

It's Just a Game: Receptivity, Immersion, & Learning

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Abstract

We offer a model for receptivity and immersion in play and learning. We explore choice, identity, and contextual awareness. We use cases, diagrams, and a specific educational game to illustrate principles. The game, *Ink*, is being developed to teach writing.

Introduction

We would like to talk about play and learning. *Play* is often placed opposite *work*; to be *playful* is to not be *serious*. Yet there are good reasons to believe that play can be a powerful way to achieve meaningful work and serious goals, including the work of learning. Specifically, there is a growing belief that video games may be effective tools for education (cf. Gee, 2003; Gredler, 1996; Dede, 1996; *High Wired*, 2001; Prensky, 2001; Aldrich, 2004; Elliot, Adams, & Bruckman, 2002).

Some advocates use the term *serious games*: games for more than entertainment. Alas, there is little empirical research to guide serious game designers (Gredler, 1996; Mitchell & Savill-Smith, 2004). Even non-serious game design is challenging (cf. Crawford, 2003; Rollings & Adams, 2003). Contemporary understanding of quality in games is largely grounded in specific games. We offer a more abstract model of two central phenomena in games: receptivity and immersion. Our model may be useful to game designers,

serious or not. Furthermore, receptivity and immersion have explanatory utility for learning.

Quality in Games & Learning

Designing good games is hard. Much of the challenge is the inherent interactivity of games as a medium. Players want to make choices, but choice can disrupt the experience the game designers intend. Case 1 illustrates one kind of disruption.

Case 1: Command Parsing

Some of the earliest video games were text-based, single-player adventure games. In such games, players have to enter their actions using a specific syntax. For example, "put apple in backpack" might work, while "put the apple in my backpack" might result in an error message from the game ("Huh? I don't understand"). These error messages disrupt the experience.

Such disruption hurts the quality of experience in at least two ways: it impedes *action* and it impedes *suspension of disbelief*. In other words, it prevents us from doing something (at least temporarily) and it reminds us that we're playing a game. There are many viable strategies for minimizing disruption (e.g., usability testing). Many strategies, if not all, will be easier to develop and apply given a better understanding of the factors involved. We've developed a model to build such understanding.

Figure 1 is a simple model for quality in a game experience. It's designed to analyze games set in *persistent alternate worlds* (PAWs). It can be applied to other kinds of games, but for a single-player game, there may not be management or community.

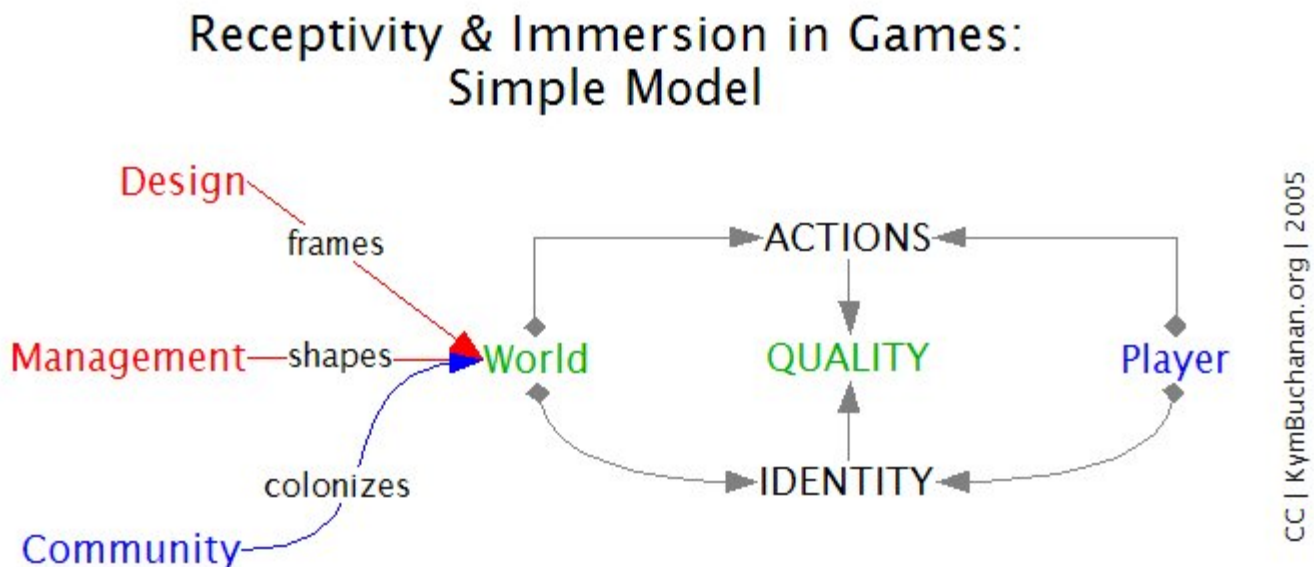


Figure 1. Simple Model Applied to Games. Actions and identity affect the quality of an experience.

PAWs include Multi-User Dimensions (MUDs, MOOs) and Massively Multiplayer Online Games (MMOGs), including *EverQuest* and *World of Warcraft*. A world is *persistent*

because it's a single, shared game. It's accessible 24 hours a day, seven days a week. Player actions have permanent effects: if a player makes a mistake, there is no reset button or previously saved game. A world is *alternate* because it's a fully-realized place distinct from the "real" or "brickspace" world. It may have its own geography, ecology, history, and culture. It's populated by player-controlled characters and computer-controlled characters. It has an over-arching story, greater than any player's personal adventures. Players are encouraged to suspend their disbelief absolutely, and pretend to be their characters. This suspension of disbelief is a form of identity-play, making *identity* a better conceptual balance to *actions*.

Quality in Learning

Identity also matters when we look at learning. With or without games, learning environments can help students think and act like practitioners (Honebein, 1996). For example, students in a science classroom may perform experiments to build understandings about science. The process of learning can involve pretending to be someone (a scientist) to learn knowledge and skills that are part of that identity (science). Figure 2 shows our model applied to learning; here, quality refers to desirable learning outcomes.

For both games and learning, our model is one of many possible models. Some causal relationships are simplified or excluded. For example, in Figure 1 the *player-identity* relationship may be bidirectional. In Figure 2, the separation of *curriculum* and *teacher* may be vexing to some educators. We've simplified some relationships to focus on receptivity and immersion; our model may be inappropriate for other analyses.

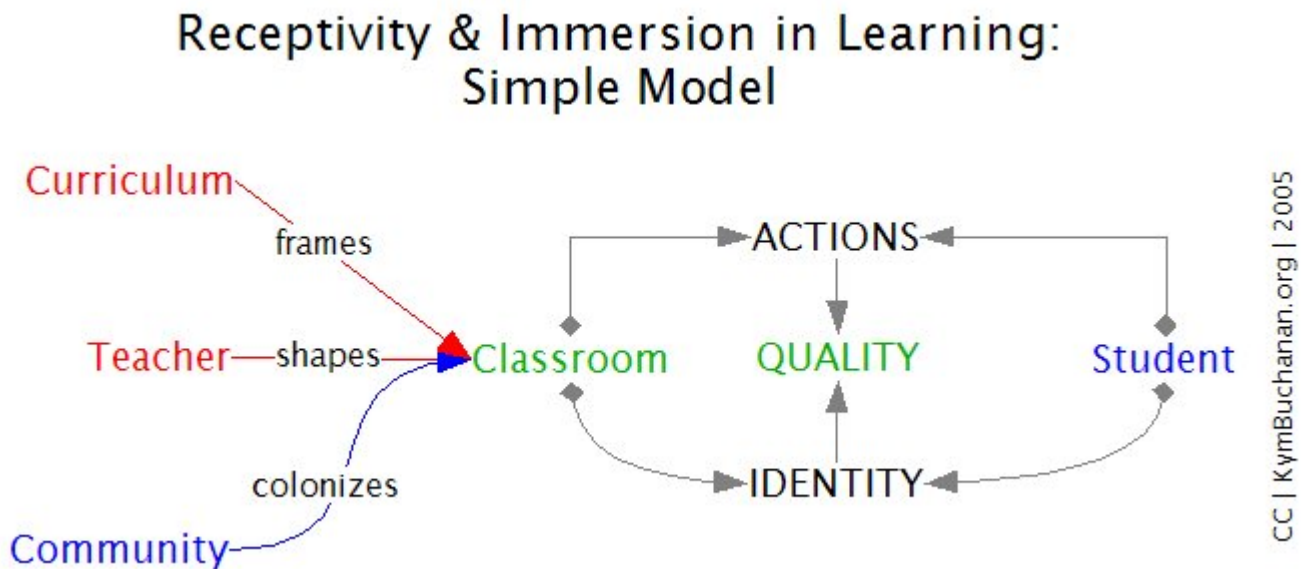


Figure 2. Simple Model Applied to Learning. As in games, actions and identity affect the quality of an experience.

Figure 2 reflects specific theories of learning, including *discovery learning* and *constructivism* (cf. Miller, 1993a; Wilson, 1996). Teachers can't simply transmit learning. Rather, they must arrange semi-structured learning environments to support educative exploration by students. Through exploration, experimentation, and discovery, students can build their own understandings. Semi-structured means a compromise between scaffolding and authenticity.

Scaffolding is a process of mitigating the risk of failure: letting students make choices while guarding against impossible challenge or crushing failure. (Training wheels on a bicycle are an excellent example of scaffolding, albeit for a sensorimotor skill. Scaffolding is equally important in teaching mental skills.) *Authenticity* is how close the learning environment approximates the world outside. The world outside the classroom presents endless choices, with the risks of impossible challenge and crushing failure. Yet in order to transfer learning from the classroom to the world outside, some amount of authenticity is necessary (cf. NRC, 2000). Too much authenticity, and students may experience disruptions like indecision, fear of failure, or confusion ("Where do I start?"). Too little authenticity, and lessons may seem mandated, too easy, or too fragmented ("When will I ever use this?").

Game design requires a similar compromise between choice and authenticity. Most games are simpler than the phenomena they simulate. For example, in a typical management game like *SimCity* or *Civilization*, the player confronts explicit cause-and-effect challenges using clear, current, comprehensive data about their citizens and resources. Real mayors and presidents face far more opaque, messy challenges. Yet most games strive for something like authenticity, by including some realistic risks (e.g., a shrinking tax base, famine). In PAWs, persistence heightens any risk, because there is no way to undo a mistake. Both games and non-game constructivist learning environments offer semi-structured experiences. However, games offer something more or different: play.

Choice & Play

Play is a complex idea: it doesn't yield to a simple definition or example. If art is such that "I know it when I see it," play is such that "I know it when I do it." For complex ideas like play or learning, it's better to use both principles and cases to build understanding (Shulman, 1992). Case 1 illustrates the relationship between choice and play.

Case 1: Laundry Basketball

Kym has some bins for pre-sorting laundry. When he takes off his socks, he can simply place them in the correct bin. Or he can stand by the door and toss his socks across the room, as if playing basketball. The same activity can simply be a task, or an act of play. Once he commits to playing, Kym is disappointed if he misses, and happy when he "sinks a throw."

As Case 1 illustrates, play is about *choice*: Kym chooses to make a game out of a chore. By choosing to participate in this fleeting fantasy, he is marginally *immersed* in an alternate world: basketball. Choice plays a dual role in play: Kym chooses to engage in play, and by immersion in play, he has new choices, or his choices take on new meaning. Acclaimed designer Sid Meier describes a good game as "a series of interesting choices" (in Rolling & Adams, 2004, p. 200). We call this the *Sid Principle* and use it to unpack the actions side of the model.

Many game designers talk about *gameplay*, which more or less refers to the moment-to-moment experience of choices and perceptual and sensorimotor challenges. Gameplay is similar to timbre in music: palpable yet ill-defined. Gameplay is a critical

influence on the quality of a gaming experience. But we distinguish it from identity, and we believe identity also affects quality. Stakes connect choices and identity. Whether a player is rescuing a princess or managing a city, the consequences of success or failure help frame his in-game identity. In other words, as a corollary to the Sid Principle, a good game offers a player an interesting identity. Figure 3 illustrates the effect of gameplay and stakes in our model.

Receptivity & Immersion in Games: Actions Side

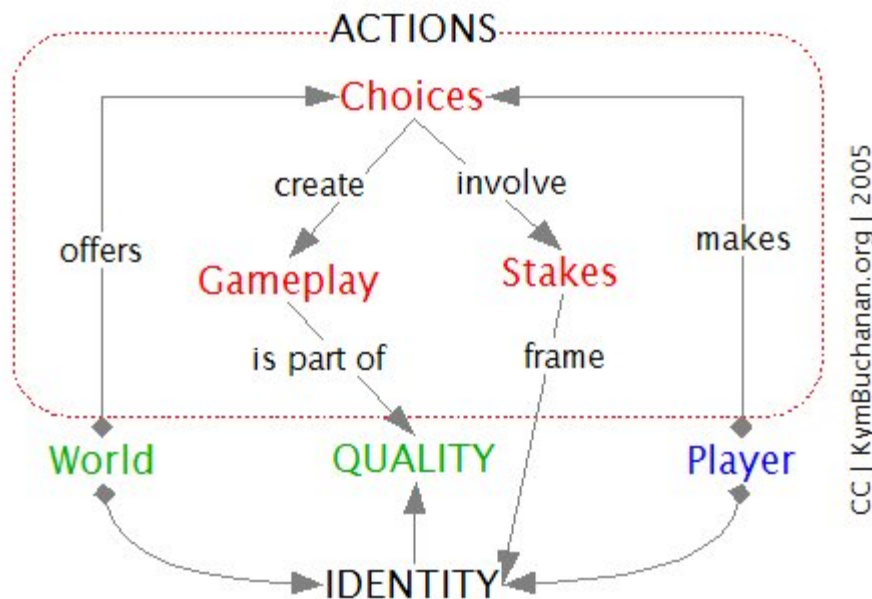


Figure 3. Actions Side. Gameplay depends on choices. The stakes involved affect identity.

Identity-Play

When a game offers a player an identity, he has a choice. Unlike laundry basketball, he is no longer the sole author of play. So the choice to participate is a form of receptivity (or consent). The player agrees to abide by the rules, allusions, and other ingredients of the world. In return, the player will probably feel more like a resident of the world, and less like a visitor. He may have to choose a thematic role, like warrior or wizard. He makes his identity malleable to the world's forces of setting and narrative. Thus, receptivity permits immersion: a sense of place, and a deeper personal investment in the game's challenges and consequences.

As role-playing games, PAWs encourage playfulness about identity. They are usually semi-structured, requiring players to make choices about their characters' abilities and growth. These choices ultimately determine what the players can do in the game: warriors fight, wizards cast spells, etc. Abilities partially determine a player's in-game identity. At least in a game, *what we can do partly defines who we are*. Hence, role-play is a form of *identity-play*. Figure 4 illustrates the identity side of the model.

Receptivity & Immersion in Games: Identity Side

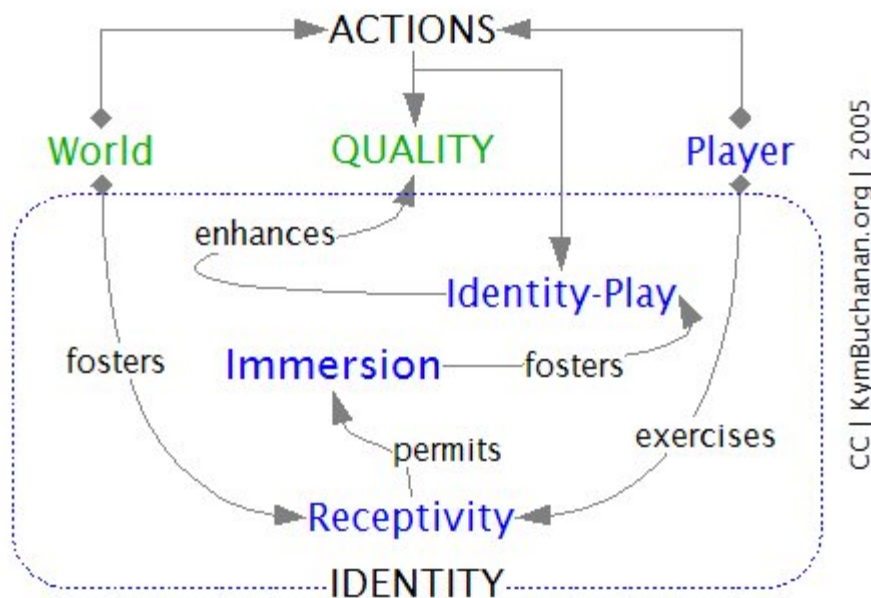


Figure 4. Identity Side. Identity-play depends on immersion, which depends on receptivity.

Persistent alternate worlds are often filled with players practicing roles like artist, explorer, hero, or leader. These roles may be far removed from most players' out-of-game identities. An alternate world fosters a "fluidity of users' identity" (Dede, 1996). The safety of a character/mask, coupled with player anonymity, may foster greater risk-taking. A PAW offers a moratorium on most out-of-game consequences, allowing players to identity-play with fewer or changed consequences (Turkle, 2001, p. xiii).

All this has important implications for learning. If changes to ability and identity are restricted to data in the game, then a character is merely a puppet. But we believe identity-play creates a two-way conduit between a player and his character. As Turkle says, "people... become whom they play... [and] who they are or who they want to be..." (2001, p. xi). A player makes in-game choices as if he were his character, but he's also using his own skills and knowledge. Similarly, only the character can triumph or fail in the world, but the accompanying emotions and wisdom ripple back to the player. Game worlds are less than wholly authentic, but real learning can occur. Immersion helps make this possible. Ideally, "The impression is that of being inside an artificial reality rather than looking through a computer monitor 'window' into a synthetic environment: the equivalent of diving rather than riding in a glass-bottomed boat" (Dede, 1996, p. 171). Gee describes this "embodied experience:" a synergy of action and learning (2003).

Vygotsky and social learning theory both emphasize the power of role-play to facilitate learning (Vygotsky, 1978; Miller, 1993b). To wit: learners use tools (especially language) and opportunities to play roles to gain the knowledge and skills of a community. As learners play their roles better, they become more influential in the discourse and practices of the community. Our model emphasizes the influence of community on receptivity and immersion. Community colonizes the world or classroom, creating the culture and norms that partially affect a player's receptivity. For example, in some PAWs

few players "stay in character." Instead they talk about out-of-game topics. Much like Case 1, this impedes immersion, and that ultimately hurts quality.

Contextual Awareness

Of course, few players ever truly forget they're playing a game. Instead, players are only immersed up to a point. This is partially a defense mechanism. Failure in a game can be frustrating and demoralizing. In the face of such potentially powerful feedback, players depend on a "circuit breaker." When experiencing in-game failure, players can tell themselves *it's just a game*. Many games even include random or semi-random elements, effectively giving players an external scapegoat: "The dice just rolled poorly." (Players are less likely to distance themselves from success.) This creates a paradox: the game is trivial and fleeting, yet profound. The stakes are contrived yet compelling. A game, especially a PAW, can become an inhabitable metaphor. A player experiences the game through his character, but never completely forgets that things are less than wholly authentic.

When a player says "It's just a game," he deluding himself a little, and he knows it. Through immersion he may leave behind parts of his identity, but he doesn't completely surrender himself. He has a meta-level awareness of context: he's making choices as his character, *and* he's playing a game. This contextual awareness is worth practicing. For example, Elbow urges readers to practice methodological believing: to pretend we agree with an author's viewpoint in order to better appreciate it (1986). Even if we pretend "it's just a game," our beliefs are permanently changed in at least a small way.

Putting It Together

Having unpacked both sides, we present the full model in Figures 5 and 6. Very few changes are need to switch between games and learning, when describing receptivity and immersion. The varied arrows and colors are deliberate. The influence of the designer/teacher is illustrated with red ideas and angular arrows. The influence of the players/students is illustrated with blue ideas and curved arrows. The co-constructed nature of some phenomena is illustrated with green.

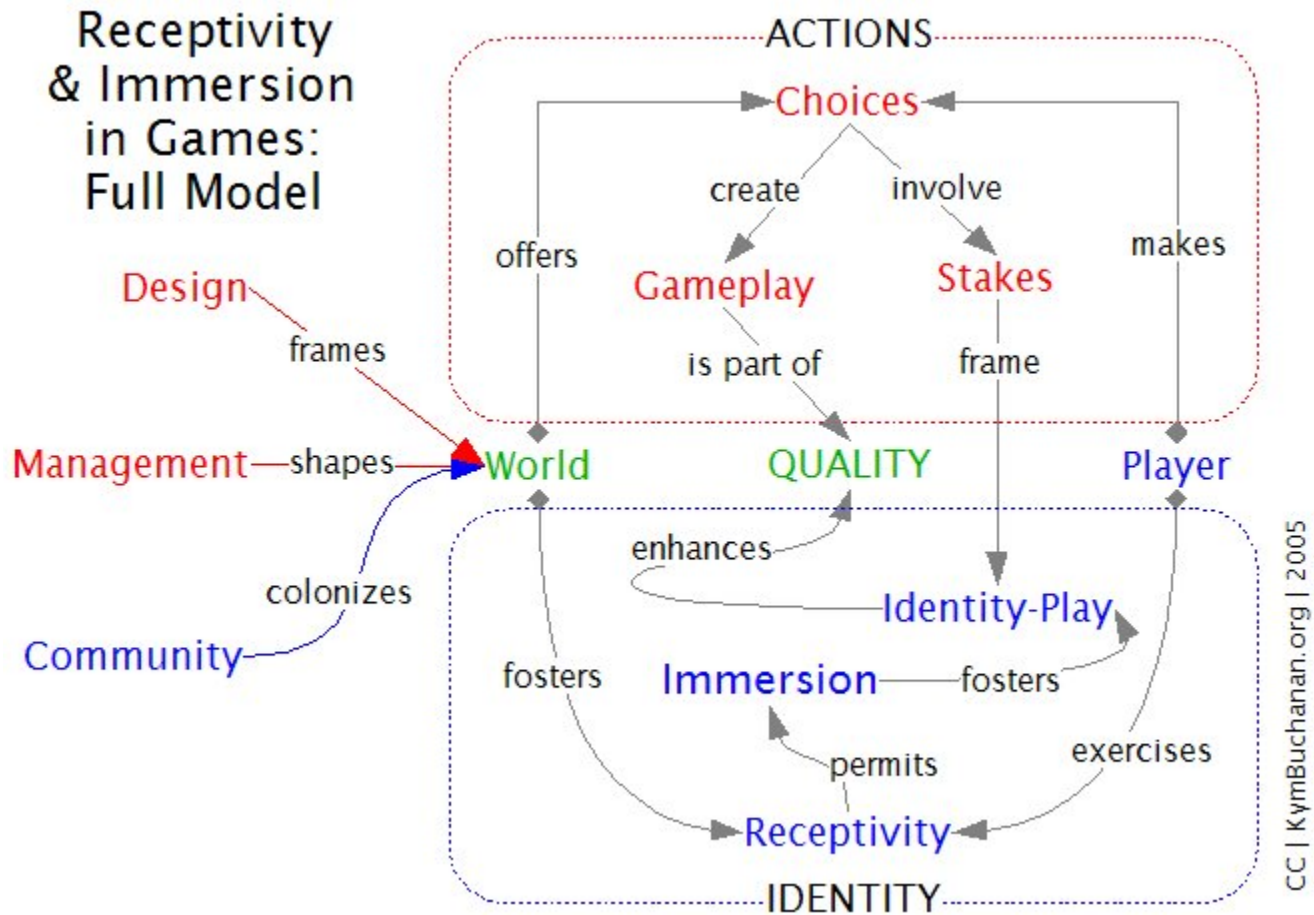


Figure 5. Full Model Applied to Games. Receptivity and immersion significantly affect quality.

Receptivity & Immersion in Learning

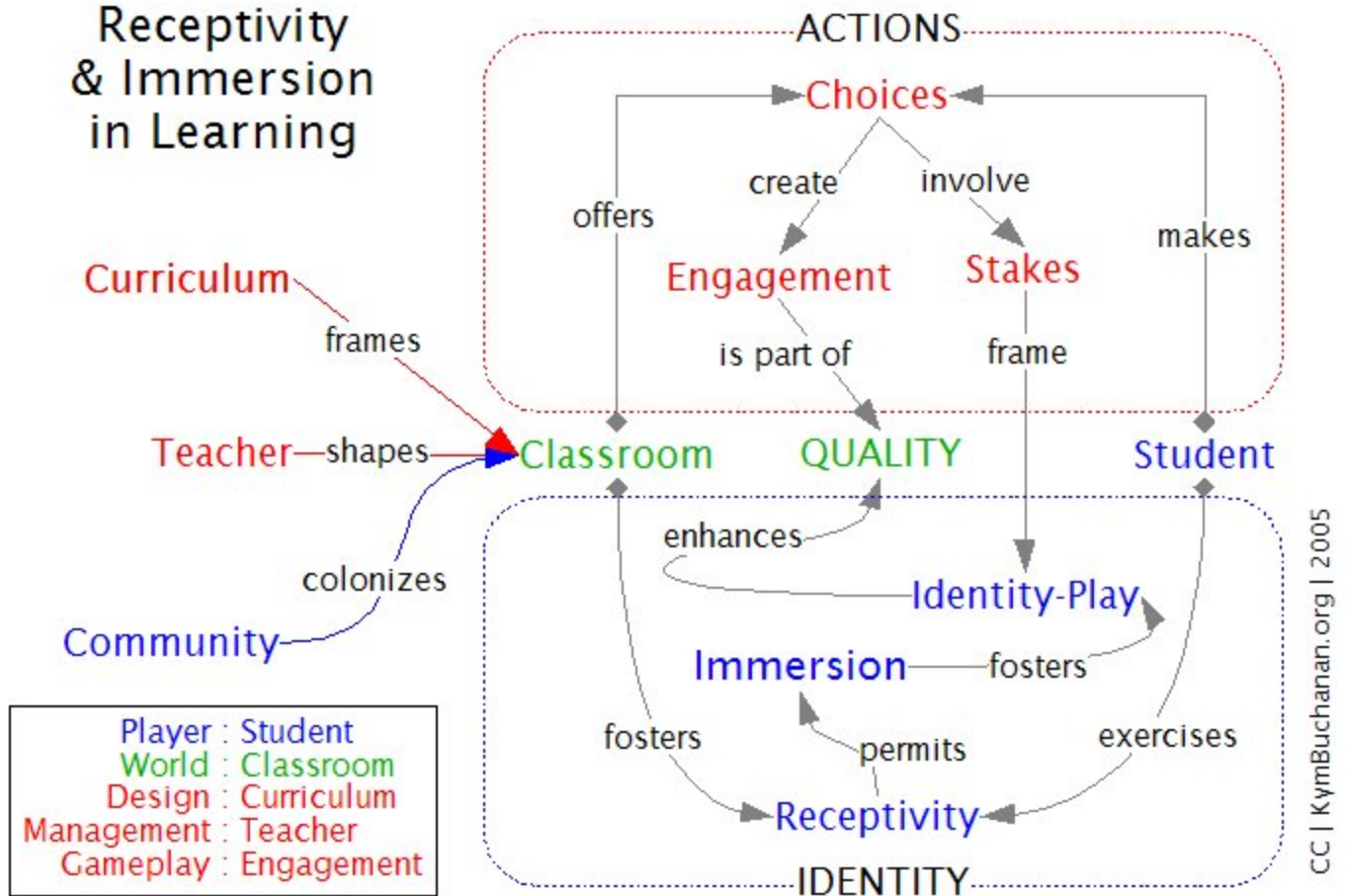


Figure 6. Learning. The same model applies.

Immersion & Writing

We'll now apply our model to a specific content area: learning to write. Writing is a complex, social activity, yet academic writing assignments can seem contrived and essentially asocial (e.g., an essay written only for a grade and only to the instructor). It can difficult to create a learning environment that's authentic enough to prepare students for writing beyond the classroom. Understanding receptivity and immersion opens up significant possibilities for teaching writing. First, we'll describe the problem, then describe our design approach.

As a form of rhetoric, writing "functions ultimately to produce action or change in the world; it performs some task. In short, rhetoric is a mode of altering reality" (Bitzer, 1999, p. 3-4). There are many reasons to write, but in professional and civic settings, writing is usually meant to solve a problem. We may write to get people to come to a meeting, to vote a certain way, to endorse a certain policy, to adopt a certain set of behaviors, or to give us money. We write to convince stockholders that the firm enjoys fiscal health, to convince our supervisors that we are contributing to the profitability of our corporation, or to convince our neighbors that the neighborhood would be better off if we all agreed to mow our lawns once a week.

Once we recognize that writing is a problem-solving activity, we notice other fundamental characteristics as well. For instance, we tend to judge a piece of writing on whether or not it accomplished its purpose, whether or not it actually contributed to

solving the problem it was meant to solve. Did people show up at the meeting? Did they vote a certain way? Because the emphasis is on solving the problem, we tend to adopt certain pragmatic practices. If a colleague can help us compose a more effective memo, then we shouldn't hesitate to ask. If adding a bar graph or illustration will convince stockholders that the firm enjoys good health, then we will add them. Perhaps a glossy photograph on the cover is called for; perhaps we should hire a designer to give the report a layout that signals professionalism. Finally, a crucial dimension of writing is getting it to the target audience. We could have a glossy, colorful annual report, but if we can't get it to our stockholders, it's of little value. A nonprofit could have a prototype for a tri-fold brochure that is concise and full of gorgeous photographs that grab the reader's attention, but if the organization lacks the budget to print and distribute the brochure, what good is it? Indeed, the organization will only produce such a brochure if it knows in advance that it can pay the printing costs. Otherwise, it will go with something else, like a photocopied newsletter.

When writing is taught in a classroom environment, these authentic factors and choices may be simplified or excluded. There are no real problems to solve, no real audience to convince or motivate. Rather than being evaluated based on whether it solved the problem, writing is given a grade based on one person's opinion of whether it conformed to certain criteria. Correctness and convention may take on a life of their own, rather than functioning as means to an end. Writing is distributed to classmates and to the instructor, even though it may not be intended to address either as a target audience. A writer might compose a paper that vigorously argues against capital punishment, even though his instructor already agrees with that position. Strategies for distributing compositions are never assessed; it is simply assumed that students will make a few photocopies and hand them to classmates and the instructor. Co-authoring is discouraged or even punished. Using other media elements, like illustrations and graphs, is not taught, and may even be frowned upon. On the whole, unless extreme care is taken to avoid it, writing in the classroom is often an impoverished trace of its counterpart in the world outside.

Immersive multiplayer games can recover the sense of writing as a problem-solving activity. Within a properly designed and managed persistent alternate world, players can encounter problems that must be addressed through writing. In this situation, writing can be evaluated in terms of its effect on the game world: Is the problem addressed? Do players change their behavior in the desired way? We can also take other steps toward authenticity. Players can team up, pooling their various talents and skills to produce more effective compositions. They can make choices about media elements based on the utility of those elements in achieving desired goals. Players must choose strategies for distributing their compositions to their target audience. They might, for instance, pay another player to hand out a brochure on a street corner or in a café.

Ink: An Immersive Serious Game

Inspired by the potential of an immersive game to support teaching and learning about writing, we're developing *Ink*. *Ink* is a persistent alternate world, blending research-based and theoretically-informed approaches to teaching writing with compelling, creative gameplay. Target players will likely include high school and undergraduate students. Within *Ink*, writing is key (not combat). Players are welcomed into an imaginary city with an elected government, diverse and competing groups, and a thriving economy based on the exchange of texts. We are explicitly designing for

receptivity and identity-play. Case 2 illustrates possible player experiences in *Ink*. (Once *Ink* opens, we hope to capture real player experiences.)

Case 2: Ivan & Chun

Ivan is a student in an undergraduate writing course. Within *Ink*, Ivan receives a journal that includes tasks from his instructor. As Ivan completes these tasks, he writes reflections about his choices. When he creates new content (e.g., items, rooms, documents), his drafts are reviewed by other players, and Ivan reviews some of their drafts. In *Ink*, a path is a series of special challenges and achievements. Ivan focuses on the Path of Government. A political group reads his job application and hires Ivan to hand out fliers to other players. The group helps pass a resolution in the Council, raising the tax on room sales. But as Ivan learns more about the world, he decides he's on the wrong side of the issue. He runs for City Council but isn't elected. Disappointed but far from finished, Ivan compares his campaign materials and public appearances to his rivals'. He finds an opposition political group, and tries new writing strategies to attract support. His group takes donations from room creators, campaigns creatively and vigorously, and passes a citizens' resolution reversing the tax increase.

Chun is an undergraduate telecommunication major who's curious about educational games. Chun focuses on the Path of Trade. Chun is a skilled writer and digital artist. By adding original images to the rooms and items she creates, Chun becomes a popular (and wealthy) member of the Trade Guild. She advances on the Path of Trade, keeping careful reflections in her journal and impressing other players on the path (who review her journal as part of her advancement). Chun often creates rooms and sells them, so she's vexed by the tax increase. Chun had generally ignored City politics. But now she follows the City Council race closely. Chun notices that most of the campaign materials are poorly designed (e.g., simple page layout, no graphics). When Ivan finds his new political group, Chun offers her services as a media consultant. She talks with Ivan to understand the issue and his message. Then she collaborates with a popular *Ink* rapper to create a podcast. Chun creates a flier to publicize the podcast, and hires some new players to hand it out.

Ivan and Chun are immersed. They aren't trying to satisfy an instructor (although Ivan's journal functions a portfolio with reflections). Rather, they are trying to persuade other players to cast their votes or spend their money in the game. They can work within the support structure of a group and/or path. They can learn from their successes and failures. They are taking risks because they are personally invested in the outcomes of their writing. Learning depends on trying the untried; with writing, there is no educative substitute for trying to write. Eric Crump says, "I often think the 8.5 x 11 piece of paper appears to some students like some sort of white looking glass, and just on the other side is the Red Queen..." (2001, p. 183). The immersion of *Ink* helps Ivan, Chun, and others like them work past that intimidating blankness. Rather, it helps them *play* past it.

Conclusion: Victories

Victory in a game can be pleasurable, even in games with little or no identity-play. Victory in a deeply immersive game can be even better: triumphing over a great evil is

more thrilling than just pressing buttons. In other words, games can be more than pretty, cliched, sensorimotor tests. The actions side of our model reminds us to provide engaging gameplay. But the identity side need more attention from game designers, especially serious game designers. Players and students alike will benefit from worlds and classrooms that foster receptivity and immersion.

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