Gotta' Learn 'Em All: Motivation and Vocabulary Acquisition in Language Learners' Playing of Computer Games in the Target Language

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Summary:

This research Paper examines the use of computer games for foreign language learning, exploring learners' motivation to play computer games in the target language. The paper begins with a literature review of relevant theories and studies related to computer games, motivation and language learning, and notes that much of the literature assumes learners are interested in learning languages for pragmatic purposes, such as practical communication or in order to pass tests. However the paper also notes that more modern research has shown that some learners, particularly learners of Japanese, may be more interested in learning a language in order to consume cultural products in the language than they are interested in learning the language for practical use. Following on from these observations, the paper asks the question of whether language learners who play games in the target language are ultimately playing games in order to learn the language, or learning the language in order to play games. A survey was designed to attempt to confirm that a desire to consume cultural products in the target language is a significant motivating factor for some learners of Japanese as a foreign language, and then to examine the relationship between learners' motivation to play games and to improve their language abilities. The survey focuses specifically on vocabulary acquisition, as this area of language learning is highlighted in the literature on using games for learning. The results of the survey are too broad to conclusively answer the question of whether language learners who play computer games in the target language are ultimately playing games to learn the language or learning the language to play games. However the results do suggest that motivation varies widely among learners, and that while some are primarily playing games to learn language, others are learning language to play games, and many are doing both simultaneously in a continuous cycle.

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List of Abbreviations and Foreign Loanwords

Animé - Japanese animation

JCP - Japanese Cultural Products

JFL - Japanese as a Foreign Language

J-Pop - Japanese Pop Music

Manga - Japanese comics

MMORPG - Massively Multiplayer Online Role-Playing Game

NPC - Non-Player Character

1. Introduction

1.1 The Purpose of the Research

This research was undertaken in order explore the use of computer games for language learning, specifically to examine what exactly motivates learners to use computer games. Most of the literature on the use of computer games for language learning assumes that learners' motivation is based primarily on pragmatic concerns such as wanting to communicate effectively in the target language or do well on tests. However some more recent research has noted that some learners are motivated to study a language primarily due to an interest in the cultural products of the country or countries where that language is used, and are therefore more interested in consuming these products, such as computer games, than they are in practical communication in the language. The goal of this research was to explore that concept further, and ultimately to ask the question: in the case of language learners who play games in the target language, are they playing games to learn the language, or learning the language to play games? A survey was carried out on learners of Japanese as a foreign language in order to explore this question. Japanese was chosen as research shows learners of Japanese are particularly likely to be motivated to learn the language due to an interest in the country's cultural products. The research focused on vocabulary acquisition as vocabulary is identified in the literature as one of the areas which games are most effective at improving, but also as an area for caution as many games feature vocabulary which has little pragmatic use outside the context of the game.

1.2 Reader's Guide to this Research Paper

The second section of this Research Paper offers a broad review of literature related to games, motivation and learning. The third section explores the concept of language learners being motivated more by an interest in consuming cultural products in the target language than in putting the language to practical use. The fourth section describes the results of a survey of Japanese learners and offers some immediate observations on the results. The fifth section offers a more in-depth discussion of the research and its implications. The sixth section closes the paper with some concluding remarks.

2. Games, Motivation and Language Learning

This section will provide a broad introduction to concepts of gaming, motivation and language learning, particularly vocabulary acquisition. It will provide a literature review of several relevant theories and studies. It will also provide some preliminary discussion of the concept of some language learners learning a language to play games, rather than playing games to learn a language, which will be discussed in much greater detail in the following sections.

2.1 What is a game?

Before the use of computer games for language learning can be examined, it is first necessary to establish what exactly is meant by the term 'game'. This is not a straightforward task, since, as Neil Selwyn (2014, p. 85) notes, 'despite their longevity, the definition of what a digital 'game' is remains a source of considerable disagreement.' Although it may be simple to point any commercial game and state that that particular product is indeed a game, it is much more difficult to come up with a definitive definition which encapsulates all games. This is perhaps due to the wide variety of games available today; games can be played on PCs, on dedicated game consoles attached to TVs, or on stand-alone hand-held devices (and they can involve additional customised hardware), they can be single player or multiplayer (or massively multiplayer), they can take a few minutes to play through or take hundreds of hours, and so on. It is not the goal of this research to dwell on the question of what exactly a game is, so Alexander Galloway's (2006, p. 1) definition will be used. Galloway describes a game as 'an activity defined by rules in which players try to reach some sort of goal' and a video game as 'a cultural object bound by history and materiality, consisting of an electronic computational device and a game simulated in software'. Terms such as 'computer game', 'video game', 'digital game' and simply 'game' are often used interchangeably in commercial and academic contexts, and so they are used interchangeably, unless noted otherwise, in this paper.

2.2 The Educational Potential of Games

Although computer games may be primarily seen as entertainment products, it has been argued that they also have significant educational potential. For example, Marc Prensky (2005, p. 97) claims that

'although computer and video games are most often thought of as pure entertainment, it is important to understand they are enormously powerful learning tools as well'. Playing a game and studying may seem to be two distinctly separate activities, however Hayao Reinders (2012, p. 2) notes that games and 'successful language-teaching environments' share a number of key characteristics, such as 'rules', 'goals and objectives', 'outcome and feedback', 'conflict, competition, challenge and opposition', 'interaction' and 'the representation of a story'. Games' educational power is generally attributed primarily to their ability to motivate players. For example, Prensky (2005, p. 102) states that 'combining games and learning can potentially add enormously to the motivation of students to learn what they may not be otherwise motivated to learn, and increase their engagement in the learning process'.

2.3 Motivation in Learning

In order to examine exactly how games motivate players, it is first necessary to understand motivation. Motivation is a complex and multi-faceted concept, so it is useful to begin with a definition from an educational psychology perspective; John Santrock (2011, p. 438) describes motivation as 'the processes that energize, direct, and sustain behaviour'. Santrock uses classroom examples to illustrate how motivation impacts students' behaviour: 'If students don't complete an assignment because they are bored, lack of motivation is involved. If students encounter challenges in researching and writing a paper, but persist and overcome hurdles, motivation is involved' (2011, p. 438). John Keller (1983, p. 389) offers a similar definition, stating that 'motivation, by definition, refers to the magnitude and direction of behaviour. In other words, it refers to the choices people make as to what experiences or goals they will approach or avoid, and the *degree of effort* they will exert in that respect'. Keller goes on to identify four key components of motivation: interest, relevance, expectancy and satisfaction. He claims that for a learner to experience motivation they must simultaneously be interested in the subject matter, feel it is relevant to achieving their goals, be able to reasonably expect to succeed, and derive a sense of satisfaction from the learning process (Keller, 1983, p. 395).

It has also been argued that motivation in language learning constitutes a special subclass of educational motivation, due to the complex social aspects of language. Zoltán Dörnyei (1994, p. 274) notes that language differs from other types of knowledge:

> 'L2 learning is more complex than simply mastering new information and knowledge; in addition to the environmental and cognitive factors normally associated with learning in current educational psychology, it involves various personality traits and social components'.

A similar idea was put forward by Gardner and Lambert in 1972, who argued that an understanding of motivation in language learning must also take into account the social dimension and the learner's willingness and ability to identify with the culture of the language they are learning (1972, p. 132).

2.4 Intrinsic and Extrinsic Motivation

Many researchers make a distinction between intrinsic motivation and extrinsic motivation. Santrock (2011, p. 441) defines extrinsic motivation as 'doing something to obtain something else (a means to an end)' and intrinsic motivation as 'the internal motivation to do something for its own sake'. Ema Ushioda (2012, p. 79) offers a similar definition, describing intrinsic motivation as 'doing something as an end in itself, for its own self-sustaining pleasurable rewards of enjoyment, interest, challenge, or skill and knowledge development' and extrinsic motivation as 'doing something as means to some separable outcome, such as gaining a qualification, getting a job, pleasing the teacher or avoiding punishment'.

Some researchers claim that one type of motivation is more effective than the other. For example Ushioda (2012, p. 79) suggests that intrinsic motivation is superior, as learners apply themselves more fully. However Ushioda goes on to note that it is unrealistic to expect students to have constantly high levels of intrinsic motivation, and that intrinsically and extrinsically motivating factors often work together complementarily (2012, p. 80). She goes on to state that ultimately the distinction between intrinsic and extrinsic motivation is not as important as the difference between motivation that comes from within the learner and motivation which comes from an external source:

> 'Fundamentally, what is crucially important is not whether motivation is intrinsic or extrinsic, but whether it is *internalized* and self-determined (emanating from within the learner), or whether it is *externally* regulated by others (e.g., teachers, parents, curriculum, and institutional requirements) using a variety of extrinsic incentives or pressures (i.e., the carrot-and-stick approach to controlling behavior).'

2.5 Integrative and Instrumental Orientations

Another distinction which many researchers draw is between integrative orientation and instrumental orientation in foreign language learning motivation. This concept is somewhat similar to the distinction between intrinsic and extrinsic motivation, but has more to do with the social and cultural aspects of language. Sybille Heinzmann (2013, p. 9), drawing on the theories of Robert C. Gardner and others, defines orientation as 'the reasons an individual has for learning a language'. Heinzmann then defines integrative orientation as 'characterized by a goal of becoming psychologically closer to TL speakers... someone who has an integrative orientation has a desire to interact with and even become similar to valued members of the TL community' and instrumental orientation as 'learning the language for more pragmatic reasons, such as gaining social recognition or economic advantages' (2013, p.9).

2.6 Games and Motivation in Language Learning

Various different ways in which games motivate learners have been identified. The interactive nature of computer games, which allows them to provide immediate feedback to the user, is one of the most commonly cited factors. Even as far back as 1984, Higgins and Johns (1984, p. 46) recognised this advantage of technology over traditional media in language education, stating that 'the language laboratory can never provide immediate, objective feedback on success or failure as a computer can with its accompanying scoring on screen'. Martha Pennington repeated this observation in 1996 with regards to reading comprehension software, noting that 'in such courseware, computers can make existing techniques more efficient for the learner in that feedback is immediate and interactive, possibly highlighting areas of the text where attention could be most productively directed (1996, p. 115-116).

Challenge has also been identified as a key element of games which inspires motivation in players. Nicola Whitton (2012(a), p. 21) notes the appeal of challenge, and links it back to the idea of immediate feedback, stating that 'challenge provides a reason for taking part, it allows players to see improvement as they progress through the game, and it is a core part of gaming engagement'. Whitton goes on to emphasise the importance of achieving the right balance of challenge, noting that 'the combination of balanced goals with outcomes and rewards is a very powerful motivational driver' (2012, p. 24). Whitton uses Mihaly Csíkszentmihályi's concept of flow in order to explain what constitutes a balanced goal. Csíkszentmihályi (2002, p.72 - 77) uses the term 'flow' to describe a mental state of absorption in and

enjoyment of an activity, which arises when the activity's challenge level is balanced with the person performing the activity's skill level. According to Csíkszentmihályi, if the challenge exceeds the person's skill level, they will experience anxiety, and if their skill level exceeds the level of challenge, they will experience boredom. As 'neither boredom nor anxiety are positive experiences', it is important for the activity's challenge level and the person's skill level to increase proportionately.

Another aspect of games which has been identified as motivating learners is the way they permit and even encourage failure. James Paul Gee (2008, p. 34) notes that 'the role of failure is very different in video games than it is in school' and claims that games encourage more risk-taking and experimentation.

Narrative in games has also been identified as motivating players, by allowing them to relate to the subjects of the game and increasing engagement. Dave White and Nicola Whitton (2012, p. 55) note:

> 'Narrative allows learners to identify with characters and situations, putting themselves in the shoes of other people and thinking through problems from alternative perspectives. It provides a personal element, taking learning from abstract situations into contexts that have purpose and meaning: this can be very motivational and lead to greater immersion with the story'.

Several studies have backed up the theory that game-based learning can improve motivation. Chen and Yang's study (2013, p. 125 - 136) of 35 university students studying English in Taiwan noted an increase in motivation among some participants playing the single-player adventure game *Bone*: 'Eight students reported their enjoyment in gaming and enhancement in learning motivation.' Chen and Yang note that students also reported a corresponding increase in language ability: 'In their written reports, most students indicated that the game helped them improve their listening ability, reading ability, and vocabulary knowledge the most. They stated that the written/spoken input enhanced their listening and reading comprehension, and some mentioned the increase in reading speed after gaming. Eleven students reported an increase in vocabulary size.' Similarly, Thomas Connolly, Thomas Hainey and Mark Stansfield (2011, p.1400) note that, based on their studying involving a custom-made Alternative Reality Game (ARG) called *Tower of Babel* with 328 students aged 12 to 15 from 17 different European countries, the game 'provided a potentially useful educational platform for motivating students to engage in activities relating to the learning of a second language'. Reinders and Wattana (2011) come to the similar conclusion that, based on their study of undergraduate students in Thailand playing a modified version of the massively multiplayer online role-playing games (MMORPG) *Ragnarok Online*,

'games are able to increase student enthusiasm, lower anxiety, and improve willingness to communicate'. Reinders and Wattana also note that the quantity of target language being produced by the participants increased over the course of the three sessions of the study, however the quality of the target language (accuracy and complexity) did not necessarily increase correspondingly.

Overall these studies suggest that there is strong evidence that games can motivate players in language learning, although some researchers, such as Reinders and Wattana include caveats about the quality of language which is produced as a result of this motivation. It should also be noted that games' power to motivate learners is not limited to language learning, but can also be applied to other subjects. For example, Wen-Hao Huang (2011) notes that in a study investigating the responses of undergraduate students majoring in Education at a university in the USA to *Trade Ruler*, an instructional game 'designed to teach general public about why countries need to trade goods and services with each other' (p. 697), 'overall the result of motivational processing in Trade Ruler was beyond average' (p. 699).

2.7 Potential Shortcomings of Using Games for Education

However, despite this evidence of the educational potential of games, some commentators have been more critical. In some cases this criticism comes in the form of an entirely reasonable caution against over-generalising about the effectiveness of games for education. For example Nicola Whitton (2012(b), p. 16) acknowledges the potential benefits of games, but stresses that the motivational power of games is not universal: 'It has also been argued that games are, in themselves, motivating and while I believe that this is true for *some* people, for *some* types of games, in *some* circumstances, this is such a sweeping generalization that it really can't be viewed as absolute fact'.

Others critics go further, claiming that using games in education could actually have a detrimental effect on learners. For example Neil Selwyn (2014, p. 97) claims that interactivity in games is so highly structured that rather than giving the player freedom, it actually forces them into narrow, predetermined role, which ultimately stifles innovation and creativity rather than encouraging it: 'despite their associations with intense excitement and thrill seeking, games tend to [be] played along rational and repetitive lines, with players adhering to strict rules and developing bounded strategies in order to succeed'. Selwyn (2014, p. 132) also argues that using games and other digital technology as learning tools encourages competitiveness rather than cooperation. Finally, Selwyn (2014, p. 146) notes that digital technology is often expensive, and therefore not freely available to everyone, resulting in its

use in education compounding structural inequality. He also points out how the use of digital technology for education results in the commodification of learning, a possible consequence of which is the growth of an education industry fuelled by the desire for profit rather than a genuine aim of enhancing education.

Another issue is the quality (or lack thereof) of educational games. Although some studies have involved games created as entertainment for commercial purposes being used as learning tools (such as Chen and Yang's study using the game *Bone*), there are also games designed specifically designed for educational purposes. Marc Prensky (2005, p. 109) notes that games intended for learning are often lacking in enjoyable gameplay and are therefore looked down on and not considered 'real' games. Peter Whitton (2012, p. 77-78) notes that this is a common concern among some educators, who worry whether games produced for education can live up to the production standards which students expect from commercial games. However Whitton also notes that research on students' expectations has been inconclusive thus far, so it is not possible to definitively say how important production standards in educational games are to students.

If Prensky's assertions are accepted, this can arguably be seen as the biggest issue facing the use of games in education, as it can be assumed that educational games designed for language learning, like educational game designed for other topics, are lacking in enjoyable and engaging gameplay. However language learners have an advantage over other learners in this sense, as it is possible to use commercial games designed for entertainment to study a foreign language, by playing games in a foreign language and learning through immersion. This allows language learners to be exposed to their target language while still enjoying all the motivating aspects of gameplay.

Using non-educational games as learning tools brings about its own set of problems, however. One potentially major problem is the fact that they often contain highly-specialised language, which the player may be required to invest a significant amount of time in learning, but which may not be particularly useful in everyday communication or in standardised tests. Mark Peterson (2013, p. 131) notes this, stating that an issue 'identified in the literature' is 'the risk of exposure to limited game-specific registers'. Reinders and Wattana (2011) observed one instance of this in their study of undergraduate Thai students playing a modified version of the MMORPG *Ragnarok Online*, noting that participants displayed 'use of simplified or reduced registers'. Given that everyday settings are quite rare in games, with fantasy, sci-fi and military settings being popular, as well as plots revolving around

combat, espionage, extreme sports, etc. being prevalent, players of many genres of games seem likely to be exposed to vocabulary which does not have many pragmatic uses.

2.8 Vocabulary and Language Learning

Vocabulary is one of the areas of language which stands out most in the literature relating to the use of computer games for language learning. Cheng and Yang (2013) identify it as one of the areas where learners made the most process, while Peterson's (2013) comments on the risk of learners being exposed to specialised registers suggests that the vocabulary which learners acquire may not necessarily be aligned with their learning goals. It is therefore important to take a closer look at how vocabulary acquisition works when playing games.

Reading has long been acknowledged as improving vocabulary, in both native language and foreign language learning. For example, Stephen Krashen (1989, p. 442) notes that 'more comprehensible input, in the form of reading, is associated with greater competence in vocabulary and spelling' and that 'children who perform better on vocabulary tests report more free voluntary reading'. Playing games can have a similar effect, by exposing the learner to the target language. Chen and Yang (2013, p. 130) note that dialogue and text in games 'can create an authentic learning environment for second language learners' and that 'similar to extensive reading, it seems that interactive adventure games can provide language input to learners'. Pia Sundqvist and Liss Kerstin Sylvén (2012, p. 197 - 199) make a similar observation based a study carried out on Swedish teenagers engaged in extramural English studies (including playing games in English). They note that 'the time learners spent on extramural English correlated positively and significantly... with the size of their vocabulary' and that playing computer games was the most popular form of extramural English study among participants. Sundqvist and Sylvén also note that activities such as playing games and reading which require the learner to be active in consuming the media 'had a greater impact on vocabulary acquisition than activities where learners could remain fairly passive', such as watching film or TV, or listening to music. One potential downside of learning vocabulary through games (or indeed any media) is that learners may only encounter the vocabulary receptively by hearing it or reading it, and will not necessarily go on to use it productively by saying it or writing it. However Jan-Arjen Mondria and Boukje Wiersma (2004, p.79) argue that this is not necessarily true, noting that in relation to their study into whether students better remember vocabulary learned productively or receptively, 'the results of the experiment showed, contrary to

expectation, that learning words both receptively and productively leads to a similar level of receptive retention as learning words just receptively'.

Having established that games are indeed effective for improving learners' vocabulary, the next question is how useful the vocabulary acquired from games is. In the context of foreign language learning, the usefulness of a word is generally associated with how frequently and in how wide a range of contexts it occurs. As Averil Coxhead (2000, p. 215) notes:

> 'Teachers and materials developers who work with vocabulary lists often assume that frequently occurring words and those which occur in many different kinds of texts may be more useful for language learners to study than infrequently occurring words and those whose occurrences are largely restricted to a particular text or type of text'.

An example of this assumption can be seen in Tom Cobb and Marlise Horst (2004, p. 15), who write that the 'problem' of identifying 'which among the many thousands of English words are most useful to know' has been solved through analysing corpora and 'identifying lists of high frequency words that make up the core of the language'. Lists of frequently occurring words are of course a useful learning tool, since, as Anne O'Keefe (2012, p.238) notes, 80% of speech and written text in English is comprised of the same 2,000 words. According to O'Keefe (2012, p. 239) mastering these 2000 words in all their possible uses is more beneficial than learning off a larger number of words. However (as will be discussed in greater detail in the next section), not all learners are necessarily interested in focusing on 'useful' vocabulary. This is a fact that is largely overlooked in the literature on foreign language vocabulary acquisition. Some commentators do discuss learners' desire to learn specialised vocabulary. For example I.S.P. Nation (2001, p. 198), defining a technical word as 'one that is recognisably specific to a particular topic, field or discipline', notes that it is important to identify technical vocabulary in order to 'identify words that will be particularly useful for learners with specific goals in language use - reading academic texts in a particular discipline, writing technical reports, participating in subject specific conferences, and so on' (2001, p. 198). However this only acknowledges learners who wish to learn specialised vocabulary due to extrinsic motivation, for some pragmatic purpose related to work or academia, and leaves out learners who may be motivated to learn highly specialised vocabulary for intrinsic reasons.

3. Playing Games to Learn Language or Learning Language to Play Games?

This section will explore the concept of language learners being motivated to learn language for reasons other than communication or pragmatic applications, using Japanese learners as a case study.

3.1 Interest Versus Relevance

As previously mentioned, John Keller (1983, p. 395) identifies interest and relevance as two key aspects of motivation, along with expectancy and satisfaction. Keller defines interest as 'whether the learner's curiosity is aroused, and whether this arousal is sustained appropriately over time', and relevance as 'the learner's perception of personal need satisfaction in relation to the instruction, or whether a highly desired goal is perceived to be related to the instructional activity'. Although these two factors may sometimes occur simultaneously, it is also possible for one to occur without the other. In the case of a learner whose goal is to master a language for practical communication purposes, such as the one assumed by Nation (2001), Cobbs and Horst (2004) and O'Keefe (2012), and the one which Coxhead (2000) states is assumed by many teachers (as discussed in Part 2), it is possible for a learner to find certain material relevant but not interesting. For example, they might recognise certain vocabulary (such as the names of different types of furniture) is relevant to their goal of communicating in the target language in daily life, but they may not necessarily be interested in it. In this case the learner may still feel extrinsic motivation to learn the vocabulary. Conversely they may come across vocabulary which they consider largely irrelevant to their goals (such as words relating to common tropes in the fantasy genre) but which they find extremely interesting. In this case the learner may still be intrinsically motivated to learn the vocabulary.

It is also important to note that some learners are not motivated by learning a language for pragmatic purposes at all, but may be motivated by an interest in certain cultural or entertainment products in the target language. In this case obscure vocabulary (such as fantasy terms) may be both interesting to them and relevant to their learning goals, whereas common everyday vocabulary (such as furniture terms) may be neither interesting nor relevant.

3.2 A Case Study of Learners of Japanese as a Foreign Language

The prevalence of language learners motivated more by an interest in cultural products than in pragmatic communication is illustrated by Noboru Toyoshima's 2013 study of undergraduate students studying Japanese at Chulalongkorn University in Thailand. Toyoshima states that he was inspired to

carry out this study in response to previous studies carried out on Thai youths studying Japanese which revealed 'that the consumption of Japanese cultural products is closely related to Japanese language learning' (2013, p. 286). Toyoshima begins by recognising the 'worldwide success' of popular Japanese cultural products such as games and animé (animation).

The results of Toyoshima's study reveal that in response to the question 'What caused you to want to learn Japanese?' (allowing respondents to give multiple responses), 68.1% of the total responses stated that it was due to an interest in Japanese cultural products (JCP). 8.8% stated that it was due to an interest in Japanese games specifically, making an interest in games the third most popular reason overall for taking up studying Japanese, second only to an interest in manga (Japanese comics) (20.4%) and an interest in J-Pop (Japanese pop) (10.6%) (p. 300). In a separate question, 62.8% of respondents said they played Japanese games before taking up study of Japanese. Toyoshima notes that these results 'proved that an interest in Japanese cultural products motivated many of the respondents to start learning Japanese' (p. 310).

Furthermore, in response to the question 'Have you had any experiences that made you think Japanese language ability is an advantage or has benefits? If so, will you tell me about the incident(s)?', 20.4% of the responses cited the ability to consume and understand JCP as an advantage (p. 302). This is only slightly less than the number who stated that communication was an advantage (23.7%). Similarly in response to the question 'Has your life changed since you started to learn Japanese?', 22.9% of responses were to do with JCP, compared to 30.3% relating to communicating and developing relationships with Japanese people (p. 305). This shows that an interest in JCP not only provides motivation for many learners to take up Japanese, but also remains their primary motivation and source of satisfaction as they continue learning the language.

The motivation to learn Japanese in order to consume JCP could perhaps be described as extrinsic, since it is motivation to learn the language in order to accomplish a specific goal. However it is important to note that the motivation to consume JCP, such as games, may also be entirely intrinsic, done for its own sake and the enjoyment which it affords the learner. This makes the motivation to learn Japanese in order to consume JCP very different from to motivation to learn it for more pragmatic purposes, such as using it for business, which would involve more extrinsic motivation. It could even be argued that this highlights the inadequacy of a strict dichotomy between intrinsic and extrinsic motivation. Indeed Toyoshima argues that it exposes problems with the integrative/ instrumental dichotomy, stating 'considering the interrelatedness of Japanese cultural products and other factors about Japan, the

classification into instrumental and integrative orientations seems too vague to be used in the analyses of the motivation of respondents in this study' (p. 311).

Toyoshima also asked his participants about studying other foreign languages and their reasons for doing so. English was the most popular foreign language other than Japanese (44.7%), however Toyoshima notes that participants' reasons for studying English were very different than their reasons for studying Japanese: 'I noticed that many students who were studying English wrote reasons such as 'for future work,' 'to communicate with foreigners,' 'as basic education' and 'useful'' (p. 303). This shows that Toyoshima's participants' motivation to study English was largely extrinsic and instrumental compared to their motivation to study Japanese which was much more intrinsic and integrative. Similarly, respondents who stated they were studying Chinese (the third most popular option, at 13.8%) stated that they were doing so ''for future work,' because it was 'useful,' and because they 'want to learn many foreign languages,' all of which are unrelated to Chinese cultural products' (p. 304). Korean (which was the second most popular option, at 14.9%) was most similar to Japanese, in terms of students' reasons for studying it, with 4 responses out of 14 students stating 'I like K-Pop music', showing an interest in Korean cultural products motivates a large percent of Korean learners, suggesting intrinsic and integrative motivation. Toyoshima observes that 'as Korean idols have become popular in Thailand in recent years, the Korean language has been attracting people who like to consume Korean cultural products' (p. 304).

Toyoshima notes that as well as an interest in Japanese cultural products motivating students to begin studying Japanese, studying Japanese also further increased their interest in Japanese cultural products (p. 132). Based on this observation, Toyoshima proposes a Japanese language learning model called the 'Virtuous Cycle Model', to illustrate the cyclical relationship between an interest in Japanese cultural products and motivation to study Japanese.

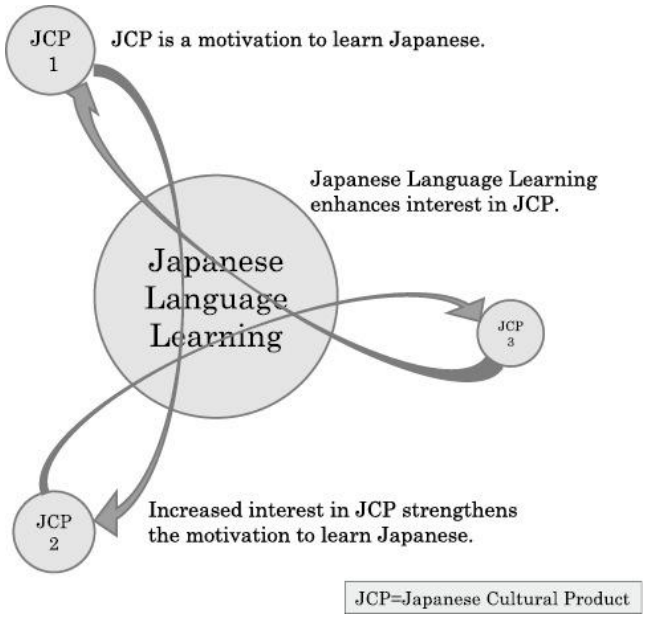

Fig. 3.1: 'The Virtuous Cycle Model (The Relationship between JCP and Japanese Language Learning)' (copied from Toyoshima, 2013, p.315)

3.3 Vocabulary Acquisition for Japanese Learners Motivated by an Interest in Japanese Cultural Products

Following on from Toyoshima's observations, it seems logical to assume that some Japanese as a foreign language (JFL) learners who play games in Japanese would essentially be learning to Japanese to play games as much as they would be playing games to learn Japanese. The survey described in the following section was designed to test that assumption. Given the emphasis placed on vocabulary acquisition when playing games in the literature, the survey focused on acquisition of vocabulary, including vocabulary with little practical use, in order to explore learners' motivation.

4. Results of Survey of Japanese Language Learners

Approval to carry out this survey was granted by the Research Ethics Committee of the School of Computer Science and Statistics at Trinity College, University of Dublin.

4.1 Purpose

The purpose of the survey was firstly to assess JFL learners' interest in computer games, and to examine the relationship between an interest in Japanese computer games and an interest in learning the Japanese language. The intention in doing so was to examine how applicable Toyoshima's 'Virtuous Cycle Model' of the relationship between JCP and JFL learning was. Secondly, the survey was designed to examine exactly what motivates Japanese language learners in the use of computer games for language learning; are they playing Japanese games to learn Japanese, or learning Japanese to play Japanese games? Following on from Toyoshima's study, the goal was to examine the relationship between participants' perceptions of what was 'useful' to learn, and what they were actually motivated to learn. The hypothesis was that some learners would demonstrate motivation to learn certain vocabulary even if they didn't consider it useful.

4.2 Participants

Participants were recruited via social media, including a number of pages and groups related to studying Japanese. Participants were required to be native English speakers, to be studying Japanese as a foreign language (in any capacity) at the time of the survey (or to have been studying it within the last year) and to be at least 18 years old. Participants were not required to have an interest in computer games or to have been actively using computer games to study Japanese, as the intention was to gauge the interest in Japanese computer games across a broad cross-section of learners. Much of the survey was hypothetical, so participants who had never used games for language learning were still able to answer the majority of questions.

4.3 Methodology

A survey consisting of 36 questions (plus 2 questions asking participants' to confirm they agreed to the terms of the study and to submitting their answers) was designed. The survey involved participants self-reporting on their interest in Japanese and their motivation levels based on past experiences and on how they imagine they would respond to hypothetical situations. Participants were first asked to provide some basic details about themselves and their history of learning Japanese. They were next asked to provide information on their interest in Japanese computer games and the frequency with which they use computer games to study Japanese language. Participants who stated that they used

computer games to study Japanese at least once every six months were then asked to answer a series of questions about their motivation in doing so, and their perception of its effectiveness. All participants were then asked to read brief descriptions of three hypothetical learning scenarios and to answer a series of questions about how interested and motivated they imagine they would feel in these scenarios. Almost all of the questions were multiple-choice, and those that included an open field required the participant to simply enter some basic details about themselves (such as their country of residence). The research was therefore predominantly of a quantitative nature. Due to constraints regarding the length of this paper, the results of one question (related to how many hours per week participants study Japanese) were omitted, as they were not deemed particularly relevant to the discussion.

4.4 Survey Results

This section contains the results of the survey and some basic discussion of their significance. A more detailed discussion of the survey results and their implications will follow in the next section.

4.4.1 Demographics

A total of 36 completed responses were collected. Participants' ages ranged from 18 to 40, with 25.4 being the mean and 24 being the mode (see Figure 4.1).

Age	Number of Participants	Percent of Participants
18	2	5.6%
19	1	2.8%
20	0	0%
21	3	8.3%
22	3	8.3%
23	1	2.8%
24	8	22.2%
25	4	11.1%
26	3	8.3%
27	1	2.8%
28	1	2.8%
29	3	8.3%

30	3	8.3%
31	0	0%
32	1	2.8%
33	0	0%
34	0	0%
35	1	2.8%
36	0	0%
37	0	0%
38	0	0%
39	0	0%
40	1	2.8%
Total	36	100%

Figure 4.1: Age of Participants

Participants' countries of residence included Canada, Hong Kong, Ireland, Japan, the U.K. and the U.S.A., with Ireland and Japan being the most common (this question was open ended, and responses including 'England', 'Scotland' and 'the U.K.' were amalgamated into 'the U.K.' for the sake of consistency) (see Figure 4.2).

Country of Residence	Number of Participants	Percent of Participants
Canada	1	2.8%
Hong Kong	1	2.8%
Ireland	15	41.7%
Japan	12	33.3%
The U.K.	5	13.9%
The U.S.A.	2	5.6%
Total	36	100%

Figure 4.2: Country of Residence of Participants

61.1% of respondents identified as male and 38.9% as female, with none describing their gender as 'other' or 'none' (see Figure 4.3).

Gender	Number of Participants	Percent of Participants
Female	22	38.9%
Male	14	61.1%
Other	0	0%
None	0	0%
Total	36	100%

Figure 4.3: Gender of Participants

4.4.2 Japanese Language Experience

Participants differed widely in terms of their experience studying Japanese language. 8.3% stated that they were currently studying Japanese at university level, while 36.1% stated that they studied Japanese at university level in the past, and 55.6% stated that they had never studied Japanese at university level (see Figure 4.4).

Experience Studying Japanese at university level	Number of Participants	Percent of Participants
Currently Studying	3	8.3%
Studied in the Past	13	36.1%
Never Studied	20	55.6%
Total	36	100%

Figure 4.4: Participants' Experience Studying Japanese at University Level

2.8% of participants had passed N1, the highest level of the official Japanese Language Proficiency Test (JLPT). 16.7% had passed the N2 (second highest) level, 11.1% had passed the N3 (third highest) level, 2.8% had passed the N4 (fourth highest) level, 5.6% had passed the N5 (lowest) level and 61.1% had never passed any level (see Figure 4.5).

Highest Level of the JLPT Passed	Number of Participants	Percent of Participants
N1	1	2.8%
N2	6	16.7%
N3	4	11.1%
N4	1	2.8%
N5	2	5.6%
None	2	61.1%
Total	36	100%

Figure 4.5: Participants' Highest Level of the JLPT Passed

The number of years which students had been studying Japanese ranged from 0 to 12 (this question was an open form, and answers prefixed with 'almost' or 'less than' were rounded up). The mean was 4.1 years and the mode was 3 years (see Figure 4.6).

Years studying Japanese	Number of Participants	Percent of Participants
0	1	2.9%
1	6	17.1%
2	2	5.7%
3	11	31.4%
4	4	11.4%
5	4	11.4%
6	1	2.9%
7	1	2.9%
8	1	2.9%
9	0	0%
10	3	8.6%
11	0	0%
12	1	2.9%
Total	35	100%
	(1 participant skipped this question)	

Figure 4.6: Participants' Years Studying Japanese

4.4.3 Interest in Japanese Computer Games

After establishing basic information about the participants' background and experience studying Japanese, the survey moved on to the main topic: interest in Japanese computer games. 58.4% of respondents stated that they were interested in computer games, with 27.8% stating that they were 'very interested' (see Figure 4.7).

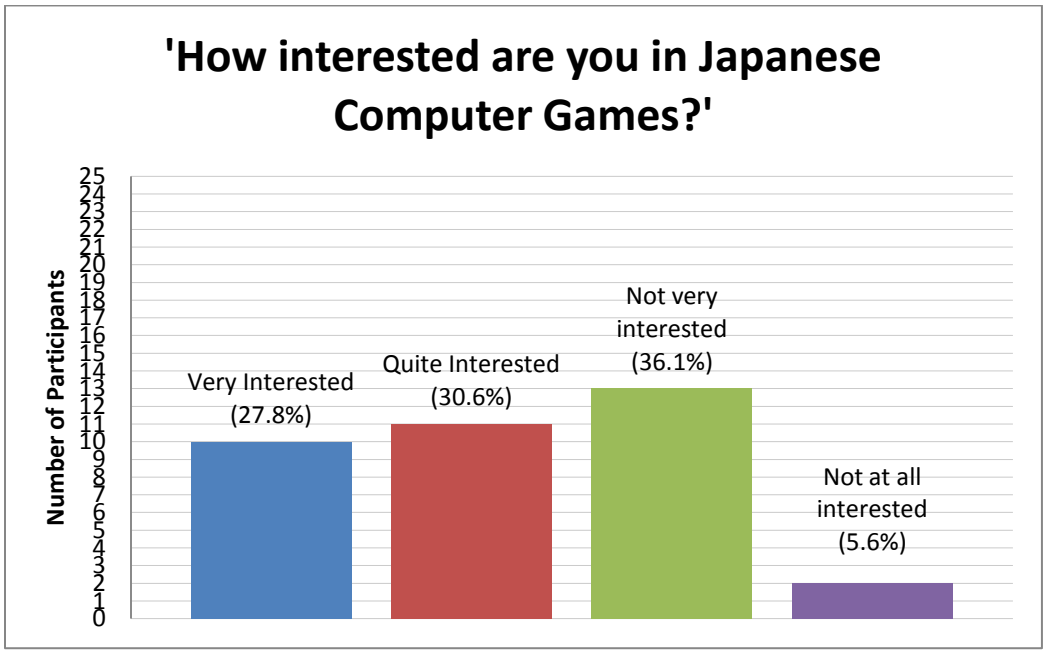

Figure 4.7: Participants' Interest Level in Japanese Computer Games

In total 55.6% of respondents stated that they play Japanese computer games in English at least once every six months, with 11.1% playing them 'every day' (see Figure 4.8). This figure is very similar to Toyoshima's research, which showed that 62.8% of participants were consumers of Japanese games before beginning to study Japanese, and a further 7% became consumers after.

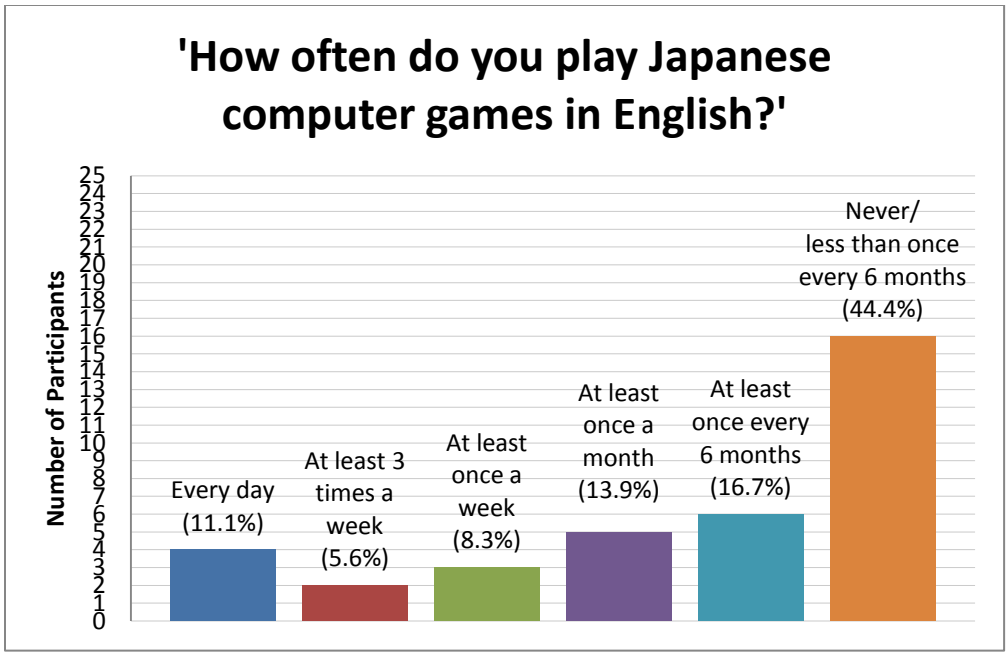

Figure 4.8: Participants' Frequency of Playing Japanese Computer Games in English

The number of participants who reported that they play Japanese games in Japanese at least once every 6 months was slightly lower, at 47.2% (see Figure 4.9). The percentage of participants who said they play them 'every day' or 'at least 3 times a week' decreased by half each (from 11.1% to 5.6%, and 5.6% to 2.8%, respectively). The number of participants who answered 'at least once a week' was the same (8.3%), while the number who answered 'at least once a month' decreased slightly (from 13.9% to 11.1%) and the number who answered 'at least once every 6 months' increased slightly (from 16.7% to 19.4%). Overall this suggests that JFL learners are only slightly less likely to play Japanese computer games in Japanese than they are to play them in English.

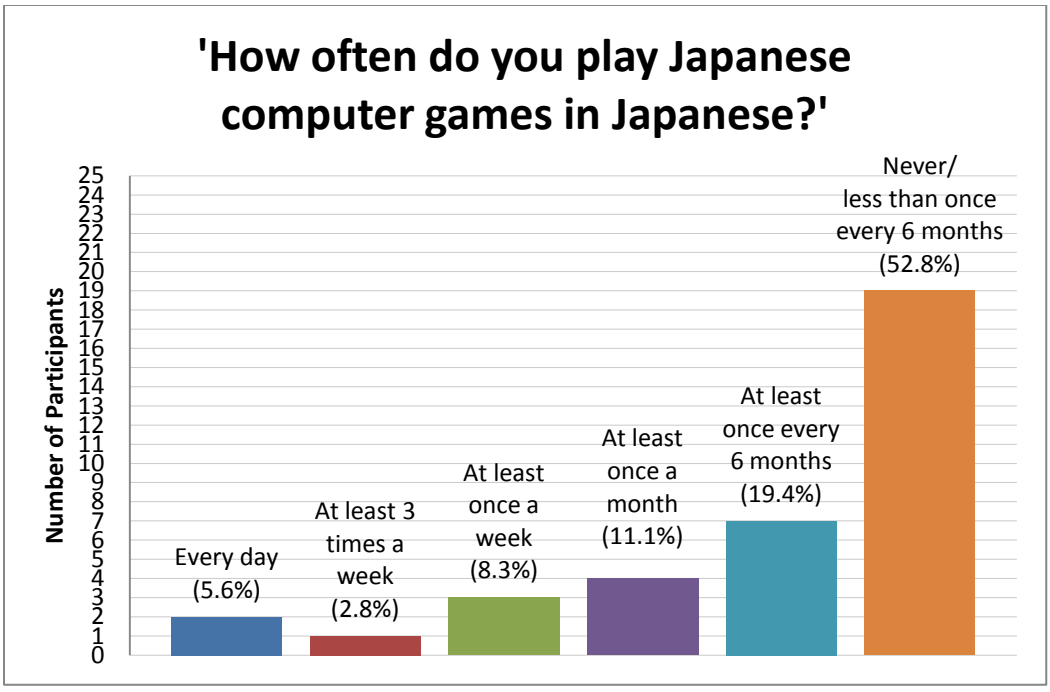

Figure 4.9: Participants' Frequency of Playing Japanese Computer Games in Japanese

4.4.2 Japanese Computer Games and Japanese Language Study

Participants were next asked about their general impressions of playing Japanese computer games in Japanese as a learning activity, and the relationship between an interest in Japanese games and studying Japanese. Participants who stated that they played Japanese computer games in Japanese 'never/ less than once every 6 months' were directed to skip this section, as it is impossible to answer for participants who never use Japanese computer games to study Japanese. A total of 19 participants (52.8% of total participants) therefore completed this section, with 17 (47.2%) skipping it.

Participants were first asked if an interest in Japanese computer games was a factor which motivated them to start studying Japanese. 58.8% of participants stated that it was (27.8% of total participants), with 35.3% (16.7% of total participants) stating it was 'a major factor' (see Figure 4.10). This echoes Toyoshima's finding that an interest in Japanese cultural products was an important motivating factor for starting to learn Japanese for many people. 68.1% of Toyoshima's participants stated that they were motivated to take up learning Japanese due to an interest in Japanese Cultural products, with 8.8% stating it was due to an interest in games specifically. The reason a higher percentage of participants stated they were motivated by an interest in Japanese games in this study is perhaps due to the fact that

they were asked specifically about games, whereas participants in Toyoshima's study could list any reason for learning Japanese.

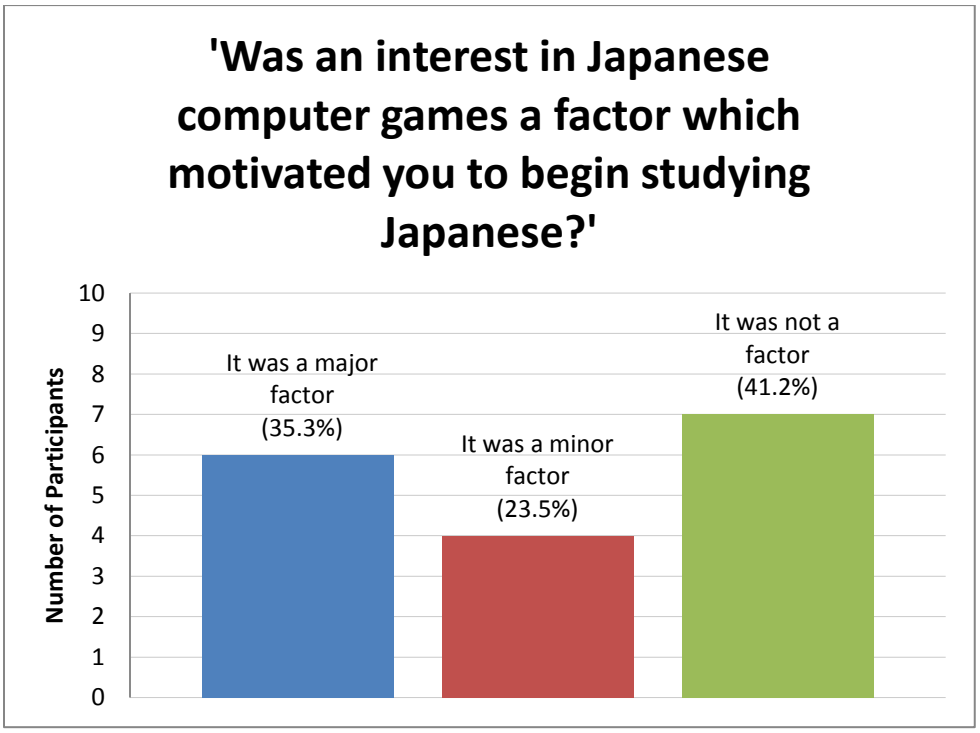

Figure 4.10: How much of a factor was an interest in Japanese computer games

76.5% of participants (36.1% of total participants) stated that their interest in Japanese computer games had increased since they started studying Japanese, with only 5.9% saying they had become less interested (and 0% saying they had become 'much less interested') (see Figure 4.11). This confirms Toyoshima's observation that Japanese language learning increases interest in Japanese cultural products. It also helps verify his 'Virtuous Cycle Model' of the relationship between Japanese cultural products and Japanese language learning as, combined with the results of the previous question, it shows the cyclical process of interest in Japanese cultural products motivating people to learn Japanese, and learning Japanese then increasing people's interest in Japanese cultural products.

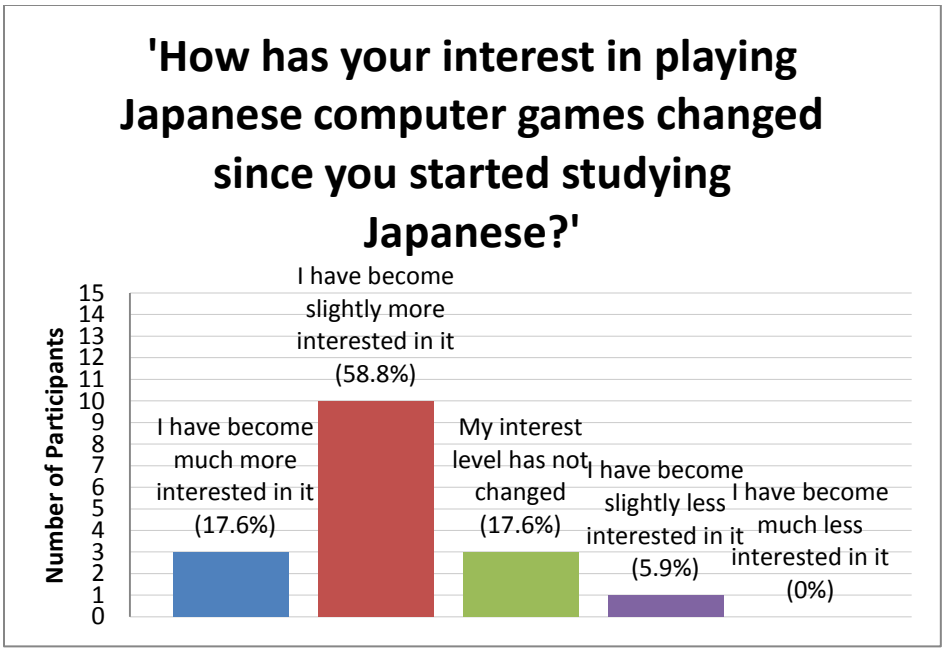

Figure 4.11: Participants' Change in Interest in Japanese Computer Games

Participants were then asked whether their motivation to play Japanese computer games in Japanese derived mainly from wanting to enjoy the game or from wanting to improve their Japanese. Following on from Toyoshima's research, it seemed that these two activities were closely bound up together. As expected most participants (94%) answered that it derived from a mixture of both, but overall more participants were motivated primarily by wanting to enjoy the game (58.8%), with no participants motivated exclusively by wanting to improve their Japanese (see Figure 4.12). This suggests that there are some learners of Japanese whose motivation to play Japanese games is primarily intrinsic, related to enjoying the game, but is also extrinsic to some degree, as they are also aiming to improve their Japanese.

Since a significant proportion of learners also stated that their motivation to study Japanese is related to an interest in Japanese games, it suggests that some learner's motivation to improve their Japanese is therefore related to wanting to enjoy Japanese computer games. This suggests a cyclical model, similar to Toyoshima's, in which some learners play Japanese games in order to improve their Japanese in order to better understand Japanese games.

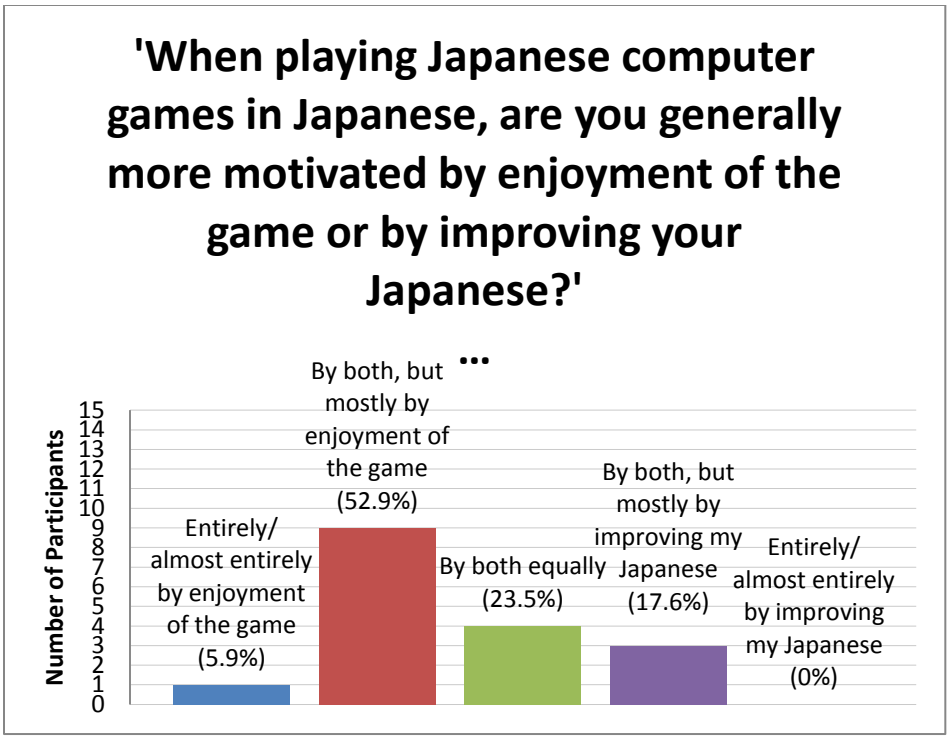

Figure 4.12: Participants' Source of Motivation When Playing Japanese Computer Games in Japanese

Participants were then asked how effective they found playing Japanese computer games for improving their Japanese, in order to better understand their motivation. Overall, 80% of participants stated that they found playing Japanese computer games in Japanese effective, with 20% stating that they found it 'very effective' and none stating that they found it 'very ineffective' (see Figure 4.13) (2 participants skipped this question).

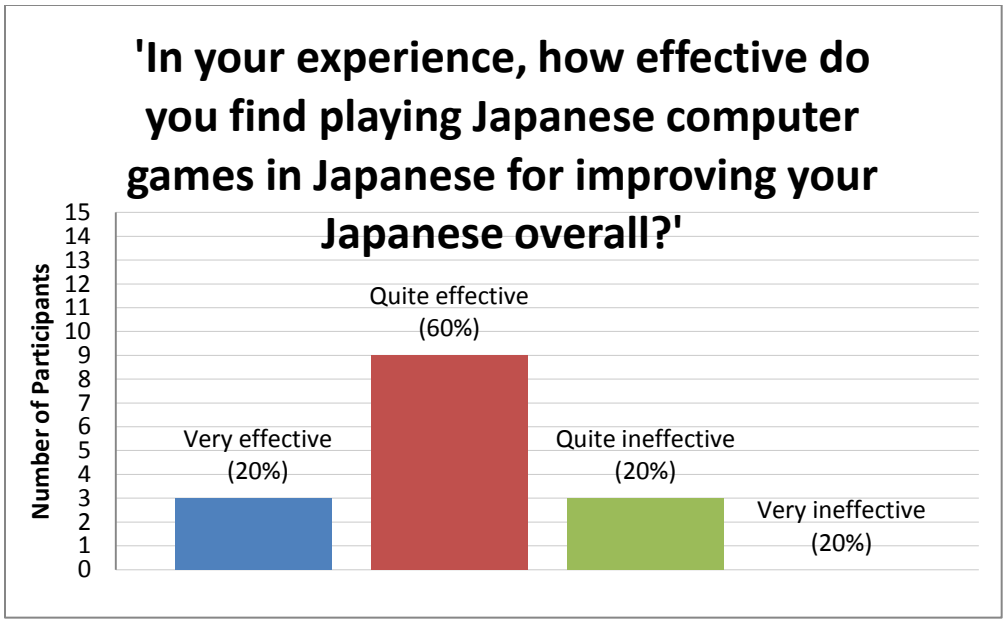

Figure 4.13: Participants' Perception of the Effectiveness of Playing Japanese Computer Games Overall

Participants were then asked how effective they found playing Japanese computer games in Japanese for improving specific areas and skills: vocabulary, grammar, reading and listening (speaking and writing were left out, as these are not incorporated into the gameplay of the vast majority games) (one participant skipped the question on vocabulary). Overall the areas which the most participants stated that they found it effective for improving were vocabulary and reading (93.8% and 92.3% respectively), with 64.7% stating that they found it effective for improving listening and 58.8% stating that they found it effective for improving grammar (see Figure 4.14). These observations are similar to Chen and Yang's (2013) study, in which participants reported the strongest sense of progress in reading, vocabulary and listening when using games to study language.

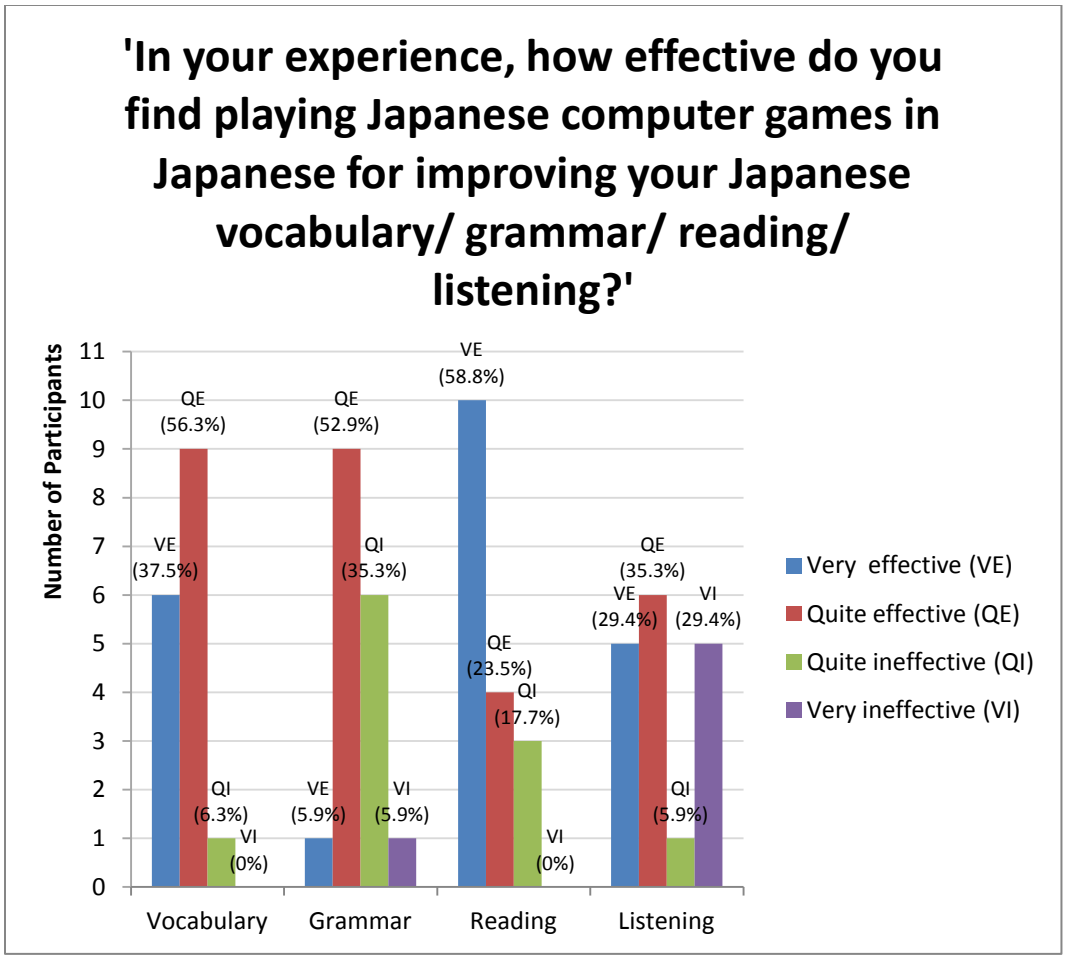

Figure 4.14: Participants' Perception of the Effectiveness of Playing Japanese Computer Games for Improving Skills

4.4.3 Hypothetical Learning Scenario 1

Participants were then asked to read about three hypothetical learning scenarios and answer a series of questions based on how they imagined they would feel in each scenario. All 36 participants were asked to answer these questions, regardless of their answers to previous questions. It is therefore important to note that the following answers are coming from a broad cross-section of Japanese learners, who are not all particularly interested in computer games.

The first scenario was described as follows:

'You are playing a Japanese game on a handheld device. The game was developed for a Japanese-speaking audience for entertainment purposes and is suitable for ages 12+. The game is a fantasy role-

playing game in which the story and combat are key features of the game. The story is conveyed via on-screen text, including narration and conversations with non-player characters (NPCs). The game features a lot of vocabulary related to the fantasy setting (for example ‘mage’, ‘warrior’, ‘rogue’, ‘magic’, ’spell’, ‘resurrection’, ‘summon’, ‘exorcise’, ‘demon’, ‘kingdom’, ‘sword’, ‘armour’, etc.). It also features a lot of vocabulary related to the combat, including a lot of similar terms (for example, ‘fireball’, ‘fire blast’, ‘fire storm’, ‘flamethrower’, etc.). A lot of this vocabulary is quite obscure and unlikely to come up in everyday conversation or in standardised tests, however it is necessary to understand it in order to make sense of the game. It is all real Japanese (which could be found in a dictionary), with no made-up words. The audio consists only of music and sound effects, with no spoken Japanese.'

This scenario was designed to vaguely resemble the highly popular *Pokémon* series of games, such as *Pokémon X* (The Pokémon Company, 2013), described by J.P. Porcaro (2010, p. 24) as 'the most popular video game franchise of the last 20 years'. Porcaro (2012, p. 24) summarises the gameplay of *Pokémon* as follows: 'Players act as "trainers" who go on journeys to collect fictional creatures called Pokémon. As they catch Pokémon, they are mentored by wise scientists and must pay attention to all the bits of information that are presented along the way and use these facts to draw connections and make decisions'. These games tend to be heavily story-driven, involving, as Porcaro mentions, frequent conversations with non-player characters (NPCs) which the player is required to pay attention to and understand in order to progress in the game. All games in the main Pokémon series (there have been numerous spin-offs) have released on handheld devices (Nintendo Gameboy, Nintendo Gameboy Advance, Nintendo DS and Nintendo 3DS) and have used written text to convey conversations in the games, with no spoken words in the audio. Besides the existence of the creatures called Pokémon, the games largely resemble the real world, and include modern technology such as computers and mobile phones. The games revolve primarily around exploration and combat, and feature a large amount of specialised vocabulary related to combat techniques used in the game (similar to some of the vocabulary mentioned above, such as ‘fireball’, ‘fire blast’, ‘fire storm’ and ‘flamethrower’). It is also important to note that the latest instalments in the series, *Pokémon X* and *Pokémon Y* (2013) and *Pokémon Alpha Sapphire* and *Pokémon Omega Ruby* (2014) give players the option of playing in a number of languages, including Japanese. It should also be noted that some of the vocabulary described in the scenario ('mage’, ‘warrior’, ‘rogue’, ‘magic’, ’spell’, ‘resurrection’, ‘summon’, ‘exorcise’, ‘demon’, ‘kingdom’, ‘sword’, ‘armour’, etc.) is not vocabulary which would generally be found in *Pokémon*, but rather is more reminiscent of popular high fantasy role-playing games such as the *Final Fantasy* series.

This scenario was therefore designed to suggest an appealing, intrinsically motivating game which features a large amount of specialised vocabulary which has very little pragmatic use.

63.9% of participants stated that they would be interested in playing this game, with 13.9% stating that they would be 'very interested' (see Figure 4.15). Considering only 58.4% of participants stated that they were 'quite interested' or 'very interested' in Japanese computer games, the game described in this scenario can be seen as highly appealing.

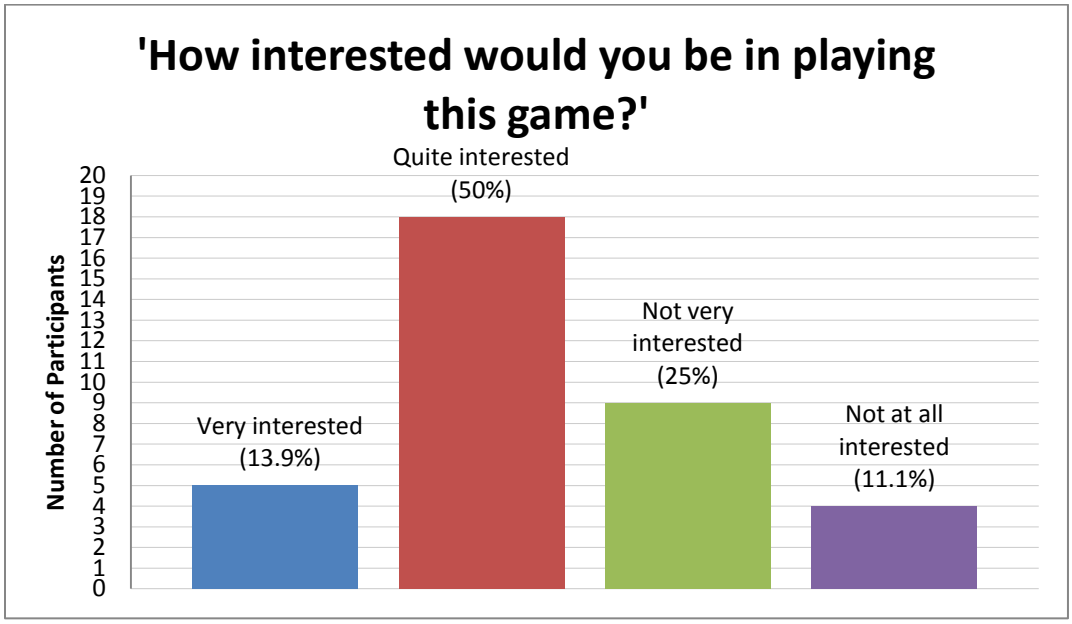

Figure 4.15: Participants' Interest in Playing Game in Scenario 1

77.8% of respondents stated that they thought this game would be enjoyable, with 22.2% stating that they thought it would be 'very enjoyable' (see Figure 4.16). This suggests that many participants' interest in playing the game would stem from intrinsic motivation.

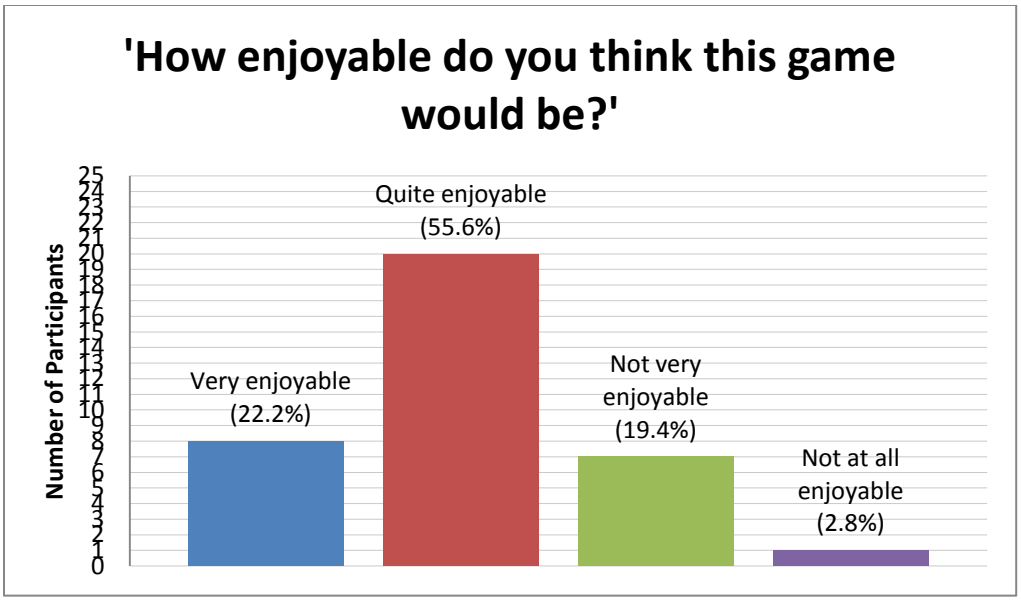

Figure 4.16: Participants' Impression of the Enjoyableness of Game in Scenario 1

Participants were divided in their opinion of how useful they thought this game would be for improving their Japanese overall, with 52.8% stating that they thought it would be useful and only 11.1% stating that they thought it would be 'very useful' (see Figure 4.17). The fact that the percentage of participants who would be interested in playing this game (63.9%) is slightly higher than the percentage who think it would be useful (52.8%) confirms that at least some participants would be intrinsically motivated to play this game despite not perceiving it as useful.

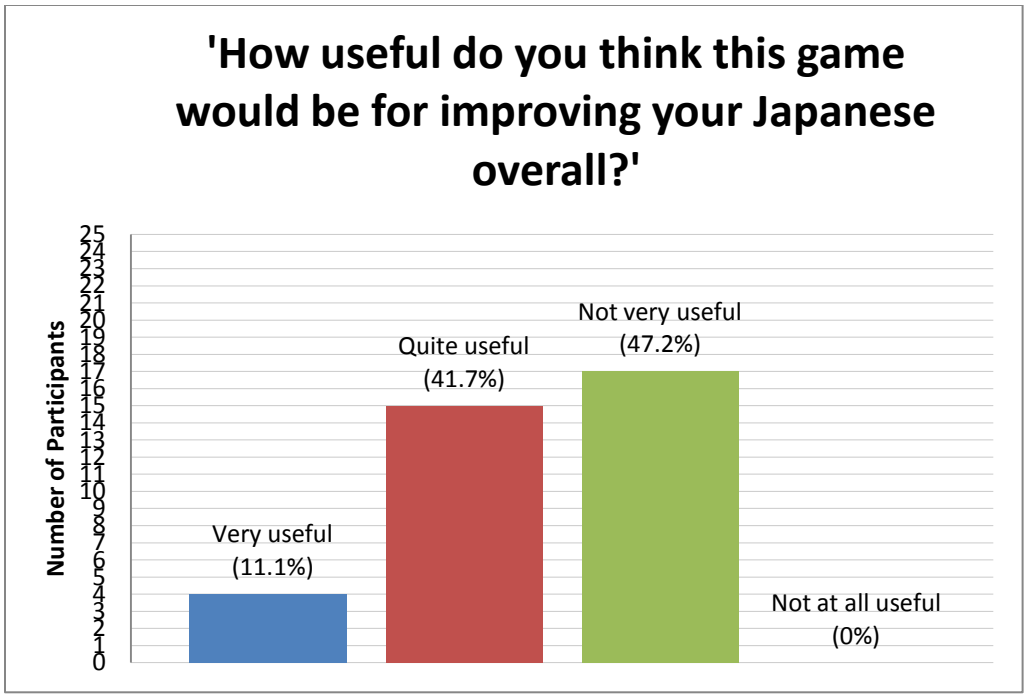

Figure 4.17: Participants' Impression of the Usefulness of Game in Scenario 1 for Improving Japanese Overall

Participants were slightly more optimistic about how useful it would be for improving their Japanese vocabulary specifically, with 66.7% stating that they thought it would be useful, and 13.9% stating that it would be 'very useful' (see Figure 4.18).

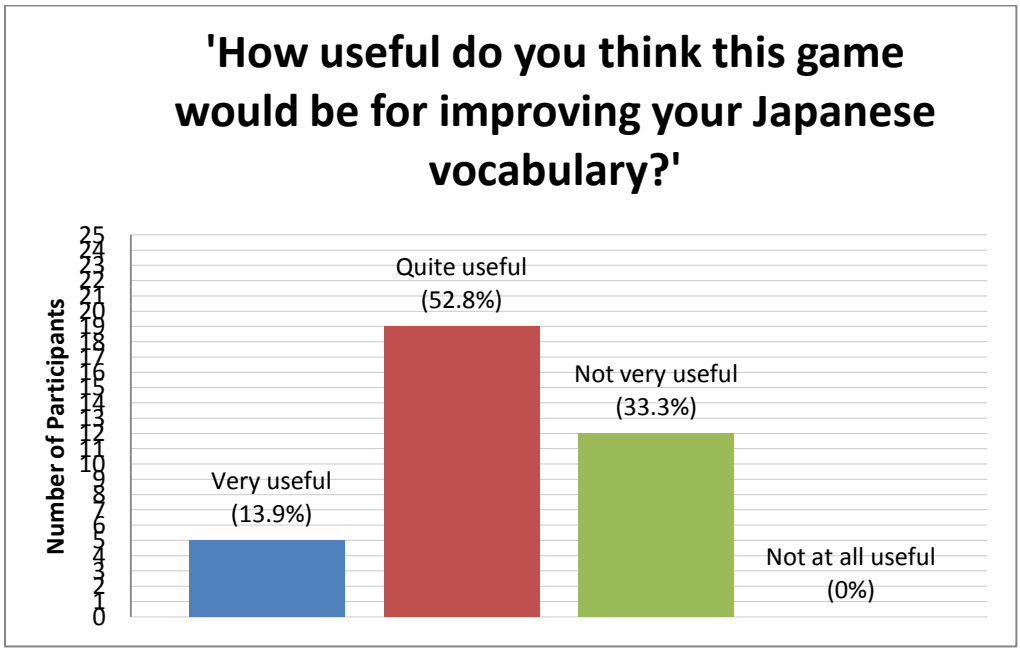

Figure 4.18: Participants' Impression of the Usefulness of Game in Scenario 1 for Improving Japanese Vocabulary

Participants were asked how motivated they would be to master the vocabulary used in the game/ app in each Scenario, in order to explore the relationship between their perception of the usefulness of vocabulary and their motivation to learn it. Responses to Scenario 1 were mixed, with only 47.2% saying they would be motivated to master the vocabulary used in this game (see Figure 4.19). However, of the 12 participants who stated that they thought the game would be 'not very useful' for improving their vocabulary, 3 stated that they would be 'quite motivated' to master the vocabulary used in this game. This shows that at least some learners are motivated to learn new vocabulary even if they do not consider it particularly useful. It should also be noted that there was a correlation between an interest in Japanese games and motivation to master the vocabulary used in this game: of the 17 participants who stated that they would be 'quite motivated' or 'very motivated' to master the vocabulary used in this game, 14 stated that they were 'quite interested' or 'very interested' in Japanese games, while of the 19 participants who stated that they would be 'not very motivated' or 'not at all motivated', 12 stated that they were 'not very interested' or 'not at all interested' in Japanese games. This suggests that learners who are interested in games are more likely to be motivated to learn vocabulary which has little pragmatic use but which is common in games, such as the fantasy vocabulary described in this scenario.

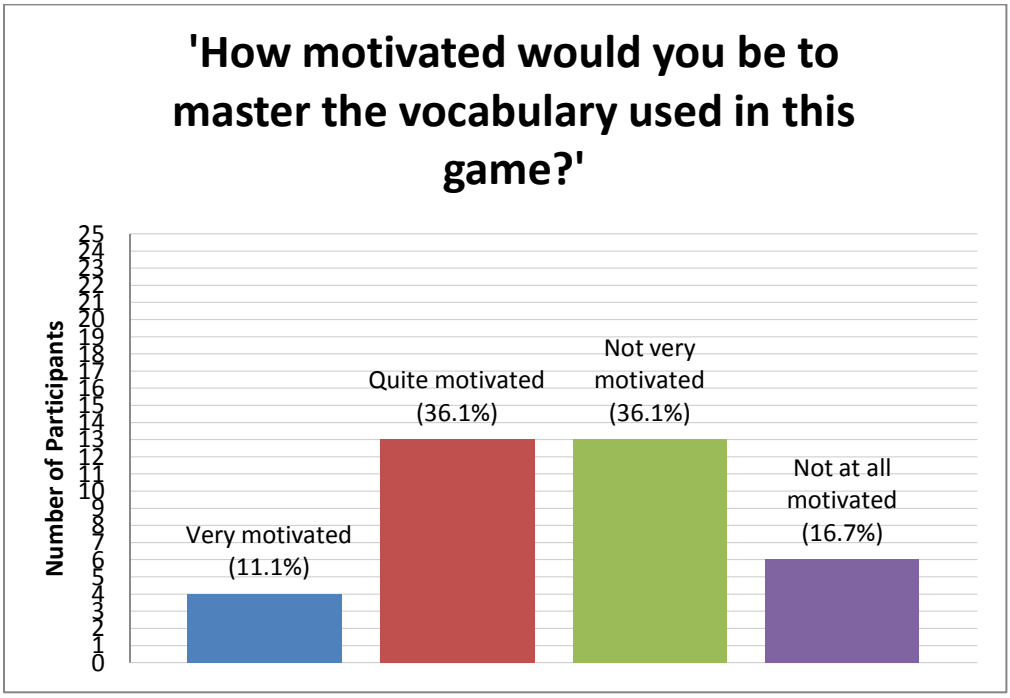

Figure 4.19: Participants' Motivation to Master Vocabulary Used in Game in Scenario 1

Participants were also asked whether their motivation to master the vocabulary used in the game/ app in each Scenario would arise more from an interest in improving their Japanese or from wanting to enjoy the game/ increase their score in the app. Participants' responses to Scenario 1 were mixed, with 71.4% of participants stating they would be motivated by both factors (see Figure 4.20) (one participant skipped this question). However the majority of participants (60%) stated that they would be motivated more by wanting to enjoy the game compared to 31.4% stating they would be motivated more by wanting to improve their vocabulary. This shows that learners' desires to enjoy the game and to improve their Japanese are closely linked and by no means mutually exclusive. It also shows that some learners are motivated to learn new vocabulary in order to better enjoy the game.

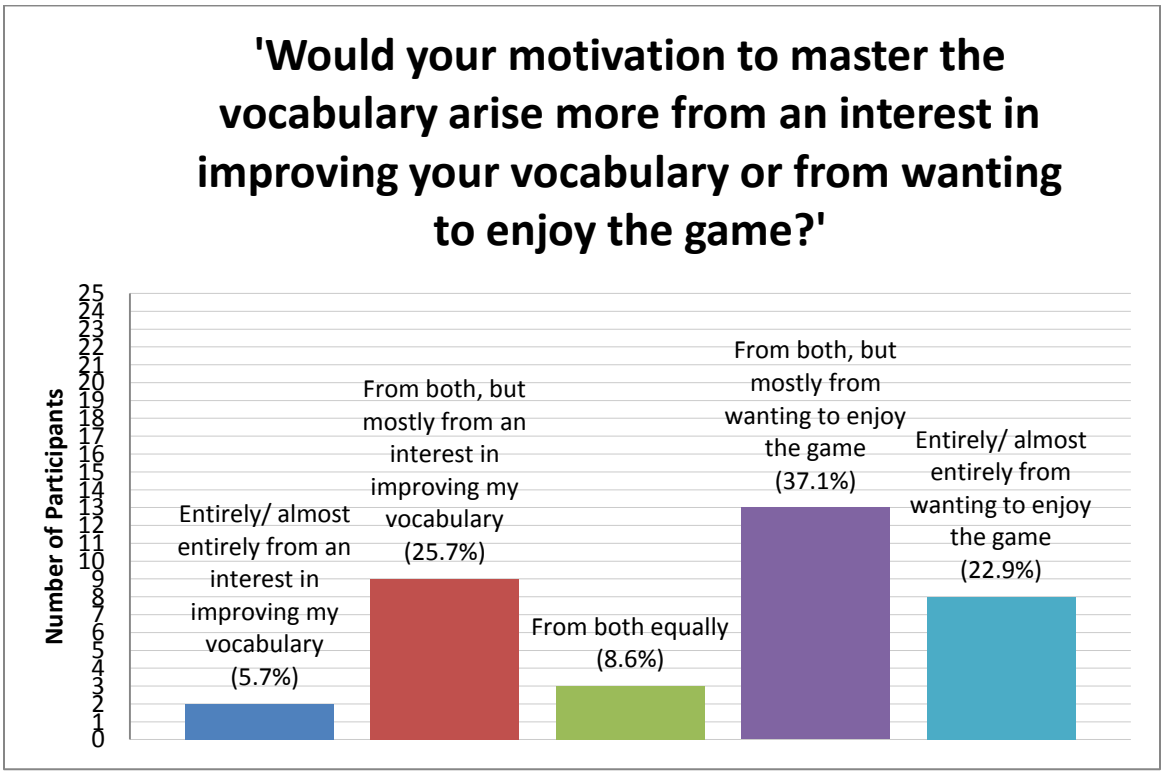

Figure 4.20: Source of Participants' Motivation to Master Vocabulary Used in Game in Scenario 1

4.4.4 Hypothetical Learning Scenario 2

The second hypothetical learning scenario was described as follows:

' You are using an application (app) on a handheld device. The app was developed for learners of Japanese for educational purposes. The app involves the user seeing flashcards on screen and matching Japanese vocabulary with its English translation, matching kanji with their meaning(s) and matching kanji with their reading(s). The flashcards are arranged into lists, and the user can choose which list they want to use. The lists are organised in various ways, including by JLPT level and by themes related to everyday life (for example 'colours', 'food words', 'school subjects', 'business terms', etc.). The user can create custom lists of vocabulary or import lists created by other users. The app tracks how many times the user has correctly matched each flashcard, and uses spaced repetition technology to prompt the user to review certain flashcards at certain times to maximise the user's ability to remember them. The app also gives the user a score based on how many The app has a simple interface. The only things the user can do are match vocabulary and kanji flashcards, and navigate menus. The audio consists only sound effects, with no spoken Japanese.'

This scenario was designed to resemble popular apps such as *Anki* and *Japanese Flash. Anki* has been installed '1,000,000 - 5,000,000' times via the Google Play store (where it is labelled *AnkiDroid Flashcards*) (Google Play, 2015) and is also available on iOS devices (it is labelled *AnkiMobile Flashcards* in the iTunes store) (iTunes, 2015). It allows users to create custom flashcards and decks, or download ones created by other users, and to review them using spaced repetition. It can be used for any topic, however it is popular among the Japanese learning community, with the word 'anki' (暗記) meaning 'memorization' in Japanese. *Japanese Flash* (Japanese Flash, 2015) is a Japanese flashcard app with flashcards arranged into various thematic decks (such as 'colours', 'food words', 'school subjects', 'business terms', etc.) and also into lists of recommended vocabulary for each level of the JLPT. I conceived of this scenario as more practical than Scenario 1, but less fun, aimed at learners with more extrinsic motivation (for example learners trying to learn a high volume of new vocabulary in order to pass the JLPT). This scenario was therefore designed to be more extrinsically motivating, and it was predicted that participants would consider it less enjoyable but more useful than Scenario 1.

77.7% of participants stated that they would be interested in using this app, with 44.4% stating they would be 'very interested' (see Figure 4.21). This represents a 13.8% increase in overall interest as compared with Scenario 1, and a 30.5% increase in participants who would be 'very interested'.

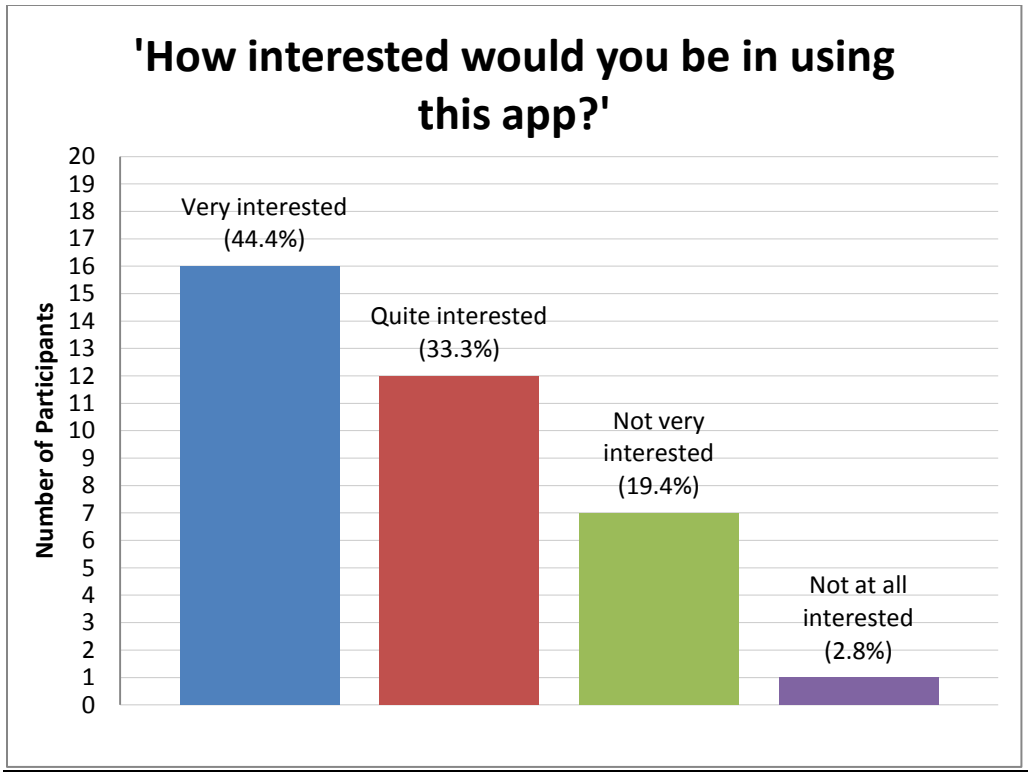

Figure 4.21: Participants' Interest in Using App in Scenario 2

61.1% stated that they thought this app would be enjoyable, and 8.3% stated that they thought it would be 'very enjoyable' (see Figure 4.22). This represents a 16.7% decrease in the number of participants who think it would be enjoyable in comparison with Scenario 1, and a 13.8% decrease in participants who think it would be 'very enjoyable'. Combined with the results of the previous question, this suggests that some participants are more interested in using certain learning tools that they consider less enjoyable than ones which they consider more enjoyable.

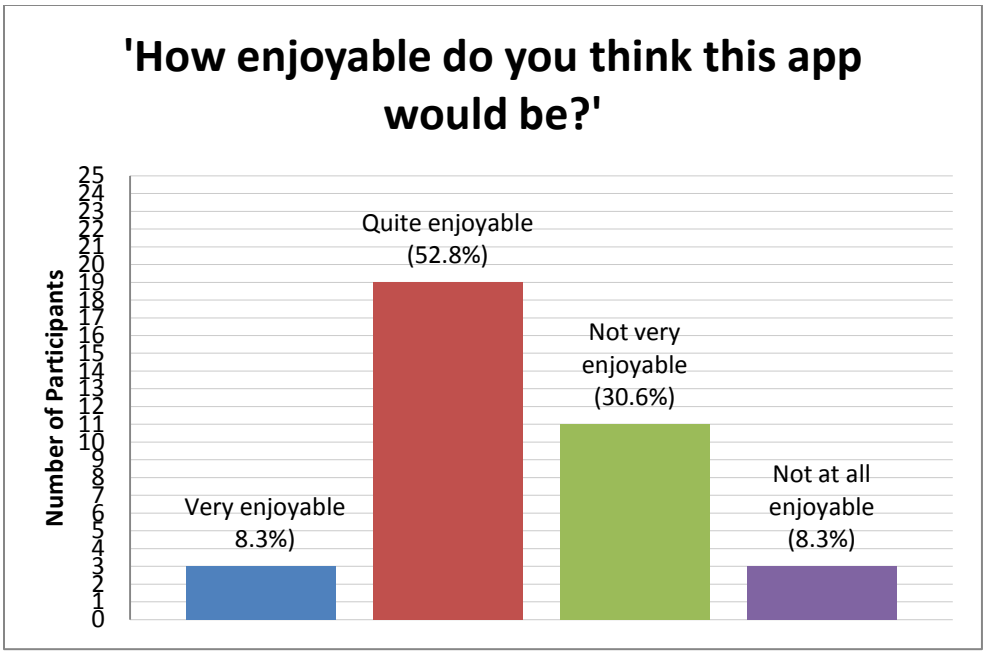

Figure 4.22: Participants' Impression of the Enjoyableness of Using App in Scenario 2

Participants were almost unanimous (94.1%) in their agreement that this app would be useful for improving their Japanese overall, with 58.8% stating that it would be 'very useful' (see Figure 4.23) (2 participants skipped this question). This represents a 41.3% in the number of participants who think it would be useful, as compared with Scenario 1, and a 47.7% increase in the number who think it would be 'very useful'. Combined with the results of the previous two questions and Scenario 1, this suggests that the reason why some learners are more interested in using tools they consider less enjoyable is because they consider them more useful. This suggests extrinsic motivation on the part of learners to use this app.

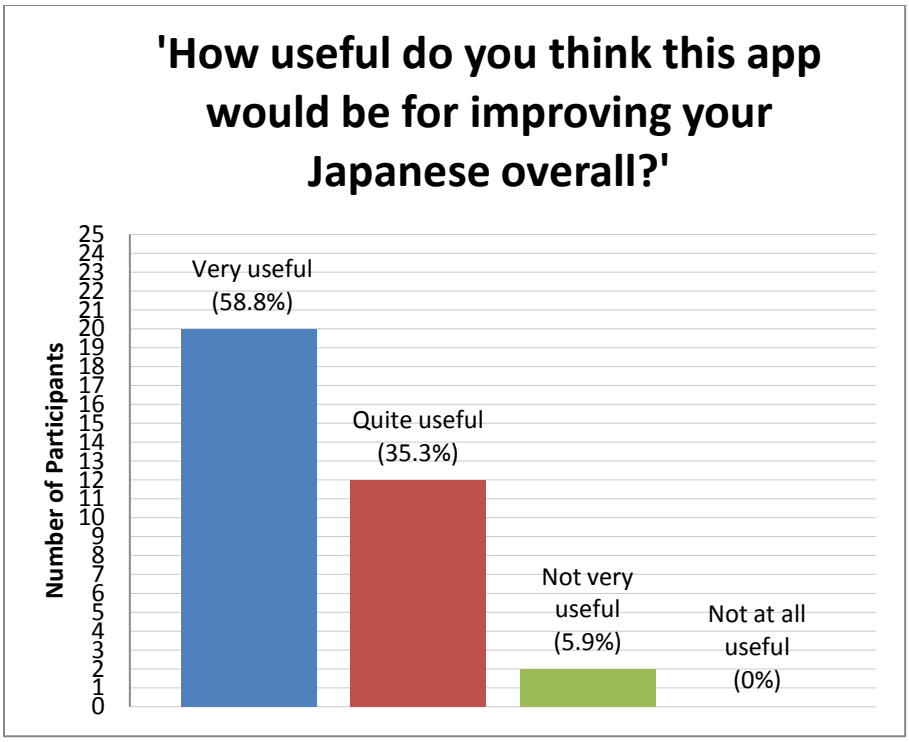

Figure 4.23: Participants' Impression of the Usefulness of App in Scenario 2 for Improving Japanese Overall

Participants were again almost unanimous (91.6%) in their agreement that this app would be useful for improving their Japanese vocabulary specifically, with 58.3% stating that it would be 'very useful' (see Figure 4.24). This represents a 24.9% in the number who think it would be useful as compared to Scenario 1, and a 44.4% increase in the number who think it would be 'very useful'. It is surprising that the percentage of participants who would consider this app useful for improving their vocabulary is slightly lower than the percentage who think it would be useful for improving their Japanese overall, as this app is designed specifically to improve vocabulary.

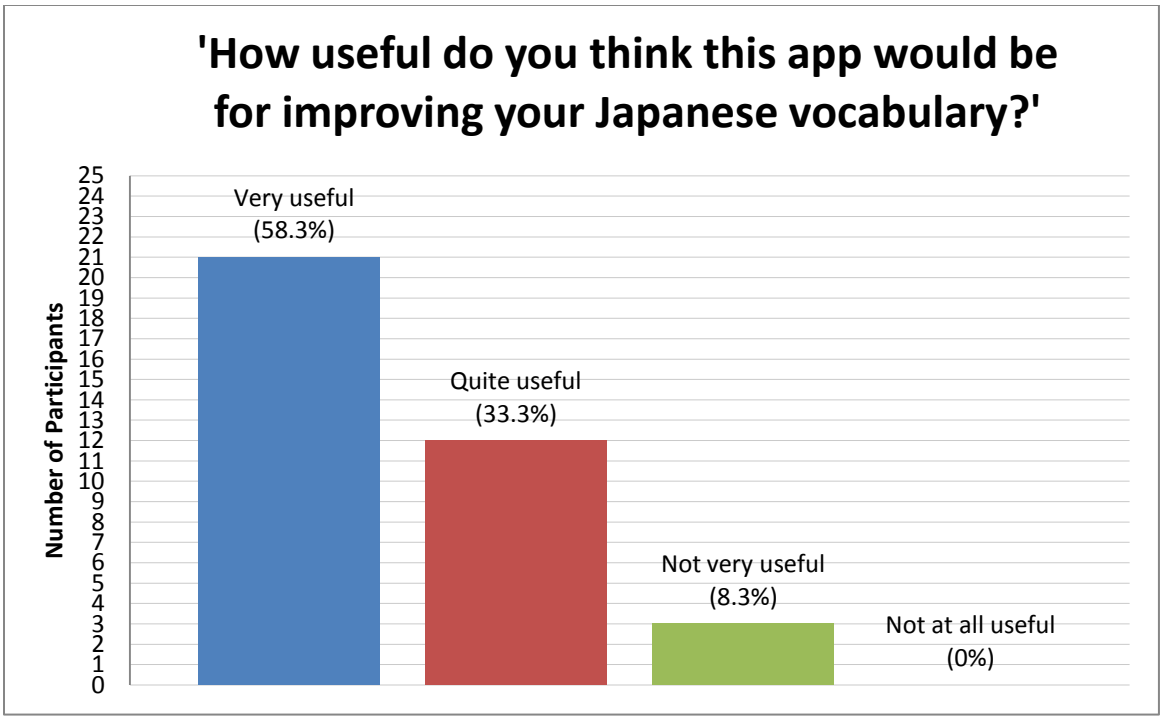

Figure 4.24: Participants' Impression of the Usefulness of App in Scenario 2 for Improving Japanese Vocabulary

69.5% of participants stated that they would be motivated to master the vocabulary used in this app, and 16.7% stated that they would be 'very motivated' (see Figure 4.25). This represents a 22.3% increase in overall motivation as compared with Scenario 1, and a 5.6% increase in participants who think they would be 'very motivated'. The increase in the percentage of participants who think this app would be useful for improving their vocabulary compared with Scenario 1 (24.9%) is very similar to the increase of those who would be motivated to master it (22.3%). Overall this shows a correlation between participants impression of the usefulness of vocabulary and their desire to master it. However it should also be noted that of the 11 participants who stated that they would be 'not very motivated' or 'not at all motivated' to master the vocabulary in this app, 8 stated that they thought the app would be 'quite useful' or 'very useful' for improving their vocabulary. This shows that some learners are not necessarily motivated to learn vocabulary even if they consider it useful.

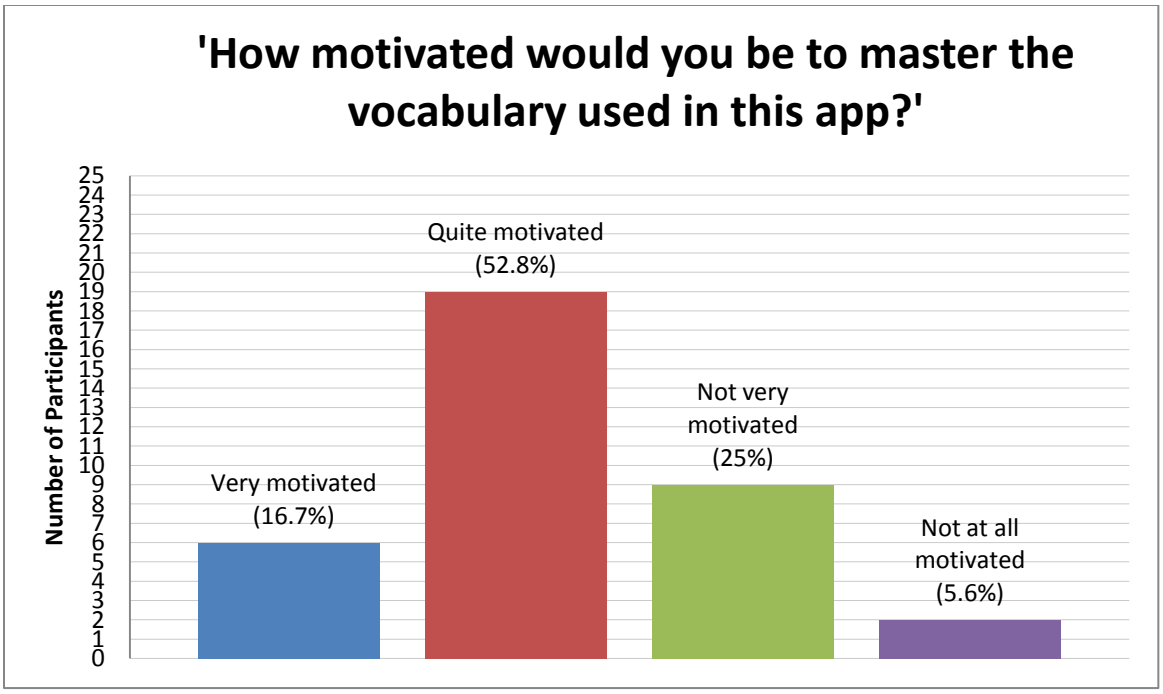

Figure 4.25: Participants' Motivation to Master Vocabulary Used in App in Scenario 2

86.1% of participants stated that they would be motivated to master the vocabulary used in this app primarily by wanting to improve their vocabulary, with 69.4% stating that they would be motivated 'entirely/ almost entirely' by wanting to improve their vocabulary (see Figure 4.26).

It is important to note that in this question the alternative to 'an interest in improving my vocabulary' was 'wanting to increase my score', however in Scenario 1 the alternative was 'wanting to enjoy the game'. This decision was made due to the fact that the app described does not really have any gameplay elements, and so the prospect of significantly enjoying using it seemed unlikely. Wanting to increase one's score was selected as an equivalent, as it seemed like the most intrinsically motivating aspect of using the app, since, as discussed previously, receiving immediate feedback on one's progress has been identified as one of the motivating aspects of using video games for learning. Of course this is not an exact equivalency, which should be borne in mind in the following comparisons.

This means that there was a 54.7% increase in participants saying their motivation to master the vocabulary in the app would arise primarily from an interest in improving their vocabulary, as compared with Scenario 1, and a 63.7% increase in participants stating they would be 'entirely/almost entirely' motivated by improving their vocabulary. This confirms that participants' motivation to use this app would be primarily extrinsic.

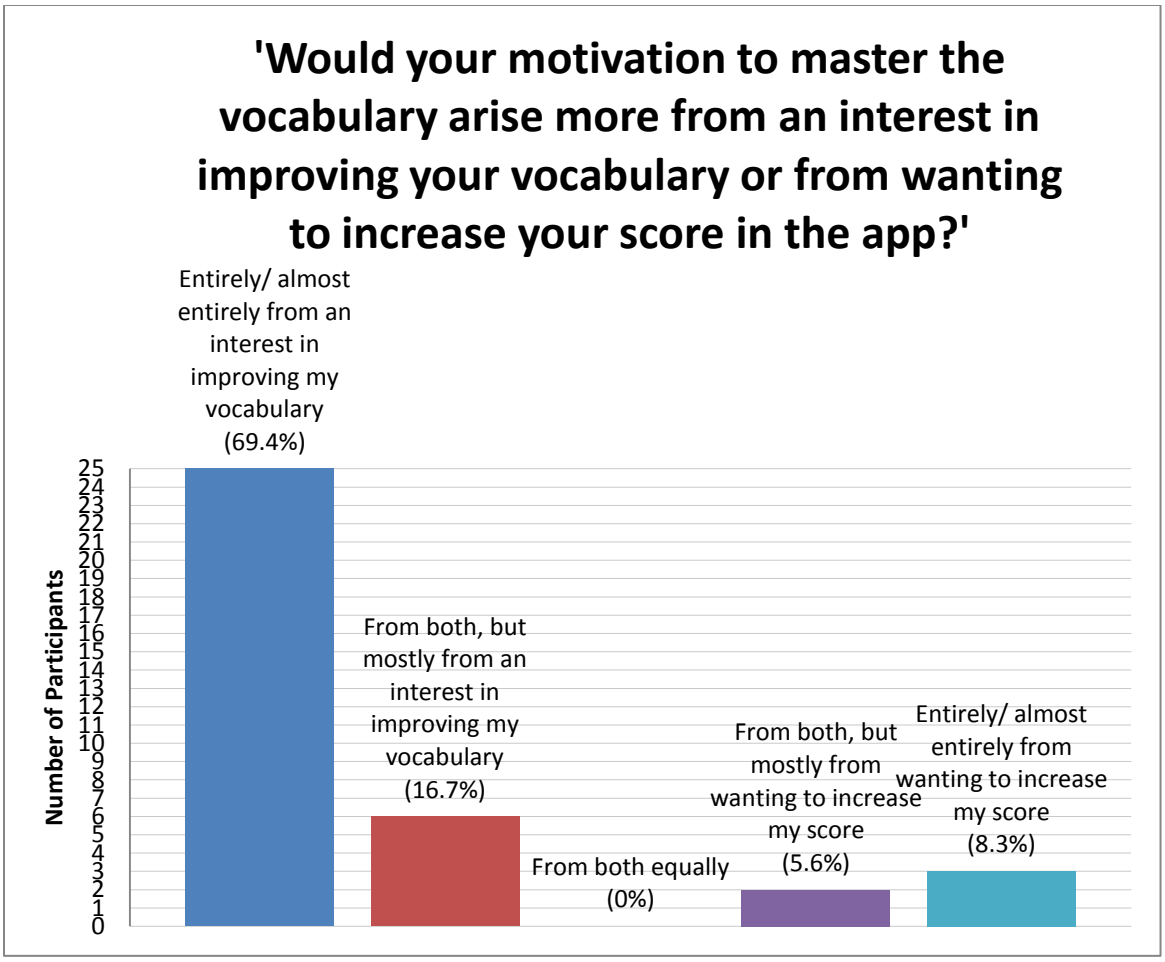

Figure 4.26: Source of Participants' Motivation to Master Vocabulary Used in App in Scenario 2

4.4.5 Hypothetical Learning Scenario 3

The third hypothetical learning scenario was described as follows:

'You are playing a game on a handheld device. The game was developed for learners of Japanese for educational purposes. The game has a fantasy setting with some role-playing elements, however the use of specialised fantasy vocabulary (such as 'mage', 'warrior', 'rogue', etc.) has been minimised. The story is conveyed via on-screen text, including narration and conversations with non-player characters (NPCs). The combat system is different from traditional role-playing games: instead of choosing which type of attack to use, you must correctly match a Japanese word with its English translation, or match a kanji with its meaning or reading, in order to attack. If you answer correctly the enemies will take damage. The vocabulary and kanji which you must match to attack enemies is not related to the fantasy setting,

and includes some words related to modern technology (for example 'computer', 'subway', 'washing machine', etc.). The audio consists only of music and sound effects, with no spoken Japanese.'

This scenario was designed to combine elements from the previous two scenarios: the entertaining game aspects of Scenario 1 (narrative, combat, etc.) with the pragmatic aspects of Scenario 2 (learning commonly used vocabulary). It was therefore intended to be both intrinsically and extrinsically motivating.

83.4% of participants stated that they would be interested in playing this game, with 52.8% stating they would be 'very interested' (see Figure 4.27). This makes it the Scenario which the most participants expressed an interest in, with a 19.5% increase in interested participants compared to Scenario 1 and 5.7% increase compared to Scenario 2, as well as a 38.9% increase in participants who would be 'very interested' compared to Scenario 1 and a 8.4% increase compared to Scenario 2.

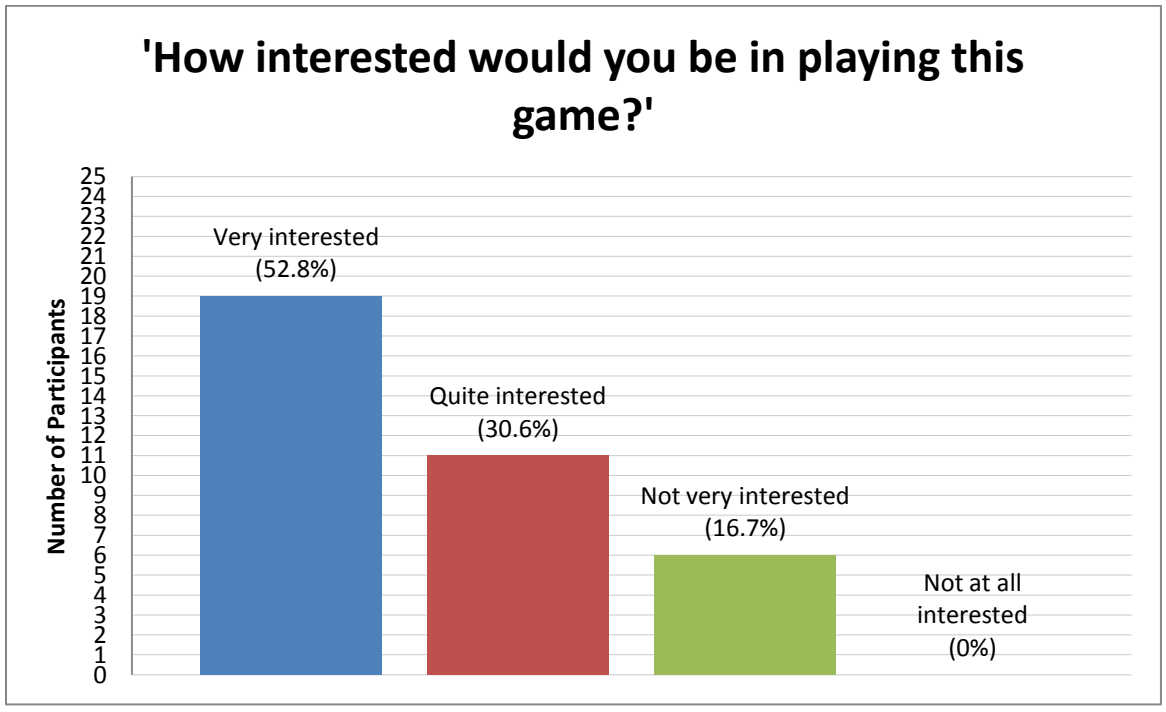

Figure 4.27: Source of Participants' Motivation to Master Vocabulary Used in App in Scenario 2

The vast majority (91.6%) of participants stated that they thought this game would be enjoyable, with 33.3% stating that they thought it would be 'very enjoyable' (see Figure 4.28). This represents a 13.8% increase in the number of participants stating it would be enjoyable compared to Scenario 1, and a 30.5% increase compared to Scenario 2, with a 11.1% increase in participants who think it would be

'very enjoyable' compared to Scenario 1 and a 25% increase compared with Scenario 2. The increase in participants who think this game would be useful can perhaps be explained by the fact that it combines appealing aspects from the first two scenarios.

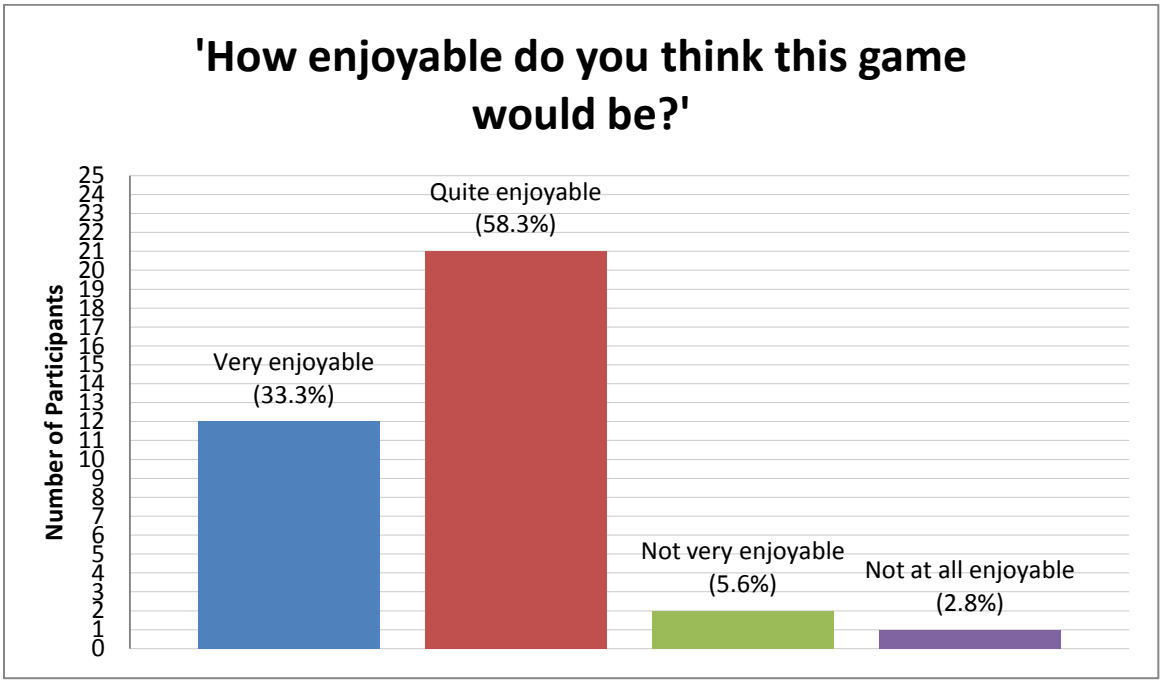

Figure 4.28: Participants' Impression of the Enjoyableness of Playing Game in Scenario 3

88.6% of respondents stated that they thought this game would be useful for improving their Japanese overall, a 35.8% increase compared to Scenario 1 and a 5.5% decrease compared to Scenario 2 (see Figure 4.29). 48.6% of participants stated that they thought this game would be 'very useful', a 37.5% increase compared to Scenario 1 and a 10.2% decrease compared to Scenario 2. One participant skipped this question.

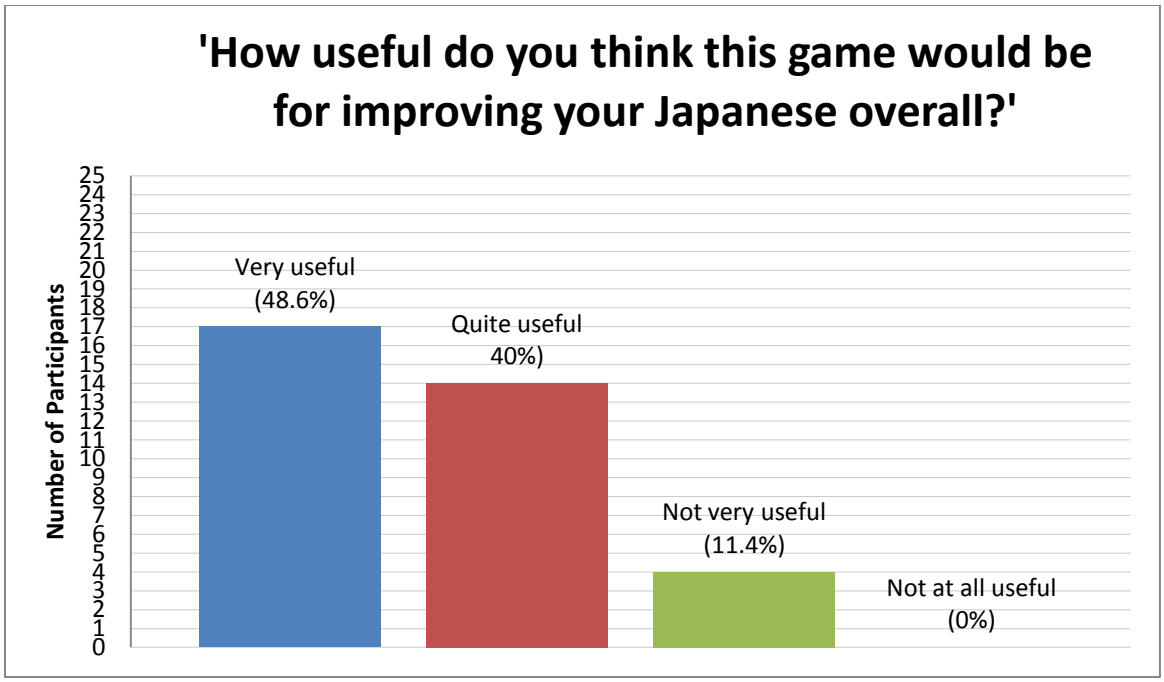

Figure 4.29: Participants' Impression of the Usefulness of Game in Scenario 3 for Improving Japanese Overall

97.2% of participants stated that they thought this game would be useful for improving their vocabulary specifically, a 30.5% increase compared to Scenario 1, and a 5.6% increase compared to Scenario 2 (see Figure 4.30). 47.2% stated that they thought it would be 'very useful', a 33.3% increase compared to Scenario 1 and an 11.1% decrease compared to Scenario 2.

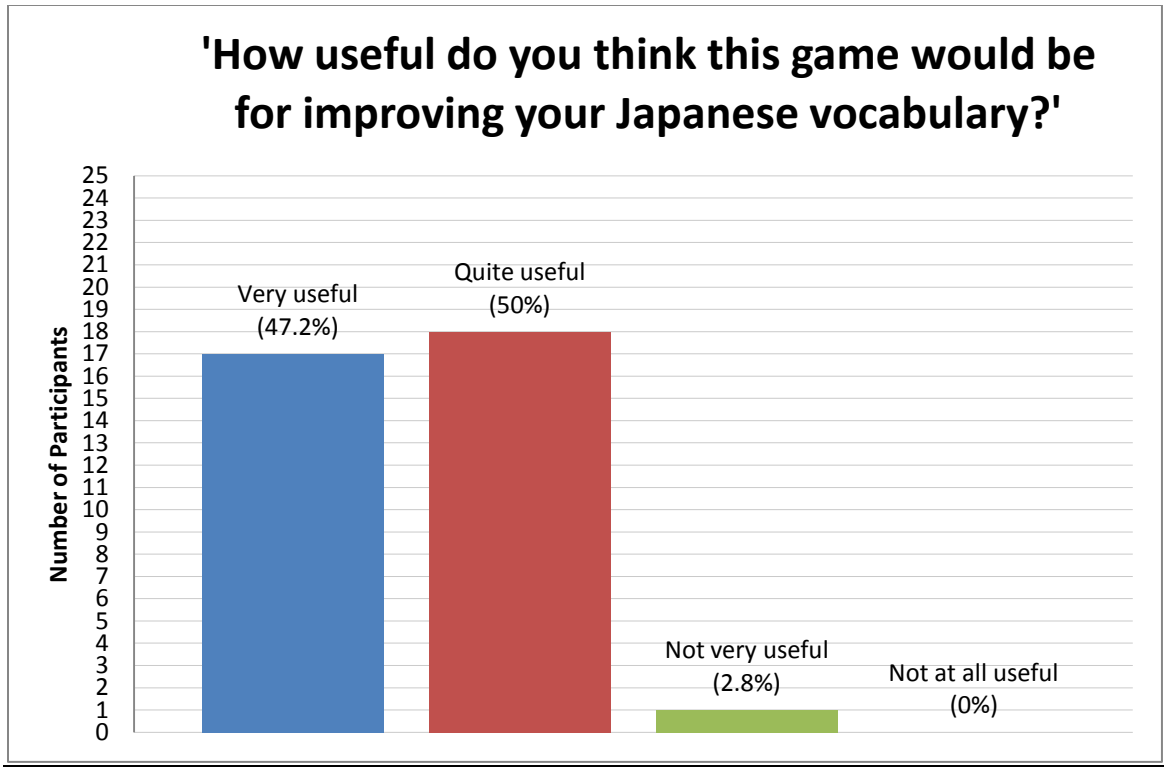

Figure 4.30: Participants' Impression of the Usefulness of Game in Scenario 3 for Improving Japanese Vocabulary

91.7% of participants stated that they would be motivated to master the vocabulary used in this game, a 44.5% increase compared to Scenario 1 and a 22.2% increase compared to Scenario 2. 36.1% of participants stated that they would be 'very motivated', a 25% increase compared to Scenario 1 and a 19.4% increase compared to Scenario 2 (see Figure 4.31).

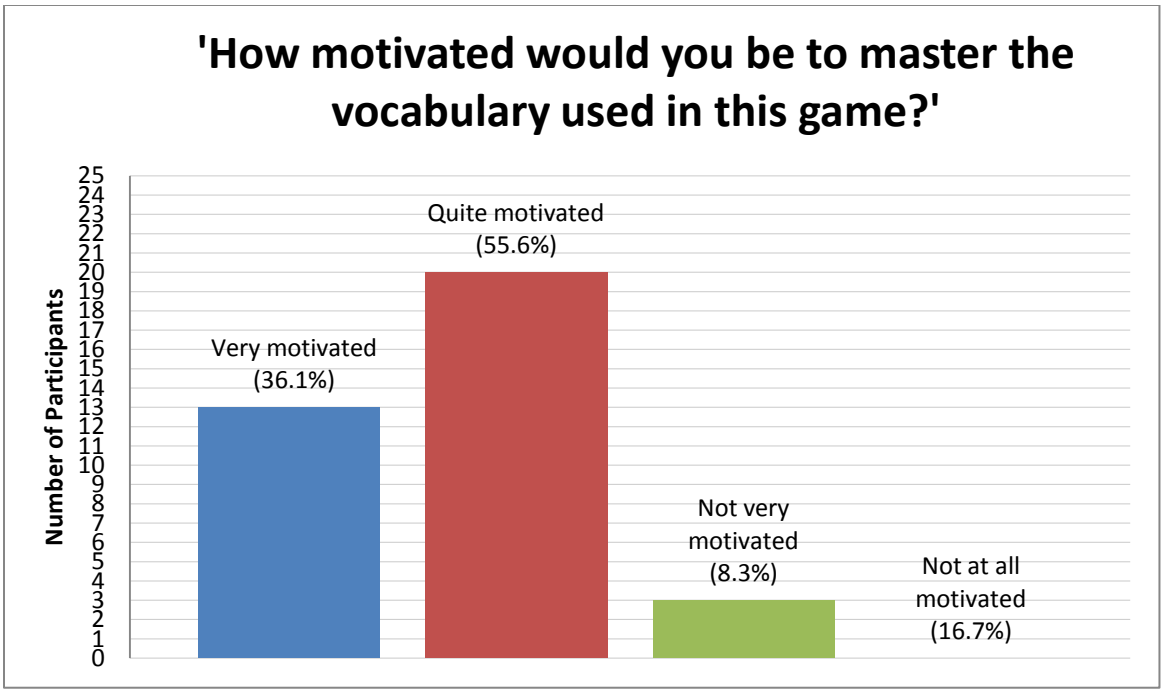

Figure 4.31: Participants' Motivation to Master Vocabulary Used in App in Scenario 2

Overall, participants stated that their motivation to master the vocabulary used in the game would arise more from an interest in improving their vocabulary (50%) than in wanting to enjoy the game (5.6%) (see Figure 4.32). This is very different from Scenario 1, in which 60% of participants stated that their motivation would arise more from wanting to enjoy the game, with only 31.1% stating it would arise more from an interest in improving their vocabulary. However participants' motivation to master the vocabulary in order to improve their vocabulary in Scenario 3 was lower than in Scenario 2, where 86.1% of participants stated that they would be motivated more by wanting to improve their vocabulary than by wanting to improve their score, and 69.4% stated that they would be motivated 'entirely/ almost entirely' by an interest in improving their vocabulary. Overall the number of participants who stated they would be motivated by both factors to some degree was highest in Scenario 3, at 83.3%, compared to 71.4% and 22.3% in Scenarios 1 and 2 respectively. The number of participants who stated they would be motivated by both equally was also highest in Scenario 3, at 44.4%, compared to 8.6% and 0% in Scenarios 1 and 2 respectively.

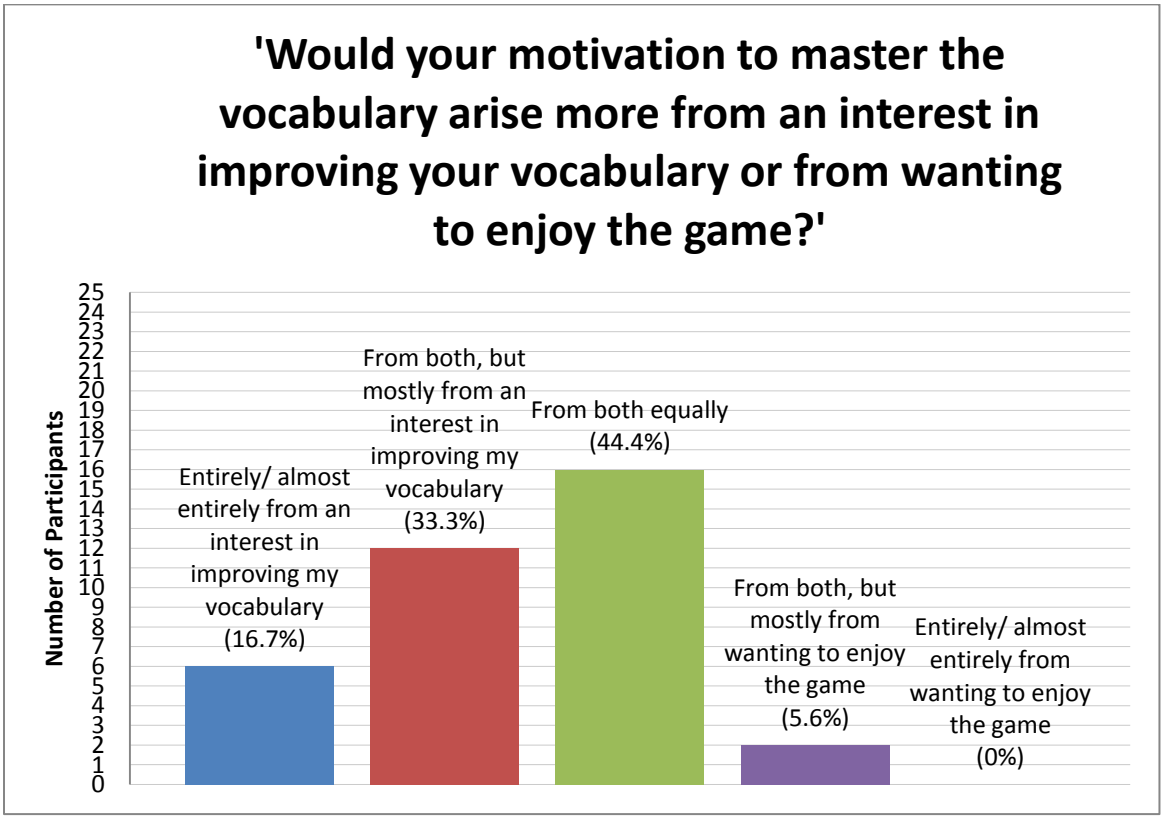

Figure 4.32: Source of Participants' Motivation to Master Vocabulary Used in App in Scenario 2

5. Discussion of Survey of Japanese Language Learners

5.1 The Link Between an Interest in Japanese Games and Learning Japanese

This survey confirmed Toyoshima's (2013) observation that there was a strong link between an interest in Japanese cultural products and Japanese language learning. The fact that 54.8% of participants stated they were interested in Japanese computer games, and 76.5% of those who played Japanese computer games in Japanese at least once every six months (36.1% of total participants) stating that an interest in Japanese computer games was a factor which motivated them to start learning Japanese. Furthermore, 76.5% of participants who play Japanese computer games in Japanese stated that their interest in Japanese games had increased since they started learning Japanese. This largely confirms Toyoshima's Virtuous Cycle Model, by showing that an interest in Japanese cultural products can motivate learners to take up Japanese, and studying Japanese can increase learner's interest in Japanese cultural products. It

does not explicitly confirm the final stage of Toyoshima's model, that an increased interest in Japanese cultural products arising from studying Japanese then strengthens learners' motivation to continue studying Japanese, however this is a logical conclusion based on the first two steps.

5.2 The Link Between Interest, Perceived Usefulness and Motivation in Vocabulary Acquisition

This survey suggests that the link between an interest in vocabulary, a perception of its usefulness, and a motivation to learn the vocabulary, is complex and varies widely among learners. The fact that overall participants stated that they thought the app in Scenario 2 would be more useful for improving vocabulary than the game in Scenario 1, and that overall they were more interested in using the app in Scenario 2 than the game in Scenario 1, shows that for many learners usefulness is associated with motivation. Such learners could therefore be said to be playing games to learn Japanese, rather than learning Japanese to play games. However the results for Scenario 1 do prove that some learners are motivated to learn vocabulary which they do not consider useful, and that an interest in learning specialised fantasy vocabulary with little pragmatic use correlates with an interest in Japanese computer games. This suggests that there may be some learners who are learning Japanese to play games as much as, if not more than, they are playing games to learn Japanese. However further research is needed in this area to confirm the source of motivation for these learners.

The results for Scenario 1 also show that a significant proportion of learners are motivated to play Japanese games both by enjoying the game and by wanting to improve their Japanese. Combined with the fact that many learners were initially motivated to take up learning Japanese at least partially due to an interest in playing Japanese, this suggests a cycle, very similar to Toyoshima's Virtuous Cycle Model. In this cycle learners are motivated to study Japanese either to play Japanese games, or for other reasons (with the strong possibility of overlap). Learners are in turn motivated to play Japanese computer games either to improve their Japanese or for enjoyment (again with the strong possibility of overlap). This suggests some learners are engaged in a constant cycle of learning Japanese to play Japanese games, and playing Japanese games to learn Japanese (see Figure 4.33). These learners could therefore be described as simultaneously playing games to learn language, and learning language to play games.

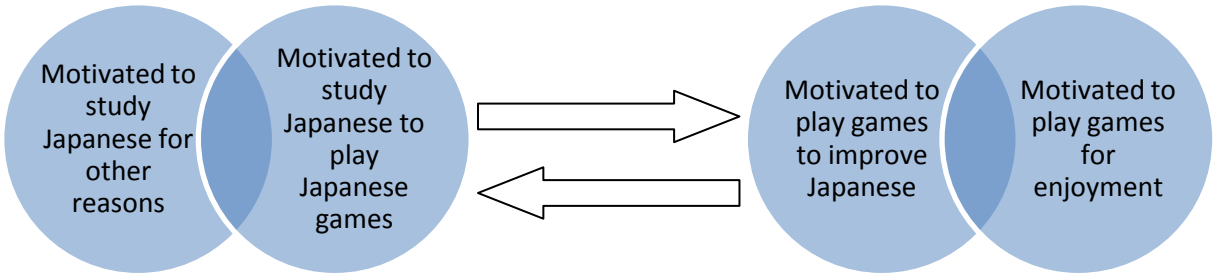

Figure 4.33: The Cycle of Motivation In Playing Japanese Games and Learning Japanese

5.3 The Need for High-Quality Educational Games

Overall Scenario 3 was the scenario which participants expressed the highest interest levels in. Unlike Scenarios 1 and 2, which were modelled on pre-existing products, no products similar to Scenario 3 - that is, high quality games which combine engaging game elements such as narrative and combat with explicit language learning - currently exist to my knowledge. There are several products which do combine game elements with language learning, but none are of the quality or scale suggested by Scenario 3. This highlights the desire among learners for more high-quality learning games, and the need for them to be produced.

5.4 Limitations of Study

Although this survey did succeed in confirming Toyoshima's findings, demonstrating that there are some learners who are motivated to learn vocabulary which they do not consider useful, and proving a correlation between motivation to learn specialised genre-related language and an interest in Japanese computer games, it did not offer a huge amount of insight into learners' motivation. This was primarily due to the broad range of participants; as many responses came from learners with little or no interest in Japanese computer games, and these were aggregated with results from participants who were interested in Japanese computer games. Although this did allow for some useful observations, it also made it difficult to comprehensively analyse the motivation of learners who are motivated to learn Japanese due to an interest in Japanese computer games, as it was beyond the scope of this Research Paper to individually analyse responses. Finally, the relatively small sample size of this survey means caution should be taken when generalising about the results. However participants in the survey did come from a wide range of backgrounds, which suggests the results may have general relevance.

5.5 Future Research

Further research is needed on learners of Japanese who are primarily motivated to learn Japanese due to an interest in Japanese computer games, in order to determine how exactly an interest in games motivates learners to learn vocabulary which they do not consider useful. Future studies in this area should therefore be limited to students who are strongly interested in Japanese games and actively involved in using them to study Japanese. Due to the complex and highly personal nature of motivation, it may also be beneficial to undertake some quantitative research in this area, in order to understand the complete process of motivation in individual learners.

6. Conclusion

This research paper has explored the use of computer games for foreign language learning, and what motivates learners to use them. The survey carried out confirms previous research which suggests that some language learners (of Japanese in particular) are motivated to learn the language more by an interest in consuming cultural products in the target language than in practical communication. The research question of whether foreign language learners who play games in the target language are ultimately playing games to learn the language or learning the language to play games was asked. The results of the survey suggest that the answer to this question varies with each individual learner, but that there are at least some learners who are simultaneously doing both, as well as some learners engaged primarily in one rather than the other. A model of 'The Cycle of Motivation In Playing Japanese Games and Learning Japanese' was proposed, similar to Toyoshima's 'Virtuous Cycle Model'. Shortcomings of this research were also acknowledged and suggestions for further research in the area offered.

[12,318 words]

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[Copy of Participants' Information Sheet]

TRINITY COLLEGE DUBLIN

INFORMATION SHEET FOR PROSPECTIVE PARTICIPANTS

'Computer Games and Motivation in Foreign Language Vocabulary Acquisition'

This study is being carried out as part of a Research Paper investigating participants' motivation in using computer games to study a foreign language.

Participants must be 18 or older and must be competent to provide consent to participate. Participants must be native English speakers who are currently engaged in studying Japanese as a foreign language (in any capacity) or have been engaged in studying Japanese as a foreign language (in any capacity) sometime in the last year.

Participants will be asked to answer a series of multiple choice questions related to their interest in computer games, their experience using computer games to study Japanese, and their opinions on hypothetical learning situations. The answers provided will be aggregated and used to make observations about trends among learners.

Participation in this study is entirely voluntary. Participants may refuse to answer any questions and are free to withdraw by closing the survey without penalty at any point. Please note that Survey Monkey automatically saves all responses, even if participants close the survey without completing it or state that they do not wish to submit your answers. In this case their answers will be manually deleted within 48 hours, and will not be included in the final survey results.

Participation in the study is expected to take approximately 15 minutes. Participants will have the opportunity to reflect on their own learning habits during the study.

Participants will be asked to state their age, country of residence and gender (optional). No personally identifiable information, such as names, addresses or contact details will be collected. Individual responses will be viewable only by the researcher (Conor Sneyd) and their supervisor (Professor Inmaculada Arnedillo-Sánchez). Anonymously aggregated responses will be published in a Research Paper for an M.Sc. in Interactive Digital Media at Trinity College Dublin, and may also be published in an academic journal in the future.

In the highly unlikely event that you reveal any illegal activities while taking part in the study, the researcher will be obliged to report these to the relevant authorities.

Declaration of conflict of interest: As participants will be recruited via various social media pages and groups related to studying Japanese, some participants may have a previous relationship with the researcher, which the researcher (Conor Sneyd) will be taking advantage of to further their research.

If you have any questions before, during or after taking the survey, you can contact the researcher (Conor Sneyd) by email at sneydc@tcd.ie.

[Copy of Participants' Consent Form]

TRINITY COLLEGE DUBLIN

INFORMED CONSENT FORM

'Computer Games and Motivation in Foreign Language Vocabulary Acquisition'

RESEARCHER: Conor Sneyd

BACKGROUND OF RESEARCH: This study is being carried out as part of a Research Paper investigating participants' motivation in using computer games to study a foreign language.

PROCEDURES OF THIS STUDY: Participants will be asked to answer a series of multiple choice questions related to their interest in computer games, their experience using computer games to study Japanese, and their opinions on hypothetical learning situations.

PUBLICATION: Results will be aggregated anonymously and published as part of a Research Paper for an M.Sc. in Interactive Digital Media at Trinity College Dublin. The Research Paper, or an altered version of it, including the anonymously aggregated results of this study, may then be published in an academic journal in future.

DECLARATION:

- I am 18 years or older and am competent to provide consent.
- I am a native English speaker and I am currently engaged in studying Japanese as a foreign language (in any capacity) or have been engaged in studying Japanese as a foreign language (in any capacity) sometime in the last year.
- I have read, or had read to me, an information sheet providing information about this research and this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.
- I agree to my data being used for scientific or academic purposes and I have no objections to my data being published in scientific or academic publications in a way that does not reveal my identity.
- I understand that if I make illicit activities known, these will be reported to appropriate authorities.
- I freely and voluntarily agree to be part of this research study.
- I understand that I may refuse to answer any question and that I may close the survey at any time without penalty.
- I understand that Survey Monkey automatically stores all answers, even when participants close the survey without completing it or state they do not wish to submit their answers before completing the survey. In these cases the answers will be manually deleted within 48 hours, and not included in the final survey results.
- I understand that I may contact the researcher, Conor Sneyd, at sneydc@tcd.ie, at any time before, during or after taking part in the study, to ask questions or express concerns about the

study.

- I understand that my participation is anonymous, and that no personal details other than my age, country of residence and sex (optional) will be stored.
- I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.
- I have received a copy of this agreement (by printing this Informed Consent Form or contacting the researcher).

I agree to the above declaration ☐ **I do NOT agree to the above declaration** ☐

PARTICIPANT'S NAME: _____

PARTICIPANT'S SIGNATURE: _____

DATE: _____

STATEMENT OF RESEARCHER'S RESPONSIBILITY: I have explained the nature and purpose of this research study, the procedures to be undertaken and any risks that may be involved. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent.

RESEARCHERSCONTACTDETAILS:
Email: sneydc@tcd.ie

RESEARCHER'S SIGNATURE:

DATE: