

**Using the *Minecraft* Affinity Subspace “Frist Dimension” to Negotiate Information  
Literacy**

by

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## Abstract

Online video games and their affinity spaces and subspaces are defined as virtual locations where groups of people gather to share common interests, and a place where learning happens (Gee, 2003). Recent studies have demonstrated the impact that affinity spaces and video games have on the development of skills such as literacy, social interactions, problem-solving, and critical thinking amongst players (Gallego, 2016; Shaffer, 2012). Studies show that video games such as *Minecraft* demand players search for information. As an open-ended world, *Minecraft* offers players a free space to explore their creativity, allowing them to become authors in the game by modifying and developing original dimensions that can be played with other users. The present study analyzed *Minecraft's* affinity subspace Frist Dimension to understand the question of (1) how gamers acquire and negotiate gaming literacy skills, and to answer the following sub-questions: (a) How do players negotiate gaming information literacy skills? (b) What vocabulary do players use to develop or build information literacy skills?

Previous research identified negotiation and vocabulary and learning as essential competencies in gaming literacy (Lapina; Petukhova, 2017). These competencies help to develop a set of learning skills that encourage players to interact, communicate and expand their knowledge of the game. For this study, twenty-five Frist Dimension posts were extracted from the thread that reflect the communication cycle, vocabulary used, and roles of the players in the forum. Garton, Haythornthwaite and Wellman's (2006) framework on social network approach was used to extract the data through observation, analyzing individual/social interactions, the flow of information and patterns of communication among people. These criteria draw the limitations and boundaries of the sample.

Results indicate that verbal interactions of players communicating in Frist Dimension demonstrate a combination of social practices and technical skills, such as support, gamer jargon, cooperation, and negotiation of information through suggestions. These practices contribute to players' collective

development of game-specific literacy. This study will help improve our understanding of affinity subspaces and how players for information exchange, social interactions, and the co-construction of gaming literacy operationalize them.

## **Preface**

This thesis is an original work by Olga J. Gonzalez A. No part of this thesis has been previously published.

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## CHAPTER 1: Introduction

Playing video games often extends beyond the game software; it can involve a set of different spaces that exist to support social gameplay from millions of other players playing the same video game (Pellicone & Ahn, 2014). In addition, as James Paul Gee (2003) states, "video games involve the player in a compelling world of action and interaction, a world to which the learner has made a commitment, in the sense of engaging in the sort of play" (p. 68). Video games make a unique space of social engagement or affinity spaces or subspaces as Gee calls them. Therefore, there is a relation associated with the game experience and the valuable knowledge that players can take from playing the game and sharing knowledge in these online spaces.

Online video games and their affinity spaces are defined by James Paul Gee (2004, p. 98) as "a place (physical, virtual, or a mixture of the two) where people interact with each other, often at a distance (that is, not necessarily face-to-face, though face to face interactions can also be involved), primarily through shared practices or a common endeavor (which entails shared practices), and only secondarily through shared culture, gender, ethnicity, or face-to-face relationships" have become fascinating areas of study. Recent studies have indicated the impact that affinity spaces and video games have on the development of skills in video game players, such as literacy, social communication, problem-solving, and critical thinking skills (Gallego, 2016; Shaffer, 2012). From *Minecraft*, *World of Warcraft*, and other games, playing video games brings together diverse skills including teamwork and communication with other players, which helps players to develop a natural learning environment within a space that is player controlled.

Affinity spaces offer a new space for players and non-players in virtual environments to discuss and share content related to video games or any other topic. These affinity spaces can break into numerous sub-communities, sub-discussion or sub-spaces as seen in this study. A subspace is a division of the main affinity space where the player focuses on a specific interest and passion, creating connection between spaces in different affinity spaces. Affinity space and subspace creates a collaborative learning environment inside gaming communities. Consequently, video games are more than challenging; they can be

seen as fun and educational tools. This informal learning can increase players' learning potential, as it does in the case of the video game *Minecraft*.

The *Minecraft* affinity subspace Frist Dimension is a Java edition forum, dedicated to the development of a new dimension with a team of 50 members. This subspace allows players to create modifications in the dimension, discuss and suggest new ideas and solve problems while working cooperatively with other participants. For example, players are able to upload and download content, share game codes, discuss ideas, issue challenges, publish stories, make comments, and much more. Frist Dimension offers a welcoming environment for new players with no or little knowledge of the game to players with high levels of expertise. As an observer with neophyte knowledge about *Minecraft*, exploring players' interactions and their use of the game's lexicon was overwhelming at first. The use of words such as "dimension," "creeps," "steampunk," and others by members of the player community led me to reach for *Minecraft* manuals such as *Minecraft Mini-Encyclopedia* or *The Ultimate Player's Guide to Minecraft* and to watch YouTube understanding more about this highly original video game. The amount of freedom players have in the videogame motivated them to hunt for information to get a better understanding of how to play the game. This search for information follows American Library Association (1989) definition of a person who is information literate, as "able to recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively." Information literacy has been traditionally studied in the field of libraries and information sciences (LIS). It has been demonstrated the world of information is complex, and navigating it can be challenging. Information literacy gives us the ability to think most critically and make balanced decisions. Understanding the need and the ability to locate and share information lies at the core of information literacy. It is essential to recognize the importance of information literacy in everyday life, and especially the importance that these skills have in one of the fastest-growing entertainment industries that are video games.

Studies show that video games facilitate information literacy skills such as searching for information related to game play such as *Minecraft*. *Minecraft* requires players to look for

information and be informed in order for players to identify when information is needed, where to find it, and what information would be most useful to solve puzzles and problems. Indeed, video games and their affinity spaces, better known as discussion forums, provide an informal learning environment for players, offering recreational and entertaining materials through virtual communities (Baker, 2014) that help to develop educational and social skills. This study examined player interactions and vocabulary specific to *Minecraft* to understand players' approaches in obtaining and negotiating information. Amongst the literature reviewed for this study there are a defined number of studies that have examined the potential that video games affinity spaces have in the development of literacy skills in players.

The thesis is organized into five chapters: Chapter 1 describes the statement of the problem and the research question. It also shows the methodology and limitations of this study. Chapter 2 provides a detailed literature review that focuses on the essential elements around affinity spaces and *Minecraft*. Chapter 3 centers on a detailed exploration of *Minecraft*. Chapter 4 explains the results obtained in the study and Chapter 5 summarizes the outcomes of the research question and the applications for future research.

### **1.1. Statement of the Problem**

Finding necessary information quickly and conveniently is challenging. As Bebbington (2014) mentions, “knowing how to find the information one needs, where to find it, how to assess the quality of information and how to use it effectively are essential survival skills” (p. 1). Hence, the development of valuable information literacy skills is essential for everyone including Generation Z (McFadden, 2019). Modern research suggests that members of this age group born in the 1990s-2000s (Burke & Marsh, 2013) lack explicit knowledge of how the Internet works and how to evaluate the information they find in cyberspace (Beck & Wade, 2006). For example, some people of these groups are unable to access, evaluate, use, manage appropriately, and add information in this environment (Trilling & Fadel, 2009).

There is a distinctive difference between information literacy curriculum expectations and student's learning literacy skills (Julien & Barker, 2009) Through the evolution of digital technologies, students acquire new tools to improve their skills, new approaches to acquiring information, knowledge, and new ways to develop social behaviours. Accordingly, different learning spaces have formed where players can acquire and put into practice their literacy skills, and this is the case with video games and affinity spaces (Aarseth, 2003). Young people's interaction with the online world of video games, making "a difference, appreciating the value of teams, and welcoming global collaboration" (Jenkins, 2016).

According to a 2018 survey by the Entertainment Software Association, more than 64% of Canadians defined themselves as gamers, as they regularly play video games (Entertainment Software Association, 2018). Video games are becoming more popular as a pastime, changing their primary objective from play to informal learning and skill-development. Adams (2007) states, "not only do games promote reading within the game spaces themselves, players also reach out to online sources such as official and unofficial websites, or other sources such as manuals to succeed in a game situation" (p. 197). For example, games can help individuals build a sense of self and present an engaging learning experience. Also, games incorporate problem solving, encourage participation in learning communities, and develop cognitive skills (Burke & Marsh, 2013).

James Paul Gee (2004) says that "players use affinity spaces dedicated to a particular game or type of game for learning; the game constitutes a complex designed system and the player orients his or her learning to issues of design and the understanding of complex systems" (p. 99). Following Gee's idea, affinity spaces create engagement among players in online communities. Users develop their literacy skills through participation in open platforms (informal platforms) such as gaming. Video games have grown in style, changing their culture, and becoming excellent spaces to build specific skills and abilities.

As a result, this study will focus on analyzing *Minecraft's* online communication platform between players destined to develop a dimension called Frist Dimension, to

understand the interaction between players and the skillset needed to obtain and negotiate information.

## 1.2. Research Question

Video games are acquiring new distinctions and filling new roles in global culture (Hayes & Duncan, 2012). Over the years, video game popularity has grown, forming informal spaces that develop learning, literacy, and social engagement. As one of the most popular video games among players with educational and entertaining ends (Stuart, 2014), *Minecraft* inspires players to build stories, video tutorials, manuals, and fan art, as well as encourages frequent participation and contribution in affinity spaces. Therefore, *Minecraft* plays a role in player learning and social development (Cilauro, 2015).

Online video games and their affinity spaces have changed the understanding of traditional learning, negotiation, and information literacy. This research analyzes a central question:

1. How do *Minecraft* players use the affinity subspace Frist Dimension to acquire and negotiate literacy?

The following sub-questions will help to answer the central question:

- (a) In what ways do players negotiate gaming information literacy skills?
- (b) What vocabulary do players use to develop or build information literacy skills?

These two sub-questions are posed to analyze the level of understanding and interactions of the players inside the affinity subspace Frist Dimension. Previous research identified essential competencies in gaming literacy, for example, negotiation, vocabulary, and learning (Lapina & Petukhova, 2017). Negotiation is critical for obtaining gaming information literacy; it is vital in the communication within diverse spaces and the ability to respect and follow different communication forms in online games and virtual spaces. On the other hand, vocabulary is the use of words and abbreviations that have helped the online community to communicate and cooperate (Lapina & Petukhova, 2017).

Consequently, these abilities combine to develop a set of learning skills that help players to interact, communicate, solve problems, and expand their knowledge not just in *Minecraft* but a set of skills that they can use in other different social and game spaces.

This study brings together my interest in *Minecraft* and information literacy. My initial interest in conducting this study arose from my own experience in *Minecraft*, being in the position of not knowing the vocabulary, slang, and by following the interactions inside affinity subspaces, which led me to understand the importance that information literacy plays in video games. *Minecraft* challenges players to seek and evaluate information. For this reason, my research questions identify the learning and negotiation processes used in the subspace First Dimension and to understand the interaction of players in this subspace.

### **1.3. Methodology**

This study was conducted using an interpretative framework used in qualitative research. Pope and Mays (1995) define qualitative research as "the development of concepts of which help us to understand social phenomena in natural settings, given due emphasis to the meaning, experiences, and views of all the participants" (p. 43). Malterud (2001) refers to theories of interpretation related to the human experience. Following these ideas, Consalvo and Dutton (2006) offered a qualitative framework to explore and study textual/critical game analysis, focusing on the study of players and video game genres without losing the aspects of the video game. This framework represents both points of view, understanding of the human experience and the elements of including studies of video game players or critiques of the game itself (Consalvo & Dutton, 2006).

Indeed, the qualitative framework provides a depth insight on video game affinity spaces analysis, since it answers what, how, or why specific events occur within a particular context in digital games. This approach provides an in-depth understanding of the data collected throughout observations, checking and analyzing each player's comment, and identifying patterns in the game spaces. The literature review helped to identify critical

elements in the impact of video games' affinity subspaces to develop literacy skills in players.

This research evaluates an affinity subspace called Frist Dimension hosted on the website <https://www.minecraftforum.net>. As the forum contains thousands of discussion threads, I decided to select the thread with more views (28,829 views) in order to obtain a dataset rich in content. Hence, the framework by Garton, Haythornthwaite and Wellman (2006) on social interaction in online communities, was applied in the data selected since it targets individual interactions, flow of information and network structures of communication patterns amongst people. As a result, the framework helps to limit and extract 25 posts that represent the communication exchange, responses, and roles of the players in the forum, in order to obtain a valuable and concise result.

Additionally, from the entire body of interactions, I coded those words that were according to Pellinoce & Ahn (2014):

1. Social in nature, such as the sharing of accomplishments and social supports for the game activity; or
2. Instrumental in nature, such as when players provided details and information related to the steps or instructions of how to play the game.

The application of the framework and interaction was utilised to study the threads indicating learning skills and power discourses, encouraging sharing knowledge and ideas, and enhancing conversation.

#### **1.4 Scope and Limitation**

This thesis aims to analyze one affinity subspace called Frist Dimension from the video game *Minecraft*. In this forum, players identify themselves with nicknames and avatars, and other information such as gender, age, culture, or username, are not displayed in the subspace, creating an anonymized social identity. Therefore, I did not follow a gender-critical approach in this study and instead followed an online social communication analysis for player interactions. Drawing on the corpus compiled from eleven players,

this study analyzes the importance and impact that Frist Dimension has on players and the development of their literacy skills.

For this study, ethics approval was unnecessary given Article 2.2 from “Research Exempt from REB Review” at the University of Alberta which reads: “Research that relies exclusively on publicly available information does not require REB review when:

1. The information is legally accessible to the public and appropriately protected by law.
2. The information is publicly accessible, and there is no reasonable expectation of privacy.”

## CHAPTER 2: Literature Review

### 2.1 Introduction

Currently, there is a considerable amount of research related to information literacy, and affinity spaces as platforms for informal learning (Gee, 2004; 2007; Pellicone & Ahn, 2014). However, how players negotiate literacy and use it to develop their information skills is still under study. This literature review starts with an introduction to video games as a learning environment, followed by descriptions of information literacy and affinity spaces. The chapter concludes with a discussion of information literacy and negotiation in affinity spaces.

### 2.2 Video Games and Learning

Video games can engage players in a deep and rewarding form of learning (Gee, 2007). They facilitate learning by integrating critical thinking, social interaction, and technology in an enjoyable setting (Gee 2007; 2004). According to the Entertainment Software Association of Canada (ESAC), more than 61% of Canadians self-identify as gamers, spending an average of 10 hours per week playing online games (ESAC, 2018). There is some concern about the negative effects that excessive video game use can have on players' health and wellbeing (Weis & Cerankosky, 2010), creating an addiction or behavioural disorder in players; for example, the American Psychiatric Association has assigned "Internet Gaming Disorder" as a condition for those individuals spending exorbitant amount of time in-game, aggression, social conflict, and other symptoms (American Psychiatric Association, 2013). However, other studies have shown the positive impact that online video games have on people in terms of learning and developing social skills, which, in turn, can change the brain structure in positive ways (Foster, 2009).

Pleasure is the heart of learning when it comes to video game use. Videogames offer feelings of satisfaction and gratification, and have an impact on the way people think, evaluate and live; reconstructing the learning process (Gee, 2007). James Paul Gee (2004;

2005), a pioneer in the area of videogames and learning, states “video games are sites for learning, developing problem-solving skills that are relevant outside the gaming context.” Echoing this position, David W. Shaffer (2008) in the article *How computer games help children learn*, supported the use of games in education, claiming that they fit with a “problem based and creative approach to learning” (Shaffer, 2008). To that end, Jenkins et al. (2009) described how video games are not always fun, but that the challenges during the game engage the student in the learning process by controlling their interactions (Jenkins et al., 2009). For example, players have the opportunity to experiment, fail and rehearse those skills repeatedly until finding success, searching for information as needed; in the meantime, the game offers a level of difficulty for players, teaching them how their decision and performance in the game affects their outcome. This experience creates a teaching-learning process. Kurt Squire (2006) emphasizes, “Many in the current generation of students first experience history, urban planning, or business not through a school, television, or movies but through video games. The SimCity, Civilization, and Tycoon simulation games, and for about as long, educators have hypothesized that videogames could be effective learning tools” (p. 25). The argument offered by Squire (2006) focuses more on the process of learning than the content of what is learned, offering individuals a different learning experience (Gee, 2007).

Sara De Freitas (2006) studied games and simulations that support learning strategies. This study points out the benefits that learners and teachers obtained from using video games as an educational tool. For example, De Freitas found an increase in students’ motivation to learn and that “learners’ groups with specific skills needs (e.g. literacy and numeracy) were more engaged by games and simulations than by traditional text-based approaches to learning” (p. 348). Certainly, video games are seen as a balance between entertainment and education (Gee, 2007). For instance, Papastergiou (2009) focuses on the effectiveness and motivational appeal of digital game-based learning. Papastergiou (2009) found that individuals were more motivated in tasks when playing games in the online learning environment compared to traditional teaching and learning methods where students found it exhausting and monotonous.

Video gaming is an activity where individuals are active and eager to learn, and where they clarify ideas through discussion, debates, and sharing information (Gee, 2007). Jeannette R. Shaffer (2012) observed that teens were using online communities to improve their social and learning skills. In her study, 180 teen gamers were surveyed, and the results showed that 85% of gamers communicate with others online while 72% stated they have played the game with others in the same room. The majority of teens preferred online games for the opportunity to meet people, to compete, and to engage in collaborative play (Shaffer, 2012). Similarly, Squire (2006) suggested that Massively Multiplayer Online Games (MMOG), where players cooperate with thousands of other players in real time, offer a new form of social interaction. He observed group collaboration, competition, and communication between gamers, describing their experiences as social.

Using video games as interactive and educational tools supports different learning experiences, engages groups of learners in ways that support learning construction, and aids in the development of 'skills-based' learning such as numeracy, literacy, and IT skills (De Freitas, 2006). Foster (2009) analyzed the impact that simulation games such as Roller Coaster Tycoon 3 had on the learning process of six 11-year-old students. His research showed that students acquired new knowledge and information literacy skills; however, his results demonstrated that learning through video games is possible but complicated at the same time. To this end, Shaffer (2008) affirms video games supply a learning experience by allowing players to develop new identities and continue through the game by engaging in communities of practice.

Researchers have demonstrated how video games enable learning. They offer individuals the opportunity for critical thinking, problem-solving, and social interaction while engaging with technology (Gee, 2007). Furthermore, the findings from several studies (Hayes & Duncan, 2012; Gee, 2007; De Freitas, 2006; Foster, 2009) indicate that video games increase personal confidence by enabling individuals to be included in social communities while they support academic learning.

### 2.3 Information Literacy

Paul Zurkowski, president of the Information Industry Association, introduced the term information literacy (IL) in 1974. The concept was used in a proposal submitted to the National Commission on Libraries and Information Science (NCLIS) (Spitzer; Eisenberg; Lowe, 1998). Zurkowski stated that individuals trained in information literacy learned skills and techniques to manage information and information tools to find solutions according to the information needs of people in various contexts (Spitzer; Eisenberg; Lowe, 1998). Two years later, in 1976, Burchinal followed Zurkowski's ideas, and emphasized the skills that information literate individuals must have to locate and use information more efficiently and effectively (Corrall, 2003). From the 1970s to 1980s, different IL definitions, skills and criteria were developed and released (Virkus, 2011). In 1989, the American Library Association (ALA) recognized IL as a set of skills for lifelong learning. They gave the following definition: "To be information literate an individual must recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively" (American Library Association, 1989).

The Canadian Association for School Libraries (CASL) in 2003 examined the standards around information and literacy, suggesting Information Literacy is an essential skill set of the 21st century. In this document, it defined an information literate citizen as one whom:

- Works independently and collaboratively to solve problems.
- Analyzes information critically in all its formats and all media contexts.
- Applies information strategically to solve personal and social problems.
- Makes decisions based on accurate and current information.
- Uses information and communication technologies.
- Respects information sources and diverse perspectives.
- Honors intellectual property and privacy rights.
- Appreciates the aesthetic qualities of various creative and scientific expressions.

- Communicates effectively and expressively using a variety of information and media formats.

Additionally, the American Association for Higher Education and the Association of College and Research Libraries (ACRL) in 2016 reviewed and endorsed a framework and definitions for IL proclaimed by the American Library Association (ACRL, 2016). In the latter case, the ACRL (2016) framework offered six flexible and interconnected core courses in which learners can increase and expand their understanding and learning of IL concepts. The six frames are divided into two categories: “knowledge of practice, ways in which learners can increase their understanding of IL concept, and disposition, address the affective, attitudinal or valuing dimension of learning.” (p. 7- 8) The table below demonstrates the contribution that each frame and set has towards IL.

**Table 1.** Framework for Information Literacy for Higher Education

<b>Frames</b>	<b>Knowledge practices:</b> Learners who are developing their information literate abilities	<b>Dispositions:</b> Learners who are developing their information literate abilities
Authority is constructed and contextual	<ul style="list-style-type: none"> <li>• define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event);</li> <li>• use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility;</li> <li>• understand that many disciplines have acknowledged authorities in the sense of well-known scholars and publications that are widely considered “standard.”</li> </ul>	<ul style="list-style-type: none"> <li>• develop and maintain an open mind when encountering varied and sometimes conflicting perspectives;</li> <li>• motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways;</li> <li>• develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview.</li> </ul>
Information creation as a process	<ul style="list-style-type: none"> <li>• articulate the capabilities and constraints of information developed through various creation processes;</li> <li>• y assess the fit between an information product’s creation process and a particular information need;</li> <li>• articulate the traditional and emerging</li> </ul>	<ul style="list-style-type: none"> <li>• are inclined to seek out characteristics of information products that indicate the underlying creation process;</li> <li>• value the process of matching an information need with an appropriate product;</li> </ul>

	<p>processes of information creation and dissemination in a particular discipline.</p>	<ul style="list-style-type: none"> <li>● accept that the creation of information may begin initially through communicating in a range of formats or modes.</li> </ul>
Information has value	<ul style="list-style-type: none"> <li>● give credit to the original ideas of others through proper attribution and citation;</li> <li>● understand that intellectual property is a legal and social construct that varies by culture;</li> <li>● articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain.</li> </ul>	<ul style="list-style-type: none"> <li>● respect the original ideas of others;</li> <li>● value the skills, time, and effort needed to produce knowledge;</li> <li>● see themselves as contributors to the information marketplace rather than only consumers of it.</li> </ul>
Research as inquiry	<ul style="list-style-type: none"> <li>● Formulate questions for research based on information gaps or on reexamination of existing, possibly conflicting, information;</li> <li>● determine an appropriate scope of investigation;</li> <li>● deal with complex research by breaking complex questions into simple ones, limiting the scope of investigations.</li> </ul>	<ul style="list-style-type: none"> <li>● consider research as open-ended exploration and engagement with information;</li> <li>● appreciate that a question may appear to be simple but still disruptive and important to research;</li> <li>● value intellectual curiosity in developing questions and learning new investigative methods;</li> </ul>
Scholarship as conversation	<ul style="list-style-type: none"> <li>● cite the contributing work of others in their own information production;</li> <li>● contribute to scholarly conversation at an appropriate level, such as local online community, guided discussion, undergraduate research journal, conference presentation/poster session;</li> <li>● identify barriers to entering scholarly conversation via various venues.</li> </ul>	<ul style="list-style-type: none"> <li>● recognize they are often entering into an ongoing scholarly conversation and not a finished conversation;</li> <li>● seek out conversations taking place in their research area;</li> <li>● see themselves as contributors to scholarship rather than only consumers of it;</li> </ul>
Searching as strategic exploration	<ul style="list-style-type: none"> <li>● determine the initial scope of the task required to meet their information needs;</li> <li>● identify interested parties, such as scholars, organizations, governments, and industries, who might produce information about a topic and then determine how to access that information;</li> <li>● utilize divergent (e.g., brainstorming) and convergent (e.g., selecting the best</li> </ul>	<ul style="list-style-type: none"> <li>● exhibit mental flexibility and creativity;</li> <li>● understand that first attempts at searching do not always produce adequate results;</li> <li>● realize that information sources vary greatly in content and format and have varying relevance and value, depending on the needs and nature of the search</li> </ul>

	source) thinking when searching.	
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*Note.* Association of College and Research Libraries (ACRL). (2016). Framework for Information Literacy for Higher Education. Chicago, Illinois.

The framework as the ACRL (2016) advises “The Framework is a mechanism for guiding the development of information literacy programs within higher education institutions while also promoting discussion about the nature of key concepts in information in general education and disciplinary studies.” (p. 24) This framework for IL tackles the rapidly changing higher education environment, as well as the responsibility that educational domains including librarians have in the development of IL curriculum.

Information literacy has been a topic of increasing academic discussion. It has been considered as a set of educational skills that is “common to all disciplines, to all learning environments, and all levels of education” (ACRL, 2000). Virkus (2011) indicates that there is a need in modern society for competencies dealing with information such as finding and using information. Library and academic institutions have tried to help individuals by teaching critical thinking as it relates to information literacy in order to locate and find information in an era of fake news (Crystle, 2012).

## **2.4 Gaming Literacy**

As society and communities change, notions of literacy change with it. Now, the concept of literacy covers "digital, programming, information and communication technology, and visual" (American Library Association, 2019). Librarians, and educational institutions, have been finding new ways to adapt the traditional literacy skills to the emerging literacy that has been growing from the use of computers and changes in social communication. Zimmerman (2017) studied the meaning and importance of game literacy in today's society, defining it as "Gaming literacy, is the ability to understand and create specific kinds of meanings.” (p. 24) New literacy as understood through video games plays a vital role in literacy education by examining new learning methods through producing and co-operating instead of merely consuming content (Gerber, 2009).

Gerber (2009) emphasizes video games as new literacy stating "new literacies offer an integrated approach to learning and literacy through the intersections of reading, writing, listening, viewing, speaking, and presenting." (p. 43) Indeed, video games provide opportunities for participants to work in a collaborative and integrative learning environment. For example, Lo and Mok (2018) affirm "gaming literacy not only is a creative development of language but also has its pedagogical potentials, even aiding the acquisition of a second language." (p. 134) Consequently, Gee (2007) proposes that student learning can occur using games. Hence, the participation in online gaming, online gaming communities, and production of paratexts such as game diaries, design histories, arts expose gamers to different challenges putting in practice cognitive, social and intellectual skills in a different learning environment.

There is an increasing body of research indicating a connection between literacy and gaming. For instance, in the article, "The Mangle of Play," Steinkuehler (2006) examined the informal socializing and in-game talk in massively multiplayer online games (MMOGs) and found the importance of knowing the specialized language and social practices inherent in the game to communicate and socialize. Building on this work, Niemeyer and Gerber (2015) studied the complex literary practices that develop when adolescents participate in *Minecraft* gaming communities as they create virtual world walkthroughs, commentaries, and paratext resources. This research indicates that obtaining gaming literacy motivates players to search and share information while enhancing the learning and education process.

## **2.5 What are Affinity Spaces?**

James Paul Gee (2004) defines affinity spaces as "physical space or virtual locations (or some combination of the two) where people shared interest." Steinkuehler (2005) emphasizes that affinity spaces can be construed as places where people meet to socialize, support each other by sharing knowledge, creating content, or seeking information around a common topic (Gee, 2004; Steinkuehler, 2005). An example is

massive multiplayer online games MMOG, a type of virtual world that supports the creation and development of an active online affinity space (Steinkuehler, 2007)

Gee (2005) states, “One of the main characteristics of affinity spaces is that the content is mutable, and evolves through the social interaction that takes place in the space.” In this case, affinity spaces include local learning interactions with a group of members that do not form a community; nevertheless, each member brings a conception of a community (Pellicone & Ahn, 2014). For example, games and gaming culture offer a space for users to socialize and interact online, providing a form of affiliation between learning and literacy through digital media (Hayes & Duncan, 2012). Gaming affinity spaces are excellent environments for informal learning since they are mutable, experimental, and quickly respond to the needs of gamers. In contrast, formal learning environments are being challenged by digital technologies (Gee, 2005), generating a transformation in higher education, allowing students to be in charge of their learning process, for example, the use of social media or forums as social learning spaces (Dabbagh & Kitsantas, 2012).

## **2.6 Informal Learning in Affinity Spaces**

Learning is one of the processes that can be combined with our daily social activities (Wenger, 1998). Frank Coffield (2000) defined informal learning as “the incidental or consequential education that happens through engagement with daily activities outside of pedagogical direction.” This is particularly relevant to a conversation about gaming communities, where informal learning develops through participation and interaction with other gamers. Informal learning discussions provide a useful lens to investigate learning as a social act in unstructured pedagogical interactions, and the theory of affinity spaces (Hayes & Duncan, 2012) contributes to the understanding of social dynamics inherent in these communities.

Jenkins (2006) describes an online community as an affinity space, defined as an "opportunity to provide powerful opportunities for learning, since people can participate in various ways according to their skills and interest" (p. 177). Schugurensky (2000)

categorized three different types of informal learning: self-directed learning, incidental learning, and socialization. These different categories show aspects of informal learning in regards to the learner's awareness, and in association with their daily interactions. Hence, Gee and Hayes's (2012) theory of affinity spaces draws upon the work of Schugurensky (2000) that provides a broader framework to situate informal learning. Individuals who share similar values and goals visit affinity spaces, to pursue social interaction as motivational value to continue with the learning process through feedback or communication exchange.

The affinity space concept is valuable for this study, as it describes and explains the importance of social interaction for informal learning (Hayes & Duncan, 2012). Affinity spaces transcend a limited geographic location or specific membership, and they also serve as platforms that promote informal learning. As a result, *Minecraft* as an online platform can be seen as an affinity space that provides multiple online spaces to develop a gamer's information literacy skills.

## **2.7 Information Literacy, Negotiation and Affinity Spaces**

Affinity spaces are online informal learning spaces that support the learning experience, allowing gamers to share knowledge and experiences, and create new dimensions or seek information (Gee, 2004). Lammers, Curwood and Magnifico (2012) found that affinity spaces offer a unique opportunity to study informal learning activities, especially literacy practices.

Indeed, different forms of intellectual activities have been found in informal game spaces, from literacy to scientific thinking (Martin & Steinkuehler, 2010). Lammers aligned with Lankshear and Knobel (2011), defining literacy as “socially recognized ways in which people generate, communicate, and negotiate meanings, members of discourses, through the medium of encoded text” (Lammer, 2011). For example, *Minecraft* is a MMOG that relies upon community settings to obtain and negotiate information about proper play

strategies, opinions or feedback on new ideas or plans. Meanwhile, it contains features that support gamers' critical thinking, problem solving and negotiation skills (Gee, 2005).

Consequently, in order to develop negotiation abilities, the primary key is by communication, for example creating or exchanging ideas or opinions about a specific topic (Fournier, 2000). Bommarito (2014) argues that inside affinity spaces there is a form of intellectual exchange that games develop. This kind of negotiation is defined as "an exchange of ideas that is directly related to or does not supersede the established shared interest or common endeavor of an affinity space." Lemcke-Kibby (2013), who was subsequently interested in online communities mentioned: "Negotiation helps to improve communities' competence, promoting learners' autonomy." This interaction between individuals or groups of people helps them to examine, discuss, collaborate, and negotiate new information, while strengthening the social interaction and collaboration between participants (Susaeta et al., 2010).

Bommarito (2014) argues affinity spaces are "varied and changing," creating a supportive environment, allowing individuals the opportunity to exercise their information literacy skills while negotiating what information is needed and appropriate when making complex decisions (Steinkuehler, 2008; Rivano, 2011). Schrire (2006) maintains that the role of affinity spaces is to provide an opportunity for collaborative learning exchange; as a result, players have the opportunity to learn, socialize and adapt to situations through communication. A study by Silus, K., et al. (2013) showed that a combination of learning and leisure time is essential for the well-being of a person. Allowing participants inside online groups to communicate and negotiate is crucial to developing social relationships based on collaborative information sharing, feedback, debate, and agreements (Silius et al., 2013; Duncan & Hayes, 2016).

Vygotsky's (1978) study claims that social interaction is fundamental to learning. Mvududu and Thiel-Burgess (2012) defined learning as a process, where students are allowed to share knowledge and negotiate information seeking expertises, by creating new understanding and insights in the search for information. Certainly, problem solving

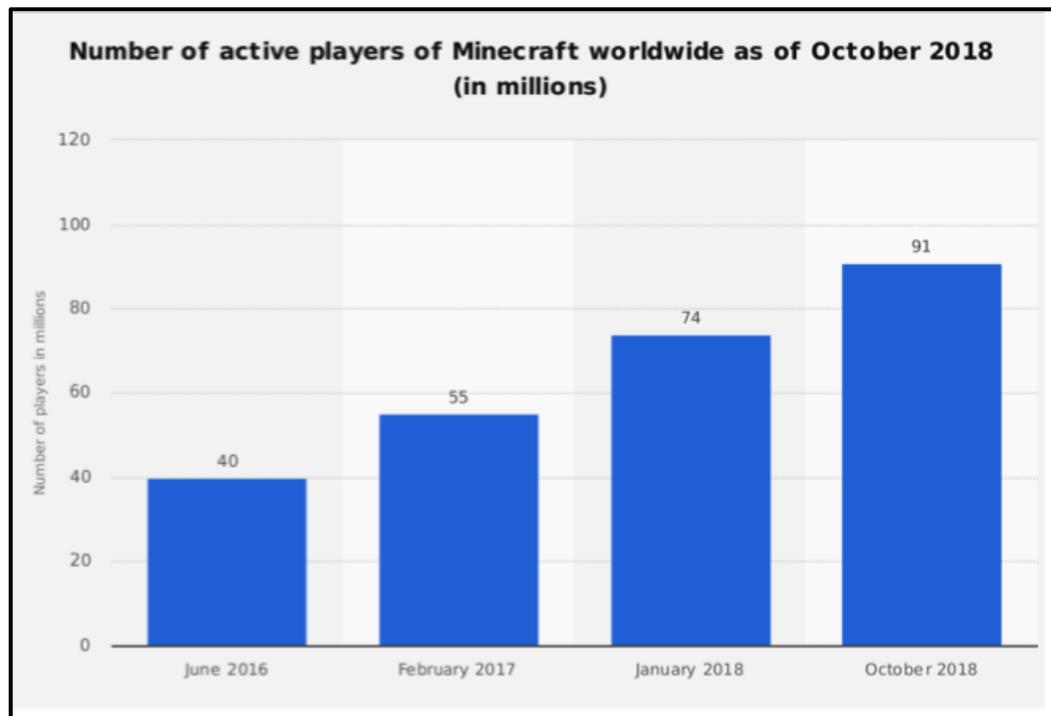
and critical thinking are recognized as 21st-century skills crucial to the development of language acquisition, including negotiating and co-constructing sense in order to effectively communicate with others (Committee for Economic Development, 2006). For this reason, affinity spaces offer a new avenue where people can express themselves and negotiate information literacy (Gee, 2004; 2005).

## CHAPTER 3: MINECRAFT

### 3.1. What is *Minecraft*?

*Minecraft* was created in 2009 by Markus Persson, and officially launched in November 2011 by Mojang. It is characterized as part of the “sandbox” genre of games, offering players tools to put into practice their creativity in convoluted situations, as well as allowing them to become “authors” in the game by modifying and developing fantastic and magical dimensions that can be played with other users.

Since its launch in 2011, *Minecraft* has increased in popularity with both teens and adults. As shown in **Figure 1**, the number of players exceeded 91 million monthly, and over 154 million copies were sold by October 2018, increasing the game’s active users. Subsequently, *Minecraft*’s features make it one of the top open-ended games ever created.



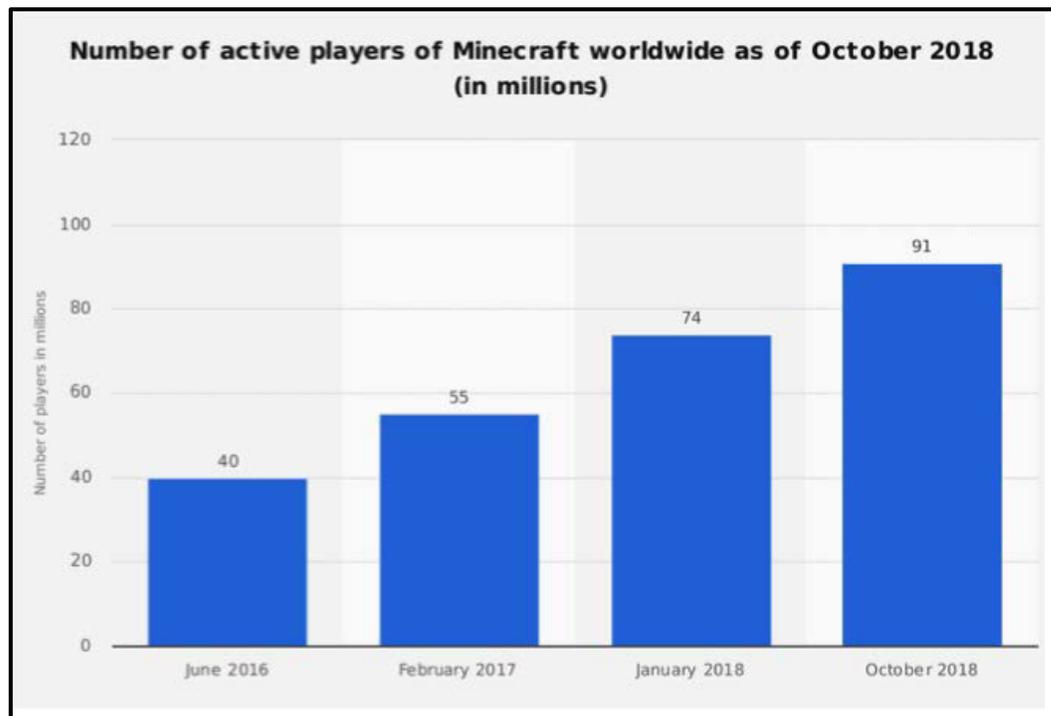
**Figure 1.** Number of active players of *Minecraft* worldwide as of October 2018 (in millions). From *statista: Minecraft active player count worldwide 2016-2018*, by Christina Gough, 2019, <https://www.statista.com/statistics/680139/minecraft-active-players-worldwide/>. Copyright 2019 by Christina Gough/statista.

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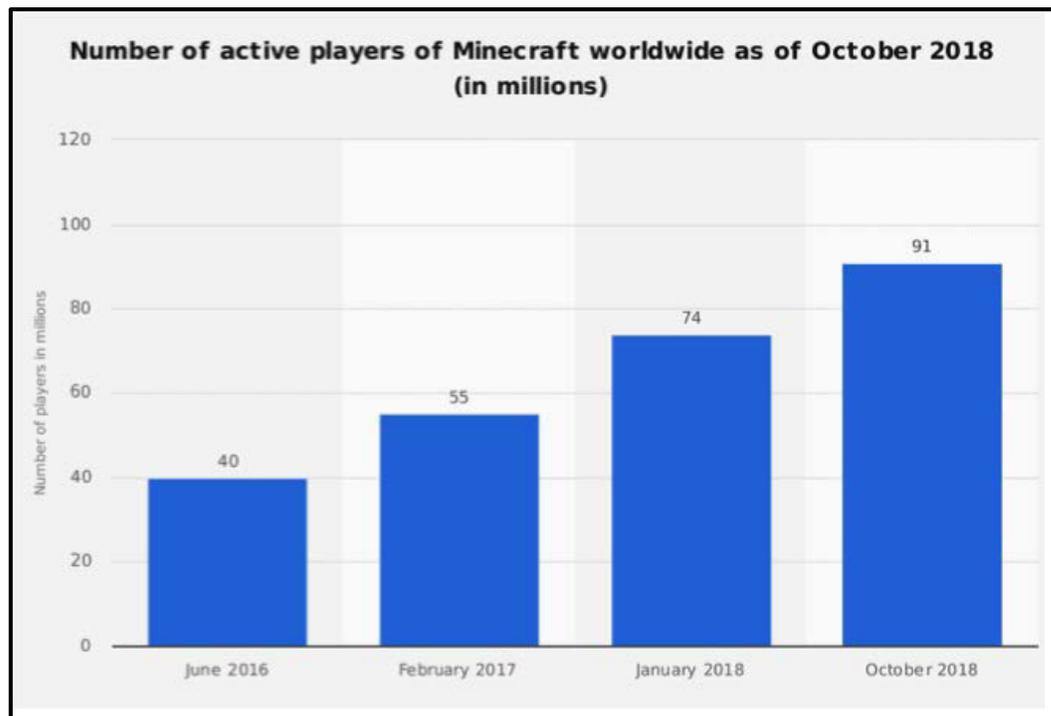
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Indeed, *Minecraft* as a sandbox game is closely tied to its open world design, challenging players' skills, and reconstructing dimensions (Kerr, 2006). Players don't have a specific goal or instructions to follow, but they are required to collect and destroy different types of 3D cubes known as "blocks." Each of the blocks represents natural elements such as soil, sandstone, wood, and wool. Combinations of blocks help to create tools and weapons such as buckets, clocks, bowls, axes, hoes, and shovels. These tools are used to gather materials in order to craft multiple items and expand dimensions, allowing players to recreate castles, rocket ships, and dollhouses once the player becomes familiar with the tools.

### 3.1.1. Modes and Platforms

The game can be played in five different modes: Creative, Survival, Adventure, Spectator and Hardcore:

**Table 2.** Game Modes Descriptions.

<b>Modes</b>	<b>Description</b>
<b>Creative</b>	There are no rules or set goals. Players are free to build any type of structure and collect unlimited resources. Players are able to kill mobs; however, mobs will never attack the player.
<b>Survival</b>	This is the default <i>Minecraft</i> mode. Players are subject to real life needs; for example, they can be hurt by falling, mob attacks, and hunger. As a result, players need to collect resources to build tools, to hunt and kill mobs in order to survive, and to build houses, castles or other structures. Users can adapt the difficulty level from easy, to normal, to hard.
<b>Adventure</b>	Players are allowed to create or explore maps and share them with other users; however, players cannot create new dimensions or destroy blocks, or configure the difficult level.

<b>Spectator</b>	This mode allows players to fly around the biome and look at the structures, but they do not have a health, hunger, and experience bar. Moreover, players cannot start worlds in this mode.
<b>Hardcore</b>	This mode is one of the most difficult and constrained of all modes. Players are not allowed to switch modes once they have started the game. They have only one life, but they can kill mobs and take damage from hostile mobs.

Hence, depending on the player's preference and level of knowledge, they can choose modes and play the game as single or multiplayer. As displayed in Table 2, *Minecraft's* basic games modes (*Creative and Survival*) are the most popular among players because of their features of dynamic nature and accessibility in all platforms which allow players to modify and create structures on their own. *Adventure* mode is supported on PC/MAC, pocket edition and windows; however, *Spectator* and *Hardcore* are only available on PC and Mac.

**Table 3.** Platforms Description

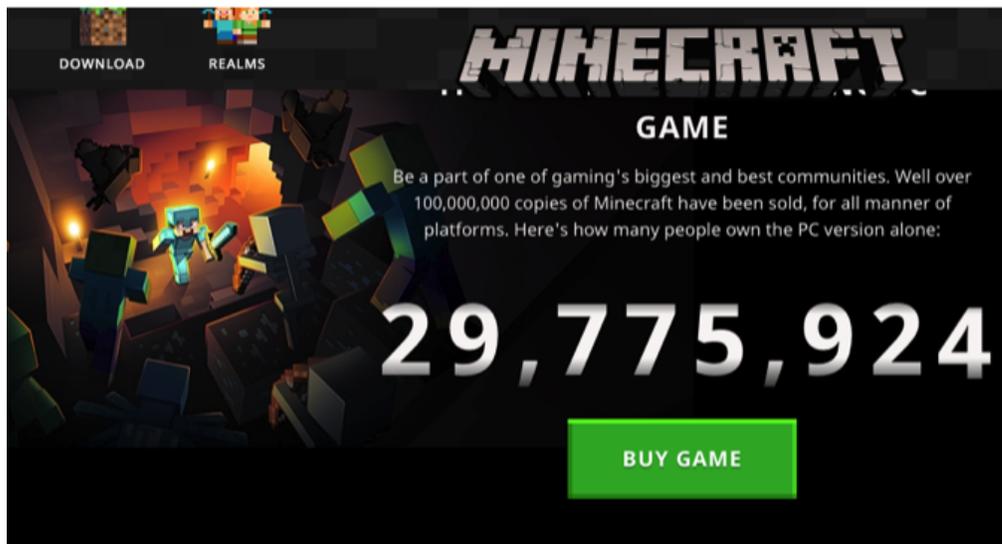
Game Mode	Platform(s)
Creative	         
Survival	         
Adventure	  
Spectator	
Hardcore	

*Note.* Reprinted from Support Game Modes, by Game Modes in *Minecraft*, Retrieved from: [https://www.digminecraft.com/getting\\_started/game\\_modes.php](https://www.digminecraft.com/getting_started/game_modes.php)  
Copyright © 2014-2019 by DigMinecraft.com.

### 3.1.2. *Minecraft* Editions

While the game description and graphics claim *Minecraft* is a straightforward, low-cost game, it is actually challenging and demanding. Therefore, the game's rise in popularity

and demand among young people and adults has resulted in the development of different *Minecraft* editions. Created initially for desktop computers, today, the game is available on different platforms, from phones to educational platforms, virtual reality and more. *Minecraft* has become one of the most influential video games played around the world (Kerr, 2006). The latest *Minecraft* statistics of 2018 show more than \$154 million worth of copies have been sold across all platforms (Girett, 2018). Today, *Minecraft* in the PC only format has sold 29,775,924 copies and sales are continuously growing.



**Figure 2.** The World's Best Selling PC Game [Digital Image]. Retrieved February 26, 2019, from: <https://minecraft.net/en-us/store/>

Currently, *Minecraft* offers three editions: Java, Bedrock and Education. The difference between these three editions is the platform used by the gamer

**Table 4.** Edition description of *Minecraft*

Edition	Platform	Download	Support
Java Edition (Original <i>Minecraft</i> Platforms)	Pc Mac OS X, Windows, Linux	minecraft.net	help.mojang.com

Bedrock Edition (Multi-platform/ Pocket edition)	Pocket/Windows 10 Edition, Samsung Gear VR, Amazon Fire TV, Xbox One, Nintendo Switch, iOS, Android, FireOS devices.	Windows, Oculus, Amazon Fire TV, Apple, Google, Amazon, Xbox Live, and Nintendo eShop stores	<a href="https://www.minecraftforum.net/forums/support/minecraft-bedrock-support">https://www.minecraftforum.net/forums/support/minecraft-bedrock-support</a> or support.xbox.com
Education Edition (Designed for Classroom)	Mac OS X, iOS12 (IPads only) and Windows 10.	education.minecraft.net	education.minecraft.net/support

In this section, it is essential to determine the difference between *Minecraft* edition and modes. *Minecraft* editions refer to the platform where players will play video games; for example, desktop computers (Java edition) is the most popular amongst players for all features and for the free demo version. On the other hand, modes help players achieve the unique outcome they want from the game; for example, players can decide if they want to create a new world in a safe environment or explore and save the world to the end of the world.

In this case, players choose *Minecraft* editions depending on the platform which they feel most comfortable with (McDoanld, 2017). Each version has advantages and disadvantages, including cost (McDonald, 2017); for this reason, players have to consider what they are looking for in the game and where and when they want to play it.

### 3.2. How to play *Minecraft*

*Minecraft* is a complex game, characterized by a lack of narrative and objective, where players are responsible for setting their own goals and challenges to explore and to gather information. The gameplay depends on the chosen mode, which allows players to put into practice their survival skills, managing their health and hunger by collecting food and defending themselves from the mobs. Likewise, the different modes can give players the

opportunity to express their creativity by gathering materials to build anything from simple to complex structures.

Nevertheless, the key to attaining excellent outcomes in the game is understanding the power of information: seeking, evaluating, and becoming informed about the benefits of elements, techniques, and tricks that players can put into practice in the dimensions to create a better experience.

Before starting to play, the first step is to register with Mojang, a process which is similar to opening a free account in any game or social media site. As outlined by O'Brian (2014), once players have finished the registration process, they choose their edition, download the game, and select modes and options. After that, they delve right into the *Minecraft* world.

As information leads to mastery of the game. I will provide an introduction to *Minecraft* Controls, Dimensions, Biomes, mobs, and the implementation of raw elements.

### 3.2.1. Controls and Commands

Starting a new video game is challenging, especially getting used to the controls and commands. *Minecraft* gives players the opportunity to start from a basic level to help familiarize themselves with the game. Once the players start developing more skills and learning new moves, they can then customize the controllers and apply the commands.

**Table 5.** *Minecraft* PC Controls and Actions.

Control	Action
Left mouse button	Attack, destroy blocks, open/close doors.
Right mouse button	Place blocks, use items.

Mouse scroll wheel	Change the hot bar slot.
Middle mouse button	Pick blocks or items by adding to the toolbar (Creative mode only). Control can also be reassigned.
Keys 1 - 9	Select the hotbar slot.
Mouse movement	Look around.
Esc	Pause game.
W	Move forward.
S	Move backward.
A	Move left.
D	Move right.
Space	Jump; fly up (Creative mode only).
Double space	Change flying mode (Creative mode only).
Shift	Fly down (Creative mode only).
E	Open inventory.
Q	Drop item.
T	Open chat in Multiplayer mode.
/	Cheat command.

*Note.* Reprinted (adapted) from *The Ultimate Player's Guide to Minecraft* (p. 22) by Stephen O'Brien (2014) United State: Que. 2015 by "Que Publishing."

Commands are used in *Minecraft* as cheat commands, allowing the player to change game modes, times, weather and objects in an instant. The forward slash (/) determines the use of commands. In addition to changing features inside the game, players learn the importance of words, and are introduced to the coding world. To be allowed to cheat, players have to choose if they allow it or not, after selecting "Yes," and clicking the letter "C," the command bar appears, on which players write and add the commands

(Copeland, 2019). There are different commands available for each platform; the table below illustrates the basic commands in *Minecraft*.

**Table 6.** Commands “cheat” description.

Commands “Cheat”	Description	Example
Clone	Clones a selection of blocks to another location.	/clones
Difficulty	Changes the game difficulty: peaceful, easy, normal, hard.	/difficulty easy
Gamemode	Changes the game mode for everyone in the game. The options are: survival, creative, adventure, spectator or hard.	/gamemode Survival /gamemode Hard
Help	If the player is not sure about the function of a specific command, they can use “/help” to obtain additional information about how it works and the type of console.	/help[command name] /help weather
Kill	This command kills everything including the player. In this case, players can use it to kill specific players or mobs.	/kill /kill<player name> /kill[mobType]
Keep inventory	Allows players to keep their inventory even if they are killed.	/gamerule keepInventory true
Weather	Changes the weather conditions to raining, thunder, or stop rain.	/wather <clear/rain/thunder>

Time	Allows players to change the in-game time. Each time of the day has a value number: Dawn- 0; Morning - 1000; Midday - 6000; Dusk - 12000; Night - 18000	/time set <value> /time set <1000>
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Copeland, Wesley (2019) Minecraft commands and cheats every player should know. Retrieved from: <https://www.pcgamer.com/minecraft-commands-and-cheats-every-player-should-know/>

### 3.2.2 *Minecraft* Dimensions

The *Minecraft* world consists of three primary dimensions: Overworld, The Nether, and The End (Fitzpatrick 2014):

1. The Overworld (the "normal" game world) is the largest dimension in *Minecraft*. It is the first dimension in which players start their journey, exploring and discovering different biomes. Resembling earth, the Overworld allows players to collect elements (such as materials and food), and is the first place where players build their shelter. To make the dimension unique, it follows a cycle of day/night in 20 real-time minutes. During the cycles, users face animals, villagers, and creatures controlled by the computer to survive. When a player dies in *Minecraft*, they wake up at the last place they went to sleep (Buffa, 2017), losing their level of experience, instruments or weapons collected through the journey.
2. The Nether (the "hell" world) differs from other dimensions in its fire, lava distinctions, and threatening mobs. To access this dimension, players have to build a portal in the Overworld to transport themselves between worlds. The Nether has no weather and no day/night cycle. The light comes from natural resources such as fire, lava, and glowstone. In the case of a player dying in this dimension, by falling into the lava or by mob attack, they can be resuscitated in the Overworld.
3. The End (the "dark" world) is the last dimension of the game. Players can reach this dimension by finding a Stronghold and activating the End portal; once they have entered this dimension, players will not be able to go back to the Nether or

Overworld unless they die or destroy the Ender Dragon. This dimension consists of a central island circle by a small, floating island. A constant, faint light replaces the day/night cycle.

These three dimensions, each of them with differing features, give players a unique game experience. As a result, players become familiar with commands, and can then start making modifications (or “Mods<sup>1</sup>” in *Minecraft* terminology) inside the original dimensions.

### 3.2.3. *Minecraft* Biomes and Mobs

There are a variety of biomes inside *Minecraft* dimensions. Following Jason Fitzpatrick’s (2014) definition, a “biome is an ecosystem” or a “geographical area with a specific climate, resources, wildlife and more.” There are more than 60 varieties of biomes organized in five basic categories (Stay et al., 2014). On the other hand, Mobs, are creatures created to damage players' lives. For this reason, it is vital for players to understand their play environment.

The following table describes the dimensions, biomes and mobs (Fitzpatrick, 2014; Stay et al., 2014).

**Table 7.** Descriptions of Biomes and Mobs

Dimension	Biomes	Definition	Mobs
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<sup>1</sup> Mods (Modifications), any change inside the *Minecraft* dimensions

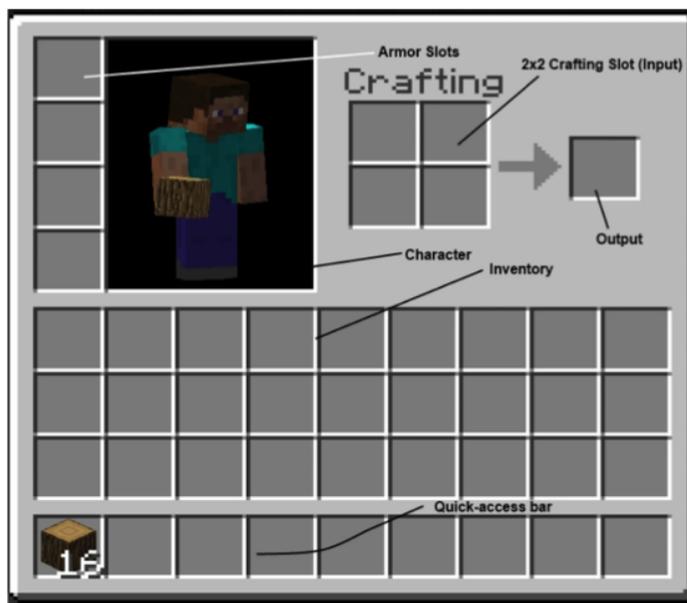
<b>Overworld</b>	Ocean	This is a water world with a large ocean. In this biome, there is a small island with sparse vegetation and beaches.	<p><b>Passive mobs:</b> sheep, cow, pig, chicken, rabbit, squid, bat, villager, mushroom, skeleton horse, turtle, cod, salmon.</p> <p><b>Tamable mobs:</b> wolf, ocelot, llama, horse, donkey, mule, parrot.</p> <p><b>Neutral mobs:</b> polar bear, enderman, spider, cave spider, dolphin.</p> <p><b>Hostile mobs:</b> zombie, skeleton, creeper, slime, witch, zombie villager, silverfish, husk, stray, others.</p>
	Dry	Includes biomes such as Desert and Savannah. There is no precipitation, and, as a result, there is no wildlife.	
	Cold	Heavy forests and extensive mountains characterize this. It is the home of wide caves, and this is the only place users can find emerald ore.	
	Snowy	Snow and ice are the principal features. Rivers and ponds are frozen. This ecosystem includes large hills, mountains, and trees covered in snow.	
	Lush	This is a mix of features from forest to swamp. Here, it starts snowing over the 256 blocks height limit.	

<b>The Nether</b>	Hell	This is filled with lava, flames and unique mobs.	<b>Mobs:</b> zombie pigman, magna cubes, blaze, wither skeleton.
<b>The End</b>	Dark	This is a dark, cold biome with large numbers of enderman and circle by small end islands.	endermar, shulker, ender dragon

Biomes and mobs are what define the dimensions, creating different challenges for the players according to the geographical features; depending on the ecosystem, the players' health and hunger can be affected, resulting in a unique experience for each player.

#### **3.2.4. *Minecraft* Inventory**

Inventory is fundamental to the game dynamic; even though it is not essential to progress in the game, items help define the game's purpose. The collection of objects forms the inventory, and includes a selection of complementary pieces; for example, players can use wood from trees to make a table, or combine it with steel to make an ax or sword. For this reason, it is essential for players to manage and seek information about items' functions and basic combinations to play the game more successfully.



**Figure 3.** *Minecraft* inventory description. (2015). Retrieved from: <https://minecraft.fandom.com/wiki/Inventory>.

As demonstrated in Figure 3, the inventory consists of a player's *Minecraft* skin, four armor slots, a crafting section on a 2x2 grid, 27 storage slots, and nine slot spaces in the quick-access bar (O'Brien, 2015). In these windows, players can manage their resources, tools and blocks, and can create weapons, cook, and perform other functions. Table 7 below contains a detailed description of the primary objects found in *Minecraft* and collected in the inventory.

**Table 8.** *Minecraft* Inventory Review.

Inventory	Use	Description
<b>Raw Material</b> Wood, grass, stone, stone steel and more than 150 items.	Crafting Building Farming Brewing	Vital for the game, each material plays a fundamental part inside <i>Minecraft</i> . These materials can be found in the Overworld, The Nether, and The End for single or multiple uses.
<b>Edible Material</b> Carrot, apple, beef, fish, chicken, others.	Feed players Farming	Food is essential to feed players and can be used to make passive mobs (pigs and cows). Some food items can have positive or negative effects in players.

<b>Plants</b> Wheat, kelp, pumpkin seeds, melon seeds	Farming Production	Plants are essential for farming. Some of the plants or seeds can be combined to be edible.
<b>Tools</b> Pickaxe, fishing rod, shovel.	Crafting Collecting Digging	Tools help to gather and collect specific items, as well as to harvest food and minerals. Tools can be created with a combination of materials.
<b>Weapons</b> Axe, sword, trident, bow, crossbow, arrow	Hunting Collecting Defending	Weapons are used to attack and damage mobs.
<b>Armor</b> Tunic or chestplate, helmet, boots.	Survival Defending	Help to reduce the amount of damage from mobs, or from other players in the game.
<b>Information</b> Book, map, compass, clock.	Inform Knowledge	Assist players to navigate and have a better understanding about their surroundings.
<b>Utility</b> Enchanted book, bucket, bed, door, etc.	Various	The utilities are used for a specific or a variety of purposes to help players in different situations.
<b>Education Edition Only</b> Antidote, tonic, sparkler, salt, portfolio, glue	Education in the classroom.	Items can be used only in the Education Edition in classrooms or outside educational institutions, and can be set to single or multiplayer.

In *Minecraft*, items can be categorized by different types of materials. As mentioned in Table 7, items can range from raw materials to those based on utility. Each of the elements represents an opportunity for the player to have a better experience of the game, allowing them to craft, build, farm, and brew; furthermore, the combination of items enhances the gameplay. Information is a crucial category inside the game, promoting and allowing players to share information and describe their learning process.

There are a significant number of items in *Minecraft*, and they are continually increasing. Hence, to have a better experience of the game, it is essential to seek, share and negotiate

information. For example, players can rely on learning through affinity spaces, such as YouTube channels, and Wiki pages to gain a more enriching playing experience.

### **3.3. Conclusion**

*Minecraft* is more than a video game -- it is a virtual learning environment for players. Without rules and restrictions, it is a blank canvas on which players can express their ideas, be creative, design items, control ecosystems, set their standards, and have fun. Players can choose from an inventory of commands, actions and hundreds of items (blocks, tools, food, etc.). *Minecraft* can be identified as a complex video game because of the lack of information or storytelling inside the game.

This open-ended world offers the opportunity to enhance learning through the use of paratextual platforms as discussion forums, for it is through social spaces that players interact with each other, developing skills in information sharing, decision making, and information literacy. *Minecraft* is more than a videogame; it is an educational aid described as a “learning and teaching tool” (Brand & Kinash, 2013). Even though there is not an official set of instructions within the game about how to play the game, there is a considerable amount of information outside the game, from Youtube video “tutorials,” books, forums (affinity spaces), and wikis around *Minecraft* made for users and players (Brand; Kinash, 2013). Indeed, *Minecraft*’s features and design provide a level of information literacy since players are encouraged to seek, search and evaluate information focusing on the imaginative, productive, and creative elements of the video game.

## CHAPTER 4: Data Analysis

Affinity spaces and subspaces are vital components of the *Minecraft* experience. They are virtual environments used to request, search and share information including strategies, objectives, and designs. In this chapter, I will explain the process of analysis and results applied to a sample from a *Minecraft* discussion forum.

### 4.1 Data Collection

Frist Dimension was created on October 12, 2017. It is one of the threads with the most views (28,866 views) and 569 replays in the official *Minecraft* discussion forum. This thread offers a collaborative space where players are responsible for building the entire dimension from the ground up. Frist Dimension's name is original, created from a combination of *Minecraft* dimensions: "Frost" for ice, and "First" for being the only one with these characteristics. After players decided on the theme of frost (ice), they selected the name by creating a poll with three options: "End," "Space," and "Frist Dimension." After a few weeks of sharing name ideas, the decision was made and was called, Frist Dimension. Destined to build an "original and unique dimension," players came with uncommon and special ideas to the development of the dimension, for example, creating frosty planes, ice spikes, frozen oceans, ancient kingdoms with monsters, and varms.

Frist dimension affinity subspace confirmed the definition of affinity spaces, where individuals engage in the process, share ideas, and create content while supporting other members' ideas (Gee, 2004; 2007; Gee & Hayes, 2012; Steinkuehler; 2005). Hence, Garton, Haythornthwaite and Wellman (2006) framework on social network approach was used to extract the data through observation, analyzing individual/social interactions, the flow of information and patterns of communication among people, following the next criteria (Garton, Haythornthwaite & Wellman, 2006):

- **Relations** refer to the resources that are exchanged, such as emotional, social support, content and information exchange.
- **Ties** connect a pair of actors by one or more relations; for example, a combination of intimacy or self-disclosure) in the group, information sharing.

- **Multiplexity** the more relations in a tie, the more multiplex is the tie. Social network analysts have found that multiplex ties are more intimate, voluntary, supportive and durable
- **Roles** are a set of behaviours and conducts expected by an individual in a social group.

The previous criteria helped to draw the limitations and boundaries of the sample. The 25 posts made by 11 players in the same time period from October 12th, 2017 to October 19th, 2017, were selected to describe the criteria of the social network framework and analyze the player's interaction inside the affinity subspace Frist dimension.

#### 4.2 Data Analysis

The purpose of this thesis is to study the impact that Frist Dimension may have in the development and practice of negotiating information literacy skills within the context of the game Minecraft. For this reason, the central research question was: *How do Minecraft players use the affinity subspace "Frist Dimension" to acquire and negotiate gaming literacy?*

The analysis of the affinity space included social network analysis techniques to visualize the social structure and interaction between players. The framework developed by Garton, Haythornthwaite and Wellman (2006) on social interaction among online communities was applied, since it targets individual interactions and the network structure of communications inside the game. Therefore, drawing on Pellinoce and Ahn (2014), each phrase from the thread was coded as an interaction that was:

1. Social in nature, such as the sharing of accomplishments and social support for the game activity; or
2. Instrumental in nature, such as when players provided details and information related to the steps or instructions of how to play the game.

Bowers (2011) applied a similar technique to determine the complex relationship between players, which "explored individual and social processes" (p. 291). This

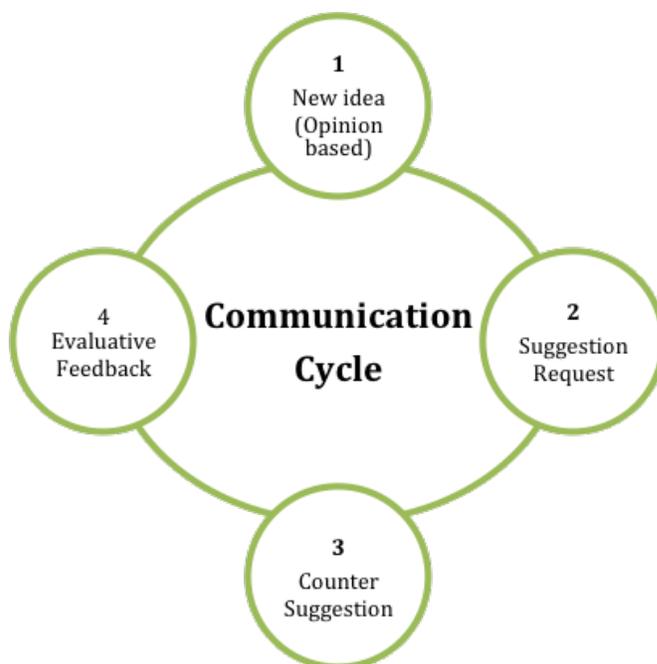
technique also shows the connection between individuals, their social interaction, and their regular negotiation. These elements allowed the exploration of emerging models of repeated information literacy behaviour, and provided evidence of the sentiments expressed by forum gamers.

The sample collected took place in October 2017 and exposed the authenticity of the dialogue, responses, reactions, and roles of the players in the forum. These comments were a continuous conversation between players when building the *Minecraft* dimension called “Frist Dimension.”

#### **4.2.1 Communication Cycle**

In the study of the Frist Dimension affinity subspace, my main goal was to observe the interaction between players. The form/type of communication inside affinity subspaces could be seen as engaged communication, when analyzing players’ participation and interactions in Frist Dimension, a common pattern emerged. The data demonstrated that participants regularly used the following communication pattern:

1. New idea (Opinion based): in this stage, participants expressed their own point of view about a specific topic without following other participants’ interactions.
2. Suggestion Request: during their participation, players asked questions, for example, “how?” “how about?” “what do you think?” and “when?” in order to seek information from other players.
3. Counter-suggestion: a suggestion that answered and evaluated the question made from the participant.
4. Evaluative Feedback: this is the final stage of the communication cycle, where participants responded to questions with evaluative opinions. Usually, this stage was determined by expressions such as “like,” “support,” “disagree,” etc.



**Figure 4.** Communication Cycle Description Found in the Thread Analysis from Frist Dimension

As illustrated in **Figure 4**, a communication cycle was revealed during most of the interaction between players, with elements repeating themselves. The following exchange between C1ff, Interlude and Dungenear sees C1ff announcing a new idea in the Steampunk dimension<sup>2</sup>, as well as politely requesting information from other players. Interlude and Dungenear respectfully respond to C1ff’s question and compliment his new idea:

*C1ff (New Idea (opinion based)): A lot of people don’t like modernized cars and planes, but if we had some Kerbal Space Program style construction, rather than building the same 3 models of planes, cars or trains, I think this would fit better with the Minecraft theme. (They also shouldn’t be called cars, planes or trains.*

*(Suggestion Request) How about “apparatuses” or “flying machines”?  
Although trains might actually fit)  
Would we have to introduce new ores into this dimension?*

*Interlude (Counter Suggestion): I said was leaving the forum, but maybe I’ll drop by once in a while to post on a thread I like :). Since we’re on the steampunk theme now, how about we reintroduce gears? They could be vertical redstone. And since steampunk is a very manmade theme, there*

<sup>2</sup> A Minecraft dimension dedicated to the creation of cars, planes, and trains.

*should also be a lot of varied generated structures. Chimneys that emit blinding smoke, elaborate redstone traps, etc.*

*Dungeneer (Evaluative Feedback): I actually really like the Steampunk idea. And I can think of the possibilities.*

*I support the new ore idea submitted by C1ff. I can imagine the items you could craft.*

**Example 1.** Communication cycle exchange between C1ff, Interlude, Dungeneer.

As we can see in **Example 1**, players demonstrate a highly fluent level of *Minecraft* gaming lexicon when communicating with each other. In this case, C1ff started with a general introduction, then wondered what other players felt about the use of modernized cars and planes inside Frist Dimension by saying: *“a lot of people don't like modernized cars and planes.”* C1ff continued by explaining the new idea and opinion in the following sections of the paragraph: *“but if we had some Kerbal Space Program style construction, rather than building the same 3 models of planes, cars or trains, I think this would fit better with the Minecraft theme.”* Here, C1ff shares what could be a good idea for the development of Frist Dimension, creating an area similar to the Kerbal Space Program where players build their own models of planes, cars or trains, instead of everyone having the same model. In **Example 1**, C1ff asked two questions: *“How about “apparatuses” or “flying machines?”*” and *“Would we have to introduce new ores into this dimension?”* The use of open-ended and binary (yes-no) questions invited other players to share their feedback, positive or negative, in order to develop consensus around common ideas.

In the third stage of the cycle, Interlude follows C1ff's idea about developing the Steampunk theme. Interlude emphasizes the construction of gear and metallic structures, to harmonize more with the theme. Nevertheless, like C1ff, Interlude asks: *“how about we reintroduce gears?”* As mentioned before, the question was asked mainly to get feedback on the steampunk idea, since there had not yet been a final decision among players. As a result, Dungeneer responds to both C1ff's and Interlude's ideas, by offering both of them supportive feedback.

**Example 2**, an interaction between players Wolftopia, Fishg, and Coolcat430, demonstrates a slight change in the communication cycle, by excluding Stage 3. Here

Wolftopia continues to develop the steampunk idea, suggesting some of the features the dimension should have. Subsequently, Fishg begins asking for information about defining the ideas for the dimension and brainstorming the name. Coolcat430 then gives feedback to Fishg regarding the dimension name idea, justifying why it is unimportant to focus on the name of the dimension:

*Wolftopia (New idea (opinion based)): I think we should stick to having a solid bottom. Remember: it's not really the bottom, but rather the outer crust of the core of the world. Maybe it could all be some sort of unbreakable crystal? Or maybe an obsidian-like block that takes forever to mine, with some sort of lava or something under it that causes certain death. That could be interesting as well. I'm actually not sure on this one, though. Will everyone be ready and okay to decide the dimension theme/setting on Sunday of next week? EDIT: More people have voted. Space has come in second, with Steampunk and Prehistoric in third!*

*To the person that made that vote: who are you? Personally, (and this could just be me) I think we have a good idea here with the Steampunk and Prehistoric theme mixed in with the Frost Crystal theme.*

*Fishg (Suggestion Request): When it comes to the space dimension, we really don't have any solid ideas besides asteroids and space whales- not much to go off of. Perhaps asteroids could be replaced by floating islands or walkable clouds, and maybe space whales can stay. But after that, I don't think the space dimension would work with frost. Also, should we start brainstorming dimension names? How about the Frist?*

*Coolcat430 (Evaluative Feedback): I don't think it's necessary to do that now, but I definitely am not against it! Although, I don't really like the name "Frist", it'd be like if the Nether was called Fure =P*

**Example 2.** Communication Cycle exchange between Wolftopia, Fishg, Coolcat430 excluding Stage 3.

When compared to the first example, the interaction between these players shows a variant in the communication cycle, as Stage 3 is excluded. In **Example 2**, we can observe the weight and position of Coolcat430's response to Fishg's information request about focusing on the dimension's name, and their rejection of Wolftopia's idea regarding the features inside the dimension. Nonetheless, the feedback by Coolcat430 shows a level of politeness, stating: "*I don't think it's necessary to do that now, but I definitely am not against it!*" In this sentence, Coolcat430 expresses a personal point of

view, without judging Fishg's idea. Then Coolcat430 continues, saying: "*Although, I don't really like the name "Frist", it'd be like if the Nether was called Fure =P.*" This is an example of information being shared here that presupposes a great deal of shared knowledge. This is a way in which literacy is conveyed, and can be picked up by players/readers with less *Minecraft* literacy. As well as, the use of the emoji =**P** at the end of the sentence was interesting, as it gave an informal context to the sentence. As Cappallo et al. (2019, p. 402) said: "emoji can be a powerful signal of emotions [...] Their visual nature allows for emoji to add richness of meaning and variety of semantics that is unavailable in pure text." Hence, the content text alongside emoji allows the reader to perceive the sentiment of the sentence by acting as a sentiment modifier, in this case, confirming or supporting the player's ideas. (Guibon; Ochs; Bellot, 2016).

**Examples 1** and **2** showed how most of the ideas exchanged between participants create a synergy where everyone politely shares their views and accomplishments, thereby creating a safe environment for each player. However, it is interesting to observe how that pattern is not followed in different online gaming spaces. As observed in the examples, discursive cooperation between group members plays an essential role in determining the scope of information sharing during the creativity and learning processes. Rudge (2019) found a communication pattern among players using conversation analysis that showed the ways in which players communicated in order to reach their objectives. The results of this study also indicated a correlation in the use of collaborative language between players to achieve goals in specific conditions, as well as communication patterns or communication cycles that represent player conversation in order to reach their objective. Indeed, conversation analysis revealed knowledge-building and participatory learning processes.

#### 4.2.2 Frequently Used Words

This study used a qualitative content analysis process for coding and examining the data. To add a quantitative element, I extracted the most frequent phrases of the 25 posts under examination. To do so, I ran a frequency query using Nvivo12, in order to be able to identify the players' jargon inside the affinity space. The analysis showed words

commonly used between players, allowing them to communicate in a language known by everyone inside the *Minecraft* world. Nevertheless, for new players including myself, understanding the meaning of the vocabulary was difficult without previous research or explanations about the game and its dimensions. These results correspond to research done by Ensslin (2012) and Balteiro (2019) on gamer frequencies of words, and the meaning of lexical preference of players in communication spaces. Suggesting players as a community have their own language or lexicon which may be global for all players in *Minecraft*.

Analysing player language helps to understand their interaction and style of discourse. As suggested by Balteiro (2019), “Gamers are not only literate in games metadiscourse, which allows them to understand, use and refer to in-game phenomena, but they also have their in-group language, which they use in computer-mediated communication and which makes them part of a larger group of gamers” (p. 44). As a result, in this study the most frequent words were extracted from the Instrumental in Nature results. Since the post “Frist Dimension” discusses the building of a dimension, the graphic in Table 2 shows the word such as “steampunk,” “overworlds,” and “Frist” were used to express and share ideas about Frist Dimension. The players also made use of words related to *Minecraft*, such as “robots,” “nether,” “villagers,” “theme,” “blocks,” and other essential vocabulary inside the game.

**Table 9.** The top 30 words Instrumental in Nature from Frist Dimension.

Word	Length	Count	Weighted Percenta... ▾	Similar Words
dimension	9	117	3.15%	dimension, dimensions
player	6	38	1.02%	player, players
think	5	30	0.81%	think, thinking, thinks
steampunk	9	28	0.75%	steampunk
maybe	5	22	0.59%	maybe
theme	5	21	0.57%	theme, themed, themes
overworld	9	21	0.57%	overworld
really	6	20	0.54%	really
suggestion	10	19	0.51%	suggest, suggested, suggestion, suggestion...
minecraft	9	18	0.48%	minecraft
blocks	6	18	0.48%	block, blocks
robot	5	18	0.48%	robot, robots
armor	5	18	0.48%	armor, armored
already	7	17	0.46%	already
nether	6	17	0.46%	nether
space	5	17	0.46%	space, spaced
frost	5	15	0.40%	frost
first	5	14	0.38%	first
ideas	5	14	0.38%	ideas
alien	5	13	0.35%	alien, aliens
quote	5	13	0.35%	quote, quotes
since	5	13	0.35%	since
something	9	13	0.35%	something
diamond	7	13	0.35%	diamond, diamonds
frist	5	12	0.32%	frist
though	6	12	0.32%	though
villages	8	12	0.32%	villager, villagers, villages
actually	8	12	0.32%	actual, actually
adding	6	12	0.32%	added, adding
things	6	12	0.32%	thing, things

**Table 9** lists the top 30 words most used inside Frist Dimension. It represents some of the jargon from the game that participants used to exchange their ideas, for example:

*jdc997: **Steampunk**: This is essentially the Cyber idea but more closely fits **Minecraft's** context. The **dimension** is a giant mechanical city sprawling infinitely on the horizontal axes.*

*Fishg: A **steampunk** themed **dimension** certainty would be interesting.*

*Cliff: The **Overworld** is going to slowly become less and less threatening, and by the time you get the super-endgame stuff, Overworld mobs are just a slight inconvenience.*

The use of these specific vocabulary creates a unique environment for the development of informal learning in informal spaces. For non-players, this vocabulary can be both overwhelming and confusing; however, players participating in Frist Dimension had a superior level of understanding of *Minecraft* and their dimension. Previous work by Ensslin (2012) on player discourse mentioned there are “both predictable and less

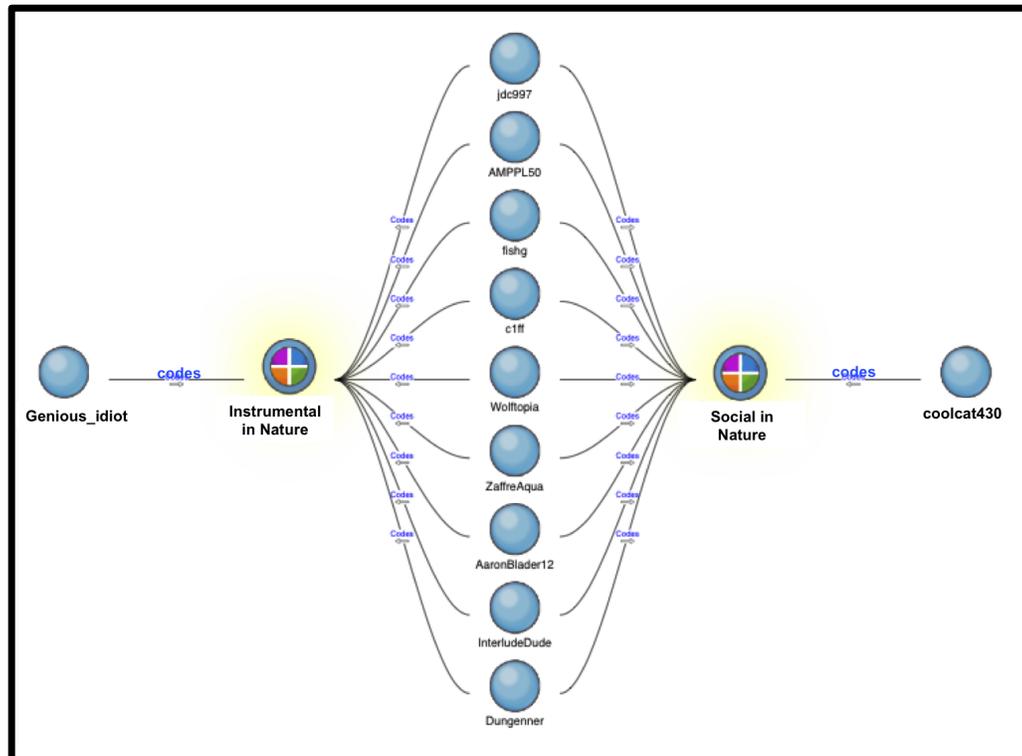
predictable words related to videogames themselves.” For example, predictable words such as “player(s),” “dimension(s),” and “*Minecraft*” are some of the words that belong to the semantic field of video games. However, less predictable words, such as “steampunk,” “overworld,” and “block” reference the player interaction within the video game inside the subspace Frist Dimension. Hence, the data analyzed demonstrated that players participating in this affinity subspace have extensive knowledge of *Minecraft* and *Minecraft* Frist Dimension, creating an environment with a unique, player-developed terminology.

This study reveals that players tend to negotiate information through suggestions. The data found inside the communication cycle reveals the importance of suggestion and counter-suggestion between players in order to obtain evaluative feedback. This may be unusual for a regular concept of literacy but not for the kind of social power-creation mechanisms going on in gamer discourse. Players were shown to share information and debate ideas in a supportive and collaborative manner.

The above terms were frequently used in general discourse, and consequently, the quality of literacy that each player possesses was demonstrated. Compared with storytelling games such as *Call of Duty 4*, *Red Dead Redemption*, and others, *Minecraft* doesn't come with a set of instructions or a storytelling template. As a result, players are required to obtain information by asking, searching, and sharing information between players. This set of skills helps players to develop critical opinions and negotiation skills.

#### **4.2.3 Interactions: Social & Instrumental in Nature**

In the world of education, literacy is seen as an instrumental skill, as is the ability to evaluate the social nature of human behaviour. Following Pellinoce & Ahn (2014), “the forum is a space that allows a porous and heterogeneous group of users to interact with one another to share a wide variety of information (both social and instrumental) relating to a common interest.” Inside the Frist Dimension affinity subspace, these two interactions (Instrumental and Social) help highlight the social nature of players, and the differences in how players use literacy for recreational and instrumental purposes.



**Figure 5.** Comparison Diagram Between Player Nodes, and Social and Instrumental in Nature Extracted from NVivo12.

As shown in **Figure 5** players participation suggests a relationship between Instrumental and Social in Nature. As demonstrated, most of the players tend to have a balance between both interactions; however, there were two players as shown in the figure above that present more tendencies to one of the interactions. For instance, Instrumental in Nature, centered on details and information related to the steps or instructions of how to play the game -- in this case, the use of technical words such as “RFTools,” “orbs,” “structures” to develop a dimension in *Minecraft*. For example, Genious\_idiot commented:

*“I managed to use RFTools to create a rough mock-up of the shattered dimension \*now let's see if I can get it to work\* (picture) alright so imagine that, but with a bit more variation in orbs, a few structures, and with forest and such actually growing on the orbs. actually hold on, i'm going to mock that up to.”*

We can appreciate the technical vocabulary used, the detail in information, as well as the responsibility that the player is assuming in the game; For example, when the player said: “*I managed to use RFTools to create a rough mock-up of the shattered dimension.*” This sentence demonstrates the engagement from the player to the dimension to be created. On the other hand, Social in Nature is a node centered in social support between players (Pellinoce & Ahn, 2014). An exchange of ideas between Wolftopia and C1ff provides an example:

*Wolftopia: That is actually really interesting. I think we should generate some more dimension ideas before we decide on one now, though, even if we end up picking the steampunk dimension. We should probably set a goal- maybe have a dimension picked by the end of this week or the end of next week?*

*C1ff: Good point. How about the 24th, a week from today?*

If we look closely, there is the distinction of Wolftopia using I-statements and the use of modal verbs creating an open question and allowing other players to participate and share their ideas. As well, C1ff responds to Wolftopia’s statement with courtesy saying: “*Good point*” and an open-ended question “*How about the 24th, a week from today?*” generating positive feedback between players.

There is a slight prevalence of instrumental over social interactions between players. This indicates that participants are primarily learning to express and share information about how to play the game, how to develop a dimension, and how to create weapons. This can be compared with almost equally important interactions that are social in nature, where participants tend to share accomplishments, generate social support with each other, which is key at moments of information exchange, including the co-designing of a game space. However, while social interaction is not as dominant as instrumental interaction, it is fundamental for motivating players to participate. Social in Nature represents social support, solidarity, and politeness inside an online community. Ensslin and Finnegan (2019) in “Bad Language and Bro-up Cooperation in Co-sit Gaming” describe player communication and the relevance of politeness inside co-sit discourse. Hence, the levels of politeness vary when information is requested, questions are asked or when advice is sought. The idea of politeness is a critical component of online community interactions,

although gaming communication is not exactly polite, this study found a collaborative and supportive environment between players. This finding means for the co-construction of gaming literacy among *Minecraft* players a creative development of language but also an informal learning experience.

Among the players' communication, support tended to be the most prevalent, with players encouraging each other to share their ideas and reach a common goal. Kouper (2010) observed the same type of interaction in forums; participants showed appreciation and acknowledgment at the moment of requesting some advice or sharing an idea, demonstrating the importance of kindness in informal affinity space interactions. In the study at hand, there was an appreciation of supportive expressions used by the participants, for example:

*“To post on a thread I like :D” (Interlude)*

*“I can’t wait to see the amazing ideas we come up with, and maybe even get put in the game (Wolftopia)*

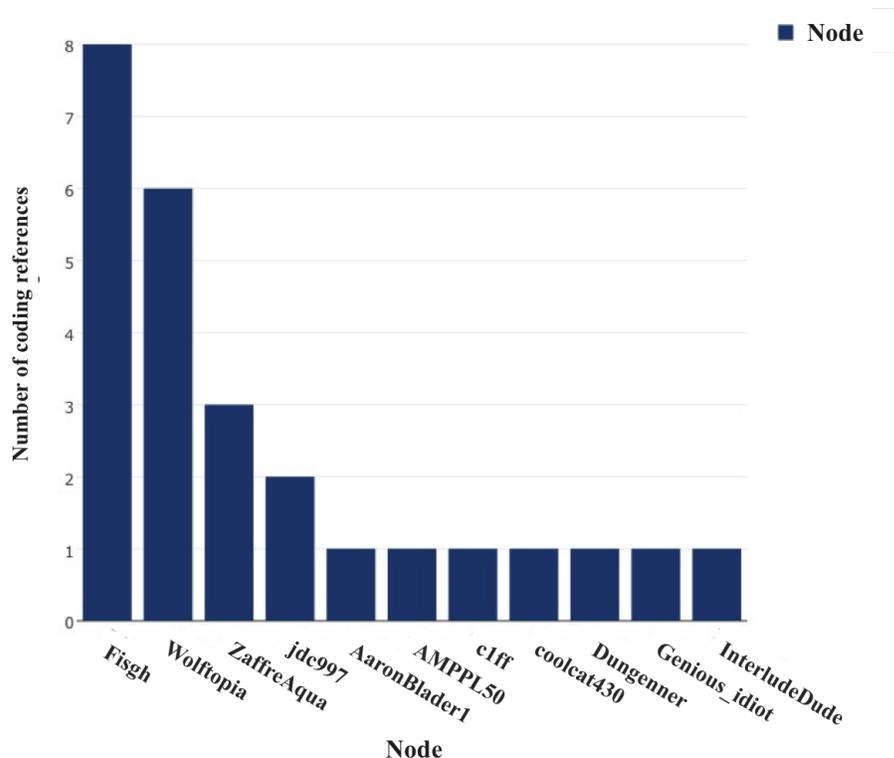
*“Good point” (Fishg)*

The example above shows a balance between social interaction and instrumental literacy, and these exchanges of information and politeness help to develop a relation of “symbolic power” (Pierre, 1991) in a respective group. Therefore, these online interactions help players learn and appreciate gaming as a tool for language and social interaction.

#### **4.2.2 Hierarchical Relationship (Relationship Pattern)**

According to Pellicone & Ahn (2014, p. 02), “power relations in nurturing affinity spaces are optimally non-hierarchical and dispersed.” Nevertheless, following Garton, Haythornthwaite & Wellman (2006), the framework and communication cycle found in some of the conversations demonstrated that this structure isn’t always present. During the study of the communication cycle, the threads were separated and classified using NVivo12 nodes. The nodes were then separated according to the players’ nicknames to determine the frequency of their participation. Once the NVivo12 chart tool was used, two players -- Wolftopia and Fishg – were shown to have a high level of interactions,

equal to the number of coding references expressed in the graph as the eight-point scale. The eight-point scale refers to the number of comments or responses made by players in the affinity space.



**Figure 6.** Player Participation in Frist Dimension

An examination of Fishg and Wolftopia's conversation and interactions with other players was then made. In the resulting analysis, these two players offered a variety of leadership skills such as decision-making, leading conversation, enforcing rules of the thread, and encouraging other players to participate and share their ideas, by ensuring rules are followed, initiating dialogue and encouraging the participation of others, these players exhibit leadership skills. Fishg and Wolftopia reveal these skills in the discourse evaluation of their comments. For example, evaluating Fishg's comments demonstrated the challenges and work involved in inspiring and empowering their followers to achieve group goals. In the comments shown in Example 3, Fishg says:

*“Before we start this part, which is very important, maybe we (and by we I mean, not just me, wolftopia, and amppl50) should brainstorm some more ideas.”*

According to Fairclough (2006, p. 166), “modalities are significant in terms of actions.” In his book *Modality and Evaluation* mentioned the work made by Verschueren (1999) stating, “modality involves the many ways in which attitudes can be expressed towards the “pure” reference and prediction content of an utterance, signalling factuality, degrees of certainty or doubt, vagueness, possibility, necessity, and even permission and obligation.” Following Fairclough (2006), the statement by Fishg expresses two levels of action: Assertion, since there is a positive message with the use of modal verbs, to express a low level of commitment (*“Before we start this part, which is very important, maybe we ... should brainstorm some more ideas.”*); and Denial, the stating of a negative statement inside positive messages eliciting the commitment and truth of other players (*“and by we I mean, not just me, wolftopia, and amppl50”*). In Fishg’s comment we can appreciate the self-organization and authority, and the sense of collective “we” as they invite other players to participate and share their opinions.

Similarly, Wolftopia exhibits enthusiasm for the development of Frist Dimension. In Wolftopia’s responses, there is a sense of encouragement and power, expressed by the use of first-person statements better known as I-statements (Fairclough, 2006, p. 171) such as *“I think,” “I could,” “I loved the idea,” “I don’t know.”* These I-statements were extracted from Wolftopia’s participation, and express ideas and points of view in a natural, unforced communication with other players. These two players were active and collaborative, motivating other players to share and negotiate their ideas, both with different communication modalities. These responses are a fundamental part of Stages 3 and 4 in the communication cycle found in section 4.2.1 of this chapter (**Figure 4**).

Informal leadership played an essential role in post interactions. This analysis demonstrated an emerging natural hierarchy between the participants. Despite the fact that Fishg created the post, Wolftopia joins in, both are seen as leaders and teachers inside the thread, offering support and motivation to each player. They do this by encouraging conversation, negotiating ideas, complimenting other players’ work or

design, and creating a warm, safe environment for players to express ideas and beliefs. Consequently, motivation, support and politeness are essential in the process of communication inside the affinity spaces, as well as subspaces. These social platforms inspire participants to continue sharing, creating content while negotiating information leading to deeper learning.

## CHAPTER 5: Discussion and Conclusion

The goal of this study was to investigate players' interactions in acquiring and negotiating gaming literacy in the affinity subspace Frist Dimension from the video game *Minecraft*. The thesis was structured around the following questions:

1. How do *Minecraft* players use the affinity subspace Frist Dimension to acquire and negotiate literacy?

The following sub-questions will help to answer the central question:

- (a) In what ways do players negotiate gaming information literacy skills?
- (b) What vocabulary do players use to develop or build information literacy skills?

### 5.1 Discussion

As an open-ended game, *Minecraft* stimulates players to seek informative materials in different spaces such as books, and online communities. As Aarseth (2003) has mentioned, "it is important to gather information about the game and use as many information sources as possible" (p. 7). Hence, playing video games is fun and entertaining, but it can also encourage players to look for explicit information in order to improve their game experience.

James Paul Gee and Hayes (2012) described how "affinity spaces help create a bond between players and their ideas, creating a path for self-participation and learning skills." This unique feature creates a reliable connection between *Minecraft* and affinity spaces. As an affinity space in the *Minecraft* world, Frist Dimension offers players a positive subspace to build a new dimension through discussion, communication, collaboration, and negotiation of information (Squire, 2006). While limited, the data analyzed in my study suggests that playing video games and using affinity subspaces engages players in cultivating their behavioural and instrumental interactions, while utilizing negotiating skills in gaming literacy.

A detailed observation of the players' participation revealed a communication cycle of social interaction in the affinity subspace Frist Dimension. This pattern evolved from

carefully reading the 25 threads made by each player, extracting the most frequent words used in the game, and separating the players' interactions into the categories "social and instrumental in nature." During this last phase, a communication cycle was found in the player interactions. It focused on four steps: first, a *new idea or opinion based*; second, a *suggestion request*; third, a *counter-suggestion*; and last, an *evaluative feedback*. This cycle was discovered in most of the communication amongst players. As demonstrated in **Example 1**, Chapter 4, the conversation led to continued discussion and an exchange of ideas between players, and this was key to the request for information. Under the communication cycle in Chapter 4, **Example 2** exhibits a different outcome since Stage 3 is omitted. However, these two examples demonstrated a communication cycle in player interactions with levels of politeness. It should be noted that the cycle was not found in all the player interactions analyzed in this thesis. Nevertheless, it is vital to recognize all results that can help lead to a thorough understanding of the player presence inside the affinity space Frist Dimension.

The communication cycle brought to light how players interact with each other and how they express their ideas inside Frist Dimensions. In this phase, it was compelling to observe how written language and textual patterns could influence players' responses and attitudes towards other players. For example, the communication cycle reveals the use of modal verbs (can, could, will, would, may, must, should). Fairclough's study (2006, p., 168) about speech functions and types of modality, stated: "the modality is intermediate between Assertion or Denial, which are typically realized as positive Statements and negative Statements." Sentences extracted from players' participation in Frist Dimension showed modalized questions and sentences: "I think this would fit better with the *Minecraft* theme"; "Would we have to introduce new ores into this dimension?"; and "I think we should stick to having a solid bottom." In these sentences, modality varies depending on the meaning. Modal markings can be interpreted as grammatical moods to negotiate or communicate the truth of others, to provide information, at the same time, asking for confirmation (Ensslin, 2012). This finding corroborates the importance of modality as a tool in the development of negotiation skills in gaming literacy. It allows

players to interpret other player's participation as well as gain a better understanding of the main goal of the game in a cooperative environment.

The analysis of the communication cycle helped to separate the threads and looked at each player's interactions and responses. As a result, perception of superiority was detected among players through the use of experienced jargon in comparison with those players with a low lexicon in the creation of *Minecraft* dimensions, manifesting in a hierarchical relationship between players. Ensslin and Finnegan (2019, p. 154) found a similar result when they investigated the role of BLE (Bad Language Expressions) in co-situated players' communication, affirming: "It also became clear [...] that in each pairing, there was a hierarchy [...] of the stronger or more experienced gamer. This hierarchical relationship manifested itself in mechanisms of asking for and giving advice." The analysis of posts in the current study showed a group of players with a great understanding of *Minecraft* dimension lexicon, developing a space of collaboration, support, and communication (Shaffer, 2012). Following, Ensslin (2012), "players consciously and frequently break the rules of politeness in order to challenge each other and engage in debates over performance and competition." However, I did not find this outcome in the data analyzed. It was interesting to observe players' communication behaviour and to find a collaborative and supportive environment between players.

The framework of Garton et al. (2006) was used to study the communication structures inside online social communications. That framework was based on two interactions: social in nature, based on accomplishment and support from players, and instrumental in nature, based on technical information about the game (e.g. How to create a dimension? What to do? What type of materials to use?). My study shows there is a slight dominance of instrumental information exchange for the technical characteristics of the affinity space. For example, as seen in **Figure 2** in Chapter 4, players are aware of their level of language expertise and knowledge. Nonetheless, social interaction plays an essential role inside *Minecraft* affinity subspaces, by developing a sense of bonding and positive discursive behaviour (Ensslin, 2012). Squire (2006) affirmed that to succeed in *Minecraft*, skills like critical thinking and social interaction are essential, as well as

making connections between the game and the affinity spaces or subspaces. This study supports this statement. There is a connection between the video game *Minecraft* and the affinity subspace Frist Dimension, demonstrated by a combination of behavioural and technical skills such as support, jargon, cooperation, and negotiation of information through suggestions.

This study will help improve our understanding of affinity subspaces and how they are operationalized by players for information exchange, social interactions, and the co-construction of gaming literacy. My research dovetails with previous research showing that affinity spaces are informal learning spaces that are available for newcomers and experts to expand their knowledge, share information, and be part of an online community (Gee, 2004; Baker, 2014). As a neophyte in *Minecraft* and Frist Dimension specifically, it was challenging and intimidating to observe the level of knowledge player interactions assumed. For example, the first time I played *Minecraft*, I was drawn into the lake and falling into lava, I died. It was an adventure not being able to understand what was happening in these surroundings without a manual or instruction to follow. It was exciting and intimidating to watch Youtube videos of people playing *Minecraft* and creating beautiful libraries, houses, museums in simple steps. With a simple search on Google, “How to play *Minecraft*?” the result was extraordinary; the amount of information literacy, fan art, blogs, videos, and online communities is vast. These affinity subspaces help users have a better understanding of the vocabulary used by players in the game, the different levels in the game, and other gaming characteristics. Indeed, analyzing the affinity subspace Frist Dimension and learning how to play *Minecraft* confirm the importance of searching, negotiating, and exchanging information.

Consequently, this research can be used as a comparative analysis with research into other interactive games to determine the level of players’ interactions inside affinity subspaces. It contributes to research on *Minecraft*, and in particular how the game operates as a literacy inducing and facilitating affinity subspace. Future research in this area might, for example, analyze online versus offline interaction within a group of *Minecraft* players. Other studies might focus on how online communities interact while

maintaining an environment of equity and learning in affinity spaces. These new ideas indicate that there are numerous questions to be answered that may contribute to our understanding of *Minecraft*'s global, lasting popularity amongst young players and information managers such as librarians and teachers in particular.

## 5.2 Conclusion

The main question of my research was: How do *Minecraft* players use Frist Dimension to acquire and negotiate gaming literacy? Ultimately, my data answers only part of that question. The data selected for this study does not demonstrate how players acquire gaming literacy; however, it was able to answer how players negotiate information literacy and the vocabulary used to build information. Due to the nature of the affinity subspace Frist Dimension, information was found by analyzing the discourse of player participation. Players exhibit negotiation literacy skills by sharing rather than explicitly seeking information, by identifying co-creative building projects, the designs of which they negotiate via suggestions, evaluations, feedback, and mutual support. By using and building their extended vocabulary, players create a space where they can communicate and learn at the same time.

Frist Dimension provides a dependable environment for players. Pellicone & Anh (2014) said: "affinity spaces afford interactions that can overcome inequalities, but this potential can only be realized through the actions of human participants." The affinity subspace Frist Dimension demonstrated the importance to concentrate on collaboration and support between players while negotiating knowledge and information inside this space, opening a new window into learning and social interaction. Learning how players are using videogames and their affinity subspaces is beneficial to fostering a better understanding of player interaction and literacy approaches. Frist Dimension, an affinity subspace where players are free to express their opinions, ideas, negotiate information, and to create an unintentional informal learning environment, is exemplary of the educational power of videogames and online communities

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<b>Spectator</b>	This mode allows players to fly around the biome and look at the structures, but they do not have a health, hunger, and experience bar. Moreover, players cannot start worlds in this mode.
<b>Hardcore</b>	This mode is one of the most difficult and constrained of all modes. Players are not allowed to switch modes once they have started the game. They have only one life, but they can kill mobs and take damage from hostile mobs.

Hence, depending on the player's preference and level of knowledge, they can choose modes and play the game as single or multiplayer. As displayed in Table 2, *Minecraft's* basic games modes (*Creative and Survival*) are the most popular among players because of their features of dynamic nature and accessibility in all platforms which allow players to modify and create structures on their own. *Adventure* mode is supported on PC/MAC, pocket edition and windows; however, *Spectator* and *Hardcore* are only available on PC and Mac.

**Table 3.** Platforms Description

Game Mode	Platform(s)
Creative	         
Survival	         
Adventure	  
Spectator	
Hardcore	

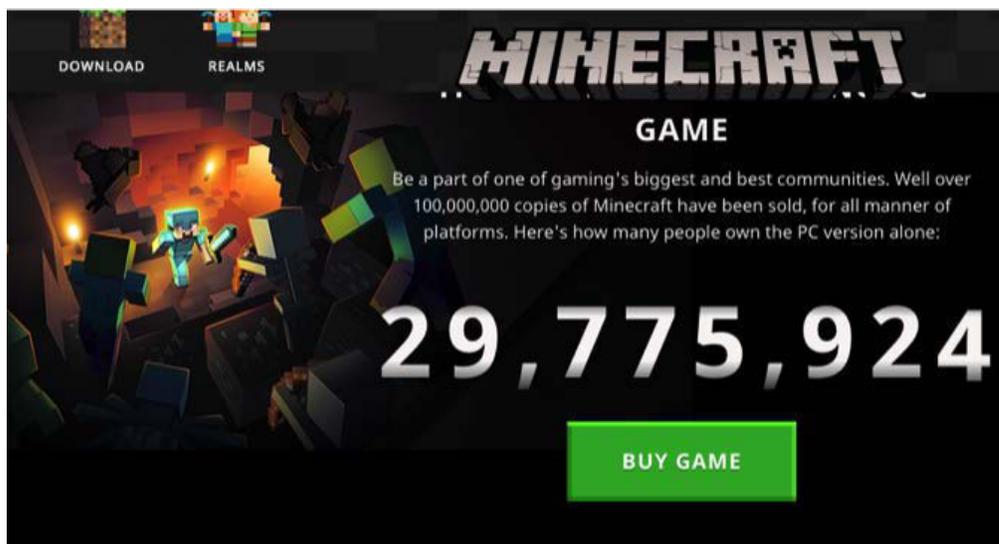
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### 3.1.2. *Minecraft* Editions

While the game description and graphics claim *Minecraft* is a straightforward, low-cost game, it is actually challenging and demanding. Therefore, the game's rise in popularity

and demand among young people and adults has resulted in the development of different *Minecraft* editions. Created initially for desktop computers, today, the game is available on different platforms, from phones to educational platforms, virtual reality and more. *Minecraft* has become one of the most influential video games played around the world (Kerr, 2006). The latest *Minecraft* statistics of 2018 show more than \$154 million worth of copies have been sold across all platforms (Girett, 2018). Today, *Minecraft* in the PC only format has sold 29,775,924 copies and sales are continuously growing.

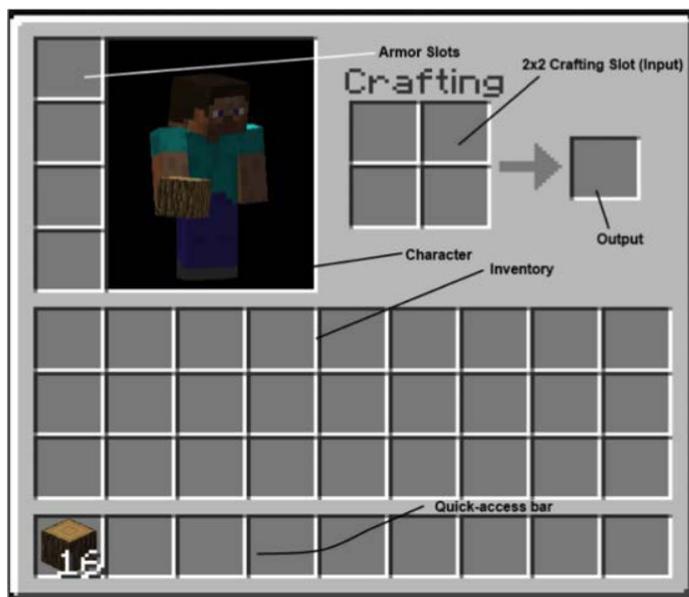


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Currently, *Minecraft* offers three editions: Java, Bedrock and Education. The difference between these three editions is the platform used by the gamer

**Table 4.** Edition description of *Minecraft*

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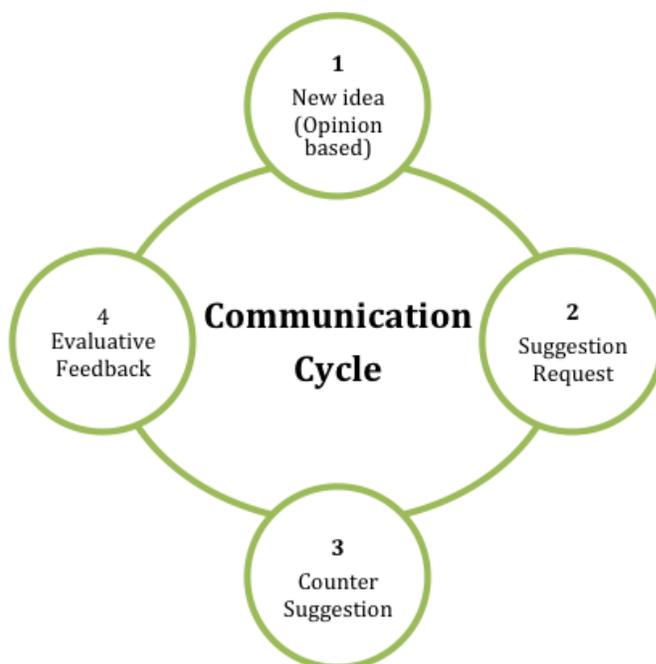


**Figure 3.** *Minecraft* inventory description. (2015). Retrieved from: <https://minecraft.fandom.com/wiki/Inventory>.

As demonstrated in Figure 3, the inventory consists of a player's *Minecraft* skin, four armor slots, a crafting section on a 2x2 grid, 27 storage slots, and nine slot spaces in the quick-access bar (O'Brien, 2015). In these windows, players can manage their resources, tools and blocks, and can create weapons, cook, and perform other functions. Table 7 below contains a detailed description of the primary objects found in *Minecraft* and collected in the inventory.

**Table 8.** *Minecraft* Inventory Review.

Inventory	Use	Description
<b>Raw Material</b> Wood, grass, stone, stone steel and more than 150 items.	Crafting Building Farming Brewing	Vital for the game, each material plays a fundamental part inside <i>Minecraft</i> . These materials can be found in the Overworld, The Nether, and The End for single or multiple uses.
<b>Edible Material</b> Carrot, apple, beef, fish, chicken, others.	Feed players Farming	Food is essential to feed players and can be used to make passive mobs (pigs and cows). Some food items can have positive or negative effects in players.



**Figure 4.** Communication Cycle Description Found in the Thread Analysis from Frist Dimension

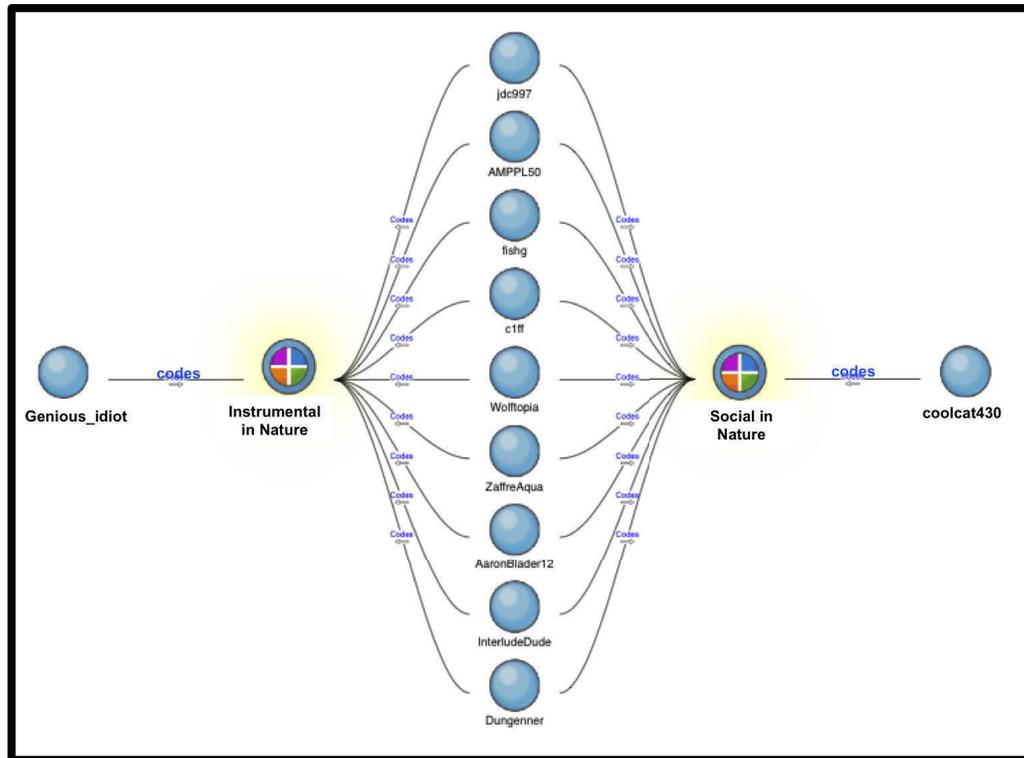
As illustrated in **Figure 4**, a communication cycle was revealed during most of the interaction between players, with elements repeating themselves. The following exchange between C1ff, Interlude and Dungenear sees C1ff announcing a new idea in the Steampunk dimension<sup>2</sup>, as well as politely requesting information from other players. Interlude and Dungenear respectfully respond to C1ff’s question and compliment his new idea:

*C1ff (New Idea (opinion based)): A lot of people don’t like modernized cars and planes, but if we had some Kerbal Space Program style construction, rather than building the same 3 models of planes, cars or trains, I think this would fit better with the Minecraft theme. (They also shouldn’t be called cars, planes or trains.*

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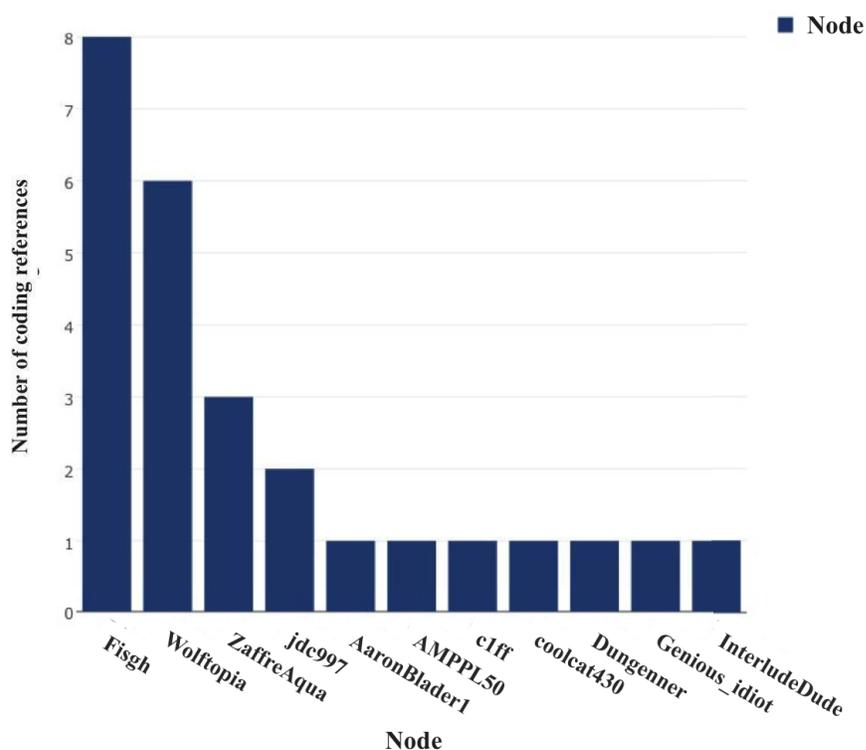


**Figure 5.** Comparison Diagram Between Player Nodes, and Social and Instrumental in Nature Extracted from NVivo12.

As shown in **Figure 5** players participation suggests a relationship between Instrumental and Social in Nature. As demonstrated, most of the players tend to have a balance between both interactions; however, there were two players as shown in the figure above that present more tendencies to one of the interactions. For instance, Instrumental in Nature, centered on details and information related to the steps or instructions of how to play the game -- in this case, the use of technical words such as “RFTools,” “orbs,” “structures” to develop a dimension in *Minecraft*. For example, Genious\_idiot commented:

*“I managed to use RFTools to create a rough mock-up of the shattered dimension \*now let's see if I can get it to work\* (picture) alright so imagine that, but with a bit more variation in orbs, a few structures, and with forest and such actually growing on the orbs. actually hold on, i'm going to mock that up to.”*

equal to the number of coding references expressed in the graph as the eight-point scale. The eight-point scale refers to the number of comments or responses made by players in the affinity space.



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An examination of Fishg and Wolfptopia's conversation and interactions with other players was then made. In the resulting analysis, these two players offered a variety of leadership skills such as decision-making, leading conversation, enforcing rules of the thread, and encouraging other players to participate and share their ideas, by ensuring rules are followed, initiating dialogue and encouraging the participation of others, these players exhibit leadership skills. Fishg and Wolfptopia reveal these skills in the discourse evaluation of their comments. For example, evaluating Fishg's comments demonstrated the challenges and work involved in inspiring and empowering their followers to achieve group goals. In the comments shown in Example 3, Fishg says:

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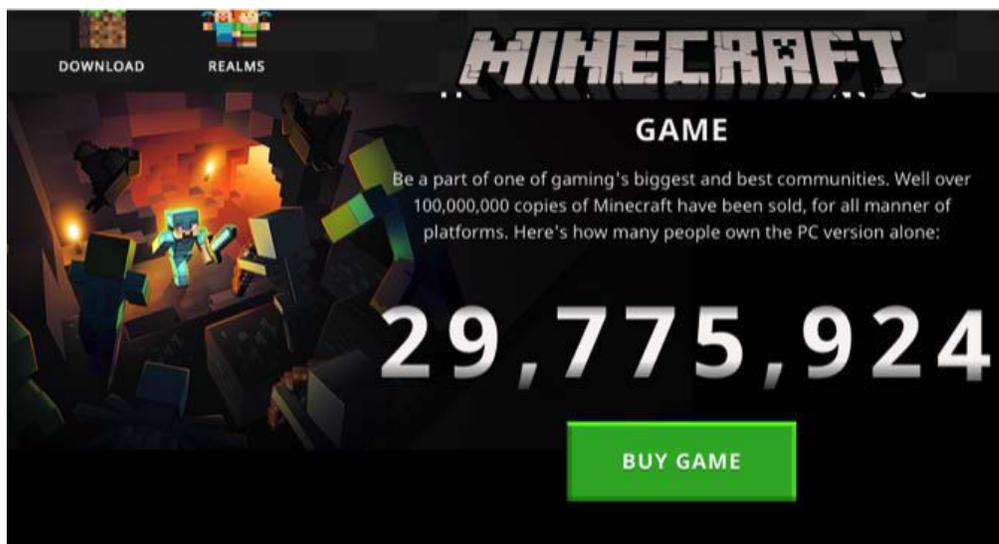
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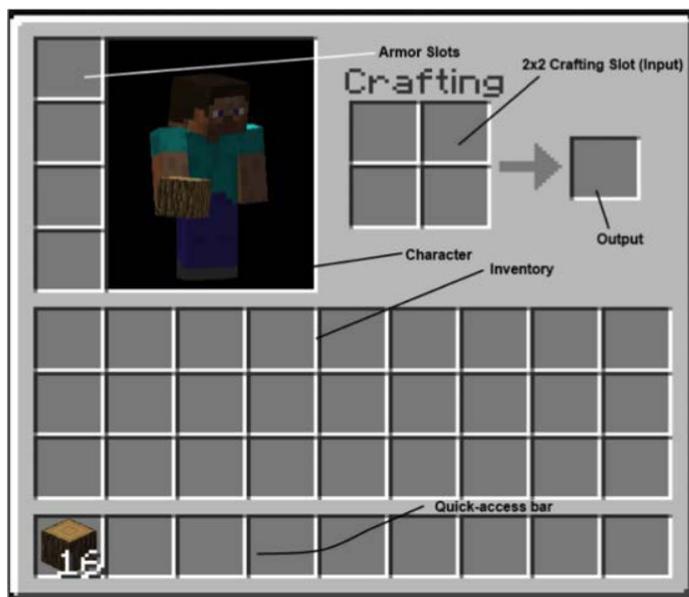


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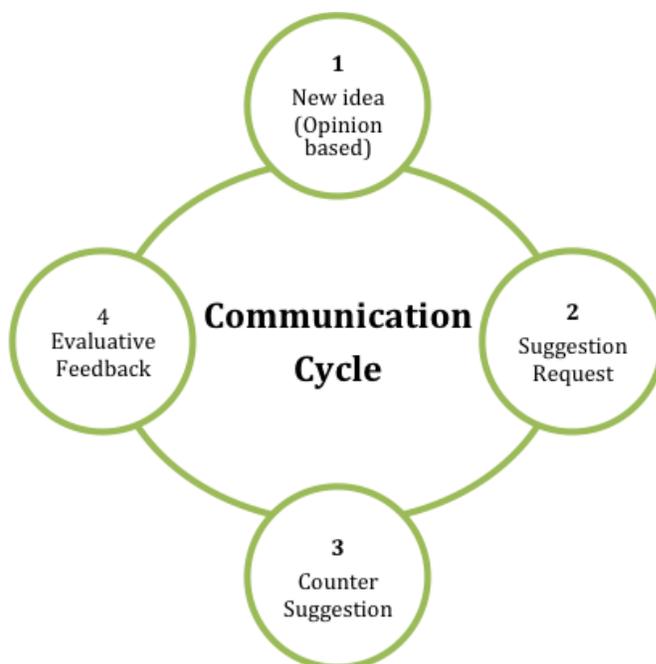


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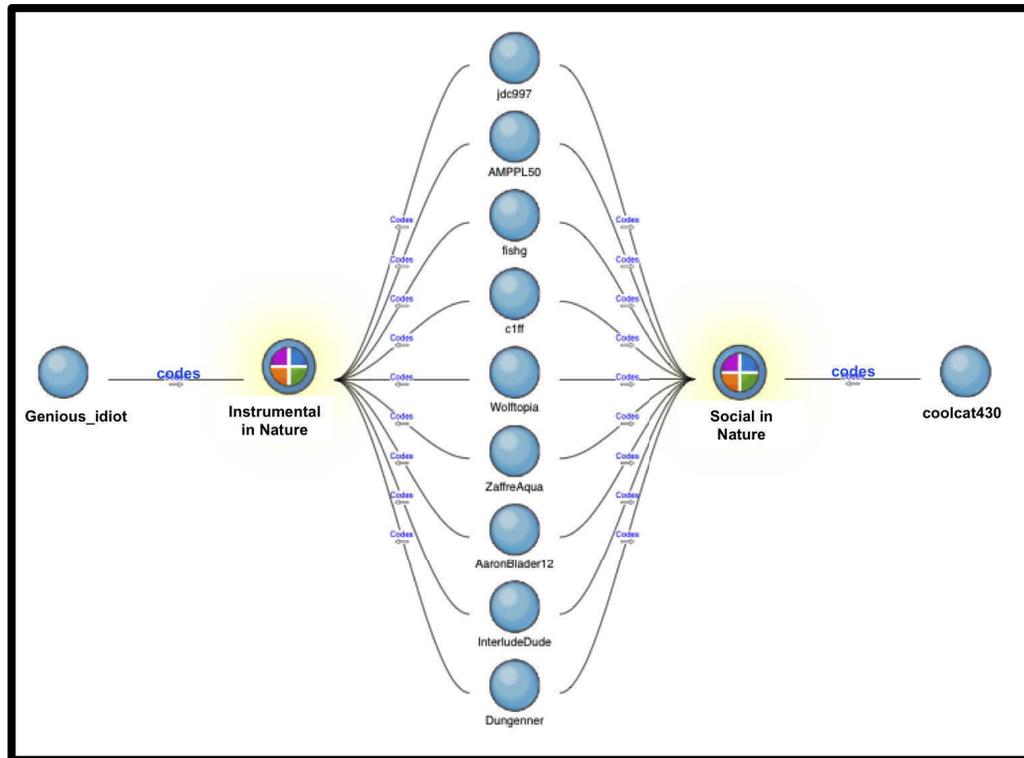
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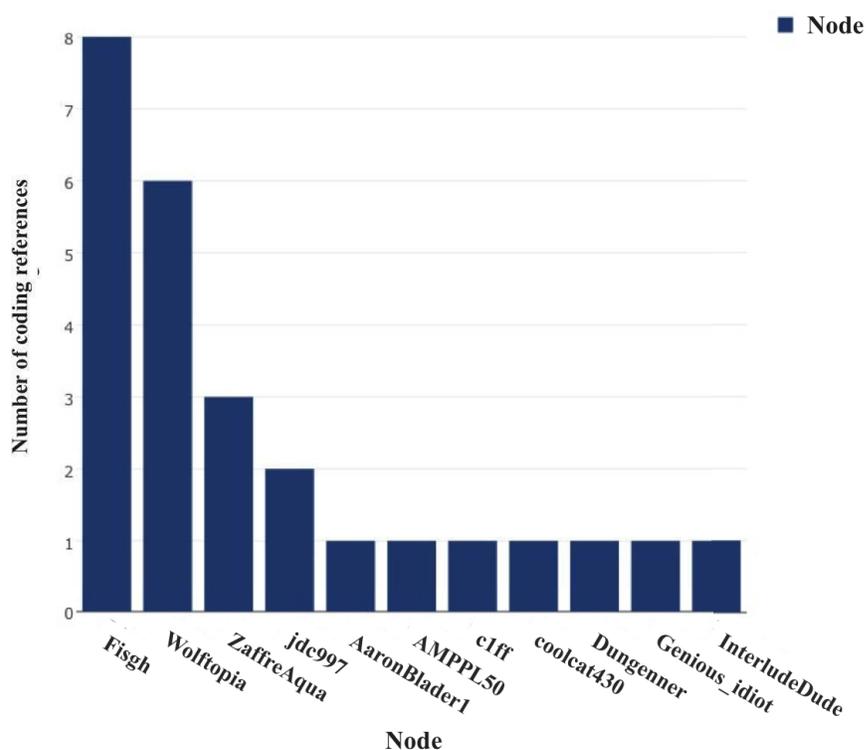


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