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# Journal of Virtual Worlds Research

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## Levelling Up: Minors' Play in a Closed-system MMOG

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### Abstract

In this paper, we present a study of 182 youths (ages 9 - 17) playing a closed-system Massively Multiplayer Online Game (MMOG), *Guardian Academy*. Its purpose was to investigate the online virtual world behaviours of youth under the age of 18 playing in an educational setting. We report on a mixed-methods study of minor players in situ across eight socioeconomically diversified educational communities, focused on characteristics, patterns, and trajectories of development of school-aged youths' online play. The study has implications for other trajectories of MMOG research, particularly those concerned with distinctive features of minors' play, the development of game-play expertise, and previous.

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## 1. Introduction

Recognized amongst education's latest crises are student disengagement, pedagogies both challenging and challenged ("flipped classrooms" and "inquiry-based learning"), infrastructure, and under-trained teachers. In response to these educational systems worldwide are looking for better ways to prepare students to live and work in the 21<sup>st</sup> century (see, for example, Cope & Kalantzis, 2009; Jewitt, 2002; Lankshear & Knobel, 2008; Prensky, 2001). To that end, game-based learning is receiving a good deal of attention (Salen, Gresalfi, Pepler, & Santo, 2014). In particular, Massively-Multiplayer Online Games (MMOGs) have been identified as potentially collaborative "learning environments" (Dickey, 2007; Kafai, Fields, & Cook, 2010; Steinkuehler & Duncan, 2008; Susaeta, et al., 2010), yet not much is known about what play looks like for youth in these spaces (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005). In particular, what play looks like in places and spaces that are unregulated – that is, that are not built particularly for youth (like *Club Penguin*, *Neopets* and *Whyville*).

Work that has focused on the educational benefits of virtual environments has found that they are very good at holding the attention of youth, even as they might result in educational outcomes (see Dawley & Dede, 2014; Fields & Kafai, 2010; Thomas, Barab, Tuzun, 2009). This study asked which youth are playing MMOGs and what does play look like for them in a multiplayer space? We were not concerned with learning outcomes or really even direct connection to existing curricula. Instead, we were keen to observe how youth play in a context that was closed to all outside participants. This paper describes the results from that closed-world study (e.g. only those who were invited could participate) of minors' play in an MMOG. 182 minors (ages 9 - 17) played over two weeks for a 40-minute period in an instrumented, Flash-based, fantasy-themed MMOG, entitled *Guardian Academy*. The study deployed a mixed-methods design with a pre-demographic survey that asked questions about age, frequency of gameplay, and prior MMOG experience. At each play, setting observational field notes were taken by two research assistants, a camera recorded interactions between participants, and participants and the game, the game video-captured game play elements such as the names participants assigned to avatars, the avatar type they chose, text chat between players, and where and how they chose to spend their in-game time.

The study took place during school or at after school clubs (see Methods section for more detail). It was part of a larger study of adult MMOG players that has been discussed at length elsewhere (Bergstrom, Jenson & de Castell, 2012; de Castell, Jenson, Taylor & Thumlert, 2014; Taylor, de Castell, Jenson & Humphrey, 2011). The primary focus of the study was to observe and document the in-game behaviours of both adults and minors in MMOGs, with a view to better understanding what characteristics form. Because the work was conducted in school-based settings, and because we wanted to observe all players (minors and adults) in a new setting – in this case *Guardian Academy* – we were especially keen to examine how novices to the environment made use of it. For example, what naming practices did they deploy when naming their avatars? What did they decide to do in-game – follow quests or play in battle mode, player to player? Did they use the text chat feature in the game? And in the case of minors, did they try to circumvent the text chat feature that prevented swear words and other phrases that are inappropriate in a school environment? What most engaged minors in *Guardian Academy*? Finally, because we also have a large sample of adults who played in the same environment, how did the youths play compared to their adult counterparts? While not the direct focus of this paper, we report on some of the ways in which minors' play departed from the play of adults. In the next section, we discuss work that is related to the study, especially work on youth engaged in MMOG play.

## 2. Related Work

Online Games have been argued to foster intrinsic motivation among young learners (Dickey, 2007), and to promote increased teamwork and participation in classrooms (Susaeta, et al., 2010). In a 2008 study, Steinkuehler and Duncan analyzed over 2000 priest forum posts on *World of Warcraft*, and concluded that forms of scientific reasoning “emerge as a natural part of gameplay in informal MMOs”, largely due to the design features of the game. The authors argue that these environments facilitate social knowledge construction and skills development. The popularity of MMOGs as educational tools has led in part to the development of *World of Classcraft*, a gamified course delivery system which maps MMOG mechanics (e.g. character classes, experience points, groups, etc.) onto classroom curriculum ("Overview of Classcraft," 2014).

However, claims like the above have been based on analyses of game mechanics or forum use, rather than observational data on minors' play in educational contexts. Where players participate in such studies, they do so most often through online questionnaires/surveys, having been recruited through postings on official and unofficial forums (e.g., Ducheneaut, Wen, Yee, & Wadley, 2009; Kafai, et al., 2010), whose users are predominantly adult.

Researchers who do work directly with minors have, usually, only reported on one research site, with students from a single demographic (Brown & Kasper, 2013; Hill, 2015; Kafai, et al., 2010; Squire, 2005). Squire's well cited 2005 paper, for example, reports that games like *Civilization* can be utilized in the classroom to move beyond 'history as names and dates' to teaching children about the complex processes that result in the historical narratives as we came to know them (Squire, 2005). While the results of small-scale studies of this kind are of great value, their ability to support generalizations about young people's play is limited.

A notable exception to these methodological conventions is Ang, Zaphiris, & Mahmood (2007) whose study involved only youth players (aged 13-18) in a face-to-face setting using *Maple Story*, a MMORPG also played by adults. Its drawback was that these young players were observed individually (no group/paired play) and the only social interactions observed were with other online players, so this study's social interaction data missed out all co-situated play (for a discussion of the importance of co-situated play as part of research design see de Castell, et al., 2014). Further, being restricted to online interaction only, it is possible if not probable that the interaction observed was guided by the conventional 'social rules' of the (adult) Maple Story community, and not so much by the young players themselves. The results can tell us how participants took up normative practices of play, and not so much about how minors approach and learn to play together online, or how they manage learning tasks in online collaborative settings. In the next section, we discuss the game used for the study, before outlining the methods used.

## 3. Research Instrument: Guardian Academy

The MMOG used in this research, Guardian Academy, is modeled after popular commercial fantasy-themed MMOs typically used in MMO studies. Guardian Academy is a 2.5-dimension web-centered, Flash-based, multi-player game (Figure 1). Players can choose to play as one of two character classes, and are given quests by non-player characters, which they complete to earn points. Players can form groups with each other to complete quests or to explore the world together. The interface allows text chat only (no audio chat). The world features a store where health potions and other items can be bought and sold. It also features a Player-versus-Player (PvP) arena where players can challenge each other to a duel; outside of this arena, players are unable to fight each other.





Figure 1. Guardian Academy

Since Guardian Academy is not publicly available to play, there is no hegemonic ‘right’ way to play nor any community-sanctioned body of ‘knowledge’ to draw on, besides the generic conventions it shares with other MMOGs.

#### 4. Methods

As noted, Guardian Academy is a closed-system (meaning you have to be invited to play) MMOG instrumented to capture player communications and actions. By ‘instrumented’ we mean that the game captured and stored information on what the players chose in terms of avatars, what they did in the game, and what text chat there was between players. Because the environment was closed to outside participants, we were able to assure safe playing conditions for our underage participants, an ethical imperative for research with this demographic. Moreover, for the minors who participated in the study, a filter was implemented during text chat that replaced swear words with numbers and symbols.

This was a mixed methods' study: a (previously validated) 82 item survey was completed by all 182 participants, and extensive gameplay data, including text chat, was collected and compiled automatically on Guardian Academy servers, providing rich and extensive quantitative data. Researchers had numerous, repeated, face to face sessions with all 182 participants across all 8 different educational sites, to provide ‘ground truth’ to the statistical analyses of the quantitative information. In addition to collecting video data of play, all laptops captured what was happening on screen using *Camtasia* (a screen capture software). While, it is not within the scope of this paper to give a full detailing of all aspects of the study, we concentrate here on what we considered (both at the time and upon further analysis) most significant, namely how novice minors navigated an

MMOG, and how their play emerged in ways that surprisingly broke with previously observed MMOG practices.

Though not discussed in this paper, researchers manually annotated samples of the video recordings of participants' play that we automatically captured using Camtasia software and then used *Noldus Observer* software for microanalyses of player behaviours. These qualitative approaches provoke and enrich interpretations from the survey and the in-game data collected. This constitutes a wealth of data that far exceeds what we can describe here, including analysis of in-game movement, avatar selection and naming practices, and text chat, all of which can be compared to the adult samples. For a full report on this study's quantitative data and analysis, including the comparative analysis between adults and minors playing the same game in further detail, see a previously published paper (Murray, et al., 2012). While this paper draws upon some of the quantitative survey and gameplay findings, it concentrates on presenting the qualitative side of what was learned.

To ground our analyses of both gameplay and survey data in participants' identities, actions and conditions, we relied heavily on qualitative methods: participant observation, interviews with participants, detailed researcher fieldnotes, and video data. Data was then triangulated for analysis: fieldnotes, interviews with youth, video data, survey responses and in game chat that was captured and stored, were analyzed separately and then considered in relation to the other data. We then coded thematically for expertise, trash talk (in person, not in chat), level of engagement with the game, and competition.

**Table 1: Details for participants across all eight study sites**

Site	Number of Participants	Age range	Same Sex Grouping	SES	Technical proficiency
Summer program	37	10 - 13	No	Low	Low
Public school 1	44	9 - 13	1 girls; 1 boys; 1 mixed	Low	Low
Public school 2	9	9 - 11	No	Low	Low
Public school 3	14	12 - 13	No	Middle	Low
Public school 4	14	13 - 14	No	High	Moderate
Public school 5	29	9 - 10	Yes	Middle	Moderate
Public school 6	20	9 - 10	Yes	High	Moderate
International Baccalaureate	15	16 - 17	No	High	High (played on own laptops)

There were eight sites in total: six public schools, both elementary and secondary, and a summer camp. At several of the school sites the research team had existing collaborative relationships with library, teaching, and administrative staff through involvement in prior school-based projects. Collectively, the sites selected represented a broad and diverse participant base with regard to gender, ethnicity, education, and socioeconomic status (SES). For example, a secondary school was chosen in a high SES neighborhood (well above the Canadian household average of approximately \$54,000) where participants from that school were also enrolled in an International Baccalaureate program. An elementary school with a large South East Asian immigrant population also participated in an area where the aggregate income was well below the annual household income according to Statistics Canada. Each of the sites was run on a voluntary basis during school hours or as an after-school gaming club. Both gender-segregated and gender-integrated configurations were implemented. Details on each of the sites are shown in Table 1.



**Figure 2: Participants playing Guardian Academy**

The summer camp site, in partnership with a local youth-empowerment program, was designed to engage a demographic prone to high attrition rates in the transition to high school. That program took place over a six-week period at a local university, and the summer camp participants were also those who voluntarily signed up for a gameplay club. In all cases, participants played between three and five sessions, each lasting forty minutes to one hour, over a two-week period.

#### **4.1 Participants**

In total, 182 youth (52% male, 48% female) participated across the eight sites. Participant ages ranged from 9 - 17 years old. Recruitment methods varied slightly between the camp site and the school sites. For the summer camp, informed consent documents (and an additional information sheet explaining the study in plain language) were distributed to all camp participants as part of their orientation package for the summer camp program. The camp was grouped into cohorts, so those minors who did not return a signed informed consent played console-based video games or surfed the Internet while participants took part in the study.

For all remaining sites, participants were recruited by canvassing classrooms with the aid of the school's teacher-librarian, and through discussions with teachers interested in having their students involved in the study. Interested students were asked to bring home an informed consent document for their parents to sign, accompanied by a letter written by the teacher-librarian explaining the purpose of the research in plain language to ensure parents and students understood the study.

#### **4.2 Apparatus**

Macbook laptops, provided by the research team, were used in this study for all sites except the international baccalaureate, where students opted to use their personal laptops. For the summer



camp, the university's wireless access was used. For the school sites, where possible the sessions used the school's own network, and a cellular-based access point was used as a back-up solution when necessary.



Figure 3: One of six school sites (elementary)

### 4.3 Procedure

The same procedure was followed at each site. On the first day of the study, participants were asked to complete an 88-question survey to collect data on demographics and gaming experience. Demographic data related to income was cross checked with existing Canadian census data related to SES. When finished with the survey, participants were taken through an instructional exercise about Internet safety, focussing on the importance of not providing indicators of one's 'real' identity to others online, and on cyber-bullying. This exercise was completed with the students playing an Internet safety trivia game.

For the play portion of the study, participants were usually spread out in one large classroom, but occasionally distributed across multiple rooms to encourage text chat in the game. Once in-game, they created avatars and played with one another on a secure server created for the study.

At least two research assistants were on site to collect detailed fieldnotes and video data, which were cross-checked with the server-side data collected during Guardian Academy play.

## 5. Results and Discussion

### 5.1 Participants' Play

Within the sample of 182 participants, over 90% indicated in their survey responses that they played video games. The most popular genres involved direct competition with other players such as *Super Mario Kart*; notably missing were role-play and adventure games. Although 34% of participants indicated they played in virtual worlds, the majority lacked familiarity with the norms,

conventions, and play-styles that mark MMOG play, and, therefore, with how to play Guardian Academy – despite its adoption of generic ‘commercial off-the-shelf’ MMO mechanics.



**Figure 4: Participant playing Guardian Academy**

Looking at the survey data more closely, we discovered that the virtual worlds our young participants had spent time in were games like Club Penguin, *Habbo*, and *YoWorld* (formerly *Yoville*), which did not share the conventional MMOG mechanics of Guardian Academy or other fantasy-themed, MMOGs such as World of Warcraft. While these virtual worlds do share key functionalities (e.g., creating and developing an avatar, earning currency, interacting with others online), their objectives and gameplay are very different. For example, in Club Penguin gameplay is comprised of a series of mini games like sled racing and ice fishing, and the overall objectives of the world/environment are organized around equipping your avatar (penguin), designing your igloo, and hanging out in the public spaces like the dock and the coffee shop. When considering the educational potential of MMOGs, researchers and educators need to be aware that not all youths play MMOGs, and those who do are not all playing the same games, so that neither players' interest nor competence can be presumed. This seems, at present, to be a minor point, but one that is increasing in importance as digital games make their way into classrooms and schools.

## **5.2 Guardian Academy – Affordances**

Guardian Academy, modelled after commercially successful fantasy-themed MMOs, allows players to create an avatar, accept quests, and engage in both PvP (Player versus Player) and PvE (Player versus Environment) play. Player versus Player is a typical mechanic in an MMOG; it means that players choose to go into an environment where they can battle one another, typically referred to

as an “arena”; Player versus Environment play means that players are, in effect, alone in the game, questing, fighting in-game monsters, collecting loot (in-game rewards), and levelling up.

In the case of Guardian Academy, the avatar creation system was basic compared to commercially designed MMOGs like World of Warcraft and *Guild Wars*. In particular, the system was limited to choosing between male and female, and between one of two classes – healer/mage and fighter/tank. There were no customizable options for hair, body size and height, skin tone, clothing, armor, and so on. In this study, very few participants chose an avatar of the opposite sex (5 in total) and of those 5 all were from the older age group (16-17), and all indicated they had played MMOGs in the past.

A second departure from commercial fantasy-themed MMOs (like World of Warcraft, *Rift* and Maple Story) is that the game does not impose a waiting period to engage in PvP. Players of World of Warcraft, for example, must reach level 10 to engage in PVP combat, and players of Maple Story must wait until level 30. This waiting period communicates to the player that they should not be engaging in PvP combat until they are ‘good enough’. Further, it indicates clearly to players that PvP arenas are not where you learn how to play an MMO; this contributes to a construction of the ‘PvPer’ as skilled expert, a status usually attributed to young males (Yee, Ducheneaut, Yao, & Nelson, 2011). That conventional conception is bolstered in the literature by researchers who perpetuate stereotypes of expert or ‘hardcore’ play by focusing attention on PvP/raids (Bardzell, Bardzell, & Nardi, 2011; Chen, 2009; Golub, 2010). This reflects a well-established cultural assumption – if you’re going to PvP, you should already “know how to play.” PvP play is, therefore, an unlikely ludic space for novices.

Despite the above assumptions, we found many participants engaging in PvP when learning how to play. Many of these youth’s experiences in digital gaming were console based and involved a play-style progression, where PvP play typically comes before PvE play. Most participants had never quested before, did not understand how the quest structure worked, and in general were more comfortable with direct combat than with playing and questing together. This inversion of the typical MMOG play-style progression (PvP → PvE, instead of PvE → PvP), provided a degree of immediate familiarity within an unfamiliar world, which they gravitated towards as a group of novice players.

Guardian Academy gave players choice over how they learned to play, because PvP combat did not require completion of any quests. This meant we could not construe a player’s choice to engage in PvP as indicative of expertise or a “hardcore” mindset, illustrating how assumed categories/markers and perceptions associating types of players with types of play are not always stable.

Of note is that minors’ chat is distinguished by a ‘telegraphic’ style, low use of articles and other grammatical particles; low use of pronouns; and high use of all-caps (shouting) (Lawson & Murray, 2015). Further, a distinguishing feature of avatar names used by these young players was their deployment of all-caps, use of their real-world names, the inclusion of numbers, and the infrequency of census names common to players 18 and over. Game activity features characteristic of minors included more PvP than PvE play, and more deaths. Minors’ in-game movement was less expansive, and less purposeful than their adult counterparts (Murray, et al., 2012).

### 5.3 Constructed Network

#### 5.3.1 Inverting the expertise model

As mentioned, few of our participants had any experience playing in MMOGs or virtual worlds. Participants from higher SES schools generally exhibited superior tech skills and experience, including game and MMOG experience, while lower SES participants demonstrated less tech

experience, weaker tech skills, and little MMOG experience. Of the 34% of students who had played MMOG's, the majority were higher SES and more experienced with social virtual worlds and games that had little in common with commercially designed MMOGs. In addition to little familiarity with MMOGs, many of our lower SES participants were lacking basic technical skills, such as using a mouse and keyboard together, typing a URL into a browser, and generally navigating even a 2-D interface like *GA*.

In the high SES group, a handful of participants had played the MMOG *Maple Story*, and they were able to take up PvE questing immediately. The rest of the participants viewed PvE play as more difficult, and had trouble with the general structure of questing (not understanding, for example, why an NPC would have an exclamation mark over their head), and instead found PvP combat more accessible and less demanding than fulfilling quest objectives, which called not just for game experience but for literacy, interpretive skills, and strategic thinking. Accordingly, our participants regarded peers who were questing as expert players. These 'experts', in turn, 'sold' PvE to their peers (and to researchers) as a more advanced form of play in comparison to PvP, which they didn't view as interesting or challenging.

Guardian Academy's design invited this inversion, in that PvE offered more opportunities to perform expertise than PvP in this context, and greater rewards (more experience points than PvP/arena battles). There being only two character classes to choose from, and few abilities available for combat in early game play, winning PvP duels or group battles in Guardian Academy doesn't necessitate much expertise; it is entirely possible for a novice player with little knowledge of MMO play to beat an 'expert' in the arena because they are both at a very 'low level' in the beginning of Guardian Academy. PvE activities, on the other hand, offered opportunities for players to display a broader range of levels and expertise, and that is what they did.

We did observe attempts on behalf of experienced players to complete, on their own, quests designed for a small group of players to overcome challenges. Indeed, many of the participants who were viewed as "experts" earned their reputation this way, and that reputation, in turn, encouraged novice players to "follow in their footsteps". It is possible, too, that the absence of those reputed "experts" from the PvP arena further validated the construction of PvP as a "training" ground for novice play.

Interestingly, there were no such (PvE) experts in the summer camp group, a low SES demographic who also reported in the survey that they were mostly novice and casual players. The summer camp participants played as a "group", and all participants engaged each other in PvP play with, initially, none of those participants making any significant attempts at questing. We believe this is likely due to the fact that there were no experienced MMOG players in this group, leaving no participants for whom questing was a familiar activity. Rather, this group collaboratively conceptualized their own model of play, which systematically began with PvP play.

### 5.3.2 Levelling up

Once participants gained sufficient confidence in their basic abilities, honed in the PvP arena, they began to make efforts at questing, which, as explained, they regarded as an 'expert' activity. That unlikely progression made sense to our participants, but these novice players' inverted assumptions about expertise were a reflection on the game's design.

Its construction was evidenced in the conversations going on both in the (real world) room and in the game's text chat, recorded as part of the instrumentation of the game. Text chat for some players became a kind of sub-text for entertainment where they would taunt one another, attempt to get around the filter that changed swear words into nonsense by using number and letter combinations, and generally 'shouting out' to their co-situated players in text, even if they were sitting right next to each other. In addition, co-situated players would ask one another questions



about locating objects, enemies, or NPCs (e.g., “where do I find \_\_\_\_?”), or strategies (e.g., “how do I kill the queen spider?”). This offered an opportunity for players who thought of themselves as experts to demonstrate their expertise in the “real world.” Interestingly, the presumption of “expertise” as being exclusively centered around PvE/questing led, at one of the sites, to the eventual formation of two “factions” around two competing “experts”.

At the summer camp site, the fact that nobody in the group had played MMOs like Guardian Academy meant that figuring out what constituted novice/expert play was rather a grassroots, group sense-making exercise in which not just game-based but also real-world relations and actions played an influential role in guiding in-game actions and constructions of “expertise.”

In this context, we observed participants figuring out how to figure out how they would identify expertise. Their “working through” was characterized by a slightly antagonistic, competitive spirit, or “sizing up” that was absent at the other sites. In-room, we observed participants challenging each other, trash talking, announcing achievements, etc. In the text chat, we noted participants frequently insulting each other, or directing insults at nobody in particular. This helped produce a generalized antagonistic/competitive attitude towards anyone and everyone. Nobody was exempt because everybody was at a comparable novice level.

Notions of progression and development of “expertise” in this (summer camp) group of novices (with little prior MMOG experience) were tied initially not to PvE skill, but to avatar level; quite simply, those at a higher level were presumed more skilled/expert than those at a lower level. Understanding the value of a level number does not require knowledge either about Guardian Academy or about MMOGs in general, and summer camp participants, in their unfamiliarity with both, used numbers (avatar level) as a “placeholder” indicator of expertise until they developed a more robust conceptualization of what constituted skilled play.

Participants in the summer camp moved to PvE when they discovered it was a faster way to level up than PvP -- and they did so as a group! As they moved from PvP to PvE, we observed that their text chat became less antagonistic (less “baiting” with insults) and discussions turned towards game-related topics. Game related questions were starting to be asked in the text chat. Many of them were unanswered in the text chat, however, because they were often answered in the real-world by enthusiastic co-situated players. Although skilling-up took a different form at the school sites where students brought greater game experience, we observed in these sites, too, that to make a claim for expertise, players laid the “groundwork” in the real-world, partly by gathering real-world support.

## 6. Conclusions

Despite their obvious ‘real world’ differences in expertise and general technical skills, all participants in this study enthusiastically engaged, and many asked us for the URL to continue playing the game at home, suggesting that even those young people, inexperienced in MMOG play, find it an engaging, interactive environment. This speaks to MMOGs’ potential as vehicles for learning, even if many students will require some technical upskilling to make these environments more accessible. We hope this study will contribute to better understanding the ways in which young people engage with MMOGs, making evident that MMOGs are, decidedly, *not* typical play spaces for those in lower SES households and contexts. And, in part because these novice players inverted the hierarchy of PvE vs. PvP play in developing their abilities, and because their communications combined both in-game and co-situated real world interaction, we observed that they played and communicated with one another, less cautiously than their adult counterparts in the same environment—despite being monitored by adults and having had very explicit instruction in why and how NOT to do that. This study shows that markers and contexts of player expertise are constructions/results of a socio-technical network of multiple actors, both real and virtual, human, material, algorithmic agents interlinking game affordances, with player contexts, cultures, and

communities. For youth playing Guardian Academy, these 'markers' were negotiated and constructed 'in situ', and, just as importantly, they were subject to change.

It was only by getting to know our participants' past and immediate MMOG experiences that we could gain distance from several specific assumptions that invite a misreading of server-side player data: assumptions about expertise, about 'digital nativity', about what kind of game an MMOG is, and about trajectories of learning-to-play.

Lastly, as a contribution to virtual worlds research, challenging presumptions that this is a generation of game players and game makers, our 'ground truth' study of young people's play as it develops across real world and online contexts, makes visible the powerful and consistent impacts of socioeconomic status on technical capabilities. This, in turn, determines the probability that students will have a virtual world or MMO experience, as well as the forms it may take. Perhaps most significantly, this study underscores the value of qualitative work across multiple and diverse sites and demographics, in studying MMOG play with this, still under-researched, population.

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