Interactive Technology & Smart Education (2005) 2: 89–100

More than just 'XP': learning social skills in massively multiplayer online games

Nicolas Ducheneaut and Robert J. Moore

Palo Alto Research Center (PARC), 3333 Coyote Hill Road, Palo Alto, CA 94304, USA
Email: {nicolas,bobmoore}@parc.com

Massively Multiplayer Online Role Playing Games (MMORPGs) have become complex social worlds. As such, playing these games requires more than accomplishing simple objectives: it is also a process of socialization into a community of gamers. Through our observation of players' activities we describe how MMORPGs provide opportunities for learning social skills such as: how to meet people; how to manage a small group; how to coordinate and cooperate with people; and how to participate in sociable interaction with them. We show how this social learning is tied to three important types of social interaction that are characteristic of MMORPGs: players' self-organization, instrumental coordination, and downtime sociability. We conclude by discussing the societal impacts of our findings and how the features of MMORPGs could be repurposed in environments specifically designed for social learning.

Keywords: Online games, ethnography, socialization, social behavior, social learning.

1. INTRODUCTION

Playing computer games is becoming more and more a social experience. Players often sit together in front of a single machine, sharing skills and expertise to accomplish a game's objectives (King & Borland, 2003); and as soon as machines could be connected to one another, gamers were quick to exploit the possibility to live and play in shared virtual worlds (Cherny, 1999; Cuciz, 2001). It took the recent explosion in Massively Multiplayer Online Role-Playing Games (MMORPGs) – games like Ultima Online,[1] EverQuest[2] and Star Wars Galaxies[3] – however, for mainstream media and public opinion to realize that computer games have become full-fledged social worlds in their own right (e.g. Kolbert, 2001).

Despite this new attention, little is know about how these games work in practice as social worlds. What kinds of interactions do players have with each other? What kinds of knowledge and practices are shared across the game community? To shed more light on these issues we are conducting a broad, exploratory study of the social dimensions of multiplayer online games. As part of this study we examine the range of social interactions that are characteristic of MMORPGs and the opportunities they provide for exercising and learning basic social skills.

There has been a lot of research in the past on the use and effects of games on teaching. Games that are used in professional contexts include:

- *Games for teaching a specific curriculum (e.g. mathematics)*. Henry Jenkins and the members of the Education Arcade symposium (see Terdiman, 2004), for instance, are interested in developing or using games to teach students some of the

basic knowledge traditionally acquired in school. While not directly concerned with games, the work of Abelson and diSessa (1981) illustrates how computers can be used in a "fun" way to learn a curriculum.

- *Games for therapy*. Coming essentially from the field of psychology, a number of past and current efforts are under way to build games that have a therapeutic component. The Self-Esteem Games project at McGill University (Baldwin *et al.,* 2004), for instance, designed games to help players feel more secure and confident in themselves.
- *Games for training*. These particular games are used to put players in a specific situation reproducing real-life. Flight simulators, such as the popular version offered by Microsoft, are the most well known examples.

Closer to our own research interests, games have also been designed specifically to teach *interpersonal and intercultural communication skills* (Raybourn, 2001). But these, as well as the other examples we have mentioned before, all have a point in common: they were *designed consciously and specifically to promote learning*. In this they differ from most of the computer games played nowadays, MMORPGs included, which are designed primarily with entertainment in mind. But while enjoyment is often the principal benefit of playing video games, the more recent crop of MMORPGs make social learning part and parcel of the game (Jakobson & Taylor, 2003). Some game designers have clearly expressed the intent to create games where socialization is encouraged and rewarded (see Koster, 2004). As these games have been quite successful at attracting large numbers of players (Woodcock, 2004), they could be an interesting source of design guidelines for games that purposefully seek to encourage social learning (Gee, 2003).

In this paper, we report on the initial findings emerging out of our empirical studies of player-to-player interactions in and around multiplayer games. We document the cultural practices of MMORPGs' players, and how the process of socialization into a community of gamers is an important source of learning. We focus on three major areas: player self-organization, instrumental interactions, and sociability. This allows us to show how MMORPGs are about much more than just gaining "experience points" (xp[4]). Instead, MMORPGs are virtual platforms players can use to learn (and later teach) the interpersonal communication principles that are appropriate in online 3D environments. We conclude by highlighting the particular features of these games that directly contribute to social learning, and how they could be reused in other contexts.

2. BACKGROUND AND METHODS

In this study, we focused on one particular MMORPG: Everquest Online Adventures (EQOA),[5] an adaptation of the popular PC game Everquest to Sony's Playstation 2 (PS2) console. We selected this game essentially for practical reasons: the two authors both own a PS2, and capturing video data from the game was facilitated by the fact that the game was designed to be played on a standard television, making its text easily readable when recorded on videotape. Moreover EQOA is a good representative of the popular "medieval fantasy" genre of MMORPGs, extending game design principles tested in its predecessor Everquest but also earlier games such as Ultima Online.

As of today, there are more than 50,000 people playing EQOA in the United States (Woodcock, 2004). The game takes place in a fantasy world broadly inspired from the works of authors such as J.R.R. Tolkien. The game is set five centuries before the PC-version of EverQuest and takes place on a single continent, Tunaria, in the larger world of Norrath. Much like pencil-and-paper role-playing games, players select a "race" (e.g. elf, human, dwarf, etc.) and a "class" (e.g. wizard, warrior), both of which will affect their attributes and abilities. Players then take control of an "avatar" or virtual body in an elaborate 3D space, where they battle a variety of creatures and accomplish quests to progress in the game and develop their character (see Figure 1).

To study life in EQOA we chose to adopt an ethnographic stance. Ethnographic field research involves the study of groups and people as they go

Figure 1 EQOA's interface (above, players are forming a group)

about their everyday lives. The term "participant observation" is often used to characterize this approach, since the researcher seeks to immerse himself in others' worlds in order to grasp what they experience as meaningful and important. Ethnography therefore entails "some amount of genuinely social interaction in the field with the subjects of the study, some direct observation of relevant events [...] and open-endedness in the direction the study takes" (McCall & Simmons, 1969).

However, virtual worlds such as the ones represented by EQOA pose a methodological challenge to the ethnographer. Indeed most of this approach is based on the ethnographer "being there" in the field to observe – but this "there" is nebulous at best in the case of online spaces (Rutter & Smith, 2002). Still, a majority of researchers believe in the virtues of "virtual ethnography" (Hine, 2000), that is, an adaptation of traditional ethnography to the study of cyberspace. As Mason puts it:

> "*A virtual ethnography is one that fully immerses the ethnographer into the consensual reality experienced by groups of people who use computer-mediated communication as their primary, and often only, means of communication. As such, the online or virtual persona of the participants are the main focus of the ethnographer. Generally, researchers have wanted to focus on the person at the keyboard; a virtual ethnography reverses this and works instead with the persona that has been projected into cyberspace by the typist.*"

A virtual ethnography is then, simply, an ethnography that treats cyberspace as the ethnographic reality. This remains a controversial step, but it is not the purpose of this paper to discuss this controversy in great depth. The interested reader is referred to (Hine, 2000; Lyman & Wakeford, 1999; Mason, 1999; Miller & Slater, 2000; Rutter & Smith, 2002) to get an overview of the debate.

Our study started with the selection of a server from one of the six EQOA offers in the United States and the creation of new characters. To balance our view of the game as much as possible, one of the authors selected a combat-oriented class while the other selected a "combat-assist" class (namely, a wizard – see section 3.4). We logged in regularly – at least twice a week, sometimes much more, each time for at least two hours over a three-month period. We tended to play at the peak times, which seemed to be weeknights, especially Fridays, and afternoons on the weekend. Through this regular participation we progressively became members of the community of players on our server. As our characters evolved we joined "guilds" (semi-permanent groups of players) and participated in activities of increasing difficulty and complexity. All of these activities were recorded using a video camera connected directly to our consoles. This provided us with a rich set of ethnographic data we later analyzed in depth using a combination Conversation Analysis (Sacks *et al.*, 1974) and open-ended coding (Glaser, 1998). Overall we recorded close to 100 hours of gameplay from EQOA.

Through our participant observation of EQOA, we developed a member's perspective of what life is like there. This perspective then greatly enhanced our ability to understand the natural player practices captured on our videotapes. By reviewing the videotapes and reflecting on our own experiences, we began to identify the primary types of social interaction in which players tend to engage – from the initial "grouping sequences", when several players decide to band together, to the humor and small talk occurring between game events. Through these observations we can see how players acquire the skills needed to participate fully and meaningfully in the wider community of a game.

3. FINDINGS

3.1 From "XP" to Social Capital

Early on in our observations, we were struck by the social complexity of current multiplayer online games such as EQOA. Most accounts of games focus on the seemingly mindless task of killing monsters and accumulating experience points to make your character evolve. While it is true that players spend a significant amount of time in combat (which is not as mindless as it may seem – see Taylor, 2003), they spend even more time simply communicating with other players. At a minimum, talking with others helps to accomplish the game's objectives (e.g. asking questions about the location of an object or creature). But more often than not, talking with others is an intricate part of the game. For instance, Everquest's "quests" are too difficult for a single player so that only a coordinated and complementary group of players can accomplish them (Jakobson & Taylor, 2003): composing a group and performing a specific role within it are therefore essential tasks in the game.

As a result, gamers need to do much more than mindlessly accumulate experience points (xp): they also need to increase their social capital within the game's society. In other words, they need not only learn the game commands, but they must also

become socialized into the game community. To be recognized as a good player you need to learn the lingo, perform your instrumental role well when grouped with others, and more generally demonstrate that you are an interesting person to play with (e.g. through humor). If you succeed, others will include you in their "buddy list" to encourage further interactions.[7] In short, these games are all about having the right social skills.

3.2 Situated Learning in EQOA

As players enter the game world, they are confronted by a bewildering array of new and foreign concepts – much like a stranger entering a foreign culture. Online games, particularly of the role-playing fantasy genre, share a rich culture that dates back to at least the 1970s. This includes entities, concepts, lingo and practices evolved out of the early text-based Multi-User Dungeons (Cherny, 1999), pencil-and-paper based games such as Dungeons and Dragons (Fine, 1983; King & Borland, 2003), and interactional practices borrowed from Internet Relay Chat (IRC) and Instant Messaging (IM), for example, brb or "be right back," afk or "away from keyboard," and lol or "laugh out loud".

The game manual, however, says nothing about these concepts: instead, the greatest resource in learning how to play is fellow players. In fact, it seems game companies have even acknowledged this fact implicitly. Game manuals are frequently quite skinny, limiting themselves to a cursory description of the most basic commands. Players are encouraged to ask questions in the game and to rely on the players' community for knowledge (see also Raybourn, 1998).

Although it is not an explicit goal of MMORPGs, social learning nonetheless occurs all the time as a normal feature of participation in a "community of practice" (Lave & Wenger, 1991; Gee, 2003). In the course of playing the game, there are a multitude of opportunities for social interactions with other players and through these "situated learning" occurs. Opportunities for situated learning in the MMORPG we have examined fall into four categories or modes of social learning:

- *In-game, in-context discussions*. The social nature of MMORPGs is due in great part to their communication infrastructure. All MMORPGs offer, at a minimum, a textual chat system similar to IRC. It is used by the players to communicate whenever something of interest happens in the game. This allows for a tight feedback loop between the events happening on the screen and the comments of the members of a group. In other words, MMORPGs allow information to be exchanged "on demand and just in time, not out of the contexts of actual use" (Gee, 2003) – a central principle of good learning environments.
- *Out-game, out-of-context discussions*. Communication between the players does not stop when the game is over. Instead, the game spills out into forums and websites, some maintained by the game producers, and some entirely player-created. These discussions are also important occasions for knowledge transfer. Players can be producers of knowledge and not simply consumers (Gee, 2003).
- *Observation*. Most of the game's activities are accomplished in plain view of other players. Players learn a great deal simply by watching what other players do (Prensky, 2001). Observing activities in a densely populated spot allows the players to engage in "legitimate peripheral participation" (Lave & Wenger, 1991).
- *In-situ teaching*. For many in-game practices, asking about them, reading about them, and observing them are not enough. Learning to do them oneself requires practice and teaching from a more experienced player. We found episodes of direct teaching between players to be quite common (as in Raybourn, 1998).

In learning the game community's shared culture and practices, players draw on all four of these modes of social learning.

Although Lave and Wenger (1991) point out the centrality of practice in social learning, they say surprising little about particular practices within which learning can be situated. In the remainder of this paper, we drill down on such shared practices in EQOA. Furthermore, we highlight the potential these practices provide for learning basic social skills in addition to learning the particular game practices themselves. In this vein we identify three types of social interaction that are most important for becoming a competent member of the game community:

- *Self-organization* among players: as we mentioned earlier, accomplishing the game's objectives requires coordination among players. For this players must organize themselves into small groups. Activities such as group creation, group maintenance, and group disbanding are important moments where the players can observe and learn how to behave as a member of the game community.

- *Instrumental coordination*: this covers moments in the game when players have to work together as a team to accomplish the game's objectives. Being able to perform a role reliably is a mark of a player's social competence.
- *Sociability*: this includes things such as humor (or its absence), small talk, players "catching up" with each other. This is as important to social cohesion, if not more, than instrumental coordination.

We will now describe how social skills are acquired and demonstrated (or not) during these three types of interactions and four types of contexts. We will illustrate how successful and unsuccessful social learning happens through several example of player-to-player interaction extracted from our video data.

3.3 Small-Group Self-Organization: How to Meet People

Games like EQOA strongly encourage players to team up with each other. The quests are specifically designed to be too difficult for a single character, and so players must find help in order to complete them. In addition, experience points can be earned more efficiently if one is in a group with others. Therefore, there is a built-in motivation to band together with other players. However, there is no automatic way to join a group (unlike in another successful genre of multiplayer games: First-Person Shooters. In games such as CounterStrike,[8] any new player is automatically assigned to a team). In EQOA players are on their own to find others who are willing to play with them, and it is only through interaction with other players that one can find willing teammates.

Technically "grouping" simply involves one player using the "invite to group" command and the recipient selecting "yes." Once grouped, the two share a "groupchat" channel and automatically share experience points from enemies killed by either player. The most efficient way to gain experience points is to battle opponents while grouped with others. By working as a team, you can defeat higher-level enemies (which give more experience points) than you could defeat on your own. The initial inviter is then the "leader" of the group, in a technical sense, in that only he or she can invite additional members (four is the maximum group size) or disband the group.

While technically grouping is quite simple, socially it is more complex. Although any player can extend a formal invitation to any other at any time, there are standard shared ways of grouping. These grouping practices emerge and become established over time, and novice players, or "newbies," learn them through observation and participation. For example, players tend to form groups in particular places. In EQOA there is a "coach" system of transportation by which characters can teleport between towns. To use a coach, the character must go to a stable in a town and talk to the coach master. It is these coaches that informally serve as grouping spots (see Figure 2). Players go to coaches to meet up with other players looking to join a group, check each other out, and offer invitations.

Once at a coach, there are a variety of ways to form a group, yet the standard method is for one player to solicit an invitation and another player then to extend one. Players can use a "looking for group" command which when used automatically produces the following kind of message in the chat box:

G shouts: 22 Shadowknight seeking group!

The format of the message accomplishes several things: it displays the message to everyone within "shouting" range, announces the level and class of the character, as well as the desire to join a group. Another player can assess the level and class of the character to determine if he or she would be a good fit and then approach the character, or more commonly, simply extend an invitation based on this information.

Although the "looking for group" command is part of the game's design, players then improvise on its basic format. That is, players will manually type (or program) customized messages that resemble the "looking for group" message, but which provide more fine-grained information. For example:

Figure 2 Grouping at coach

B shouts: Lvl 29 SK Seeking XP Group!
O shouts: Level 23 Frontier Cannibal Shaman needs group for Long XP Grind
V shouts: A lvl 9 bard seeking a xp grp...PST or INVITE
M shouts: UNEMPLOYED 13 Shaman LOOKING 4 A GROUP W/ A REAL TANK!
L shouts: Group around level 23 with a healer looking for more!
M shouts: Grp seeks a caster lvl 20-23 PST[9]

In these variations on the "looking for group" message, players may reveal more about their characters, reveal what kind of group they wish to join, and reveal what they want the group to do.

Other important aspect of grouping practices are *level matching* and *class balancing*. In order to fight effectively and maximize experience points, a good group should contain four members, all around the same level of experience (levels range from 1 to 60), and with complementary classes (combat roles are explained in the next section). A good group leader will assemble the most balanced group possible given the characters available on the scene. When deciding whether to invite a character or whether to stick with a group, players will assess whether the group is adequately balanced. For example, in the following exchange, E, C and M are in a group and have just lost their fourth member. They return to the coach at Darvar Manor to recruit another player. E, the group leader, uses the "Who" menu to scan the names and attributes of all characters in the vicinity. The members then discuss what class of character to try to enlist.

C tells the group: what should we get... caster? tank?
C tells the group: these ogre shadowknights look badass
M tells the group: get damage deal if u can
E tells the group: what's damage deal?
M tells the group: a damage dealing class

In other words, M advises E to try to enlist a warrior-class character or "damage dealing class" (e.g. warrior, paladin, shadowknight) who can inflict extensive damage to an opponent using weapons.

In another case, R is assembling a group for the explicit purpose of traveling to a particular town, Moradhim, rather than for the typical purpose of gaining experience points. He also specifies the range of levels he is looking for, which is rather large.

R shouts: looking for a group lvl 8 to 12
R shouts: for help getting to mor[10]

R (level 8) has successfully recruited A (level 9) and then invites T (level 12), who is a significantly higher level than the others. When T accepts, A points out that the inclusion of T in the group will preclude A and R from gaining xp (based on the game design) because T's level is too high.

A tells the group: u know we wont get any xp now
A tells the group: no offense
R tells the group: i know and i don't care for it right now

It is through this interaction with A and R that T learned that level matching matters when assembling a group.

Usually after these formal invitations have been accepted (although also sometimes before), the players exchange bows and textual greetings and begin to plan what they will do and where they will go. At any time following the initial grouping, they may discover that they do not all work well together, that they have diverging plans, or even that they do not like each other. A group member may then leave, or be kicked out and begin the grouping process all over again.

Thus, we see that grouping practices in EQOA are somewhat complicated and that becoming competent in them requires in-game socialization. While the mechanics of how grouping is accomplished in the game is quite different than meeting people in real life, in many ways they are similar. The closest real-world equivalents to grouping at coaches in EQOA may be situations like pick-up basketball or singles' bars. One goes to a particular place, surveys the potential teammates or partners who are available on the scene, approaches those who seem to be the best fit, and in the end makes due with whomever they can get.

In summary, grouping in EQOA gives players experience in approaching and meeting strangers. In some ways, virtual worlds are ideal places for learning to meet new people because they are safer than real life and the costs of rejection and losing face seem to be much lower. In this they resemble singles' bars, or pick-up sports games. They also teach how to assemble a well-balanced, efficient team – an important skill in today's workplace (Gee, 2003).

3.4 Instrumental Coordination: How to Coordinate and Cooperate with People

Once a group is formed, each player has to learn how to play his or her role correctly: it is not just

hacking and slashing. As we mentioned earlier the game's quests are purposefully too difficult for a single player, and group members must coordinate their actions in order to succeed. Over time, the entire community of players has evolved several cultural practices to deal with this issue of coordination, practices that newcomers must learn.

Initially when newbies engage in group combat, they tend to attack the computer-controlled opponent in individualistic ways. Each group member does their own thing, but they are not necessarily coordinating their attacks. However, when playing with more experienced players (or by browsing the game message boards), they soon begin to hear mention of particular combat roles: "tank", "healer," "caster," and "melee." A good group is one that is balanced in terms of the classes that can play these roles, and experienced players know how to play the role that is appropriate to their character's class.

The most efficient combat strategy is to attack only one opponent at a time. This is the responsibility of the *tank* (rugged weapon-fighting classes): he "pulls" (or attracts) a single opponent toward the group, and then "taunts" it so that it only attacks him (see G in Figure 3). This facilitates the work of the other group members. While the opponent is focused on the tank, the *healer* (see C in Figure 3) can then focus his efforts on just one person – the tank – although the healer is responsible for keeping everyone in the group from dying. Failure can occur if the tank pulls several opponents at once, causing the healer to be overwhelmed, run out of power, and eventually everybody dying for lack of healing. Similarly, the tank also distracts the opponent from the caster. The *caster* (spell-casting classes; see character in foreground in Figure 3) can cause the greatest amount of damage to an opponent using spells, yet he is extremely vulnerable and will die quickly if attacked. It is the responsibility of the tank to make sure this doesn't happen and, if it does, the responsibility of the healer to remedy it. Finally the *melee* (weaker weapon-fighting classes; see M in Figure 3, who is barely visible between the gnoll and the tree) assists the tank in combat and in keeping opponents away from the healer and caster. In other words, these roles, and the corresponding classes, are interdependent: individually each one is fairly limited, but when working together, they can be more effective than any of them could be on their own. In playing these four combat roles, if a group of players can tightly coordinate their actions, they can efficiently eliminate hordes of opponents. The result is an "xp grind" which enables them to progress through the levels of their class at a rapid pace.

Figure 3 Combat roles

While learning the terminology and functions of the combat roles is a significant accomplishment for the newbie, these are not enough. Performing a particular role takes skill and practice. Within a group, a great deal of learning goes on. More experienced players often teach "newbies" the subtleties of their role by offering tips during the course of combat or modeling correct technique. For example, on one occasion, C and E are playing with a much more experienced Z who is "power-leveling" them. In power-leveling, a more advanced character helps less advanced characters gain xp at an accelerated rate. Although the designers have tried to prevent any type of power-leveling, the players have discovered a rather complicated workaround. This workaround has become part of the shared game culture, and on this occasion, Z is teaching the others how to do it. C is learning to play the role of "healer" and E "caster." Z advises them on each role:

Z: are you chaining heals or just using one?
C: I'm casting it several times, should I be doing something different?
Z: use two different heals and alternate
E: z, what are you casting?
E: or were you casting during the fight?
Z: detonate once then on second it was freezing strike
Z: i didnt till mob was half down or youll lose xp
E: what are u going to cast to keep the
E: nm
Z: I cant keep agro
E: right
Z: or ill do too much damage. I can only drop once you get it half way
E: so you're just doing less than half the dmg?
E: got it

For the novice player, power-leveling is rather confusing; however, through player-to-player teaching, it can be mastered after only a few sessions. As illustrated above it requires the low level player to start attacking a single monster (or "mob") until its health is down to half its initial value, at which point the higher level player steps in to kill the monster in one blow (here, using a powerful spell such as "detonate" or "freezing strike"). Any breakdown in this process can result in players not receiving experience points, dying, or both. This example illustrates how, more generally, learning to play a combat role is a central element in fitting into the game community, and how it can only be learned in-game through participation and interaction with other players.

Playing EQOA is, therefore, a really important source of learning how to be a good teammate. Playing a combat role in the context of a group is very similar to playing a particular position in a sport in the real world. To be successful, players must learn the technical aspects of coordinating their actions, as well as the more general ability to cooperate. In fact, our observations reveal that players who refuse (consciously or not) to play these group roles are quickly shunned. Among the social skills learned we can list:

- Leadership: advanced players must learn to be good conductors and orient the activities of newcomers. Style is of the essence here: this is a game after all, in which players want to have fun. As such, authoritarian dictators are rarely successful. Instead, good high-level players are more empathic. They reinforce "good" group behavior (e.g. a tank carefully pulling a single monster) and point at coordination problems (e.g. recommend that a caster stands away from combat).
- Sensitivity to others' needs: players need to observe the activities of other group members and adapt their actions accordingly. If the healer is overwhelmed and out of power, for instance, it is bad practice for the tank to immediately start bringing fresh monsters toward the group. Players who do not act according to others' needs are quickly excluded from a group.

3.5 Sociability: How to Socialize with People

Combat sequences are only a fraction of the game. EQOA has a certain rhythm built into it, where combat alternates with periods of "downtime" (e.g. between opponents or while traveling from one location to the next). These calmer periods are an opportunity for the players to chat with each other about a variety of topics, game related or not. Some game designers, such as Raph Koster of Ultima Online and Star Wars Galaxies, consciously and strategically use periods of downtime – short periods in which player must wait – in order to try to encourage social interaction among players (Koster, 2004). Thus downtime is an important opportunity for players to learn and exercise sociability (Simmel, 1949), that is, social interaction that is pursued for its own enjoyment and need produce no extrinsic results.

Indeed, playing MMORPGs is essentially about hanging out with people recreationally. In some ways, they simulate features of "third places" (Oldenburg, 1989) such as a local pub: instead of having a few drinks, a game of darts and a lot of laughs with your friends, you battle a few monsters, explore a rich landscape and have a lot of laughs with your friends (for a deeper discussion of this particular aspect of MMORPGs see Ducheneaut and Moore, 2004). Games like EQOA are not focused purely on instrumental coordination (i.e. how to kill monsters): there are opportunities for sociable interaction too.

As a lot of game time is spent "doing nothing" (or, to put it differently, not killing anything) it is important for a player to demonstrate that he is an interesting person to be with. While some may enjoy hours of running silently in the game's wilderness, we found that most players would much rather use this time to talk to each other. During these moments, humor and laughter (usually expressed with "lol," which is short for "laugh out loud") are extremely important for group cohesion and success. For example, the following exchange occurred while a group of friends was traveling to a dungeon for a quest. All three players are male, but E is a female character:

> A tells the group: my wife is jealous that I am playing with another woman wearing a sexy robe
> E tells the group: did u tell her about me?
> E tells the group: us?
> C tells the group: lol
> A tells the group: yes, she saw the picture of u I have in my wallet
> E tells the group: LOL

On another occasion, a group has just formed at a popular coach and the new group is now running to a particular location for an "xp grind" or long, efficient combat session. C and E already know each

other, but otherwise the group consists of strangers:

G tells the group: How long evryone on 4
C tells the group: not sure...
G tells the group: k
E tells the group: at least an hour
G tells the group: boo
M tells the group: im not sure yet
C tells the group: lol
E tells the group: depends on how fun you guys are ;-)
G tells the group: lol
M tells the group: nice

In addition, humor can also be woven into the activity of grinding combat xp. For example, during a long power-leveling session, Z and E who are both wizards and thus can stand back a bit from the action have the following exchange in which E asks Z about an object his avatar is visibly holding:

E: oo, i like your book, z
Z: its a list of ex wives
E: lol

While good jokes can make the gaming experience more enjoyable for everyone in a group, failed jokes can detract from it. A player who can make the other players in a group laugh is highly valued and may be kept around despite inexperience in combat. However a player who repeatedly tells jokes that the rest of the group does not find funny will likely be kicked from the group. For example, on one occasion, three friends, E, A and C picked up a fourth player, B. It quickly became clear that B did not fit in with the rest of the group who liked to tell numerous jokes. However, when B tries to participate in the joking, he is unsuccessful (see Figure 4).

E tells the group: the plan is to power level
C tells the group: cool
B tells the group: i have a 17 mag that could pop your head like a zit
((long pause))
B tells the group: lol
((longer pause))
E tells the group: the question is where and what color should the mob be

Eventually the group abandoned B, in part, because he simply was not funny.

Periods of downtime are thus a perfect platform for players to experiment and learn about sociable behavior – a skill that could easily translate to the physical world. Players learn about how and when to use humor, and how to approach strangers and progressively build up relationships. Moreover, games are an ideal platform for experimenting with sociability for two reasons:

Figure 4 A failed joke

- There is always something to talk about. The game's objectives are ideal conversation starters and ice-breakers: players share a lot of common ground because of the game's framework – if nothing else, you can always talk about the last monster killed or where to go next. This prevents what we call "interactional paralysis": unlike other physical or virtual spaces, the context of the game encourages interaction. MMORPGs benefit from a kind of "triangulation" similar to the one discussed by Whyte (1988, p.154).
- The mediation of a virtual avatar, the use of pseudonyms, and text-based communication all reduce the risks of failed interactions. Unlike real life, there is little stigma for experimenting with new jokes or trying to approach unknown others. As such games are interesting platforms for testing interactional strategies that can later be reused (or not) in the physical world.

4. CONCLUSION

There is little doubt that MMORPGs have become complex social spaces. Playing them is about more than mindlessly killing monsters: it is about learning and participating in the shared practices of a game community. As we argue, such online games provide opportunities for learning social skills such as how to meet people, how to manage a small group, how to coordinate and cooperate with people, and how

to participate in sociable interaction with them. Through our virtual ethnography, we have begun to describe the types of social interactions—self-organization into small groups, instrumental coordination, and sociability – that are characteristic of MMORPGs such as EQOA and that result from features of their design (see Table 1).

Our description of the types of social interaction in MMORPGs and the basic social skills required to participate in them raises the question of how these skills may carry over into real life or not. Online social worlds such as MMORPGs provide a relatively "safe" environment to experiment with interpersonal communication. Game characters provide players with a great deal of anonymity; the pace of interaction is slowed by the use of text chat giving players more time to think about responses; offending another player cannot escalate into real violence and textually abusive players can be silenced through the "ignore" function. Hence these online worlds are relatively safe places to experiment with approaching others and proposing joint activity, with playing specific roles within a small group, with initiating personal talk, joking, and more. Through practice in these virtual environments, players may build up self confidence in interacting with and organizing others that could carry over into real life. In fact, one veteran player of Everquest and Star Wars Galaxies whom we interviewed told us that although he is "pretty shy" in real life, online he is a leader in his guild (an in-game club or player association) and he enjoys spending time helping "newbies." He asserted that he thought the several years he spent playing MMORPGs have made him more outgoing socially in real life. In fact there is already some evidence that playing MMORPGs can improve one's basic social skills. When asked about whether they thought game play had improved their leadership skills in real life, roughly half of the Everquest players surveyed reported that they had learned a little or a lot in terms of four leadership skills: mediation, persuasion, motivation, and overall leadership (Yee, 2004). Other research suggests that Collaborative Virtual Environments (CVE) similar to MMORPGs are useful for teaching basic social skills to adults with Asperger's Syndrome (Parsons et al, 2000; Beardon et al, 2001). "The shared features between virtual and real worlds may facilitate the generalization of skills from the former to the latter" (Kerr 2002: 81). Certainly more empirical studies must be done in order to measure the impact of playing MMORPGs on real-life social competences.

Moreover the design of MMORPGs fosters the development of social skills by encouraging players to interact with one another. This is done primarily by doing three things: 1) creating tasks, such as quests, that require the participation of multiple players to accomplish (discouraging "solo play"), 2) creating interdependencies between the different character "classes" and combat roles and 3) building periods of downtime into the rhythm of game play. These seem to be general principles of small group dynamics which should be effective in a wider variety of CVEs beyond MMORPGs. There is no reason that the quests and character professions must be combat-oriented and set in fantasy worlds. In fact, even within the MMORPG genre itself there is beginning to be a wider range of activities and professions. For example, in the game Star Wars Galaxies, character professions include doctors, dancers, chefs, architects, mayors, and more that are non-combat-oriented. Players who choose these professions never have to engage in combat in order to progress in the game. Thus we can imagine

Table 1 Activities, knowledge and basic social skills by types of social interaction

	Small-group self-organization	Instrumental coordination	Sociability
Activities	• Soliciting invitations with "looking for group" announcements • Identifying best potential group members • Inviting individuals to join the group	• Pointing out a potential target to the group • Coordinating combat actions with other group members • Looting defeated opponents	• Initiating small talk • Telling jokes • Being sensitive to personal talk
Game knowledge	• Level matching • Class balancing • Grouping commands	• Combat roles: tank, healer, caster or melee • Pulling • Powerleveling • Combat commands	• Chat commands
Basic social skills	• Approaching strangers • Recruiting • Small-group formation	• Cooperation • Playing team role • Team coordination	• Politeness • Humor, wit • Empathy

education-oriented worlds that use the same principles of social interaction but use different content (perhaps based on history or real-world professions).

Going a step further the experience-points-based achievement systems in MMORPGs could easily be transformed into educational-credits-based achievement systems in which students accumulate credits for accomplishing educational tasks. Instead of "grinding" through virtual combat, students could grind through assignments together. In order to motivate advancement, students would gain some kind of new ability for their in-game characters whenever they reach a new level. Of course another motivation is reputation among fellow students. Thus the structure of MMORPGs may be suitable for learning some level of educational curricula in addition to learning basic social skills.

Overall, our research highlights the positive impacts MMORPGs can have on their players. As a final caveat, it is worth mentioning that all interactions in a multiplayer game are not necessarily the source of social learning – for instance, a class of players known as "griefers" engages in activities with the specific intent of disrupting other players' enjoyment of the game (Foo, 2004). In our experience however, these incidents are quite rare. In the words of Baym (1995), it is easy to focus on these problematic and highly publicized incidents and loose sight of the "countless, rewarding and routine non-problematic interactions" taking place in multiplayer games. Like Bartle (2004), we believe instead that "virtual worlds are a force for good, based on the fact that players can learn to be better people as a result of playing them." Much can be gained by understanding how MMORPGs can make social learning such an enjoyable activity.

NOTES

1. http://www.uo.com/ (January 2005).
2. http://eqlive.station.sony.com/ (January 2005).
3. http://starwarsgalaxies.station.sony.com/ (January 2005).
4. Gaining experience points is a central part of playing MMORPGs. Earning them is the only way for players to progress through the levels of their character's "class" (e.g., wizard or warrior) and, in return, to gain more powerful abilities (e.g. stronger spells, deadlier attacks).
5. http://everquestonlineadventures.station.sony.com/ (January 2005).
6. To protect the players' privacy, all names have been deleted from our figures.
7. Eventually groups of players who enjoy their time together can form "guilds" or "clans", which are semi-permanent social structures for organizing their members' activities. As a member of a guild, a player can more easily find other people to play with and can participate in "guild raids" in which dozens of guild mates work together to defeat an especially difficult opponent such as a dragon. To achieve this, guild leaders often pay close attention to the balance of classes and skills offered by its members.
8. http://www.counter-strike.net/ (January 2005).
9. Lvl: level; SK: ShadowKnight (a character class); Grp: group; PST: Please Send Tell (that is, the player is asking others to reply using the private messaging channel).
10. Mor means Moradhim – a centrally located village in the game world.

REFERENCES

Abelson, H. and diSessa, A. (1981) *Turtle geometry: The computer as a medium for exploring mathematics*. Cambridge, MA: MIT Press.

Baldwin, M., Baccus, J., Dandeneau, S. and Sakellaropoulo, M. (2004) Self-esteem games. From http://www.selfesteemgames.mcgill.ca/ (January 2005).

Bartle, R. (2004) *Designing virtual worlds.* Indianapolis, IN: New Riders.

Baym, N.K. (1995) From practice to culture on Usenet. In S. L. Star (ed.), *The cultures of computing*. Cambridge, MA: Blackwell, pp. 28–52.

Beardon, L., Parsons, S. and Neale, H. (2001) An interdisciplinary approach to investigating the use of virtual reality environments for people with Asperger syndrome. *Educational and Child Psychology*, 18(2), pp. 53–62.

Cherny, L. (1999) *Conversation and community: Chat in a virtual world*. Palo Alto, CA: CSLI Publications.

Cuciz, D. (2001) The history of MUDs. From http://www.gamespy.com/articles/january01/muds1/index4.shtm (January 2005).

Ducheneaut, N. and Moore, R.J. (2004) Designing for sociability in massively multiplayer games: An examination of the 'third places' of SWG. In J.H. Smith and M. Sicart (eds.), *Proceedings of the Other Players conference* (http://www.itu.dk/op/proceedings.htm). Copenhagen: IT University of Copenhagen.

Fine, G.A. (1983) *Shared fantasy: Role-playing games as social worlds*. Chicago, IL: The University of Chicago Press.

Foo, C.Y. (2004) Redefining grief play. In J.H. Smith and M. Sicart (eds.), *Proceedings of the Other Players conference* (http://www.itu.dk/op/proceedings.htm). Copenhagen: IT University of Copenhagen.

Gee, J.P. (2003) *What video games have to teach us about learning and literacy*. New York: Palgrave/MacMillan.

Glaser, B.G. (1998) *Doing grounded theory: issues and discussions*. Mill Valley, CA: Sociology Press.

Hine, C. (2000) *Virtual ethnography*. Thousand Oaks, CA: Sage.

Jakobson, M. and Taylor, T.L. (2003) The Sopranos meets EverQuest: Social networking in massively multiplayer online games. *Conference proceedings of the 2003 Digital Arts and Culture (DAC) conference*. Melbourne, Australia. pp. 81–90.

Kerr, S.J. (2002) Scaffolding – Design issues in single and collaborative virtual environments for social skills learning. In S. Muller and W. Sturzlinger (eds.),

Proceedings of the Eighth Eurographics Workshop on Virtual Environments. Aire-la-Ville, Switzerland: Eurographics Association.

King, B. and Borland, J. (2003) *Dungeons and dreamers: The rise of computer game culture*. New York: McGraw-Hill.

Kolbert, E. (2001) Pimps and dragons. *The New Yorker*, May 28, 2001. From http://www.newyorker.com/fact/content/?010528fa_FACT (January 2005).

Koster, R. (2004) Raph *Koster's writings on game design*. From http://www.legendmud.org/raph/gaming/index.html (January 2005).

Lave, J. and Wenger, E. (1991) *Situated learning: Legitimate peripheral participation*. New York, NY: Cambridge University.

Lyman, P. and Wakeford, N. (eds.) (1999) *Analyzing virtual societies: New directions in methodology*. Thousand Oaks: Sage.

McCall, G. and Simmons, J. (1969) *Issues in participant observation*. New York: Addison Wesley.

Mason, B. (1999) Issues in virtual ethnography. In K. Buckner (ed.), *Proceedings of the Esprit i3 workshop on ethnographic studies*. Edinburgh: Queen Margaret College, pp. 61–69.

Miller, D. and Slater, D. (2000) *The Internet: An ethnographic approach*. Oxford: Berg Publishers.

Oldenburg, R. (1989) *The great good place*. New York, NY: Marlowe & Co.

Parsons, S., Beardon, L., Neale, H.R., Reynard, G., Eastgate, R., Wilson, J.R., Cobb, S.V.G., Benford, S.D., Mitchell, P. and Hopkins, E. (2000) Development of social skills amongst adults with Asperger's Syndrome using virtual environments: The 'AS Interactive' project. In P. Sharkey, A. Cesarani, L. Pugnetti and A Rizzo (eds.), *3rd ICDVRAT*, Sardina, Italy, pp. 163–170.

Prensky, M. (2001) *Digital game-based learning*. McGraw-Hill.

Raybourn, E. (1998) The quest for power, popularity, and privilege in cyberspace: Identity construction in a text-based multi-user virtual reality. Paper presented at the *Western Speech Communication Association Conference*, Denver, Colorado, February 1998. Available at: http://www.cs.unm.edu/~raybourn/mo05d-1.htm (January 2005).

Raybourn, E. (2001) Designing an emergent culture of negotiation in collaborative virtual communities: The DomeCityMOO simulation. In E. Churchill, D. Snowden and A. Munro (eds.), *Collaborative virtual environments: Digital places and spaces for interaction*. London, UK: Springer Verlag, pp. 247–264.

Rutter, J. and Smith, G. (2002) Ethnographic presence in a nebulous setting. In Hine, C. (ed.), *Virtual methods: Issues in social research on the Internet*. Berg.

Sacks, H., Schegloff, E.A. and Jefferson, G. (1974) A simplest systematics for the organization of turn-taking for conversation. *Language*, 50, pp. 696–735.

Simmel, G. (1949) The sociology of sociability. *American Journal of Sociology*, 55, pp. 254–261.

Taylor, T.L. (2003) Power gamers just want to have fun?: Instrumental play in a MMOG. *Proceedings of the 1st Digra conference: Level Up*. The University of Utrecht, The Netherlands. Available at: http://www.itu.dk/people/tltaylor/papers/Taylor-Powergamers.pdf (January 2005).

Terdiman, D. (2004) *Play games, be better students?* From http://www.wired.com/news/games/0,2101,63415,00.html (January 2005).

Whyte, W.H. (1988) *City: Rediscovering the center*. New York: Anchor Books.

Woodcock, B. (2004) An Analysis of MMOG *Subscription Growth – Version 9.0*. From http://pw1.netcom.com/~sirbruce/Subscriptions.html (January 2005).

Yee, N. (2004) Learning Leadership Skills. *The Daedalus Project*. From http://www.nickyee.com/daedalus/archives/000338.php (January 2005).

Nicolas Ducheneaut is a social scientist in the Computer Science Laboratory at PARC. He obtained his PhD in 2003 from the University of California, Berkeley. His research interests include the sociology of online communities, computer-supported cooperative work, and human-computer interaction. He has studied social interactions in a wide variety of environments ranging from real-time multiplayer games to large bureaucracies. These studies led to the design of novel technologies to better support electronic communication in virtual environments. Nicolas's research is based on a combination of qualitative methods (ethnography) with quantitative data collection and analysis (such as data mining and social network analysis).

Robert J. Moore is a sociologist in the Systems and Practices Laboratory at PARC. He obtained his PhD in 1999 from Indiana University, Bloomington, where he was trained in ethnomethodology and conversation analysis. His research interests include the organization of social interaction and practice in workplaces and in 3D virtual environments, with a focus on gesture and embodied conduct. He has conducted video-based, work practice ethnographies of document production centers, multiplayer online games, automobile assembly plants, and survey research call centers.
