Humanism, Collaboration, and the Future of Serious and Educational Games

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Abstract

Current methods used for designing serious and educational games rely on humanist theory that places too much emphasis on individual study while denying the proven educational worth of collaborative learning. This article explores the origins of humanist educational theory within serious games and purposes a solution to the shortcomings it creates. By incorporating collaborative learning techniques, through the use of multiplayer game design, it is possible to further the potential of serious games, increasing retention and transfer.

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Introduction

The *McDonald's Game* was designed by Italian games developer Molleindustria in 2006 in an attempt to highlight the atrocities that occur on an everyday basis at McDonald's (Molleindustria). The player is tasked with managing various aspects of the McDonald's Corporation, including raising cattle to be slaughtered for hamburgers, managing farmland to feed the cattle, maintaining public opinion of the corporation, etc. It is a seemingly innocent game until one investigates the manner in which these tasks are achieved. In order to maximize profits and not go under, the player is given the option to clear cut forests to make more land for their soy beans. They are given the option of feeding their cows growth hormones or bribing local officials, all of which help the player increase revenue, thereby winning the game. Ian Bogost refers to the *McDonald's Game* in his book "Persuasive Games" as "an anti-advergame, a game created to censure or disparage a company rather than support it" (29). He describes that the reason the *McDonald's Game* is so successful is because it forces players to undergo the procedure behind the McDonald's Corporation. Using procedural rhetoric it "entails persuasion to change opinion or action" (29). Since the game requires the players to forget all of their morals to succeed and become an entirely unethical corporation, the procedure of the game attempts to teach the player that McDonald's is bad. It forces the player to inject hormones into cattle in order for the player to stay afloat. This in turns leads to a clear and concise call to action: stop buying McDonald's.

While playing the *McDonald's Game,* the player is left to their own accord. They are free to play the game in whatever way they like and are free to take whatever message from it that

they see fit. For example, they could conclude that McDonald's is forced with many hard decisions that encourage them to be unethical, yet they have a higher standard so they chose not to partake in the atrocities presented in the game. This is the wrong conclusion and suffers because the learning that takes place is entirely internalized, leading to no discourse on what the player experienced. Here in lies the fundamental flaw with the current state of serious games like *The McDonald's Game*. Without the ability to discuss the game, the player is prone to take away an incomplete or ill-informed message. They become vulnerable to interpreting everything within the game as fact as there is no other opinion presented to them. If the game were multiplayer or were it played with another person concurrently, the two players would be able to discuss what was just played. This could lead to discourse far beyond the game, creating a more critical view of the game and a deeper understanding of its purpose. Serious games are handicapped by their reliance on read and reflect techniques to achieve their purpose. They rely on design techniques that echo humanistic theory of education; theory that does not take full advantage of the benefits of collaborative discourse.

In this essay, I examine the shortcomings of the present state of serious games. I argue that serious and educational games are not reaching their full potential because they use humanistic theories of education in their design. I purpose a solution to increase the effectiveness of serious games, advocating the use of collaboration in these games. Structurally, I first discuss the pros and cons of serious and educational games as well as the theory of humanism and its presence in said games. I then examine the benefits of collaborative learning and how they can apply to video games. Next, I give current examples of well-made serious/educational games and examine where they can improve, specifically in their disregard of the magic circle. I conclude

with a proposed solution, advocating the use of collaboration, rather than independent, read and reflect style play, in future educational/serious games.

Serious Games: Pros, Cons, and the Influence of Humanism

Humanist theory has become ingrained in the world of serious and educational games. Humanism places emphasis on the individual. According to theorist David Ehrenfeld in his book *The Arrogance of Humanism* it rejects the work of the divine and encourages individuals to focus inwards toward the works of man for self-betterment (5). In terms of education it is a return to classical education theory, that of the Greeks and Romans. Both cultures placed importance on the individual as well. Students are encouraged to study works alone, relying on inner reflection to lead to enlightenment. It is the source of the concept of the Ivory Tower. The Ivory Tower is where an academic locks themselves away with their studies, emerging years later, a better, more intelligent person because of the experience as described by John Brubacher in his book *On the Philosophy of Higher Education (7).* This movement is often seen in the higher education system but has since fallen out of style (14). More and more colleges are opting for co-ops, team projects, and work placements because of the proven benefits of collaboration. Despite the educational realization of the “arrogance of humanism”, serious and educational games have not yet come to the same realization.

Serious games are played individually, relying solely on the understanding of the single player. Players are placed on their own, locked away forced to look inward for any learning to take place. It is a logical step for game considering a game is often played by one’s self and the earliest games did not have the capabilities that they do now. Educational games are often built with schools in mind where the collaborative support structure is already in place. Unfortunately,

without that support structure, serious games suffer from their read and reflect, humanistic play style. It is detrimental to educational games because, according to Ilan Gur-Zeev's essay *Philosophy of Education in a Poor Historical Moment: A Personal Account*, "humanistic-oriented education is possible solely at the cost of its transformation into its negative, into a power that is determined to diminish human potentials for self-exaltation" (479). Humanism places too much pressure on the individual making serious games more difficult to play. Serious games should be universal so they can appeal to the widest audience possible. By incorporating the benefits of collaborative learning, it is possible to alleviate the shortcomings of humanistic design.

The benefits of play are well documented and widely accepted. Foundational play theorist John Huizinga defines play in his book *Homo Ludens* as:

> A free activity standing quite consciously outside "ordinary" life as being "not serious" but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings that tend to surround themselves with secrecy and to stress the difference from the common world by disguise or other means. (13)

Play allows for role-playing, creative thinking, and abstract problem solving. Theorist H.B. Schwartzman praises play as a teaching tool in his work *Transformations: The anthropology of children's play*. He writes: "play is viewed as an attitude or frame that can be adopted towards

anything … [it] occurs at a logical level different from that it qualifies… play is functional because it teaches about contexts; it teaches about frames not being at the same level as the acts they contain" (Schwartzman, 179). This ability to adopt play to any teaching context allows for a versatile approach to education. It is no wonder why video games have been adapted to be used as teaching tools.

The advent of serious games (games that use persuasion to push a call to action, for a purpose other than entertainment) and educational games (games whose purpose is to educate and inform rather than entertain) has opened up a new avenue for learning. Emde et al. describe in their essay "Technically Speaking: Transforming Language Learning Through Virtual Learning Environments (MOO)," that computerized education allows for the benefits of virtual worlds including a lowered affective filter, higher confidence, and increased motivation (213). The benefits of virtual environments on learning are further explored by Thorne et al. in their essay "Second Language Use, Socialization, and Learning in Internet Interest Communities and Online Gaming." They conclude that virtual environments and avatars allow students to take on any role that they want, meaning that those students with low self-efficacy or confidence can now inhabit a confident and strong avatar (809). Virtual environments also increase motivation. Zheng et al. discuss in their essay "Negotiation for Action: English Language Learning in Game-Based Virtual Worlds" how "learners feel motivated as a result of the graphical interface… since they are visually appealing, animated, and interactive" (500). Games are natural learning tools but still have some fundamental shortcomings.

Theorist John Huizinga, in his book *Homo Ludens,* further describes play as "not 'ordinary' or 'real' life. It is rather a stepping out of "real" life into a temporary sphere of activity with a disposition all of its own" (8). This fundamental aspect of play complicates games as a

learning tool. If one has to step out of real life to play then creating a video game that is based on teaching real life concepts becomes difficult. It is a fundamental paradox. How does one teach real life knowledge through play if play is by definition not real? It is not an easy question to answer. One solution, argued later in this essay, is the use of real life knowledge within the game as part of the game itself. Unfortunately, this paradox is only one of the problems that serious and educational games face today. The other, and more widely discussed in this essay, is the influence of humanism and humanistic views of self-betterment on games teaching mechanisms.

The Benefits of Collaborative Learning

To better understand the potential of collaborative based educational and serious games, it is essential to first identify the positive effects of collaborative learning. Collaborative learning is a proven classroom concept that is often incorporated side by side with independent work in the United States public school system. It relies on a particular view towards intelligence that is arguably more comprehensive. Educational theorist Kenneth Bruffee argues in his foundational text, *Collaborative Learning*, that knowledge is not simply what a person knows; it is their ability obtain information from their environment (24). This means that a student who works in a large group is more intelligent as the group allows them to form a large pool of knowledge.

This also plays into noted educational psychologist Lev Vygotsky's theory on the Zone of Proximal Development. The Zone of Proximal development is the zone in which a student can surpass their base knowledge if given structured assistance, usually in the form of scaffolding. Collaborative learning allows for students to reach the upper limits of their Zone of Proximal Development as it allows each student to benefit from the other's strengths. Take, for example,

two students paired together for an assignment. One student is good at math but poor at English, the other vice versa. If the team is given a math problem, the team will be able to perform well. The student who is poor at math will be helped along by the one who is good at it, thereby increasing the effectiveness of the lesson. If the problem were an English oriented question the effect would be the same. One student structures the problem and helps the other to reach the upper limit of their Zone of Proximal development. These are only some of the proven benefits of collaborative learning.

Collaborative learning also allows for the formation of learning groups. Learning groups are a strategy used within American classrooms to allow students to utilize each other's skills. They teach cooperation, leadership, and help create a sense of belonging. In Doly Young's essay "Creating a Low-Anxiety Classroom Environment" she explains how "Krashen posits that anxiety in the language learning context is wrapped up in the phenomenon he refers to as 'club membership.' He argues that the affective filter is down when you consider yourself a member of the group" (3). It is no surprise that students are more likely to participate and learn when they are in a welcoming area and feel like they belong. But there are other benefits as well.

The formation of learning groups also allows for a shared language. According to Bruffee, "collaboration gives those new to the topic the language to properly discuss the subject internally. External discussion leads to beneficial internal examination"(23). By joining with other players, the user of a serious game benefits by from more easily acquiring the language to play the game. For example, using the previously mentioned, *The McDonald's Game*, a player may not know the proper vocabulary for the terms in the game. They may not know what growth hormones are or soy by-products.

In computer games this extends to the rules of the game as well. The more time a player spends learning the rules of the game the less time they spend extrapolating the objective of the game. For example, if a player is fumbling with the rules of a game, they can become angry or anxious. Once they are frustrated, their affective filter rises, as described by educational psychologist Stephen Krashen in his work "Principles and Practice in Second Language Acquisition." Krashen writes that three factors determine the strength of one's affective filter: motivation, self-confidence, and anxiety (31). All three of these can be negatively affected by poor understanding of the game's rules. When members form learning groups it allows them to use each other's previous knowledge and experience to benefit the groups learning. In terms of the rules, it helps a student having trouble work through the difficult area and avoid raising their affective filter. If no previous knowledge is present, it still allows the players to share their understanding and thoughts on the language/rules of the game and form a new, more holistic understanding. Bruffee explains this phenomenon through the example of two shopkeepers who decide to work together:

> When shopkeeper A asks shopkeeper B to take a look at the way she has rearranged the floor of her shop… they become an autonomous collaborative group with the task of revising and developing the product of one of its members… As member of the same, concentric, or overlapping communities of interest and expertise, they speak the same language. And as members of different communities or subgroups, they look in upon other communities with the uncommitted eyes of outsiders… B will understand and agree with some of what A has done with her store

> but will raise questions about other things. Challenged, A will translate unfamiliar terms and ideas into language that B can more or less understand and accept. They will come to terms and reach a consensus (22).

By utilizing the prior knowledge of A and the goals of B, it is possible to make a better layout for the store than if B had worked alone. A has the vocabulary to design the layout but also has the objective gaze of someone who is not emotionally involved in the process. This is easily translated to serious and educational games. The player, who has never played the game before benefits from collaboration as there is no time wasted learning the rules and mechanics of the game. Party A can share strategies they used to help win and B can push back with theories of their own. By working together there is a push back, a give-and-take that is at the heart of learning.

Collaborative discourse and argumentation are essential to the learning process. Jonathan Osborne describes their importance in his article “Arguing to Learn in Science: The Role of Collaborative Critical Discourse.” He writes that collaboration and argumentation “offer a means of enhancing student conceptual understanding and students’ skills and capabilities with scientific reasoning” (463). This is only possible, however, if students are provided structured opportunities to engage in deliberative exploration of ideas, evidence, and argument” (466). This is why serious games need to incorporate collaborative techniques. They are the perfect medium for providing structured opportunities for discourse. Their rules are hard-coded and unbending. They allow for cooperation that will enhance the understanding of the material presented for all parties involved. Playing a game independently may lead to some self-betterment but humanistic theory falters when compared to the proven benefits of collaboration, By working playing games

collaboratively it is possible to experience a far more productive and persuasive serious/educational game.

Standard Examples of Serious/Educational Games

In order to better grasp how humanism and has manifested itself within serious and educational games, it is essential to examine games that are currently being played. In this section I will argue that the inclusion of outside discussion, such as on forums or in the classroom, breaks the mold of independent learning in a positive way. These are rarities that are helping push the boundaries of what is possible for serious games. Unfortunately, their collaborative elements are used outside of the game context, eliminating the positive effects of the magic circle. *Oregon Trail* is one such game. I will now argue that because of the collaborative elements that *Oregon Trail* entails, via its group classroom play and structured, teacher led discussion, it stands apart from other serious games.

Oregon Trail, originally created in 1971 by Don Rawitsch, Bill Heinemann, and Paul Dillenberger for the Apple II, is a computer game often used by teachers in middle and elementary schools to teach students about United States expansion during nineteenth century Manifest Destiny (Oregon Trail). *Oregon Trail* places the player in the shoes of a pioneer family traveling west in search of a better life. The player is tasked with providing for the family, setting the pace of the caravan, and making difficult decisions about how best to reach their goal. Throughout the game the player is hit with tidbits of information about the journey west as well as encountering key cities and forts that existed during the time period. The main message of the game is the outright difficulty of the journey. Family members starve, die of dysentery, and

drown, all in the hopes of reaching Oregon (Oregon Trail). It is a brutal journey that effectively demonstrates the challenges that these settlers had to overcome.

Where *Oregon Trail* differs from other serious/educational games is in the way in which it is played. John Chiodo and Mary Flaim, in their article "The Link between Computer Simulations and Social Studies Learning: Debriefing," explain that the classroom context, *Oregon Trail* is often played as an entire class of 20-30 allowing for students to openly share the journey as they experience it (120). This open discussion and shared experience allows each of the players to benefit from the others' experiences. Numerous game play strategies are tested, more towns are reached, and each player now takes pride and ownership of their specific journey. The group is now able to form a community of learners and players, lowering the players' affective filter, encouraging participation, and allowing for open discourse. This better helps achieve the target goals of the social study teacher, goals that Chiodo and Flaim describe in length:

> They should note if any landmarks of the Oregon Trail can be found on maps today and if so, they should name them. Students should explore the relationship between the wagon parts (axles, tongues, wheels) and a spare tire or the engine parts. On the trail, students realized that their life depended on supplies. They should decide whether this is still true today and explain their decision. The last stage involves students' generalizations and conclusions. Students should endeavor to explain why people would leave the security of their homes, travel a long distance, and risk loss of life to settle in a new area.(121)

It is important to note that many of these goals are not obvious to the player. Structured teaching allows for even more learning to come out of *Oregon Trail*, besides the history lesson. If the students played the game on their own it is doubtful that such deep learning would take place. *Oregon Trail* also benefits from the classroom setting because after playing the game, it is usually openly discussed in the classroom.

Oregon Trail is often not used simply to teach the students about the Oregon Trail but to open up a conversation about it. Teachers use it as a stepping stone, to create excitement about the topic that drives their future lesson plans. For this reason, after playing the game, a teacher will often have an open discussion about the game with the class. It serves as a type of debriefing and according to educators John Chiodo and Mary Flaim, "debriefing is the key to the entire learning process during which students' knowledge and attitudes are applied, tested, analyzed, and synthesized" (119). This collaborative environment allows the teacher to put the game in context and to solidify the lessons it taught. It also allows for the dismissal of some of the myths or ambiguity that may have arose from the game. For example, *Oregon Trail* only gives the player a few selections for the profession of their character. This could in turn leave a young student with the impression that only farmers, bankers, and doctors took the Oregon Trail. Chiodo and Flaim encourage the use of reflecting questions like how much money did you have at the start and at the end? How long were you on the trail? Did you trade for supplies? Can you recall some of the hazards on the trip (120)? The teacher can then ask more difficult, analytical questions like why did the cost of supplies increase as the length of your journey increased? Did water depth/width affect your decisions to ford, ferry, or float the rivers (120)? By openly discussing the game played, it is possible to rid games of their short comings and allow for a more coherent and complete understanding of the game. But what happens when a serious game

is played outside of the classroom? How can players get this type of feedback and discourse when they are playing alone in their homes? Luckily, game designers have found a solution to this issue, albeit an incomplete one.

*Super Columbine Massacre RPG!*is a serious game that places the player in the shoes of two teenagers who are about to murder their fellow classmates. Designer Danny LeDonne describes the purpose of his game as a means to "challenge social taboos [and] confront real cultural issue," as well as tell the story "from the perspective of the shooting's greatest enigmas of all: Eric Harris and Dylan Klebold" (Ledonne). The game forces the player to kill the students of Columbine High School in a recreation of a 1999 tragedy in said school. By placing the player in the shoes of the killer, it echoes much of what Bogost's theories on procedural rhetoric. For example, during the first level of the game, the player must murder their fellow classmates. It is unavoidable. The game will not continue should they refuse. The player undergoes the procedure of planning the murder during the intro stage and then executing it during the first stage. They become Eric Harris and Dylan Kelbold. The experience becomes much more powerful as the player takes on the unspeakable role of mass murderer.

Aside from the procedural rhetoric that the game employs, it also benefits from its collaborative elements. Where *Super Columbine Massacre RPG!* sets itself apart from other serious games is in its support structure for the player. Instead of leaving the player to experience the game alone, Danny LeDonne created a forum so that the players could discuss what they just underwent and speak freely about their thoughts and feelings about the game. LeDonne writes:

> The game's forum is equally important to the SCMRPG project. Through it, people from six continents and all walks of life are discussing the game itself and the incident it is based on. Some of

> them confess childhood pain or share personal feelings on the shooting. Some of them sustain vulgar diatribes or accuse the creator of wrongdoing. Some of them discuss the game's social implications in a broader context. At the end of the day, the understanding of the Columbine school shooting is deepened and redefined. That is the real object of the game**.**

LeDonne acknowledges the power of shared experience. By creating a forum he allows player to contextualize their experience, share their thoughts about it, and learn from those with differing opinions.

Without this forum, players can easily draw inappropriate conclusions about the game. This is especially dangerous with as controversial a game as *Super Columbine Massacre RPG!* In fact, numerous players lashed out at LeDonne because of the games especially heinous premise. Death threats, hate speech, and even political action were taken because some players failed to grasp the purpose of the game. Without the forum and ability to share thoughts concerning the game, these misinterpretations would be far more common place. *Super Columbine Massacre RPG!* utilizes some of the benefits of collaborative play to create a much more compelling and persuasive game. It allows for a structured approach that assists players in finding the intended conclusion that the game argues. *Super Columbine Massacre RPG!* is a rarity amongst serious games and many new designer can learn from its example. It could, however, be improved by incorporating the collaborative elements of the game into the game play experience.

Maintaining the Magic Circle

By keeping collaboration completely separate from game play, games like *Super Columbine Massacre RPG!*and*Oregon Trail* lose the benefits that games and the magic circle offer. The idea of the magic circle, originally coined by John Huizinga in his book *Homo Ludens*, is that all play has "forbidden spots, isolated, hedged round, hallowed, within which special rules obtain. All are temporary worlds within the ordinary world, dedicated to the performance of an act apart" (10).The magic circle acts as a means to isolate the play experience. According to games theorist Ernest Adams in his book *The Fundamentals of Game Design,* "within the magic circle, actions that would be meaningless in the real world take on meaning in the context of the game" (15). This means that when a serious game neglects the magic circle, the message the game is trying to convey becomes less powerful. Instead of abiding by the rules of the game space, they step outside of them, not allowing for the separation of the real and the game. In terms of collaboration, when the game uses it outside of the game context, it no longer holds as much power as it would have within the game. The actions that were previously of the utmost importance within the game are no longer as important. The game has finished and the rules no longer apply. The deeper learning takes place outside of game, taking the learning outside of the learning/game space. The player can no longer reflect and examine their experiences because they are no longer within the game.

To better understand the phenomena, the same effect can be compared to a museum. While at a museum visitors walk the halls, inspect the exhibits, and learning theoretically takes place. Now take two distinct scenarios. In the first, the visitor visits the museum in complete solitude. He/she looks at each of the exhibits alone, discuss them with no one whatsoever, draw their own conclusions, then leaves. This is the scenario that reflects most serious games. They are played in solitude, offering little to no means for discussion. If the visitor was then allowed to

discuss with their class the exhibits they saw, outside of the physical museum, it would reflect games like *Oregon Trail* and *Super Columbine Massacre RPG!* Despite the added benefit of this discussion, there are still some fundamental flaws with the museum experience.

Now examine the second scenario. In this scenario the museum visitors tour the museum in a group. They tour the museum together, and as they visit each exhibit, they discuss with each other their thoughts and feelings on each of the exhibits. If discourse arises during the visit the group can revisit the exhibit in question and form more informed conclusions. The latter scenario allows for a richer learning experience. It benefits from the fact that the collaboration takes place within the same context that the learning does. There is no separation, no breaking of the magic circle. In this scenario the museum halls are the magic circle. Like a game, the space offers "a protective frame which stands between you and the real world and its problems, creating an enchanted zone in which, in the end, you are confident that no harm can come" (Apter, 15). Although Michael J. Apter is using these words to describe the magic circle in relation to play, the occurrence is the same. The museum offers a protected space with specific rules that allow for visitors to experience the exhibit outside of the real world. This is why maintaining the magic circle is so important.

Discussing a serious game after playing it is equivalent to discussing a museum after leaving. The player/visitor gains none of the positive effects of the environment and the magic circle. The protected space is gone and the context of the game/exhibit is no longer present. The player can no longer re-examine any area of the game in question and all actions and discussion hold less weight since the added significance of in-game actions is destroyed with the breaking of the magic circle. The key to maximizing the benefits of collaborative learning is to place this learning within the context of the game. Problems do, however, arise within the magic circle.

As discussed in the section “Serious Games: Pros, Cons, and the Influence of Humanism” of this essay to this essay, there exists a juxtaposition of real life influencing in game actions. Huizinga describes play as being outside of real life, so if by creating a game that incorporates the real life knowledge, a problem arises. To solve this solution I advocate using the real life knowledge within the game as part of the game itself. By creating a game that keeps the real world knowledge within the magic circle it is possible to maintain it. Take for example a language learning game. If the characters within the game space speak the language being taught, Spanish perhaps, then the use of Spanish will not seem out of place. Mythical languages are used all of the time in fantasy role playing games, so if the game is structured properly, it is possible to convince the player that Spanish, is in fact a magical language used by the inhabitants of the game. This then translates to the player accepting the real world learning as part of the game space, maintaining the magic circle, and preserving the added benefits of the play. Because of the difficulty involved in this sort of solution, many designers choose to ignore the paradox and simply create games that make no attempt to preserve the magic circle. While this solution may seem clear cut, there is still a large problem.

If a designer chooses to fix this problem by turning the real world knowledge into something that seems relevant and cannon in the game, then a new problem arises. Without making the distinction between real space and game space, transfer becomes an issue. Transfer describes the process of carrying knowledge over from one situation to another. It can be used to the knowledge a student gains in school versus how much they take it with them into the real world. In this scenario, I am it refers to the transfer of knowledge from within the game space to outside of the game space. It is true that keeping learning within the game space makes the learning more meaningful because it is part of the game and not just something added, it is also

true that eliminating this distinction makes it less obvious to the player that the knowledge is something that is relevant to the real world. For example, in *The McDonald's Video Game* it may be of the utmost importance to clear cut forests in order to turn a profit, but it may be difficult for players to extrapolate that that is something that is done in the real world. Looking back, players may reflect that what took place within in the game was just that: a game. Transfer is one of the largest problems facing the field of serious/educational games today. In this essay I do not propose a solution but I acknowledge its importance and hope to someday find a solution. It is not a problem that can be solved overnight.

Conclusion: A Proposed Solution

It is clear that the current state of serious games is lacking. They rely too heavily on teaching concepts based on humanistic theory. Serious and educational games are being treated like the Ivory Tower of higher education. They are independent experiences that rely on the notion of self-betterment. Designers expect players to play their games alone and draw their exact desired message independently. While this technique has its benefits, including collaboration can maximize serious games potential. Like the world of education, not everything is done independently. Sometimes it is important to use interaction and collaboration to open up discourse and encourage discussion. A more constructive approach would be to combine the proven benefits of collaborative learning with serious games. Collaborative learning increases conceptual understanding, creates a shared language, and lowers the affective filter, all of which lead to increased learning and retention. It opens up channels of discourse that allow for new perspectives and clarification of the material at hand. By incorporating collaboration into games it is possible to maximize the teaching capacities of educational games and the effectiveness of

serious games. There is, however, some action that needs to be taken to realize the full potential of collaboration in games.

In order to maintain the positive effects of the magic circle it is essential to place the collaboration within the context of the game. By placing it outside of the game via outside discussion in forums or group contexts the learning loses the protection of the magic circle. The learning is no longer in a protected space therefore it loses the weight and significance the magic circle affords. It also makes it difficult to revisit any topic that arises during discourse. The player is no longer to examine areas that come up during discussion because they have already exited the play space. Therefore the most efficient solution is to include the collaborative experience with the game play.

This incorporation can take form in a variety of ways but must occur simultaneously. A multiplayer game that has open and instant forms of communication would be ideal. This could be via voice chat or typed communication but must allow for an open exchange of ideas between each of the players. This is the heart of collaborative learning. Without open communication, it is difficult to reap all of the benefits. It is also essential to keep this concept at the heart of the game's design. Without designing the game to the system it will seem tacked on and will be rejected by the player. A cohesive design with collaboration at its core will make for the optimal serious game experience. By following these guidelines, it is possible to escape the dated trap of humanistic design. Games are not always meant to be played individually. They are tools that enable instant and potentially meaningful interaction and in their current state are not being used to their full potential. Technological advances have made instant worldwide interaction possible so there is nothing holding back the incorporation of collaboration. It is time to re-think how

designers approach serious games. By including collaboration into serious games it is possible to increase their pedagogical potential.

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