take in a stream of discourse and understand the gist of it without worrying too much about details (Al-Jawi, 2010).

   In the setting of a video game this could be getting a general understanding of the plot, or how the game works, in terms of mechanics.

3. **Reading and listening for detailed information** are in opposition to the general understanding approach and are useful in understanding every detail of the information that is provided (Al-Jawi, 2010). Reading and listening for specific information are the abilities to gather specific details within a text, reading or listening only to gain wanted knowledge from a text (Al-Jawi, 2010).

   Within the context of video game analysis, this would be whether or not video games are able to provide a stream of information that players can either analyze for general understanding, specific information or detailed information, either through spoken or written language.

4. **Interpreting text:** Could also be called inference or listening/reading for implications. Dr. Fadwa describes this as the ability to see beyond the literal meaning in words, being able to use a variety of clues left by authors to gain an understanding of what writers or speakers are implying or suggesting (Al-Jawi, 2010).

In the setting of video games this would be whether or not they are able to provide nuances either through spoken or written information that allows for interpretation other than the literal meaning.

2.10 Definition of genres:

Game genres affect the experience of playing in a more radical fashion when compared to reading books of different genres. For example, an RPG can be a mystery focused game, fantasy, modern, sci-fi or more. Research shows that dividing video games into genres creates access points for users when searching and engaging in, what they deem as, interesting gameplay (Clarke, Lee, & Clark, 2015; Peever, Johnson, & Gardner, 2012). There is a similarity in what genres engage different types of players, as what forms of teaching engages different types of learners. Research has shown possible link between different types of learners and their preferred genres creating possible resources for engaging learners on their interests (Khenissi et al., 2016). This link has led to further research that suggests that educational video games can be developed in accordance with genre preferences of different types of learners (Rapeepisarn, Wong, Fung, & Khine, 2008). There is little to no research on the genres video games when linked to Norwegian language learning, leading to a possible beneficial area to bring forth research on this topic.

Interestingly, genres within video games have two definitions covered by the same word. The first definition is one that is more familiar to any person more familiar with non-interactive media, wherein it is a collection of themes and tropes that define the "feel" of the genre. The more game centered genre where the method of interaction is what defines it as a genre, as an example the board game *Checkers,* and *Monopoly* are both boardgames but with different genres. Where this becomes more complicated is the synthesis of story genre with game genre.

Like a lot of genres, it debatable the degree to which any game is an example of a genre, or that anything is a single genre is intersubjective. For example, *Dracula*, *Twilight* and *Underworld* all have action, horror and romance elements, but *Dracula* is defined as horror, *Twilight* as romance and *Underworld* as action. All have the texts have elements of the other, but the amount of focus on one particular genre is what we define it as.

Genres within video games differ from other mediums. While literature can feature clearcut genres, video games tend to blur the line. Most video games will seldom feature just one genre. The Fallout franchise of video games are mainly seen as Role Playing Games, or RPGs, while they heavily feature traits associated with the genre of RPG, a lot of the time spent playing is taken up by characteristics that are associated with the Shooter genre. Combat withing the game is mostly based upon using firearms to combat enemies, much like games from the *Call of Duty* or *Battlefield* franchises. The *Resident Evil* franchise is in a similar space where most the games are mainly within the horror genre, a lot of the game time is spent combating enemies with firearms. This is a regular occurrence within video games. If we were to look at *Fallout 4* on Steam, one of the most prominent video game platforms on for the personal computer, the game is described as "open world, post-apocalyptic, exploration". Role playing game is not featured as the top four descriptions of the game, even though the developers themselves categorize the game as an RPG. Steam features a user-controlled genre tag system, which allows users to tag genres to games.

This is an example of the difficulties some video games are to categorize into a single genre. With this in mind, this paper will try to define two of the more popular genres of video games – shooter and RPG. These are definitions we are using, a definition constructed with consultation with other enthusiasts:

Shooters are games that emphasize physical challenges, including hand–eye coordination and reaction-time where the focus is almost entirely on the defeat of the character's enemies using the projectile weapons given to the character.

RPGs are harder to define but can be largely identified by the inclusion of a progression system that increases the statistics of the player's avatar, the ability to customize equipment such as weapons and armor, and a quest that constitutes a central storyline that has optional side quests to participate in.

2.10.1 Shooter:

The forerunner of the genre can be traced back to the arcade game *Space Invaders* with the most popular iteration of shooters being those that are set in "first person" popularized by games such as *Wolfenstein* and *Doom*. In this genre players are provided with a projectile weapon and must dispatch adversaries while avoiding taking damage from said opponents or form the environment in which the game is set. Largely this genre is focused on hand eye coordination, where the player is meant to aim and fire a projectile while avoiding opponents are hit themselves. Shooters tend to be similar to games of Paintball or airsoft, with additional complexities such as special abilities like deployable shields and occasionally flight.

2.10.2 Role Playing Game:

Role playing video games were inspired by traditional tabletop games like *Dungeons and Dragons*, *Traveler* and *Call of Cthulhu*. Players take control of a customizable character that develop their strengths and experience throughout the game, traditionally following a main set of story events, with side events sprinkled throughout their journey. The element of gaining experience to level up and further develop their characters stats and abilities are a main feature within the genre. While gaining experience and leveling up is a staple, individual game franchises choose to incorporate different variations of a "level up system". For example, in *The Elder Scrolls* franchise has chosen to use a variation that focuses on usage of skills to further improve stats/skills and learn new abilities. To gain the ability to craft better armor or weapons, the player must spend time smithing items until they gain enough experience to gain a skill point within the skill tree of smithing. Likewise, they have to wield one-handed weapons to improve and gain new skills within the one-handed skill tree. The *Dark Souls* franchise has taken a different approach, focusing leveling up stats, instead of different skills. Players improve their skills, not through continuous use of different weapon types or magic, but through gaining enough "souls" also known as experience points, to increase their level which gives them the opportunity to improve a single stat by one point. Stat points decide whether or not the player is able to wield a weapon or use a magic spell. For example, in *Dark Souls* a player needs to improve their intelligence stat to 11 if they want to use the spell "Soul Arrow", or they need 7 points in strength and 12 points in dexterity to wield a "Rapier". There are many more variations of this system, some which differ entirely from the aforementioned systems, but at their core, there is a focus on improving the player character and making them stronger.

3 Methodology

Our study is meant to provide a framework for which a potential language educator can assess and recommend videogames as a text to further improve a student's language abilities. One of the hopes of this research was to give a resource that teachers could use to provide an additional avenue for learning. One thought we had over the course of writing this paper was a "language journal" where the teacher assigns that the student writes down instances where they learned some new words. However, we do not doubt the creativity of education professionals in their ability to adapt to suit the needs of their students.

3.1 What is Thematic Analysis?

Thematic analysis is the qualitative data analysis method that is used to discover themes in texts in order to address research questions. The themes are identified after a rigorous process of data familiarization, coding and revision (Caulfield, 2022). Thematic analysis can be used as either an inductive or deductive method, either starting coding before you have determined the themes and then using said code to build themes from your code or after you have previously determined your theme using preexisting theory or knowledge. Thematic analysis is useful when attempting to categorize and divide large data sets as it divides said data sets into neat categories that are easier to process.

3.2 Subskills

In order to gather observational data, we settled on using a form of thematic analysis in order to determine what sorts of subskills a hypothetical subject would practice during a play session in a game. Ultimately, we determined that the focus should be on passive/receptive skills as a basis for study and sought out characteristic traits that we could use to determine the level of prominence of certain "sub-skills" of receptive skills. The themes we settled on were a set of subskills listed by the Language Link International Language Centre (ILC, 2022). From these we selected the items listed and defined below, as these were elements that we determined were capable of being observed as instances rather than processes during game play.

- **Listening/reading for detail:** To read or listen to a text in order to get meaning out of every word.
- **Deducing meaning from context:** To guess the meaning of an unknown word by using the information in a situation and/or around the word to help, e.g. I drove my van to the town center and parked it in the central car park. Van must be some kind of vehicle because you drive it and park it.
- **Inferring attitude, feeling, and mood:** To decide how a writer or speaker feels about something from the way that they speak or write, rather than from what they actually and openly say or the words they use.
- **Predicting nouns, and verbs**: A technique or learner strategy students can use to help with listening or reading. Students think about the topic before they read or listen. They try to imagine what the topic will be or what they are going to read about or listen to. This makes it easier for them to understand what they read or hear.
- **Skimming:** To read a text quickly to get a general idea of what it is about.
- **Long form Scanning:** To read a text quickly to pick out specific information.

- **Short form Scanning:** To read a short sentence quickly to pick out specific information. †

  † Short sentences here being defined as basic SVO sentences with little extra information (You picked up a Grubby bandage, you did 20 damage, or Ekens used sneak attack.)

We determined during our initial trial run of our method that we wished to delineate between scanning that was of a shorter sentence, such as one that would repeatedly inform the player that they have done a specific amount of damage to an enemy or object, or that they had retrieved a common item. We did so because during said initial trial we observed a large amount of the scanning sub skill and determined that some of the scanning going on was qualitatively different and that the data could be better clarified by highlighting one form of said scanning.

After finding a playlist of our chosen game we used a random number generator to select a video out of a playlist to get a chunk of the game, this was done in the hopes of getting a sample of the game that could show off a more complete spectrum of what the game involved rather than starting at the beginning or middle or end of the playlist.

The selected video was then observed for around 10 – 15 minutes while indicating or tallying the instances of moments where the subskill could be utilized in the game.

After we logged the total amount, we made some qualitative notes in order to put the data into context so it could be easier to understand upon revisiting them. These notes would include things such as, what were some of the noticeable common instances of areas where the subskill was capable of being utilized, and further clarification of the observation such as one instance where a character in a dialog gets cut off being a potential instance where a learner can attempt to predict what the character was trying to say.

We determined that this form of deductive thematic analysis was appropriate as a method as we wished to have a method to display data in such a way as to add a level of objectivity to our observations. As we wanted a way to display the data in a way that reflected the observation period without having to rely on memory to determine what subskills were on display.

In order to demonstrate the applicability of the method and due to the degree that the authors of this paper are aiming for we determined to limit our chosen games to those that have been rated by the Pan European Game Information (PEGI) to be suitable for ages 12 or over. The games chosen were:

Bravely Default (2012), Dragon Quest XI S: Echoes of an Elusive age (2017), Enter the Gungeon (2016), Final Fantasy XV (2016), Fire Emblem Three Houses (2019), Fortnite Battle Royale (2017), Genshin Impact (2020), Kingdom Hearts 3 (2019), Legend of Mana (2021), Monster Hunter Rise, (2021), Ni No Kuni II: Revenant Kingdom (2018), Octopath Traveler (2021) Overwatch (2016), Paladins: Champions of the realm (2018), Plants vs Zombies: Garden Warfare 2 (2016), Pokémon FireRed (2004), Ratchet and Clank: Rift Apart (2021), Risk of Rain 2 (2020), Spellbreak (2020), Splatoon 2 (2017), Xenoblade Chronicles 2 (2017).

We chose these games in order to get a broad range of genres and game types. We also did not select games that were so called “educational games” as we wished to select games that were more likely to be chosen by a hypothetical student rather than one that would be chosen by a teacher who wished to “assign” a game to said student. We also wished to make it potentially easier to recommend commercial games released within the past decade.

3.3 Reliability

Because of the way we defined subskills and that they are a pre-existing standard we believe that should other researchers attempt to reproduce this experiment with the definitions we have listed they would come to conclusions that match our sample. We are certain that should a potential future researcher reattempt this experiment they would not get the exact same results down to the values of the sub skills. However, we are fairly confident that they, if they are using the same definitions of subskills as we listed, were to perform this experiment they would get similar results. One potential difference is that should they not use the exact same video and playlist that we ourselves did they may come up with slight variations or might come to a section with a different focus subskill focus. However, upon repeated experimentation and a larger sample size the results should become more and more homogenized and similar to one another. This does mean that the results that we gathered might not be the results that are the "true" scores of the game selected. Ultimately it is our belief that while the results of the experiment might not be true, the test itself is reliable.

3.4 Validity

In terms of validity, we believe that due to the selection from a creditable learning center we were able to select a number of subskills that could be identifiable on initial glance. There is some question as to if the learning center is accurate in their choice of sub skills as we were unable to find where they sourced their terms from or if they had created these terms on their own. In addition, because we are seeking out a quantity of information rather than trying to determine the quality of the instances.

Additionally, our supervisor was contacted in order to determine and locate the subskills selected, and he was also consulted to confirm our definitions and sign off on their use. We believe that this lends some additional authority with a qualified professional and an external perspective.

3.5 Limitations

This method can be criticized for its lack of accounting for the quality of learning opportunities and instead merely quantifying the instances where passive learning skills can be applied and trained. This means that in comparing a game with quantifiably higher rates of low-quality listening opportunities will score higher on the scale than a game with higher quality listening opportunities that occur less frequently. The method also assumes that the selection of material from the game is representative of the whole. Within personal experience this is not always the case, as an example there are games that shift genre mid game and radically alter the modes of interaction with the player, ether they are mini-games or fully change part way through.

3.6 Ethics

Due to the nature of this study and the method of data gathering we believe that our process does not violate any ethical guidelines. Firstly, due to the public nature of the videos we are not intruding on any privacy rights, as we are not gathering survey data. One potential issue might be if the YouTuber decides to remove their video form the hosted sight, we have then maintained a record of its existence. In counterpoint however should the YouTuber remove said video there is a limited level of data that can be traced back to said Youtuber.

In addition, the games selected were limited to games that would be appropriate for those aged twelve or older. As the next age category was sixteen or older where we feel that we wanted to have a large pool of games but did not want to include games that, as teachers, would cause friction to recommend to students in lower secondary school. Additionally, we wished to avoid having to justify themes in games. Although as a side note we feel are subjected to a uniquely high level of scrutiny when compared to film, music, and more traditional literature.

3.7 Justifications for our decisions

3.7.1 Why we chose not to distinguish between reading and listening

A major reason we chose to combine the two skills of reading and listening and not observe them as two separate types of receptive skills was that we believed that we had already limited ourselves by genre, and age categorization. We were also confident that the two skills would be similar enough in nature to provide adequate data on what we wished to observe.

3.7.2 Why we chose RPGs and Shooters

Ultimately, we determined that we wished to focus primarily on two broad game genres, role playing games and shooters. As a side note, videogame genres have problematic elements in their naming schemes. Genres in the sense of games are assigned by core gameplay interaction, rather than their visual or narrative. For example, although *Fortnite* and Enter the *Gungeon* are both classified as shooters the former uses an over the shoulder camera angle while the latter shows the game from overhead as a bird's eye view. As for the reasons why these two game forms were chosen, the reasoning was that for role playing games, we have an initial bias towards them as potential language learning resources. Due to our previous experiences interacting with the medium we have gained a preconception that they are well suited to language teaching due to their perceived density of lexical use. This is especially noticeable in comparison to other genres, where the game relies less on the interaction with the game world through dialog and a deceased focus on traditional narrative structure. Role playing games come from a tradition that places a higher emphasis on story and character development, a legacy that it has carried over from its roots in tabletop gaming. Shooters however come from a tradition that places higher emphasis on player skill and is primarily focused on completing challenges.

The reason we chose shooters is firstly we wished to have a large genre to compare our findings to. Shooters make up the second largest genre in terms of market share in gaming (ESA, 2019) with Action games being the largest. However, action encompasses an exceptionally broad spectrum of games that we reasoned that any definition of action game would include shooters as a taxonomic subcategory, additionally there is the genre of Action roleplaying games that would muddy the waters further still.

Our initial bias had us skeptical to the level of language learning opportunities of shooters. For the reasons that are opposite of those listed above. As such games simply have a different primary focus. Especially because shooter games tend to focus primality on moment-to-moment gameplay and tend to have story parsed out in cut scenes and occasionally audio logs that can be missed.

3.7.3 Stories

One of the reasons we chose more modern games is that modern games can tell more complicated stories. As the ability to store data has become more and more feasible and cheap the amount of information on said storage medium dedicated to gaming has increased to keep pace. In the days of the Atari 2600 the amount of data one could collect on a single hard drive was infinitesimal in comparison to the current multi gigabyte videogames which is normal in the current video game market.

In addition, the medium has had time to mature from its infancy and has, as any story telling medium when given enough time, found the particular ways that it can uniquely tell stories. For example, games are particularly suited to environmental storytelling, a technique where the events of the story or history of the constructed world are not actively spelled out to the player but are spread around the virtual space. Not only that but as people have grown up with games as part of their life, they have become more ambitious with what they consider possible, experience within the industry and avant-garde individuals have expanded the scope, scale and potential of the medium. Alongside the medium's progressing development, it maintains a current of nostalgia and willingness to learn form its own history, taking lessons form said history (often lessons from games that the designers were exposed to as children or young adults) and applying it to contemporary development.

3.7.4 Higher chance of getting data

Due to the way that trends within YouTube work it is more profitable for creators to produce videos on topics that are more recent, this remains true for the gaming sphere of YouTube as well. New games will inevitably be more popular and in vogue than games that came out thirty years ago, for a large part due to their marketing budget and novelty. YouTube is also increasingly being taken into consideration for the marketing campaign of studios and developers, as influencers gather a potential audience for their product. Therefore, there are going to be more videos on more recent releases and those videos will be likely be the games that ether have the larger marketing budget or ones that gain popularity through word of mouth.

3.7.5 More relatable to potential students

One of the better ways to get students to learn is to target their inner motivation instead of external motivational factors. If the student is trying to learn English, it is within the interest of the teacher to provide as many potential avenues of learning as feasible. For the same reason that teachers would want to encourage their students with reading Young Adult novels or comic books, a teacher could use video games. To narrow down why contemporary video games, a contemporary video game is more likely to attempt to appeal to their age group with themes that are peculiar to their generation and current zeitgeist. While a game made from an earlier generation, simply by not having the ability to predict the future, might not resonate with the student. This is not to say that games and stories do not have universal themes, but if we were to take a hypothetically non-heterosexual student, there is a severe lack of queer representation in games from before the 21st century. This lack of representation was primarily due to an understanding that the target audience for said products was largely heterosexual cisgendered white males, something that has been shifting over the past few years, albeit admittedly fairly slowly.

3.7.6 Better Game Design

Additionally, as the medium has developed there has been a concerted effort to improve upon the art from in a professional and academic manner. In the same way that art schools develop aesthetic skills and styles, game design schools have sprung up in order to teach prospective designers and story tellers. This has led to an increased gathering of consensus around what is good and bad in terms of game design. Additionally, the industry has also invested in large amounts of market research in order to better appeal to audiences.

3.7.7 Teacher oriented decisions

We wished to use a method that could be easily adopted by teachers who wanted to easily determine the value of a game as an educational opportunity. To use an analogy our method attempts to simulate a teacher pulling a book from the library and flipping to a random page in the book and analyzing the content inside so they can recommend a book at the student's reading level.

In order to gain a wide selection of varied material and to create a more universally applicable method we used YouTube and the "Let's Play" genre of video in order to get a sample of gameplay. This decision was also made so that we did not have to incur a significant financial investment. In addition, it would be equally inconvenient to a potential teacher to personally purchase a game so that they can judge the potential learning quality of said game. These inconveniences come in the form of monetary, as games can cost upwards of 70 United States dollars. Time is another factor that limits a teacher in being able to fully experience a game, with games being often a several hour-long investment, as an example *Ratchet and Clank: Rift Apart (2021),* on average takes around 15.5 hours to beat according to a self-reported survey website (LLC, 2022), a significant time investment that is unrealistic to expect form a working adult to perform in their free time, doubly so if the teacher wants to be able to give a recommendation in a timely manner to a student.

4 Results:

This section deals with the results that were gathered from our methodology. The section firstly presents the summary in the form of a table divided by game title and shorthand for the subskills that we were looking for. This is followed up by a summary paragraph for each game, listed in alphabetical order. The paragraphs detail some qualitative reflection that we engaged in after we recorded the ten minutes of observed gameplay. This reflection was made in order to provide additional context to give readers a clearer picture of the observed gameplay.

Please note we placed Pokémon first outside of the alphabetical order, as there are a number of concepts that are similar or identical in other turn-based RPGs. The listed columns are shortened and the full list is in part 3.1 Subskills.

4.1 Summary

TITLE (RPG)	Detail	Deduce	Inferring	Predict	Skim	Scan L	Scan S
Bravely Default	22	18	23	1	0	5	11
Dragon quest XI	15	15	33	0	1	8	5
Final Fantasy XV	4	11	40	0	0	2	13
Fire Emblem: Three Houses	9	6	25	0	1	10	10
Genshin Impact	8	19	16	0	0	9	3
Kingdom Hearts 3	3	14	30	0	0	7	26
Legend of Mana	1	0	3	0	0	0	25
Monster hunter Rise	1	1	0	0	0	4	25
Ni No Kuni II: Revenant Kingdom	39	11	9	0	1	4	19
Octopath Traveler	3	8	39	0	0	1	1
Pokémon	8	7	7	0	0	13	201
Xenoblade Chronicles 2	2	13	22	0	0	0	33
Mean	9.58	10.25	20.58	0.08	0.25	5.25	31.00
σ	11.19	6.08	13.68	0.29	0.45	4.20	54.50

TITLE (Shooter)	Detail	Deduce	Inferring	Predict	Skim	Scan L	Scan S
Ratchet & Clank: Rift Apart	13	15	0	0	0	2	3
Enter the Gungeon	10	0	2	0	0	0	28
Fortnite	0	2	0	0	0	1	126
Overwatch	1	5	14	0	0	9	70
Paladins: Champions of the realm	5	0	0	0	0	0	50
Plants vs zombies GW 2	2	0	0	0	1	0	163
Risk of rain 2	6	2	0	0	0	0	10
Spellbreak	4	2	0	0	0	1	33
Splatoon	17	19	16	0	2	3	44
Mean	6.6	5.2	3.9	0	0.3	2.9	72.8
σ	5.77	7.05	6.54	0.00	0.71	2.91	53.51

	Detail	Deduce	Inferring	Predict	Skim	Scan L	Scan S
Total Mean	8.24	8.00	13.29	0.05	0.29	3.76	42.81
t	0.415	0.093	0.002**	0.339	0.762	0.038*	0.262

4.2 Pokémon:

Detail: 8 Deduce: 7 Inferring: 7 Predict: 0 Skim: 0 Scan L: 13 Scan S:201

Pokémon is a turn-based RPG featuring hundreds of creatures called Pokémon.

The game features a lot of instances of deduction through combat. Example: “Bulbasaur got burned”, which leads to the Pokémon gaining the “burn” status effect and taking damage at the end of their turn “Bulbasaur was damaged by burn”. A player would then understand that the burn status is something that is afflicted to the Pokémon outside of their attack turn and leads to Pokémon being continuously damaged by the status effect at the end of each turn.

A lot of Pokémon battling is going to feature opportunities for skimming, where players can see if their attack was not very effective, neutral or super effective, as well as if the enemy or their own Pokémon is inflicted with a status effect, or stat increase or decrease.

Every turn each trainer chooses their what to do, either use an item, use a move, flee from battle or switch Pokémon. When both players have chosen their action, the next set of text prompts are giving us short burst of information. Example Weedle used poison sting, it was not very effective, Geodude got poisoned, Geodude used tackle, Geodude was hurt by the poison. In this one battle turn, 5 instances of short form scanning occurred. If both Pokémon are evenly matched in terms of strength, a battle can last for several turns, and on top of that, both trainers can have up to 6 Pokémon each, where the battle lasts until all Pokémon on either side has fainted (died). In the case of an enemy Pokémon fainting, there would also be two extra instances of short form scanning, due to one text letting us know the enemy Pokémon fainted, and another letting us know how much experience points our Pokémon got. Additionally, if a Pokémon has an ability that directly effects the enemy Pokémon, a text prompt will occur telling us what happens. Example: Arbok’s Intimidate lowered chameleon’s attack. Bringing in another instance of short from.

It should be noted that newer players would/should read through more akin to detailed reading, as to get the knowledge they need to learn the game. The gameplay video used for this analysis, features players that had gotten accustomed to the game, and quickly went through most instances of text while in battle. A seasoned player would at most scan for whether the attack hit or missed, and whether or not it was effective, super effective or not very effective.

Most instances of Detail, Deduce and Inferring came from Trainer dialogue before and after battles. Additionally, a player can choose to talk to every NPC they encounter, to gain tips, random bits of dialogue or story and more.

It should be mentioned that Pokémon has a lot of variables in battling that somewhat controls the number of instances of listening/reading skills that occur, meaning that it would be somewhat impossible to correctly predict how many instances will occur in a play session.

From prior experience, there is a notable amount of NPC interaction that is optional.

4.3 Bravely Default

Detail: 22 Deduce: 18 Inferring: 23 Predict: 1 Skim: 0 Scan L: 5 Scan S: 11

This game is an RPG where the goal is to go on a quest to restore balance to the world after it has fallen into chaos. The game primarily involves Gathering companions and fighting in a turn-based combat and exploring a constructed fantasy world. The game is voice acted and has the spoken text scroll by during the dialog as subtitles that only appear when the words themselves are spoken. Other than that, there are combat menus, inventory and shop menus where the player has time to read the information about items they own or can buy.

During the sample there was no combat observed, and largely the segment had dialogue between the main characters and a selection of NPCs (non-playable characters), or the player in in game shops looking for potential items to purchase. The dialog allowed the player to practice their detail listening and reading, deriving meaning from context, and inferring attitude, additionally there was an opportunity to predict dialog as during one scene a character gets interrupted by another leaving the player not directly knowing what was about to be said. The in-game store sections allowed the player to scan items for their general name and price, and there was the occasional popup reminder that had the player proactive short form scanning.

4.4 Dragon Quest Xi:

Detail: 15 Deduce: 15 Inferring: 33 Predict: 0 Skim: 1 Scan L: 8 Scan S: 5

Unlike other games, where a lot of the dialogue can be avoided by not talking to NPCs, and where most of the written text that players encounter is battle related, (simple descriptions of events lacking adjectives). Dragon Quest features a lot of dialogue heavy sequences, which switch between being purely text based, or text/voiced sequences. Although most interactions that are not voiced seem to be non-essential content. Every instance of dialogue that was connected to the main story quest seemed to be voiced. This makes the pursuit for the main story quest more desirable in terms of time spent learning, as the voiced sequences provide both written and verbal products for the player to learn from.

4.5 Enter the Gungeon:

Detail: 10 Deduce: 0 Inferring: 2 Predict: 0 Skim: 0 Scan L: 0 Scan S: 28

This game is a shooter where the player views the action from an overhead perspective and controls the character in a two-dimensional plane. The point of the game is to reach the deepest level of a dun

During the gameplay there are chances for short scans from picking up ammunition during gameplay or from swapping form one gun to another. Most detailed reading occurs when picking up new items, so the player can try to understand what they do. Although in “Enter the Gungeon” item descriptions are not necessarily direct. They might just hint at what the item/weapon does, rather than describing their effects.

Finally, there is some ability to infer attitude from a shopkeeper that pops up at certain points throughout a playthrough.

4.6 Final Fantasy XV:

Detail: 4 Deduce: 1 Inferring: 40 Predict: 0 Skim: 0 Scan L: 2 Scan S: 13

An interesting instance of deducing from context in one of the dialogue sequences from the data gathering showed a choice between voicing frustration or resolve, both choices would lead to instances where the player could deduce what those two words entail, by listening to what is said by the player character and how it is said. Should be noted that subtitles are present, so the ability to deduce from pure reading was also possible.

Where many other games listed are turn based RPGs, Final Fantasy XV is an ARPG. Meaning Action Role Playing Game. This means that combat is more rapid, and reaction based, rather than input command and wait through both yours and your enemy's turn to finish. What this entails for the data gathering is that during combat, there will be fewer instances of short form scan, since combat is not shown through text/visuals. Instead, what we get in this game is short expressions from characters such as "It's proving to be a challenge" or "Nice shot!". Which leans more towards instances of inferring rather than purely scan. Although small spurts of information during combat such as blocking icon/text appearing, and vulnerability appearing in text. So, there are some instances that somewhat resemble those found in turn-based RPGs.

Another interesting instance of deducing meaning from context was seen through a combat encounter where the enemy suddenly went berserk, and the player got a new objective to flee from the monster they were fighting and regroup with the other characters. Players would eventually figure out that fighting would not work against this enemy at that moment and would have to run away from it. Leading to a possible understanding of what "flee" means in this setting.

4.7 Fire Emblem: Three Houses:

Detail: 9 Deduce: 6 Inferring: 25 Predict: 0 Skim: 1 Scan L: 10 Scan S: 10

The game is split into a dialogue section, and combat. It should be noted that story related combat also features a considerable amount of dialogue. In these story related combat encounters, the characters communicate akin the dialogue heavy sections. But regular combat is turn-based with some opportunities for short form scans.

Although most of the content in the dialogue heavy sections is not necessary to complete the main storyline, players are more likely to pursue it, as it is an important aspect of developing character relationships and character specific missions and information.

4.8 Fortnite:

Detail: 0 Deduce: 2 Inferring: 0 Predict: 0 Skim: 0 Scan L:1 Scan S: 126

Most instances found in Fortnite are short scan, these mostly relate to text popping up when you down an enemy, or when an enemy is taken out by other players. The information to gather here is what type of weapon the enemy was taken out by, so you can somewhat make a tactical decision on how to approach an enemy. If the enemy has a sniper, try and get to close range where their sniper is not as effective type of stuff. Name of the area they are in appears on the mini map, how long until the play area is closing in on itself. The amount of short scan will lessen as more and more players are eliminated. If there are 10 people left, then there can be a max amount of 9-18 messages of people getting downed and killed. Other messages like "already reloading" or "can't do that now" can also appear. Name of weapons or vehicle appears.

It should be noted that Fortnite is a multiplayer game, allowing you to group up with other players and communicate with them either verbally through a mic, or through voice chat. This adds an immeasurable and uncertain number of possibilities for instances of subskills to occur. It also brings with it the possibility to listen to other forms of English from both native and non-native speakers. Especially on European servers, where native language is so varied.

4.9 Genshin Impact

Detail: 8 Deduce: 19 Inferring: 16 Predict: 0 Skim: 0 Scan L: 9 Scan S: 3

It should be noted that Genshin Impact is a free to play gacha game, which means that the game does not cost money, but there are a lot of characters to collect that can be acquired by buying loot boxes that has a random percentage chance to give the player different characters from the loot box character pool. Loot boxes have been compared to gambling, so it is something to be aware of.

The game itself is an action RPG, with an evolving story that introduces more and more content as the creators put out new updates.

Most instances occur during dialogue, combat features little to no instances except for experience points and items/resources dropped from enemies during combat encounters.

4.10 Kingdom Hearts 3:

Detail: 3 Deduce: 14 Inferring: 30 Predict: 0 Skim: 0 Scan L: 7 Scan S: 26

Kingdom Hearts is an action RPG similar to Final Fantasy XV, made by the same developer. Although combat in Kingdom Hearts shows little, short scan except for the occasional form change commands found within the game. The games from the kingdom hearts franchise heavily feature Disney characters and worlds, and so the structure of each world is akin to a Disney movie that has been shortened and is intercut with combat sections.

Combat related instances are mostly short scan in the form of change commands, team attacks and when gaining experience points or munny (name of the currency in the game) and gaining a level up.

Although there is a journal where information about different enemies and character is stored, as well as summaries of what happened within the different worlds visited, and some other lore related documents that can be read by the player whenever they are not in a cutscene or combat. While not encountered a lot in the data gathering. The journal can still be used to practice/encounter the different instances.

4.11 Legend of Mana:

Detail: 1 Deduce: 0 Inferring: 3 Predict: 0 Skim: 0 Scan L:0 Scan S: 25

The game is not voice acted.

Action RPG but no text instances occur during combat, so it is purely mechanic focused. The end of combat features one instance of short scan in the form of an experience point sheet.

The material gathering for this video game occurred during a session that was very combat focused, so most of the data was a short scan. Although similar to other RPG, during dialogue heavy sections, a broader variety of subskills would be encountered.

4.12 Monster Hunter Rise!

Detail: 1 Deduce: 1 Inferring: 0 Predict: 0 Skim: 0 Scan L: 4 Scan S: 25

Monster Hunter Rise is an RPG focused primarily on a gameplay loop of accepting a quest to hunt a large creature for the purpose of harvesting its body parts to use as weapons and armor to hunt stronger and more challenging monsters. Between missions the character is able to recuperate at a base of some kind. This base functions as an outpost in the wilderness with access to a forge to upgrade items and eatery to apply status buffs for the next hunt. For the most part the story is told in rare cut-scenes that ferry the player from one of these bases to the other. Outside of these missions there is little dialog or reading material outside of mission briefings informing the player on what the quarry is.

During the observed sample the player was undergoing a side mission to hunt a monster, aside from this instance where the player can practice detailed reading and context deduction. Apart from this brief instance there was also a chance for long form scanning where there is an item description for effects that said weapon inflicts (fire, thunder, ice. etc.) or if it can poison or stun a monster. Aside from these there were mostly instances of short form scanning where there were item pickups and harvesting.

4.13 Ni No Kuni II: Revenant Kingdom

Detail: 39 Deduce: 11 Inferring: 9 Predict: 0 Skim: 1 Scan L: 4 Scan S: 19

The material analyzed form this sample featured several tutorial information popups that somewhat skewed the amount of detail instances that occur, seeing as they are not going to be that regular of an occurrence, but it is still something that is encountered when playing.

Combat is action RPG oriented. Bringing with it some text at the start and finish of combat. Not much in terms of instances here, although characters sometimes utter short expressions like “Take this!” or “This will be over in no time!”. Which can provide some instances of either deducing what the expression means or how it is used or inferring how the person says something or acts when encountered with combat. End of combat provides information of what the character gained from that encounter in terms of items and resources.

The game switches between both voiced and unvoiced dialogue.

4.14 Octopath Traveler:

Detail: 3 Deduce: 8 Inferring: 39 Predict: 0 Skim: 0 Scan L: 1 Scan S: 1

The game is turn based, so combat encounters are more akin to Pokémon in terms of text choice during what action to do, but it does a lot more show do not tell in terms of effect of attacks after choosing attacks.

Game feature a mix of voice acted and unvoiced dialogue.

The data gathering occurred during a dialogue heavy section with a lot of inferring meaning from attitude.

4.15 Overwatch:

Detail: 1 Deduce: 5 Inferring: 14 Predict: 0 Skim: 0 Scan L: 9 Scan S: 70

Overwatch is a multiplayer only game that likewise to other games allows for communication both verbally and written with random teammates from different countries, so the same applies with different types of English.

A lot of different callouts such as “I need healing” or “ultimate is ready” is both spoken and noted down in chat. So, if a player has chat enabled, they can both read and hear the different callouts from characters, as well as the varied way they are spoken by the different characters.

Although the game is primarily player-to-player interactions, through the little quips and rare instances of dialogue between characters, a lot of personality can shine through, and instances of inferring can occur.

A lot of inferring comes from small quips from the different characters, or the sporadic dialogue that can occur between certain characters.

Long scan mainly occurs in deathcam or when checking the scoreboard.

Rare occurrences of in-game tips allow for more detailed instances.

4.16 Paladins: Champions of the realm

Detail: 5 Deduce: 0 Inferring: 0 Predict: 0 Skim: 0 Scan L: 0 Scan S: 50

Paladins is a hero shooter similar to Overwatch where the objective of the game is to score as many points as possible during a match. There are a variety of game modes including point capture modes, team death match, and king of the hill. As a hero shooter there are a number of characters the player can choose from as their avatar for the match with unique special abilities to benefit the team.

The sample selected began as a streamer was selecting a character and its loadout. This was one of the few instances of non shortform scanning visible in game. The rest of the sample was a match where the primary Subskill on display was short form scanning in the form of effects of the abilities that the character could perform as well as various goals for the match and limited written chat interaction.

4.17 Plants vs. Zombies Garden Warfare 2

Detail: 2 Deduce: 0 Inferring: 0 Predict: 0 Skim: 1 Scan L: 0 Scan S: 163

While it is similar to Fortnite in that what weapons are used to defeat enemies keeps popping up in the killfeed. we elected to not note these as instances of short scan. This is due to the nature of the game. Garden warfare is more of an arcade shooter, meaning that certain information is less meaningful than in a competitive game like Fortnite. Fortnite only allows for one life, while in arcade shooters, you keep respawning after every death. So, the killfeed is more likely to be ignored, as the information given is non-essential.

Most instances were short scans, coming from kill messages on your HUD and killfeed or some other instances of assists through dmg done, or auto turrets killing enemies.

There were some instances while in the main hub area where the player is able to read notifications about events, changes and new inclusions in the game. Although a normal session would consist of just regular gameplay rather than reading these.

4.18 Ratchet & Clank: Rift Apart

Detail: 5 Deduce: 0 Inferring: 0 Predict: 0 Skim: 0 Scan L: 0 Scan S: 50

Ratchet & Clank is a long running third person shooter game series with an emphasis on comedy science and action. The player controls the titular Ratchet, a cat-like alien who uses various forms of weaponry with unique effects to defeat evil villains and preform various heroic actions. Said weaponry have included ninja throwing stars, plasma beams, a disco ball grenade that forces those nearby to dance, and lasers that alter their targets to become various farmyard animals.

Due to its comedic nature, there is a high degree of dialog in the game both within cut-scenes and during playable sections. A regular feature of the game is voiced announcements over speakers, in this sample for instance the character is infiltrating a prison run by agents loyal to an evil emperor and over an announcement speaker are lines that humorously refer to torture in an upbeat and cheerful way. The game also has a shopping system where the player can buy weapons, ammunition, and upgrades for the weapons. These provide ample opportunity for detail listening, deriving meaning from context. There is also a map for the levels that can be accessed at any time that provides an objective marker, and in game tool tips that provide the chance for long form scanning and short form scanning respectively.

4.19 Risk of Rain 2:

Detail: 6 Deduce: 2 Inferring: 0 Predict: 0 Skim: 0 Scan L: 0 Scan S: 10

The menu has a logbook feature that allows players to read descriptive texts about enemies, environments and items that they come across while playing. These can be used to practice the different subskills, but during a normal gameplay session, players are more likely to play the game rather than read through menus.

During class selection, players will most likely detail read through their class abilities to get an understanding of how their class works.

The game has a difficulty meter that moves gradually from easy to impossible. Players can learn the meaning of easy, medium, hard, etc. as the game progresses and gets harder

Most instances of short scan will come from items, which will exponentially grow as the game progresses, so the farther you get, the more items you will find, and the more instances of short scan will occur.

During the gameplay watched for this, the player was new to the game, and did not actively search for items leading to fewer instances of short scan.

4.20 Spellbreak

Detail: 4 Deduce: 2 Inferring: 0 Predict: 0 Skim: 0 Scan L: 1 Scan S: 33

Most of the instances of text are coming from item descriptions found within the arena/world they are playing on. Also, when abilities are upgraded. Some objectives can be present, like deal x amount of fire dmg. Allowing for both deduction and detail reading. Detail as to what the objective is, and deduce in terms of what fire is, and what constitutes as dmg. Consuming a potion allows for the deduction through actions as to what consumption means.

A player can just mash buttons to pick up items, so the number of instances they get will vary from player to player.

4.21 Splatoon

Detail: 17 Deduce: 19 Inferring: 16 Predict: 0 Skim: 2 Scan L: 3 Scan S: 44

Splatoon is primarily a multiplayer shooter with a single player campaign mode. While players can play through the campaign at any time. The main draw of the game is its multiplayer focused game modes.

Half of our allotted analysis time was spent in a multiplayer heavy section; the rest was spent in the single player mode.

Instances related to the multiplayer portion leaned more towards short form scanning. Messages like “low ink” [low ammunition], “splatted by [name of opponent]” or “splatted [name of opponent]”. Small bursts of information like what name of the map or mode they are playing, when their special attack is ready, when a teammate uses their special etc.

Still instances like “respawning in 3,2,1” lets the player deduce the meaning of the word “respawn” or when a player issues the message “BOOYAH!” which can be deduced to be a celebratory expression. Similarly, the message “DANGER!” appears when your team is far behind the enemy team, letting the player deduce the meaning of “danger” as a bad thing.

In the hub area, players can see messages/pictures made by other players, showcased above the head of different player models. These pictures/messages are random and can showcase different instances of the subskills. It is impossible to predict what these pictures/messages entail, so they were excluded from the data gathering material.

The single player portion of the game has dialogue that allows for a more varied instance gathering. Although during the gameplay parts with less dialogue, there are still some scanning. Dialogue that allows players to detail read to get full understanding of what is going on, or deducing meaning of words through context or inferring the attitude or feelings of the speaker.

4.22 Xenoblade Chronicles 2

Detail: 2 Deduce: 13 Inferring: 22 Predict: 0 Skim: 0 Scan L: 0 Scan S: 33

As an action RPG the combat features little text, although certain status effects pop up in text form. Additionally, the characters do speak quite a bit during combat, mostly short phrases of one to three words, but they still convey some important information, like letting the player know a specific attack is ready to use, or that they are inflicting status ailments on their enemy. They do tend to speak over each other, so there is some difficulty in actually hearing what is said, especially since subtitles did not appear during combat.

5 Discussion:

Our initial hypothesis going into the study was that we would see a higher number of opportunities for developing scanning skills in the Shooter genre. This bias was due to our previous experiences with the genre and the considerable amounts of popups in especially hero shooters, that usually use short single word indicators of effects. In addition, the genre is primarily one that is focused on skill and reaction time rather than slow careful consideration of the next move.

Our findings were that the RPG genre had a significantly higher number of instances where there were chances for the application of the Inferring attitude. In addition, long form scanning was also highly statistically significant at a P score of under 1 percent, however as opposed to our initial hypothesis this was more heavily weighted in the RPGs favor when it came to the mean number of opportunities per observation sample. In fact, when it came to frequency of opportunities, in all but one category (short from scanning) the mean of RPGs was higher than that of shooters. Though in order to be conclusive further observation is required, as we intentionally selected a limited dataset that might not be representative of the whole.

5.1 Prominent skills

Based on the results we can determine that predicting is not a prominent subskill in any of the chosen games. It is in fact only a single instance where the player can passively attempt to predict an upcoming word without actively choosing to perform the subskill as if they were in a formal educational exercise.

the most common subskill on the other hand was short form scanning, something that we early on noticed during our observation, and therefore made special distinction from it in order to have more meaningful results. We maintain that it was a successful and useful distinction to make by the evidence that short from scanning was observed approximately 10 times more often than its long form counterpart. By making some level of distinction we were able to find instances that we considered more valuable instances of the subskill and led to a dataset that had more useable information than if we had left it out. In addition, because we separated the two forms, we were able to determine a significant difference in the t-score of the two genres.

5.1.1 Listening/reading for Detail

Although not significant in a statistical sense there the mean between shooters and RPGs when it comes to reading and listening for detail has some interesting results. For one thing it the t-score indicates that there is a 40% likelihood that there is no difference in regard to genre when it comes to the use of the skill. Moreover, there seems to be a higher mean occurrence of detail observing in RPGs but there is also a much wider standard deviation in the same genre. Shooters though the mean occurrence of Detail observation is low have a lower standard deviation compared to RPGs.

This is not something that we expected on in the crafting of this experiment. We had the assumption that there would be a much clearer difference between Shooters and RPGs when it came to this category as we were researching the subskills. We were of the belief that because that listening and reading for detail would be a skill in which RPGs would completely out pace Shooters, as RPGs have had a history and tradition of a higher level of focus on story.

One possible reason for this discrepancy is that most current games are much more story driven than they were in the past and have higher amounts of meaningful dialog as a corollary effect. Additionally, there are games listed in RPGs that have a relatively low score such as Monster Hunter that we have experience with and know have little in the way of dialog that might be bringing down the mean. Furthermore, the gameplay during our selection of the sample was not representative of the entire game, that some of the games chosen have higher levels of listening for detail but in the ten minutes we chose had a less compact subskill density and were we to select another sample form a different part of the playlist we could have found a higher degree of listening and reading for detail.

5.1.2 Deducing meaning from context

Deducing meaning form context similarly is not significantly different in sense that t indicates that there is an approximately 9% chance that the difference could be due to other factors. Although this is a better value than what we discovered in the reading and listening for detail section it still is not truly enough to definitively state that there is a difference we can say that the likelihood is relatively high that the difference is there.

A potential explanation for this is that there was as a trend more dialog during game play and cutscenes for there to be wider use of more complex lesser-known words and expressions. This would be understandable in a genre that has a history and ancestry of an elevated focus on story and prose. During our data collection it nearly every shooter had a total number of instances at five or below with the median value of two. The two outliers to this general trend are *Splatoon* and *Ratchet & Clank* with both reaching into the upper teens in terms of instances. We would venture a guess that because the two exceptions had put a higher level of focus on story over the other examples in the genre. These two games modify the results to such an extent that in removing them in a subsequent T-Test the P value comes out to 0.002, a quite substantial change and significant result. Therefore, we can say with some degree of certainty that barring those exceptions there is a significant difference between the two types of games that favors RPGs as the more subskill dense genre. It is theoretically possible that were the data set even larger the contrast would be even greater and could cancel out the weight of the outlying games.

5.1.3 Inferring attitude, feeling, and mood

Inferring meaning attitude, feeling, and mood is another skill that was heavily weighted in favor of RPGs, with the t score coming out to approximately 0.002 giving us a highly significant score and meaning the likelihood of it being happenstance is truly low.

Our reasoning is that the dialog in most of the games were focused on characters who often would not be direct in saying what they mean, a standard way of writing prose in most media forms. Combined with the already stated focus on story in RPGs in comparison to shooters then there are more instances of dialog generally in the former compared to the latter. Strangely enough one of the games *Ratchet & Clank: Rift Apart* does have an increased focus on story compared to the other selected games in its genre, but there was no instance of Inferring attitude detectable in the selected gameplay video, more than likely this is because the characters were not attempting to obfuscate their meanings in communication with one another. In contrast, *Overwatch* has a disproportionately high level of Inference in its results, this is on account of the “quips” and

"trash talk" that the characters communicate with, some of whom are sarcastic and therefore necessitate inference of attitude on behalf of the player.

5.1.4 Predicting nouns and verbs.

This skill was one that did not have much in terms of a chance to be used passively. There were instances where if the participant actively attempted to perform this task, they would behave the opportunity to do so. These were primarily within the RPG genre where there are often breaks and pauses between the dialogues of the participants where the game sill does not continue without the player pressing a button to indicate to the software that they wish to proceed. However, we were much more focused on the use of games as extramural activities and therefore did not take this into account when coding our samples.

Our results therefore were only represented by a single instance in a single game. In the clip of the game, *Bravely Default* there is an instance where one character was cut off mid-sentence. Observing for this form of Prediction meant that the instances became highly unlikely to occur in the game. It is for these reasons that it would not be recommendable to use these games as resources for passively learning prediction. However, if forced to choose between the genres, then RPGs would be the selection that is closest to being significantly higher. Even if the difference between the two genres is not great enough to be considered truly significant in a statistical sense.

5.1.5 Skimming

There was not a good deal of cases where skimming was used as skill during gameplay. This can be somewhat understandable as a great deal of the time the games are hoping that the player has a deeper understanding of the story and gameplay that skimming would not be well suited to. As previously mentioned there are examples of games that do make use of this skill such as the aforementioned *Papers please,* however as that game is neither a shooter nor is it an RPG it is not included in the findings. An interesting result of said findings however was that both genres chosen were not significantly different in terms of the likelihood of the skill opportunity occurring, and the skimming subskill has the highest t-score out of all the results found.

5.1.6 Scanning

As stated in methodology we wished to add a level of distinction to the results so as to better illuminate the qualitative differences between sentences that merely state simple SVO statements form sentences that describe often repetitive basic information. The long form scanning we observed had a much smaller occurrence in relation to that of short form scanning. With a difference in genre being that in shooters there was a ratio of around 17:100 (as a percentage of Long form scanning divided by short form scanning then rounded to the nearest tenth) of long form to short form and in RPGs the ratio was instead approximately 4:100. in addition, there were observed around double the instances of scanning in shooters compared to RPGs, so we can say that shooters are giving less quality in terms of scanning compared to its opposing genre, and this would in our opinion mean that shooters provide mostly non-useful forms of scanning. When it comes to the topic of significance our results show a significant difference in the amount of what we have defined as Long form scanning between the two genres. The significance is weighted in such a way as to favor RPGs as the most

subskill dense genre when it comes to Long form scanning. Conversely, there does not seem to be a significance in the difference between the two genres when we look at short form scanning.

To condense the above paragraph, we found that while there was no significant difference between the number of Short form scanning instances, we did find that there was a significant difference between the two genres when it came to the occurrences of long form scanning. The t test shows a result of 0.038 and with the higher of the two means being that of RPGs.

The reason for this is likely due to shooters being designed in such a way as to present as much information to the player in as condensed form as possible. This is due to the gameplay being highly reliant on testing the reflexes of the player rather than the reading skills that are more prevalent in an RPG. Furthermore, RPGs have a tradition of items that the player characters can equip to improve various statistics, such as damage output and ability to avoid damage. These items will have varying statistics and have many different values, such as in game price, often these values are listed in ways such as dealing more "fire damage" or "ice damage" and the listing of these values have importance to the player as they need to maintain an increase in their damage output in order to take on the adversaries that they will be facing. In contrast many shooters do not have as many weapons that vary in small amounts often, they are visually easy to identify from form (shotguns, rifles, pistols), or in the case of games such as O*verwatch* or *Risk of rain 2* the player does not change weapons over the course of a game round, meaning that there is less reading, and more object recognition being practiced.

5.1.7 Overall

With the results above we can come to the tentative conclusion that RPGs are better resources for learning passive subskills extramurally within the context that we have established previously. With five out of the seven sub skills occurring more prevalently in the RPG genre than in the shooter genre, and the two sub-skills whose differences are significantly different are also weighted such that they are more prevalent in RPGs.

There are certain outliers in the two genres, a few notable standouts in the shooter genre were the games, Splatoon, Ratchet and Clank, and Overwatch. These games stood out particularly due to their higher levels of listening or reading for detail, deducing meaning form context, and inferring attitude, feeling and mood.

With Ratchet and Clank there is a much larger emphasis on comedic storytelling and humor, something that means that the writers give more instances of Listening for Detail and Deducing meaning from context. These instances were mostly due to three things, character monolog (primarily in the form of short jokes, quips, or exclamations of the characters current goal), announcements over a loudspeaker, and a short cut scene with dialog.

5.2 Pedagogical implications

As for the use of games in the context of education, this displays that should a potential teacher wish to recommend a genre when it comes to either RPGs or shooters, the results indicate that the best option is that of RPGs. In such a way the teacher can meet the student "halfway" should the teacher be under the impression that the student is not capable of preforming tasks that would normally be assigned by the teacher, such students could be those that are affected by ADHD or dyslexia, as the student would have a more direct stimulation and connection between input and result. This is something that the authors of this paper have experienced

anecdotally, that it has been easier to immerse themselves in some digital media than an assigned book or homework.

The teacher is also able to use this as a basis for more tailored forms of away from school assignments is that is something that they find desirable. In such a context the teacher could assign the student to write a "book report" or "film analysis" using the same pedagogical resources that they already have access to. Requesting that the student research other examples of styles that the teacher wishes the student to attempt. Ultimately the student could also be assigned to write a recommendation and use that as a means of advancing their English leading to a higher level of fluency.

5.3 Possible deeper research

A potential means of studying this further could be a wider look at other genres, using thematic analysis to try to determine a list of genres that would be most suitable for students to use as extramural learning opportunities. Genres such as point and click adventure games or real time and turn based strategy games could be observed using this method in order to have an increased understanding of the overall usefulness of the genre in terms of passive extramural learning.

It could be an interesting research intervention attempt to record multiplayer sessions of relevant video games, ones where there is a high degree of interpersonal interaction in order to determine the effect such a variable would have on the results of the survey.

5.4 What does this mean?

Our goal with this study was to determine if there was a possibility to create a means of empirically differentiating receptive learning subskills. Then using thematic analysis, we try to determine if the method could display a concrete difference between genres, especially when it comes to the frequency of instances of said skills occurring. This level of occurrence is something that we can refer to as skill density or subskill density for the sake of brevity. Here we can define skill density as the number of times that a skill is given the potential to be practiced within a limited time period, in our case ten minutes. Skill density has no bearing on the quality of the interactions taking place and could even be the same interactions over and over again and must therefore be taken with a degree of rational skepticism. A high subskill density does not mean that the game is better at facilitating the learning opportunity for that subskill, only that the chances occur more often in a defined time period.

We hope that this study has demonstrated a technique that teachers and other educators can use to determine the applicability for extramural learning for games. One that can be applied to other genres as well as the games that are labeled shooters and RPGs. We believe that we have created such a method and that this method does display what has been folk wisdom amongst video game enthusiasts and other people interested in the medium, that there is a significant difference between genres when it comes to the applicability of games for their use as education resources.

5.5 Limitations

During the study we observed potential limitations to the results, non-random selection of the games, limited age categories, genre limitation, our and limitation to single player games.

The method to determine the sample did not account for bias in our sampling, while we did choose to limit the age restriction that we wanted to use as a sample, and we decided to focus on two genres. The individual games themselves were selected arbitrarily and were largely games that we were aware of beforehand. Ultimately if one wished to be even more rigorous in the study then one would need to determine a means of selecting the games that we did not consider in our research design.

A potential issue with the research is also that if one were to judge games that were made for a more mature audience (over sixteen years of age), one could call into question the functional applicability of such a method. As by that age said students would be expected to have a higher degree of English competence and would therefore be more appropriate to discuss the literary merits of the text being recommended rather than the instances of potential practice displayed in the work. However, if the student was an adult learner completely foreign to English, then this criticism might be said to be dismissed by such a situation.

The selection was also a limitation in that some games are built around some mechanic that heavily engages one or more particular sub skills. An example of this type of game is the 2013 game *Papers Please* wherein the payer takes control of a border security officer in an increasingly paranoid state. The game heavily relies on skimming as one attempts to sort through progressively increased amounts of documentation and transcripts, looking through them for discrepancies in the presented facts. In the same way other games might focus more specifically on one or more skills and therefore, would be more applicable if they were recommended or assigned by the teacher for extramural learning in a specific subskill.

Finally, a major limitation in the study was our choice to not include the complicating factor that human interaction would have on the results of our analysis. Our reasoning for this was that although multiplayer games could be a place where it is easy to get into contact with other English speakers, and in so doing develop their English skills through conversation, this is not a product of the game in and of itself but the community surrounding the game and is highly variant from game to game, as some games have more active communities than others. In addition, it is also highly dependent on the personality of the player, as a more active and willing interlocutor would get more practice out of such an interaction than one who is more passive. It is our belief that on an entertainment platform such as YouTube or Twitch, this kind of passivity would not be encouraged by incentive structures that make it more likely for a streamer to be a more active participant. This behavior can be intuited as a method to increase viewership to the channel for increased revenue and attention, and we would have a higher tendency to get active extroverts to record themselves for an audience.

There is also a potential to categorize the results in a slightly different schema than the way that we did during our coding. Additionally, as we progressed through the games, our determination for what was in each category could have altered sightly due to our clearer understanding of the subskills that were on display. We also felt tempted to include skills that had not been prominent in the course of the coding phase, although we were aware of this during said coding and we believe that it was merely a temptation and not something that impacted the data significantly. Had we had additional time or resources we could potentially repeat watching the same samples to get higher amounts of data, either with more participants or simply one individual repeating the same video over and over.

6 Conclusion

Nowadays, increasing numbers of pupils are exposed to multiple opportunities to practice and learn English outside the formal school environment. Pupils' encounters with English and its subsequent subconscious learning are better known as extramural English. Among the more ubiquitous mediums available are video games, with widespread and frequent interaction among the school age demographics. Games seem to offer an array of learning affordances when it comes to developing receptive skills. This is particularly important since LK20 highlights the importance of developing pupils' receptive skills, namely, listening and reading. In this thesis, we attempted to determine the frequency and types of receptive affordances.

We managed to observe that there were multiple instances of learning opportunities, especially with extensive reading and listening in consideration. Opportunities to practice the receptive skills were frequent and were constituted of a diverse range of discernable subskills. These subskills included listening/reading for detail, deducing meaning from context, inferring attitude, feeling, and mood as some of the more frequent. In addition, there was far and away a disproportionately high degree of scanning affordances.

Therefore, we can say that thematic analysis method is useful in its potential application as a means of differentiating between games and to identify for an educator the applicability of individual games for training of desired receptive skills. As such we can be confident in asserting that this resource is useful not only to those who are already familiar with video games as a medium but also those who are less acquainted with the subject.

According to our observations, RPGs in our determination were overall more appropriate for use as extramural learning resources, especially due to the comparatively high affordances for inferring attitude, feeling and mood, and long-form scanning subskills.

However, there are notable exceptions to this trend as some games within the shooter genre were able to provide a deal of opportunities to employ the use of receptive subskills in enough numbers to give purpose to the analysis on individual titles rather than dismissing entire genres outright using this process. This means that the resource is valuable in being able to filter out the quality games from those that are of lesser quality, or simply the games that have subskills that the educator would wish the student would focus on.

The analysis was able to be used to meaningfully display the sorts of subskills that the learners would be likely to interact with during the course of play. Though we are certain that other subskills could potentially be identified, refined, combined, or split in future studies should any researcher potentially find an interest in doing so. We would not be so arrogant as to believe that we have come across the final version of this resource and hope that others might refine and further add to the body of knowledge.

Additionally, our research was primarily drawn from "Let's Plays" meaning that it is not necessarily "pure gameplay" without any other considerations taken into account. Let's Plays are a genre meant to entertain or instruct. It could be useful to use recorded data form selected participants who know they are members of an experiment in order to get a better idea of the learning potential of selected games. Either that or the researcher can try to devise another way to get more data through playing the games themselves and recording their progress and choosing the gameplay section that they themselves produced. Further YouTube has an algorithm

that tries to match users to the videos that the system believes fits to the user's previous searches and preferences, this means that our selections and a different researcher would likely be dissimilar.

Another potential method to get a more refined result could be selecting more than a single 10-minute chunk. Instead selecting two or more and averaging out the subskills, obviously however, this would multiply the workload for each game added for example, our 21-game selection took 3.5 hours (210 minutes) of observation. This means that data gathering in such an instance would entail a minimum of 7 hours of observation. In addition, every doubling of the observed time would have diminishing results as the observer would get closer and closer to the absolute number.

The resource we developed could also be modified to fit other mediums, such as film and television, this might also be helpful in future observations in order to compare other mediums to videogames.

The observation study was primarily focused on single player experiences but could possibly be applied to multiplayer games. This would require in our estimation, recording software installed on Personal Computers or Consoles.

Other potential means could be gathering together a group of students to record multiple gameplay sessions to see the interactions between each other, in such a case one could measure the productive sub skills they use in addition to the receptive.

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