

An Ethnographic Study on the Digital Literacy Practices of Role-Players in a Massively Multiplayer Online Role-Playing Game *

대규모 멀티 플레이어 온라인 롤 플레이 게임 참여자의
디지털 리터러시 활용 관행에 관한 민족지학적 연구 **

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ABSTRACT

Various digital literacy and critical competencies are crucial for success in the information and media-rich 21st century game of life. This study explores and describes the digital literacy practices of role-players in *WildStar*, a science fantasy Massively Multiplayer Online Role Playing Game (MMORPG). Active role-players create and participate in group-driven interactive stories while in-character. A hybrid ethnographic method integrating overt participant observation and engagement, collection of community artifacts across multiple sites (such as wikis, discussion boards, and social media), and semi-structured interviews was employed to understand how role-players seek, use, evaluate, and manage information, media, and technology. Role-players used various media and technologies to supplement, simplify, and make role-playing more immersive. The relative digital literacy skill levels of individuals varied, leading role-players to leverage the skills of more proficient or experienced community members. Given the broad appeal of online games and educational benefits of role-playing, implications and applications for digital literacy skills instruction and library programming are also discussed.

Keywords: Digital Literacies, Role-playing, MMORPG, Ethnography, Interviews

초 록

정보와 미디어 집약적인 21세기 게임 환경에서 디지털 리터러시 스킬과 비판적 역량의 활용은 점점 더 중요해지고 있다. 이 연구는 공상 과학 판타지를 주제로 한 대규모 멀티 플레이어 온라인 롤 플레이 게임 (MMORPG)인 와일드스타 (*WildStar*) 참여자들의 디지털 리터러시 활용 관행에 대해 탐구하고 설명한다. 활동적인 역할 참여자는 게임 내부의 특정한 역할을 가지고, 그룹 중심의 대화형 스토리를 만드는데 적극적으로 참여한다. 역할 참여자가 어떻게 정보, 미디어 및 기술을 찾고, 사용하고, 평가하고, 관리하는지 잘 이해하기 위해, 이 연구는 광범위한 역할 참여자 관찰 데이터, 위키페이지나 토론게시판의 글과 같은 참여자들의 커뮤니티 활동을 보여주는 데이터, 그리고 17 명의 참여자들을 대상으로 한 반구조화 면담 데이터를 통합 분석한 하이브리드 민족지학적 방법을 사용하였다. 참여자들은 다양한 미디어와 기술을 사용하여 롤 플레이를 보완하고 단순화시키면서, 더욱 몰입적인 롤 플레이를 만들었다. 개인별 디지털 리터러시 수준은 상대적으로 상이하고, 참여자들은 더 유능하고 경험 많은 커뮤니티 구성원의 기술에 의존하기도 했다. 온라인 게임의 특성과 롤플레이의 교육적 효과를 고려한 디지털 리터러시 교육과 도서관 프로그램의 영향과 적용 방안에 대해서도 논의하였다.

키워드: 디지털 리터러시, 롤 플레이, MMORPG, 민족지학, 면담

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I . Introduction

Computer and video games constitute a multiple billion-dollar media industry with a diverse user group that includes persons of all genders, ages, races and ethnicities, and education levels and, as an industry itself (Entertainment Software Association 2019; Lenhart et al. 2008; Lenhart, Jones, and Macgill 2008; Squire and Steinkuehler 2005). As such, Game Studies has received increased attention in recent years, with scholars from myriad academic disciplines conducting research spanning the critique and analysis of game narratives and the philosophies embedded in games, to exploration of player behaviors and languages, the observation of gaming cultures, and more (Boellstorff 2006). While computer or video games are interactive media by definition, Massively Multiplayer Online Role-Playing Games (MMORPGs) offer a uniquely immersive and multifaceted gameplay experience. In MMORPGs, there are extensive levels of interaction between users, other players, artificially intelligent non-players, and the environments created within the virtual world. Subsequently, participants in the virtual worlds presented in MMORPGs are bombarded with copious amounts of information in textual, visual, spatial, and aural forms. This is doubly so for the community of focus in this study, active role-players. Role-players, those who create and participate in community-driven stories while in-character, also research and craft their own characters and stories, thus adding even more information and media to use and manage.

Digital literacy skills, encompassing information, media, and information communication technology (ICT) skills in the context of this study, are especially important in the high technology world of the Information Age. Given the acceleration, expansion and development of the internet and other information communication technologies, people in the 21st century need to have the necessary skills to find, manipulate and evaluate information, media, and technology to become successful in both their professional and personal lives (Partnership for 21st Century Learning [P21] 2019a; 2019b). Gross and Latham (2012) found that new college students over-inflate self-assessments of their information literacy skill level and are unaware that they lack important skills needed for success. If this association persists across the general population, people entering college or the workforce may face a severe disadvantage early in the game of life without even knowing it. Research on digital literacies will help to better understand how the skills are used and how they can be improved. Digital literacy skills are as important to be successful within game worlds as they are in the real world and MMORPGs may provide another, more engaging and satisfying means by which digital literacy skills can be developed and

acquired beyond the traditional information literacy instruction offered in libraries.

Previous research on this topic has shown the use and demonstration of a variety of literacy practices and social information behaviors in MMORPGs. However, Library and Information Science (LIS) research on this topic area is limited; with research on online role-players being even more scarce. As such, the purposes of this study are to explore and describe the digital literacy practices of role-players in a MMORPG. Accordingly, the guiding research question is:

RQ: To what extent do MMORPG players develop and use digital literacy skills?

Given the purposes, research question, and context of the study, a hybrid ethnographic approach was developed to provide a detailed understanding of the intricate and complex nature of role-playing and the role-playing community in a MMORPG. Khoo, Rozaklis, and Hall (2012) noted an increase in ethnographic studies in the LIS field since 2005 and argue that LIS curricula should be better developed in the area to enable LIS researchers and practitioners to better understand the information behaviors of library and information users. Research on digital literacy practices in MMORPGs is also limited due to the relative novelty of MMORPGs as well as the ethical and technological barriers to conducting research in such environments. Furthermore, previous MMORPG research has predominantly focused on older MMORPG titles, such as *World of Warcraft* and *EverQuest II* (Meredith, Hussain, and Griffiths 2009). By focusing on a different, more recent MMORPG, *WildStar*, this study also has significance for addressing existing gaps in the research literature by exploring the digital literacy practices of an understudied community in a different game while advancing ethnographic methods in LIS.

This study also focuses on the social, educational, and practical aspects of gaming. While concerns about gaming addiction¹⁾ may be valid, many of the negative stereotypes of games as being a waste of time, detrimental to society, or leading to violent behavior, as claimed by Sanders (1995), have been refuted by empirical research (Markey and Ferguson 2017). Johnson (2005) argues that new popular media, including video games, encourages critical thinking and cognitive development as users engage with more interactive and complex media. According to the Entertainment Software Association²⁾ (2019), 65% of adults in the United States play video

1) The World Health Organization defined gaming disorder in 2019 to address public health concerns related to gaming addiction. More information here: <https://www.who.int/bulletin/volumes/97/6/19-020619/en/>

2) ESA hereafter.

games, with an average age of 33 years old. Furthermore, 70% of US families have at least one children who plays video games and 57% of parents play games with their children (ESA 2019). While not all parents play video games with their children, most, 74%, view video games as being educational (ESA 2019). As such, more nuanced discussions about the value of gaming can be found in the sources mentioned above or in the literature review below; further debate is outside of the scope of this study.

II . Literature Review

1. Digital Literacies

For the purposes of this study, digital literacy can be understood as a set of skills needed for seeking, using, managing, creating, and evaluating information, media, and information communication technologies in effective, efficient, and ethical ways. The Partnership for 21st Century Learning's (P21, 2019a; 2019b) framework of information, media, and information communications technology (ICT) literacies was used to analyze digital literacy practices of role-players in this study. As seen above, previous research has identified a variety of literacy skills being used by MMORPG players. As such, a comprehensive framework that accounted for multiple types of digital literacy definitions as many other standards focus on one type of literacy specifically. P21's definitions (2019b) also consider and account for the creation and sharing of information and media, which is an important aspect of new definitions of information and digital literacies, such as Mackey and Jacobson's (2014) reinterpretation of information literacy as a metaliteracy. Mackey and Jacobson (2014) argue the crucial goals of information literacy, such as critical thinking and information skills, often overlap and align with the goals of other types of literacy. As such, information literacy can be articulated as metaliteracy because it functions as a comprehensive, integrated literacy framework that connects with and accounts the variety of literacy skills needed to interact and engage with the various types and forms of information and media in collaborative digital contexts (Mackey and Jacobson 2014). More discussion on what should or could be entailed by definitions or conceptualizations of meta-, digital, information, media, technology, traditional, or any other type of literacy is outside of the scope of this study. Additionally, P21 was selected over other standards because it is targeted at learners

of all ages and is part of larger framework addressing other critical skills and content areas for developing curricula for the 21st century.

2. Massively Multiplayer Online Role-Playing Games (MMORPGs)

The acronyms MMOGs and MMORPGs are often used interchangeably within the research literature but vary slightly in their activities between each other. According to Steinkuehler (2007b, 298), MMOGs are:

“[H]ighly graphical two- or three-dimensional video games played online, allowing individuals, through their self-created digital characters or ‘avatars’, to interact not only with the gaming software – the designed environment of the game and the computer-controlled characters within it – but with the other players’ avatars as well.”

Steinkuehler’s definition is purposefully broad to allow for the various types of MMOGs. In MMOGs and MMORPGs, players must complete tasks and engage in myriad activities as determined by the game in order to advance. MMORPGs offer a particular take on these game mechanics by focusing on the roles players take in both the games’ mechanics (such as dealing damage, healing, or protecting others) as well as the story and lore of the game. MMORPGs are immersive and interactive virtual (often 3-dimensional) environments through which players navigate and fulfill a chosen role while also competing against, or cooperating with, other players and the artificial intelligence of the game to achieve goals, explore game content, collect materials, and engage in various other activities. Many MMORPGs, such as *World of Warcraft*³⁾ or *Guild Wars 2*⁴⁾, offer persistent worlds in which players choose and enact a particular role within the context of the game.

Many MMORPGs are set thematically within science fiction or fantasy worlds (Steinkuehler, 2007b). Today, most virtual worlds are persistent material and social environments that allow players to follow a loose story line, pursue hobbies or crafts, trade items and services, form associations, cooperatively quest, and compete against other players (Oliver and Carr 2009; Steinkuehler 2007b). MMOGs and MMORPGS combine player-created avatars, game mechanics, and an intricate socioeconomic cultural network (Thomas and Brown 2007). This understanding acknowledges other features of current MMORPGs such as auction houses and even holidays

3) Also known as “WoW;” <https://worldofwarcraft.com>

4) Also known as “GW2;” www.guildwars2.com

(Thomas and Brown 2007). Game mechanics usually manifest in the form of quests that involve combat against NPCs or other players, the gathering of resources and/or exploration of the game's virtual world (Thomas and Brown 2007).

3. Digital Literacies in MMORPGs

Given the immersive and interactive nature of MMORPGS, game players must interact with and use various types of information and media in order to navigate and participate in the game. Gee (2003) states that good games offer information in context and argues that this aids players in understanding what the information is, what it means, and how it can be used. For example, when a player accepts a quest they receive some type of information, such as clues, directions, or a background story of sorts. The player can intuit that this information is relevant to the task at hand and use it to satisfy the quest's objectives. It is more difficult to understand this information if it is not given to the player in right context. The player can instinctually recognize clues or directions for the quest. He also says that good games allow users to contribute to the virtual worlds in some way, whether it be by creating items, changing the environment, creating maps, etc. (Gee 2003). Neuman (2011) argues that the information rich environments allow players to take an active role in their learning as they interact with different information objects in a game.

Games are motivating by their nature, and the integration of supports for learning and easily accessible information enables students to build new understandings rather than simple memorization. Hobbs and Rowe (2011) argue that the combination of play and learning generates an environment where learners can engage in the both the creation and analysis of messages, which in turn can lead to the development of media literacy skills. This is especially crucial as advertisements become more embedded in games (Wasko 2008). Prax (2009) found that people who more frequently use the Internet and play computer games, especially MMORPGs, have higher multi-media, multi-channel communication literacy skills than those who do not; five hours of gameplay a week in WOW increased players' multi-media multi-channel communication literacy skill levels.

MMORPGs often require teamwork and for players to cooperate with each other using complimentary roles and skill sets in order to complete objectives. Gee (2003) also notes that players also communicate information both in- and outside of the game. All of these factors contribute to the social, educational, and recreational values of a game that can be engaged

simultaneously (Gee 2003). He later states that “as anyone who has played World of Warcraft knows, [cross functional teams] are the heart and soul of that game, recruited for pleasure and mastery” (Gee 2009, 8). Cross functional teams are groups in which each member has their own unique, specialized role, but also has an understanding of the roles of the others; this shared knowledge is necessary in order to be successful (Gee 2009). In a more recent article, Gee (2009, 4) argues that in the 21st century, users need:

“[E]mbodied empathy for complex systems, ‘grit’ (passion + persistence); playfulness that leads to innovation; design thinking; collaborations in which groups are smarter than the smartest person in the group; and real understanding that leads to problem solving and not just test passing.”

Gee (2009) argues that these things can all be learned through games, as they are complex systems that can and do resemble the real world. He states that gaming and science are both focused on model-based thinking; i.e., models or simulations of the world are created so that theories can be applied and tested within them (Gee 2009).

Steinkuehler (2004; 2007a; 2007b), like Gee, has studied learning and literacy in games, though she has focused on MMOGs specifically. In Steinkuehler’s (2004) preliminary findings from ethnographic observations of *Lineage I* and then *Lineage II*⁵⁾ she observed learning as a social practice while receiving instruction from another player on how to move as well as players collecting data for building mathematical models to be tested in game play. Steinkuehler later observed in-game storytelling, cultural traditions and norms, i.e., marriage nomenclature debates (2007b). Literacy practices were also observed outside of the game in community forums and creative fan fiction works. Based on observations and detailed examples gathered in her study, Steinkuehler (2007b) argues that multiple, or rather, a constellation of literacy practices is actively engaged in *Lineage I* and *II* and that MMORPGs are in effect literacy practices themselves. Galarnau and Zibit (2011) also argue that the learning of 21st Century Skills can occur incidentally and organically through play in online games.

Steinkuehler and King (2009) found that in their incubated gaming group of at-risk boys, players were able to blend in-game and outside of game information to learn more about their *WoW* character’s abilities by comparing what they saw other players doing and references to an external community maintained game website. Nardi (2008) argues that the information spaces of MMORPGs are moving toward being mixed reality spaces, places where the physical and the

5) Please see <http://www.lineage.com/> and <http://www.lineage2.com/>

digital interact with one another, such as a library. In these spaces, information both from people and technology, becomes a powerful instrument for bringing communities together, and players create a variety of tools in order to collect and share information, such as websites, modifications, etc. (Nardi, 2008).

VanLeer (2006) briefly discusses MMORPGs in relation to information literacy. She compared her experiences as a *WoW* player to the Association of College & Research Libraries' Information Literacy Standards and argues that four of the five standards were met. VanLeer (2006) thinks that the "information pull" nature of interactive gaming should be applied to library and information literacy tutorials rather than the traditional "information push" philosophy in order to make information literacy instruction process more fun and therefore more appealing and stimulating.

Martin (2011; 2012; 2014) and colleagues (Martin et al. 2012) argue that "[a] player's information literacy ability is directly tied to the success of the player" (2011, 270) given the amount of information and research needed in the game to progress. Without these skills, players are unable to determine when information is needed and where to find it and be unable to advance through the game (Martin 2011). Furthermore, given the copious nature of game-related information, from sources like guild websites, forums, databases, wikis, opinion and news sites, etc., players would not be able to find information appropriate for them with such skills (Martin 2011).

Martin and Steinkuehler (2010) describe a theoretical framework for collective information literacy based on the analysis of pro-academic behaviors of *WoW* players. Rather than an individual player moving through the steps of information literacy process, players went through the stages of the process simultaneously and collaboratively. They suggest that such a theory must account for the social aspects of online spaces, represent the simultaneous and non-linear nature of information practices, and work in recreational and not just educational environments (Martin & Steinkuehler 2010).

Martin (2012, 384-385) argues that "Information is an individual and community practice, and information literacy is a process that takes place on both individual and group levels." Identity, experience level, and play style influence the information literacy practices of male young adult *WoW* players (Martin 2012). For example, more experienced players utilize more specialized resources, such as knowledge compendiums, player-maintained websites and databases specific to a particular game (e.g. www.wowhead.com), while less experienced players used more general sources. Martin et al. (2012) found that information and visual literacies are exhibited throughout high-level play, but varied across different time scales and spaces. However, Martin (2012) notes

that even though players may not ask each other for information, they still rely on each other indirectly as much of the resources are community products.

In summary, MMORPG players utilize a variety of digital literacy skills to facilitate play, communicate, and accomplish their goals. The social environment of MMORPGs also allows players to collaborate and leverage the skills of individual players to supplement and support the overall community.

4. Role-Playing

The role-playing (RP) aspect of MMORPGs can refer to either the mechanical role a player chooses in the game (such as deal damage, heal, or protect other players) or the practice of players creating and acting out a story with their avatar/character (Williams, Kennedy, and Moore 2011). This study focuses on the latter type of role-playing. Role-playing requires the use and development of shared knowledge and a cultural language (Ilieva 2013). Stories created by role-players can borrow themes or incorporate concepts from within or outside of the medium (Ilieva 2013).

In the context of this study, role-players created characters based on the story or lore of the *WildStar* (Carbine Studios 2014). The game itself is set on a long-lost, recently-rediscovered planet called Nexus, where two warring factions, the Exiles and the Dominion, are racing to claim the ancient and powerful technologies left there for themselves. As such, many role-players created characters to fit the themes and plot of the game, such as explorers, scientists, soldiers, spies, refugees, business owners, etc. As seen in the Findings section below, role-players collaboratively create and enact stories as their crafted characters synchronously via text communication channels. Role-players designate distinct text channels for in-character (IC or ICly) role-playing and other channels for out-of-character (OOC or OOCly) communication. Both IC and OOC text channels are used simultaneously to facilitate and coordinate storytelling; while the story and acting occurs in the IC channels, role-players discuss plot directions, character actions, attain consent, as well as discuss non-role-playing information in OC channels.

III. Method

1. Hybrid Ethnography

This study employs a hybrid ethnographic approach derived from a combination of established ethnographic methods used to examine communities and their behaviors in similar research contexts, namely virtual worlds and MMORPGs. To explain the use and establish the validity of the hybrid ethnography, the techniques and themes that informed its development are briefly described below.

Van Maanen (2006) describes ethnography as the study and representation of cultures. Ethnography arose from the fields of anthropology and sociology and has been applied to study various phenomena in virtual worlds in the areas of collaborative learning, human computer interaction, game studies, social media, and communications (Boellstorff et al. 2012). Ethnography is naturalistic and holistic in approach as it attempts to describe, in rich detail, the behaviors of communities (Boellstorff, et al. 2012; Schutt 2009). Geertz (1973) equates ethnography to thick description, a discussion and analysis of human behaviors that is careful to take into account and describe the complex contexts in which such behaviors occur. While ethnography is not tied to a particular set of methods or data analysis techniques, data collection primarily occurs at the activity site(s) of the focus community (Khoo, Rozaklis, and Hall 2012; Schutt 2009; Van Maanen 2006). In a survey of the Library and Information Studies (LIS) research literature, Khoo, Rozaklis, and Hall (2012) found that most ethnographic studies utilized observations, interviews, fieldwork, focus groups, or cultural probes (postcards, journals, cameras, etc.) to collect data. In the real or digital field, ethnographers may also collect data via participant observation by engaging in activities alongside the participants (Boellstorff 2006; Boellstorff et al. 2012; Moore, Ducheneaut, and Nickell 2007; Schutt 2009; Steinkuehler 2004; 2007a; 2007b).

Various ethnographic approaches have been applied to the study of virtual worlds and MMORPG research. Similar themes and guidelines from three distinct, yet related, and established approaches to ethnography in virtual worlds and MMORPG research, specifically, Hine's (2000) virtual ethnography, Gillen's (2009) virtual literacy ethnography, and Steinkuehler's (2004; 2007a; 2007b) cognitive ethnography, informed the core aspects of the hybrid ethnographic approach used in this study. Additionally, certain aspects of Knoblauch's (2005), particularly the use of audiovisual data collection techniques during field visits to facilitate richer data over a shorter overall duration of the study, were also incorporated into the hybrid ethnographic approach. As described by Knoblauch (2005), focused ethnography emphasizes data-intensive field visits utilizing audiovisual data collection techniques with a shorter duration of the overall ethnography. As such, a hybrid ethnography can be understood as an adaptive, multi-sited,

focused game ethnography because it is flexible in approach to allow for a closer following of the research phenomenon and the opportunity to explore emergent behaviors, collects data from multiple sites, and leverages participant observation and engagement in activities alongside participants in order to gain an authentic perspective and generate a thick description of the digital literacy practices and other information behaviors of active role-players in MMORPGs.

2. Data Collection

The hybrid ethnographic approach collected qualitative data through fieldwork in the form of overt participant observation and engagement, the collection of community artifacts, and a series of semi-structured interviews conducted both in- and out-of-character.

Fieldwork was conducted via participant observation and engagement in the persistent, virtual game world of the new-at-the-time, science fiction and fantasy-themed MMORPG, *WildStar* (Carbine Studios 2014). Following IRB approval, fieldwork occurred over a six-month period which began in July 2014, approximately one month following the launch of *WildStar* on June 3rd of 2014, and ended in January 2015. In order to expand scholarship and make unique observations, a new MMORPG with which the researcher was unfamiliar, *WildStar*, was chosen. In general, MMORPG research, as Meredith, Hussain, and Griffiths (2009) suggest, has been focused on a few staple games, focusing on a new game also expands the scope of MMORPG scholarship overall.

In-game data including chat-logs, gameplay recordings, screenshots, and field notes were collected across 42 in-game field site visits; the length of each visit ranged between 0.5 and 4.5 hours, depending on the activities, but averaged around two hours. Field site visits included general gameplay as well as participation in public role-playing events and activities. Chat-logs were captured using an official built-in chatlogger utility within *WildStar*. Gameplay recordings (which include in-game video and audio as well as external audio from voice-chat applications) were collected using Open Broadcaster Software (OBS), an open source and free software suite for screen-capturing, recording, and online broadcasting (OBS Project, n.d.).

Out-of-game data collection of community artifacts occurred between July 2014 and July 2015, and included a structured and purposive sampling of community websites, wikis, social media posts, and forums collected via HTTrack Website Copier and NVivo 10 NCapture (QSR International 2012; Roche 2015). Similar to Burnett et al. (2003), this study used a combination

of samples; however, rather than using 4 subsamples, this study utilizes 3 subsamples primarily derived from the features and limitations of the community websites and forums. The first subsample (S1) was a purposive sample of threads or posts that related to the research questions of this study, such as threads or posts debating hot topics, site news, “stickied” posts or threads, codes of conduct, etc. Subsample 2 (S2) consisted of a structured sampling of the 3 most viewed threads or posts in a relevant sub-forum or section. Subsample 3 (S3) included the top 3 most replied or highly active threads or posts in a relevant sub-forum or section. For particularly long threads (4 or more pages of replies), only the first and last pages and a page near the middle were collected to avoid data overload. Posts and discussions related to the study and member-checking were also archived for analysis.

Establishing and maintaining relationships with participants are extremely important in ethnographic studies. According to Schutt (2009, 315), participant observation involves “developing a sustained relationship with people while they go about their normal activities.” The hybrid ethnographic approach used in this study focuses on individual role-players as the unit of analysis. As such, the researcher also utilized participant engagement to build a better understanding of role-playing activities by creating and assuming a character and participating in role-playing events with others in the community.

Given the structure of the game world within *WildStar*, the researcher created a backstory for two characters, Jon Thorstein, an Exile human medic, and Jonti Thort, a Chua spellslinger on the Dominion side to allow for observations and activities across both sides of the faction divide in the game. In order to fulfill the roles of a researcher both in and outside of the game, the researcher’s background focused on their scientific qualifications and interest in studying the customs and skills across different cultures as a traveling librarian and scientist paying their way using their medical skills. The researcher, while in-character, performed as a character with intellectual curiosity, patience, and good listening skills in order to fulfill the research goals of both the character and the researcher. The background story and character profile was crafted to help build rapport with the community and make them more comfortable with the researcher’s purpose and behavior. To establish awareness, trust, and transparency of the project and the researcher’s presence in the community, participant observation and engagement was conducted in an overt manner. The researcher’s status as a researcher and information about the project and how to opt-out of data collection if desired, was stored and made easily viewable both within the game via a role-playing profile modification as well as outside of the game on the

role-playing community website via the researcher's character profile information, forum signature, and discussion posts about the project.

Additionally, 17 sets of semi-structured interviews were conducted with role-players in the community. The sets of qualitative interviews consisted of one interview conducted out-of-character (OOC or OOCly), between the researcher and the player themselves, and one interview conducted in-character (IC or ICLy), between the researcher's character (Jon Thorstein or Jonti Thort) and the participant's character. This dual approach provided an opportunity to understand digital literacy practices of both the characters as well as the players behind them as they may have different needs or motivations. Potential participants were purposively sampled through a recruitment call posted as a thread on the forums of the primary role-playing community website. The recruitment post included a full description of the study and other necessary informed consent information for the semi-structured interviews. Additional participants were snowball sampled through references and referrals from community members and interviewees. To encourage participation in the interviews, potential participants could elect to be interviewed in-game, via email or Skype text chat or whichever electronic media they were most comfortable with (Kazmer and Xie 2008). Participants were compensated with one in-game token with an equivalent worth of one month's game subscription per interview.

Most of the interviews were conducted in-game, with the exceptions of one OOC interview and one IC interview (different participants) conducted via text-chat in Skype, and one OOC interview conducted over email. Out of the 17 sets of interviews, 16 participated in both IC and OOC versions, with one participant choosing to complete only the OOC version, resulting in 33 interviews total. The interview questions were derived with the research question and definitions of digital literacy in mind. A semi-structured approach to the interviews allowed informants to describe their behaviors in their own terms and allow the researcher to delve deeper and focus on emergent themes that arose from the discussions with the participant (Kazmer and Xie 2008; Mishler 1991; Murray and Sixsmith 1998). OOC interviews were typically conducted in a private party chat channel in-game, with one OOC interview conducted via email and one over Skype chat. Prior to beginning each interview, the researcher shared a link to the study's details and asked each participant if they had any questions or comments about the study prior to doing the information consent process. Informed consent for the interviews was accomplished by having the researcher post the informed consent statement into chat and asking the informant to read and state whether they agreed or disagreed with the statement. In turn, the researcher also

acknowledged their informed consent and affirmed that they would follow up with the participant with a confirmation of their participation and delivery of the incentive.

After informed consent was confirmed, the interviews began. About half of the participants chose to complete the OOC interviews first before the IC interview. Each individual interview lasted between 0.5 and 1.5 hours, with a set of IC and OOC interviews requiring between 1 and 3 hours to complete. The in-character interviews were conducted in public spaces within the game, such as an open field, a town hall, or a tea house. Many of the IC interviews with Exile characters were conducted in a tea house outside of their capital city, Thayd, as seen in Figure 1 below. In general, the in-character interviews were a bit more casual than the out-of-character interviews. This was partly due to Jon Thorstein and Jonti Thort's personalities, but also because some of the out-of-character interview questions were not appropriate for in-character role-playing. For example, as seen in Figure 1 below, Jon Thorstein is interviewing an Aurin refugee. Rather than ask about how they find or evaluated information directly, Thorstein asked about their plans on Nexus were, what they did for work, or how they found it, or what their interactions with other their peers were like whether Dominion or Exile.



<Fig. 1> In-Character Interview – Tea House⁶⁾

6) This and all other screenshots reported in this article are used in accordance with the Fair Use doctrine as stated in Section 107 of the Copyright Act for nonprofit educational, research, and noncommercial purposes. This and all other in-game screenshots shared in this article contain copyrighted art assets and are subject to the following copyright and trademark notices: © 2014 NCSOFT Corporation. All rights reserved. NCSOFT, the interlocking NC logo, Carbine, *WildStar*, and all associated logos and designs are trademarks or registered trademarks of NCSOFT Corporation. All other trademarks are the property of their respective owners.

Prior to ending each interview, the researcher asked the participants if they had any questions for the researcher. Out-of-character, these questions were about when and where the results would be shared or whether the researcher enjoyed role-playing. Of course, that answer was yes, and the informants were directed to check the community forums for updates about any publications of the findings. While in-character, these questions were similar, but tied to the lore of the game. For example, since the researcher's backstory was about conducting research on the new citizens of Nexus, many informants assumed the researcher was working for the Exile Academy of Science (XAS) or the Royal Collegium on the Dominion side. The researcher usually mentioned partial ties to these organizations to give some credibility to their efforts. After completing the interviews, the researcher sent the incentive(s) out and then wrote and sent a message to the informant via the in-game mail system to confirm their participation and thank them for their time and insights. Observing, participating in role-playing activities and events, and interviewing with individual role players helped to create an understanding of the larger role-playing community through a variety of perspectives.

3. Data Analysis

All of the collected data was cleaned, managed, and analyzed using NVivo 10 (QSR International, 2012). A directed content analysis of the field notes, chat logs, screen shots, video and audio recordings, forum posts, wiki entries and backlogs, and interview transcripts was conducted using the preexisting definitive framework of digital literacy skills created by the Partnership for 21st Century Learning (2019a; 2019b). Hsieh and Shannon (2005) describe directed content analysis as the analysis and thematic coding of data based on an existing theoretical or analytical framework. Hsieh and Shannon (2005) argue that one of the goals of directed content analysis is to “validate or extend conceptually a theoretical framework or theory” (Hsieh and Shannon 2015, 1281). Given the purposes and research question of the study, comparing the behaviors and activities of role-players to an existing framework of digital literacies to see if and to what extent they exhibit digital literacies was methodologically sound.

4. Limitations & Countermeasures

The limitations associated with this ethnographic study mirror those of other heavily qualitative research methods (Boellstorff et al. 2012; Schutt 2009; Thomas and Nyce 1998). The people,

situations, and conversations observed and engaged with are unique to the particular community and culture that the researcher is studying and, as such, the results or findings are difficult to generalize. Similarly, the precise causal mechanisms that may facilitate the development of digital literacy skills and practices may not be suitably measured through an ethnographic study. Additionally, longitudinal study of role-players in *WildStar* is not possible as the game shutdown permanently on November 28th, 2018 (McWhertor 2018). Limitations also extend to the analysis of the data. Since directed content analysis uses an existing theoretical framework, it may be more likely to be supportive of the theory or framework than unsupportive and potentially miss emergent themes as they occur (Hsieh & Shannon 2005).

To mitigate and avoid the above issues and to ensure validity and consistency of the data, analysis, and findings, a variety of countermeasures were used. First, inter-coder reliability testing with coders familiar with the digital literacy framework was used to ensure the consistency of the researcher's analysis of the data and emergent codes were added to the framework as needed. Second, the collection of various data types across various sites allowed for the triangulation of data points to support findings using multiple sources. Third, member-checking was conducted via posts on the discussion board forum of the role-playing community's website to allow the role-playing community to comment on and provide feedback on the project and its findings to ensure the findings were accurate and representative (Adams 2009). The overt nature of the author's participation and engagement combined with member-checking allowed for the community to participate in judging the accuracy and trustworthiness of the findings as well.

Despite the limitations, the aims of ethnographies are to describe and explore the behaviors and cultures of unique communities. While highly contextual, the findings of this study may be transferable to similar settings and contexts, such as role-playing communities in other virtual worlds and MMORPGs.

IV. Findings

As described above, the findings are derived from a variety of data sources and types. The semi-structured interviews were an integral part of the data collection. To provide context to the findings gained from the interviews, the demographic characteristics of the participants are briefly described below. Out of 17 participants, 5 (about 29.4%) identified as women, 11 (about 70.5%)

identified as men, and two identified as genderfluid or genderqueer and, as such, were counted using their preferred pronouns⁷). The average age of interview participants was 29.76 years old, with a median age of 29, and a range of 20 to 41 years old. They were highly educated, with 9 (about 53%) holding a Bachelor's degree, 2 with Associate's degrees, 4 that had some college education or were current students, and 2 had Master's level degrees. Their majors varied widely from anthropology to business to education to information technology. Their careers and jobs also spanned various industry sectors, including sales, hospitality, healthcare, education, construction, information technology, and others. In terms of race and ethnicity, 15 participants (88%) identified as white (non-Hispanic), 1 identified as Hispanic white, and 1 identified as Asian.

As mentioned above, digital literacy practices as discussed and described in this article include the Partnership for 21st Century Learning's framework of information, media, and information communication technology literacies. As such, the findings below are split into each distinct literacy of the framework. The chat transcripts below are presented in their original, verbatim form (with the occasional editorial clarification using brackets); and, as such, typographical and grammatical errors are not uncommon. Player and character names have been anonymized and personally identifiable information has been removed to protect the confidentiality and privacy of the participants. Within the role-playing chat excerpts and figures below, player and character names are anonymized to protect the participants' identities and privacy. Additionally, when interpreting the text excerpts, "Character _" signifies an in-character (IC/ICly) message and "Player _" signifies a message communicated out-of-character (OOC or OOCly).

1. Information Literacy Practices of Role-Players

As defined by P21 (2019b, 5), information literacy includes the abilities to:

1. Access and evaluate information
 - Access information efficiently (time) and effectively (sources)
 - Evaluate information critically and competently.
2. Use and manage information
 - Use information accurately and creatively for the issues or problem at hand
 - Manage the flow of information from a wide variety of sources
 - Apply a fundamental understanding of the ethical/legal issues surrounding the access

7) This is why the total of overall gender identities totals 18 rather than 17.

and use of information

Role-players consider other players and characters are important and trusted sources of information both in- and out-of-character and many role-players turn to their peers to seek out and access information as well as to evaluate it. When asked about how they knew whether the information they were getting was useful or valid, one of the participants responded bluntly during an interview:

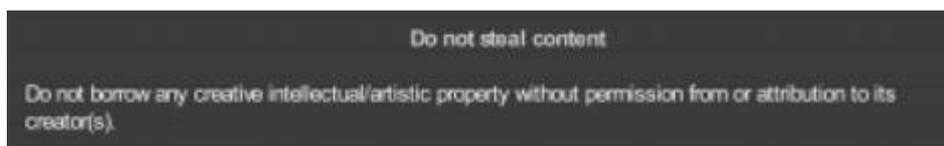
[Player]: Is it naive to say I trust people to not be jackasses? = P

Since community members are a convenient and knowledgeable source of information, it is not necessarily naïve for role-players to seek out and trust information and advice from other role-players, particularly when it comes to character and related role-playing information. However, different levels of role-playing and types of role-players have different criteria for the types of information that are usable for their role-playing. Role-players often engage in discussions about the quality and sources of their information. For example, at the beginning of an in-game public role-playing event, the host turned to the out-of-character party chat to offer the following disclaimer before the event began:

[Host]: Awesome - so yea, anything you know, or if I get anything wrong - please keep me honest! Add what you know, and we'll have fun and good times.

[Host]: Also I did clear as much of this as I could with Pappy from Carbine, so - while I will try very hard not to wander off into too much uncharted territory, I did actually check/research as much as I could!

This move both states at the forefront that the research has been done and from where the information has been sourced (in this case, Pappy, the Narrative Lead of Carbine Studios), but also offers an opening for discussion about the quality and accuracy of the information to other participants in attendance in case they might have conflicting opinions or additional information. Stating the source of the information used has more to do with validating their claims and ensuring that the information is accurate and usable for role-playing rather than demonstrating an understanding of the ethical or legal concerns about the use of information. However, attributing the authors or sources of information or other content is encouraged in the community. In Figure 2 below, the second rule listed on the code of conduct posted to one of the role-playing community's primary forums directly stipulates "Do not steal content."



<Fig. 1> Code of Conduct Excerpt: "Do not steal content"

This prohibition on the use of both intellectual and artistic property without permission or attribution applies to both information and media and implies that doing so would be a violation of the community's standards and potentially a legal issue. Of course, this depends on each role-player's understanding of the potential ethical and legal issues, which was not easily observed nor directly measured in this study. However, this could be an example of more involved, experienced, or knowledgeable sharing information and encouraging or enforcing certain information behaviors over others.

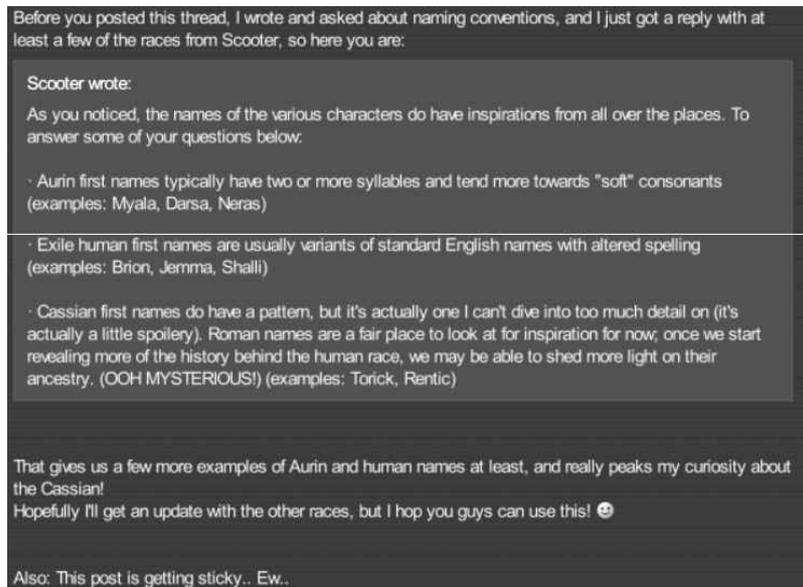
Role-players are also resourceful in using information made available through other sources. During a role-playing event, one player reminds other players about helpful information in OOC chat:

[Player]: if you haven't checked the Osun sections of your Galactic Archive - tab next to the lore section where your datacubes and journals are, I highly suggest you do. :)

Lore information that is unlocked through exploring, questing, and finding datacubes across Nexus, the game world within *WildStar*, is automatically saved to each character's Galactic Archive, an in-game quest, lore, and achievement tracking system. This in-game information as well as other lore information from Carbine Studios is often collected and managed on community websites, forums, and wiki sites. There, players collect, compile, and manage information to create a variety of guides for role-playing or compendiums of lore information on particular topics, such as specific storylines, particular races or classes, or regions within the game. For example, one community member put together a guide to direct role-players to guides about class lore that other community members had created. While each guide exists in its own thread on the site, this particular community member organized all of the information and put it into one place so that others would have an easier time finding this information.

Similarly, as seen in Figure 3 below, a discussion about the naming conventions for each of the races, one of the community members adds to the already posted information with some examples from their research and correspondence with Carbine Studios employees, Scooter, the former Carbine Studios Community Lead Scooter in this case. As described in the normative information behaviors and information values sections, role-players often reach out to Carbine

Studios employees to find, clarify, or verify information; information from official sources has a major impact on role-playing. For example, after the above information was shared in the thread, another role-player commented that this new information and its source completely changed their stance on their character's name, as seen in Figure 3 below.



<Fig. 2> Character Naming Thread

This example also demonstrates the additional research a player puts into their character. While they eventually selected another name, this player researched Latin words and their meanings when considering surnames for their character. Adhering to the official lore—in this example racial naming conventions—is important for role-playing. This is another example of a role-player's reliance on the information literacy skills of others; role-players often turn to other players or the resources developed by community members when seeking information.

While role-playing, some characters (ICly) exhibited information literacy practices and skills as well. For example, in the following IC interview excerpt, the researcher's character asks one of the participants to tell more about their character's job and how they get along with their fellow Exiles:

[Character]: beams. "Oh, it's super great! Everyone's so helpful, and we're out there doing really important Stuff. Like... shipping. Lots of shipping. I have no idea what R&D is doing with all that stuff."

[Character]: Um. How honest should I be about the fellow Exiles thing?

Jon Thorstein, in OOC /party: My brother works in logistics :)

Jon Thorstein: As honest as you feel comfortable with sharing. One of the goals of this research is to find ways to help unite the Exiles, so knowing both the good and the bad parts are important.

[Player, in OOC /party]: Oh, I should probably mention this. IDK [I don't know] how familiar you are with [my guild's] premise, but [my character] does more spy stuff than spreadsheets. She won't talk about that IC, but I'm happy to OOC if needed.

Jon Thorstein, in OOC /party: Ah, that makes sense!

Jon Thorstein: I assume that you work with others to get information needed for logistics work. So I was wondering how that was going.

[Character]: Well, I have my own cubicle in the lab complex with a terminal and everything. The Logistics director, [another player's character; her boss], gives me some objective--call omniplasm vendors for quotes or find a way to transport and dispose of medical waste or something--and I do it. It's mostly forms and computer work.

Above, the participant's character effectively conceals her true identity by feeding the researcher's character misinformation about her work life. It also serves as an example of using multiple channels for information sharing with role-playing. Without the player telling her backstory to the researcher in the out-of-character /party chat, the researcher would have been none the wiser; however, the ruse is effective on Jon Thorstein, who continues on unknowing of the truth and asks more about her work in logistics. The player also effectively uses information by sharing enough about their cover profession to seem knowledgeable and protect their true identity and motives.

2. Media Literacy Practices of Role-Players

Media literacy is defined by P21 (2019b, 5) as the abilities to:

1. Analyze media
 - Understand both how and why media messages are constructed, and for what purposes
 - Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
 - Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media
2. Create media products
 - Understand and utilize the most appropriate media creation tools, characteristics and

conventions

- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments

Role-players interact with a variety of media types both within and outside of the virtual game world of *WildStar*. This section will describe how role-players both engage with media messages as well as create their own media to facilitate their activities both in- and out-of-character.

Many of the media messages most important to role-players come from Carbine Studios. These media messages often contain information about the state of the game, upcoming changes, or, lore information (information regarding the story or history of the game) that could potential impact characters and their stories. Similar to the example from Section 4.1, a player shares lore information from a social media post from Pappy about the possibility of deserts on the Aurins' home planet, Arboria, and discusses it with others in game via text chat:

[Player 1]: Just in case there was anyone concerned, Pappy just confirmed that desert Aurin are entirely possible

[Player 2]: just did? like twitch or sometin?

[Player 3]: Hooray!

[Player 1]: MAybe not just, idk. But on his twitter he did

[Player 1]: I just happened to see it come across my dash

[Player 2]: hrm....well they can make like, super cacti land

[Player 4]: :D

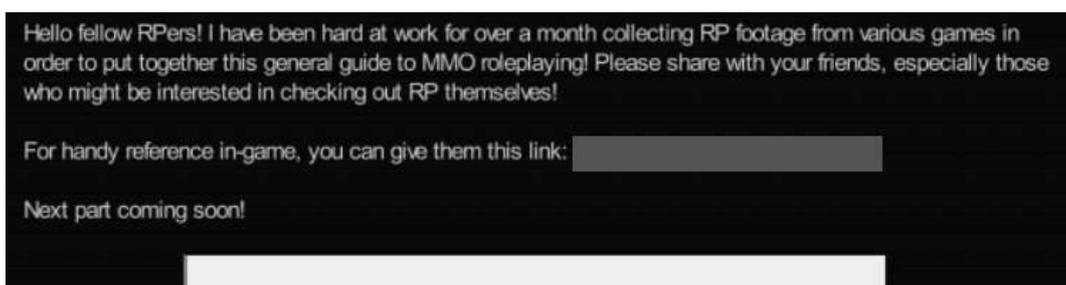
[Player 4]: There can be forests in the desert.

[Player 1]: "The possible existence of deserts on Arboria is not negated [b]y this lore"

Above, Player 1 shares their interpretation of the social media message they had gotten from Pappy via Twitter. Note that the quote they cite only mentions the potential existence of deserts on Arboria, and not necessarily that there were Desert Aurin. Player 2 immediately asks for the source of the media message, presumably to confirm it for themselves. Social media messages such as this are used and interpreted by role-players in order to facilitate their role-playing. Based on this social media message, a player could develop an Aurin character from the deserts of Arboria and then refer to this message as a justification for their choices if challenged by another role-player without this knowledge.

Role-players also create various forms of media for engaging with their community both in- and out-of-character. Players often create text-based guides for role-playing that covers lore information or tips for role-playing. However, some players go above and beyond these text

guides and create video guides. In Figure 4 below, one player created a series of YouTube video guides focused on role-playing in MMOs using footage sourced from a variety of other MMOs and shared it on the community forums.



<Fig. 4> Media Creation: YouTube Video RP Guide

Creating online video content sourced from a variety of MMOs requires knowledge of appropriate screen capturing technology, scriptwriting, as well as related digital media creation skills. While not everyone in the community possesses these skills, those who do not still benefit from the results of those who do.

Much of the media created by role-players is intended to help or share information with the community. However, role-players also use and create media in creative ways. For example, during a live, IC role-playing event, a pair of characters play a song to commemorate the event and honor their friend:

[Character 1]: looks to [a male Aurin in character], letting him prepare the guitar as she brushes at her hair, "Um... this. This is for my cousin... this is for [her cousin's name]. It's... our song."

[Character 2]: takes the guitar strapped onto his back, moving it into position in front of him. He'd look to [the female Aurin], giving a nod, before peering down to the instrument he holds. He flexes his fingers, before they begin to pluck at the strings to make a resounding melody that echoes through the air!

[Character 1]: (For added audio: <http://tinyurl.com/memorialsong>)

[Character 1]: waits for things to quieten down, for the guitar to be the only sound. She takes a few slow steady breaths, eyes flicking shut for a second before opening again and gazing up, out, past the audience to a point in the far distance. As the guitar starts to play she counts the beats out loud under her breath, as well as tapping them out on her leg, before lifting her chin up and starting to sing - loud and clear, from her diaphragm, her voice carrying a smooth and steady melody.

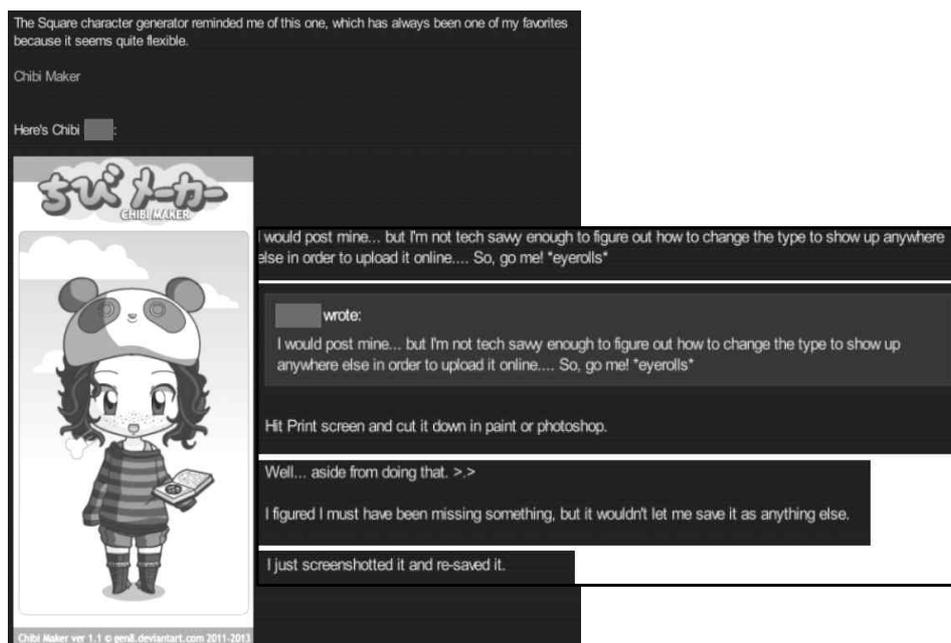
[Character 1]: Atop the crags and cliffs the air is thin; so we'll find a mountain path on down the hill.

During the event, the pair of Aurin above performed a song to honor the female Aurin's cousin. Using an ((out-of-character)) insertion, the performing Aurin shared a link to the song on YouTube, where the audience members could listen to the song as it was performed by the original artist while the two Aurin role-played as if they were performing it in game. By sharing the link, the player also attributes the song to its true performer, clarifying that they did not write the song. The female Aurin shared lyrics in an appropriately timed manner to match the rhythm and cadence of the actual song to simulate an actual performance. Including the song during the live role-playing event made the experience feel more immersive and enjoyable. Role-players use media to augment their role-playing activities.

Creating and sharing media is also a means of community building. For example, many role-players take screenshots of their characters and their adventures to share on the forums or through social media services, primarily Tumblr and Twitter. Another example of media creation can be seen in using media tools, ChibiMaker⁸⁾ in this case, to create customized cute, anime art style portraits of their characters. Figures 5 below contains examples of media creation, experimentation, and sharing as well as troubleshooting.

Above, having been reminded of a similar tool, the original poster shares a link to the Chibi Maker website and shares a portrayal of their character using it. After sharing the media creation tool, many other players began experimenting with it, creating different versions and representations of their character and sharing them with each other (not pictured above). The thread continues on for multiple pages as more and more community members contribute their creations, feedback, and comments to the conversation. This experimentation also provided learning opportunities for those who participated. For instance, in the cutout in Figure 3, another player wanted to participate, but had some trouble sharing their portrait; soon after other players replied with potential solutions.

8) ChibiMaker © 2011-2013 was developed by gen8.deviantart.com: <http://www.dolldivine.com/chibi-maker.php>. All screenshots are used in accordance with the Fair Use doctrine as stated in Section 107 of the Copyright Act for nonprofit educational, research, and noncommercial purposes.



<Fig. 5> Media Creation & Troubleshooting: Chibi Characters

3. Information Communications Technology Literacy Practices of Role-Players

P21 (2019b, 5-6) defines information communications technology literacy as the ability to:

1. Apply technology effectively
 - Use technology as a tool to research, organize, evaluate and communicate information
Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy
 - Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies

Role-players use a variety of ICTs when looking for, using, evaluating, and sharing information. Role-players look for role-playing information on websites and use social media or forums to pose questions to Carbine Studios as well as discuss, debate, and interpret lore information and official media messages. They organize their character information using in-game add-ons as well as compile and create guides and various types of media that they share and update with each other through social media, and most importantly, their community website and forums. Given that this study focuses on the activities of a role-playing community in the virtual

environment of an online game, each role-player must apply technology effectively in order to participate. That said, there are a lot of interesting and innovative ways in which information communications technologies (ICTs) are used to facilitate role-playing beyond simply playing the game and in addition to the examples used in previous sections.

Role-players use a variety of ICTs to facilitate their role-playing primarily due to the limitations of any one technology. For example, *WildStar* only provides text chat in-game and does not have built-in Voice Over Internet Protocol (VOIP) technology. Role-players wanting to use voice communication to talk about their role-playing⁹⁾ must use an external ICT in addition to running the game client. The use of ICTs by role-players is often done in an effort to address the limitations of one ICT or media. In practice, the use of additional ICTs helps role-playing activities be more immersive and detailed. For example, role-players often create posts on the community forums or social media accounts about their character and their story. In the following example from an in-game, IC event, one role-player was advancing a plotline in which their characters were victims of a virulence that was spreading around:

[Character 1]: nods to Jon.

Jon Thorstein: You nod your head at [Male Aurin].

[Character 1]: Careful. [Character 2] 'n I have that bug going around.

[Character 2]: Ah should have et contained.

[Character 1]: ([[TinyURL to a post on the community forums]])

Jon Thorstein: Hello, [Character 1]. Nice to see you again. Thanks for the warning!

As soon as the researcher's character joined the conversation at this public event, Character 1 warned the researcher's character that he and Character 2 had come down with an illness in order to prevent the researcher's character from getting sick as well. Character 1 then inserts an ((out-of-character)) comment into the /say channel to share a TinyURL¹⁰⁾ link to a backstory about the virus on the community forums. Using TinyURL to cut down on the long original URL demonstrates competences using this particular ICT and the limitations of in-game chat as the original link would have been difficult to share and read in-game. Similarly, if Character 1 had to explain the details of the virus with each person they came into contact with at length in chat, it would have disrupted the other conversations going on.

9) While role-players use VOIP technologies and services, it is generally used for out-of-character communication and information sharing, and not for in-character use to preserve immersion.

10) TinyURL is an online tool that allows users to create shorten and customized URLs; more information here: <http://tinyurl.com/>.

The use of ICTs external to the game can also be used to supplement live, in-character role-playing activities going on in the game. In the in-game chat transcript below, the host of a memorial event created a Tumblr page for the event and periodically shared a link toward the end of the IC event. As with the example above, the host uses double parentheses to insert an OOC comment into the IC chat channel to invite players and their characters to participate to the event in a different way on Tumblr:

[Host in /custom emote]: (You guys are free to mingle! We do have a tumblr site to "ICly hang the dedications" The site is at [URL] If you do not have a tumblr acc, you can post as anonymous!)

Above, the host invites participants to hang their dedications on the Memorial Tree, which was a tree near the location of the event chosen by the host to commemorate the event and those being remembered. However, there is no way for character to do attach items onto the tree or leave items at its based within the game. In order to circumvent this limitation, the host created an external site where players could visit and have their characters share their dedications and mementos.

As mentioned in the above sections, the characters themselves also indicated the use of ICTs. For example, characters on the scientist path or those playing the engineer class often made references to using their scanbots or other robots to record and share information. This can be seen in the IC chat transcript from the memorial event below:

[Character 1]: [Event host], I missed the memorial, [another Character] said you might have it recorded on the holo net somewhere."

[Event host]: nods towards [Character 1], holding a thumbs up. "Yep! I had a cambot recording it. I'll be posting up on the holonet. You should be able to search for it quite easily."

Similarly, characters sometimes made references to using their datachrons, an in-game ICT technology, for sending and receiving messages, such as this character during an IC event:

[Character]: nods towards [Character 2] as he forks out his datachron from his pockets. He holds out his datachron, ready to receive coordinates. "Yes, please!"

However, most of these references were made as passing comments to add detail to the schemes and not necessarily as in-depth descriptions of their use by the characters. This is similar to using job specific information to create more realistic characters and advance plot lines, much like the spy mentioned in Section 4.1.

V. Discussion & Implications

1. Discussion

As seen above, role-players exhibit a variety of digital literacy practices and skills, both supporting and expanding on previous scholarship on digital literacies in MMORPGs. Information literacy skills are apparent in the research conducted to create stories and characters as well as manage information exchange during role-playing events across multiple channels. Media literacy skills are apparent in role-players' ability to analysis lore information messages as well as the creation of artwork and other media to support their role-playing activities. ICT literacy skills are also seen through the use of various information communication technologies, such as forums, websites, social media, and other apps and tools to supplement and enhance role-playing. However, the level of proficiency with or mastery of certain digital literacy skills seemed to vary on an individual basis, particularly for skills and practices associated with information and media literacies. Given the digital nature of role-playing in an online game, most role-players are effective and efficient users of a variety of information communications technologies (ICTs).

Since role-players often rely on each other and their community for information, this also implies a reliance on the digital literacy skills of others. Seeking out appropriate sources of information and media are important parts of digital literacy and knowing where to look or who to ask are examples of effective and efficient information and media seeking. Martin and Steinkuehler (2010) also described the social and collaborative nature of information literacy in MMORPGs and created a framework for collective information literacy based on their observations. While this study did not use Martin and Steinkuehler's (2010) framework for collective information literacy, the examples findings describe above would fit closely into one or more of the five patterns of collective information literacy. Future work could explore how their framework could be adapted or modified to look at the collective digital literacies described in this study.

Similarly, the results of this study also support Martin's (2012) findings that identity, experience level, and play style may influence information literacy practices. Within the context of this study, role-players of different social types (based on preferred themes, their character's profession, their personal motivations, etc.) and levels of role-playing (casual/light, medium, and heavy) have an impact both on the types of information sought and used as well as judgments

about the relative values for each type or source of that information. However, while this study did not compare the relative digital literacy skill levels across social types, senior members of the role-playing community (those that have been role-playing in *WildStar* or other online games for many years) or those in leadership positions (of various social types and levels of role-playing) were often seen and consulted as important sources of knowledge within the community by those who were newer or less experienced. This social context of digital literacy practices and, more broadly, information behaviors of role-players will be explored through the lens of Jaeger and Burnett's (2010) theory of information worlds in a forthcoming article from the researcher.

A particularly difficult aspect of digital literacy to observe was whether or not role-players understood the ethical or legal implications associated with using information, media, and ICTs. While role-players were often quick to cite their sources to give credit where it was due or to help justify their lore information claims, discussions of related issues such as copyright or fair-use were not common. However, the community website and forum's code of conduct does remind or warn members that it was a public forum and that one's posts would be visible to all. Relatedly, this issue was brought up by a community member during the resulting discussion from one of the researcher's check-ins with the community. This community member rightly pointed out that some members of the community might not consider the information as public and/or miss the information the researcher had posted about the study and its data collection plans, which had been public from the beginning and shared through previous public forum posts, the researcher's website, and associated character/account profiles throughout data collection and analysis. By considering the aforementioned feedback and through discussions with the site's moderators, all parties agreed that a public notice on the newsfeed/thread of the website would help boost visibility and reiterate to the community that their posts were public and that they could opt out of the study at any time. While this is an isolated example, it does reflect an understanding of the legal and ethical issues around information use by some members of the community. Overall, the notice seemed to gain positive support and interest in the study; no one elected to opt out of data collection at any point of this study.

The findings presented in this study also support Steinkuehler's (2007b) argument (along with argument of many of the other scholars discussed in the literature review) that players engage in a variety or a constellation of literacy practices. Role-players engage in *WildStar* information, media, and ICT literacy practices as well as other literacy practices, such as traditional literacy

(reading and writing), story-telling, creating cultural vocabularies, traditions and norms, which were observed by Steinkuehler (2007b) in *Lineage I* and *Lineage II*. In fact, players were more likely to report a variety of skills that they had developed in game and/or used in the real world. However, terminology like “digital literacy practices or skills” and related terms were not specifically identified by role-players despite regularly engaging in behaviors and practices that resemble digital literacy skills, as described above. However, many of the skills they mentioned were related to digital literacy practices or helpful in other ways. For example, many players reported that role-playing helped them develop a variety of skills, such as the abilities to: write creatively, improvise, and create new content and media; read and write quickly, communicate ideas quickly and concisely, organize events and manage time and other people; empathize and understand different people and cultures; as well as develop social and interpersonal skills. A grim yet useful example of the latter was that one player remarked that they were better at identifying and subsequently avoiding toxic individuals based on their experiences over the years in the online gaming community. Many role-players expressed interest in anthropology and creative writing in particular.

Of course, not all role-players are LIS researchers or practitioners, so it should not be expected for role-players to articulate some of the skills they use as “digital literacy skills” or “practices.” As one participant stated, “Honestly, all these questions you asked have been enlightening too, I had to think hard and think about stuff I never quite thought of before.” This may simply be due to a lack of vocabulary or familiarity with digital literacies or their purposes. Alternatively, it also suggests that information behaviors and digital literacy practices are such a crucial or integral part of role-playing that they are indiscernible or inseparable from one another from the player’s perspective. Relatedly, Martin (2011) argues that the success of a MMORPG player is directly dependent on their information literacy ability due to the copious amounts of information and research required to advance through the game. Based on the findings of this study, this argument can be extended and translated to state that the success of role-playing is dependent on the digital literacy ability of the player given the amount and variety of information, media, and ICTs needed and used for role-playing in an online game.

Digital literacy practices are an intrinsic part of the role-playing process—players who do not engage in the needed information work or leverage their digital literacy skills, or those of others, will not be able to engage in role-playing activities in an authentic way. Lloyd and Williamson’s (2008) review of the research literature on information literacy found that information literacy

practices vary across contexts and, as such, understanding the impacts of and differences between the contexts in which these information behaviors and digital literacy practices occur is important for understanding the complex nature of information literacy. Tuominen, Savolainen, and Talja (2005) argue information literacy practices cannot be separated from the sociotechnical contexts in which they are used, stating that the domain specific knowledge, learning, and information technologies involved in information literacy practices are deeply embedded in the practices of a specific community or culture.

Previous scholarship has also noted the importance of context and its influence on digital and related literacy practices within games in particular. Gee (2003) argues that because games offer information within the contexts in which the information will be used, players are better able to understand what the information is, what it means, and how to use it. Building on that notion, Neuman (2011) argues that the information rich game environments allow for players to take a more active role in learning how to engage that information. Hobbs and Rowe (2011) argue that this learning through play helps learners to both create and analyze media. As seen above, role-players use a variety of information, media, and ICTs as a part of their role-playing activities. Role-players understand that characters and stories occur within the context of the larger mythology of *WildStar*. They seek out and analyze information and media about the lore, through official sources or their peers, to learn more about the game and then create and share their own information and media as a part of their role-playing activities. The symbiotic relationship between learning and role-playing both directly and indirectly encourages the use and development of digital literacy skills in role-players.

2. Implications

At the forefront of the findings is the notion that digital literacy practices are embedded within online role-playing in MMORPGs. Role-playing as an activity and online games as a medium should be considered as potentially powerful educational tools for digital literacy instruction, despite their recreational nature. Many LIS researchers and educators have indeed used virtual worlds for training information professionals, virtual reference services, or as tools for information literacy instruction (Clarke 2012; Mon 2012; de Freitas and Griffiths 2007). However, much of that research focuses on using educational games or virtual worlds rather than recreational online games or virtual worlds. Other researchers, such as Nicholson (2010; 2015), have explored

programming with games in the library and using meaningful gamification to enhance learning in the classroom. This study provides evidence that digital literacy practices are a crucial part of recreational role-playing in MMORPGs and that online role-playing is a complex and enjoyable activity, which could be an engaging and fun way to learn about digital literacy skills. Recent work by Ramnarine-Rieks (2015) suggests that game design can be an effective approach for teaching information literacy to undergraduates if it is appropriately applied in the classroom. Suh, Kim, and Kim (2010) found that MMORPG-based instruction was effective in improving the English skills of elementary-age students in South Korea.

MMORPGs combine elements of action and role-playing games, which are the first (26.9%) and third (11.3%) most popular, best-selling genres of games in the United States (ESA 2019). Considering the popularity of role-playing games and their potential benefits as observed in this and other studies discussed above, LIS educators and practitioners should consider integrating recreational online games and role-playing into their instruction, resource development, training, and programming. Nicholson (2010) argues that gaming programs can be an effective way to engage reluctant library users as well as promote the use of other library resources and services. For example, when hosting a role-playing game program in the library, librarians could bring books on storytelling and creative writing and share other useful information and resources from the library collection that may be interesting for the participants. As mentioned in the discussion section above, role-playing games engage a wide variety of literacy and other critical skills. As such, the popular appeal and educational value of role-playing games could be applied to create numerous library programs or classroom activities focused on different sets of skills, topics, and learning objectives.

The final practical implications are directed at game developers and designers. Like Williams et al. (2011), this study describes a small yet active and passionate part of the MMORPG community. Game developers and designers should acknowledge and pay attention to this part of their player community as they often have a deep understanding of the story and lore of the game as well as a keen interest in the other features and activities of the game that are not particularly aimed at role-playing. When asked why they choose *WildStar*, role-players often referred to the interesting plotline or important role-playing features, such as sky plots and the wardrobe system. However, many more mentioned that they appreciated the level of engagement and interaction that Carbine Studios maintained with their community. As seen throughout the sections above, role-players regularly interacted with Carbine Studios employees, especially the

members of the Narrative Team, via social media. This high level of community engagement did not go unnoticed by role-players, who often mentioned that they appreciated it. This study helps demonstrate the importance of community acknowledgement and engagement and game studios should strive to keep in touch with all parts or subgroups of their player populations.

Additionally, given the amount and variety of information, media, and technologies used by role-players, enhanced integration of features that support their activities should be built into the game. While the developers of some games rely on an add-on system to allow players to change the interface or add missing features by creating and installing add-ons, the add-ons are still limited by the permissions granted by the developers and limitations of the game's design, such as the amount of memory allocated to add-ons and the accessibility of the game's application program interface (API). Game designers and developers should consider native support and integration of social media, built-in wikis, and in-game browsers.

VI. Future Work & Conclusion

1. Future Work

Building on the discussion above, there are a variety of opportunities and directions for future research. The findings of this study suggest that recreational online games and role-playing could be leveraged to teach and learn digital literacy skills as well as other important skills mentioned by participants, such as leadership, networking, and creating writing. Additionally, role-playing might also be useful for helping players to develop empathy and an understanding of others by gaining experience through role-playing as characters different from themselves and/or interacting with diverse individuals from different cultures and locations. The creative, character-driven aspects of role-playing also present opportunities to explore social issues, such as sexism, racism, homophobia, transphobia, and xenophobia. Future research should focus on using and developing online games and/or role-playing activities and evaluating and testing their ability to teach these and related skills.

During interviews, some of the participants mentioned they had come from or still role-play in other MMORPGs, it would be interesting to investigate how and why information, role-players, and their communities move across or between different games and communities. Other

researchers, such as Pierce and Artemesia (2009) and Poor and Skoric (2014), have observed the migration and dispersion of guilds and online communities from their original games or virtual worlds to new ones. Since *WildStar* shut down in November of 2018, a follow-up study to track the dispersion of the *WildStar* role-playing community to other MMORPGs and virtual worlds may provide insight into the use of digital literacy skills during and post-transition or -migration. Further exploration of role-playing in other online games may uncover a variety of literacy and critical skills in other virtual contexts.

Another opportunity for research is the continued refinement of the hybrid ethnographic approach used in this study. While the method was developed with this particular research context in mind, it has potential applicability in other online contexts beyond role-playing and online games. Khoo, Rozaklis and Hall (2012) found while there has been an increase of studies described as “ethnographic” or as an “ethnography” have increased in the field of LIS since 2005, many did not provide clear definitions of ethnography or even justify its use. They go on to for improvements to LIS curricula in order to better prepare both researchers and practitioners to better understand the information behaviors of information and library users (Khoo, Rozaklis, and Hall 2012). The researcher hopes that studies such as the one presented here are helpful in that endeavor.

2. Conclusion

Online role-playing in *WildStar* is a complex, information- and media-dense activity facilitated by a variety of information communication technologies. Creating character and stories, planning and participating in events, as well as researching and discussing lore information can require significant amounts of information work as well as sizeable investments of both time and emotion. Confirming and expanding previous findings, digital literacy practices and skills of role-players in *WildStar* were social and collaborative in nature and also an intrinsic and embedded part of role-playing. Therefore, it can be argued that digital literacy skills are a critical part of successful and enjoyable role-playing. That said, while role-playing does not require absolute mastery or complete digital literacy, it does require that role-players leverage digital literacy and other skills from other members of their community. In effect, the seeking out and usage of appropriate resources, whether other players or otherwise, is further evidence of the digital literacy skills of role-players.

Given the implications, practical applications, and methodological contributions of this study,

LIS educators, practitioners, and researchers should consider both the intrinsic and potential educational value of recreational online games and role-playing and, hopefully, expand scholarship on games within LIS and its related disciplines. Considering the massive appeal of games, its ever-growing industry, and the relatively dearth of gaming research in the LIS literature, opportunities for LIS researchers are plentiful.

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