

Character creation and customization for Massively Multiplayer Online Games

Brazilian cultural analysis for Online Educational Games

Da Silva, Sylker T.
Kyushu University
sylker@gmail.com

Abstract

The research here described represents the small starting point of a bigger research project which objective is to develop a Virtual Learning Environment based on the popular Massively Multiplayer Online Games for Brazilian students. Following the player's flow in the gameplay, the first step to be considered is the avatar creation and customization. The objective of this paper is to settle the initial parameters for the character's creation system based on the cultural aspects of Brazilian people. Using an exploratory and comparative methods, this work has analyzed three different online games in order to determine which avatar's characteristics should be customizable. Seven distinct Brazilian ethnic groups were found formed by five other groups, including international immigrants, like Japanese. Based on these groups and the games analyzed, the next steps for this work and a new research were established as results. From now on, the character's archetypes should be developed to set up the customizable body parts. Additionally some complex problems were found to be answered in future researches, as the player's class assignment in an educational game. It was considered important to assign some technical directions in this early stage of development, such as the Game Engine selection and software parameters that are not directly related to the culture, but to economic and social aspects of the target audience. Three Game Engine with free version available were analyzed and the results has pointed to Unity, for its low cost and flexibility and multi-platform as well. The Web Browser game deployment capability really suits the requirements of this project.

Keywords: Online Games, Culture, Education

1 Introduction

This work represents the first step of the first step in a research focused on to create and develop a Virtual Learning Environment based on the Massively Multiplayer Online Games known by the acronym MMOG.

For the first step is needed to understand what comes first in a so complex system. In despite of the traditional project methods, what of course will imply the production of a Game Design Document and other additional development documentations, for this research's purposes, this work is guided by the user's play flow itself.

This decision was taken because of the nature of the research and the complexity of the project, for the prototype development was segmented in different parts in order to make it possible to be executed with low resources.

This first step is, in fact, the character creation and customization by user. This is an important part of MMO games and defines a relevant aspect of interface: the avatar.

The objective of this paper is to establish the starting parameters for the avatar's creation and customization system for a Massively Online Educational Game for Brazilian students.

The results obtained through a bibliographic exploration method and a comparative method applied between three Massively Multiplayer Online Games has indicated seven Brazilian ethnic groups to be used as the basis of character

conception and which properties could be customized.

2 Starting Concepts

Before going through the main goal of this work is necessary to set up some essential concepts. First of all, the MMOG itself, as one of the most popular genre of games nowadays.

The terms MMOG and MMORPG are commonly used to describe a subgenre of games that allows the user to play over the Internet with hundreds or thousands of other players [2]. As seen in the beginning of this paper, the acronym MMOG means Massively Multiplayer Online Game and RPG comes from Role-Playing Game, a board game that, along with the computer's technology is the very origin of such subgenre [2].

The ability to play the game and interact with other players makes this kind of digital world one of the best environments to promote education according to theories of cognitive interaction involving participation in a community in order to construct the knowledge [3]. Also, this same community is responsible in the process of culture generation through nature.

These special aspects of MMOG have triggered this research with the objective of develop an online game with the best parameters in accordance with education principles.

As said before, the first step in this colossal task resides in the creation and customization of the avatar by the user, what points to the next concept needed of some discussion.

The virtual representation of conscious beings in synthetic

environments, immersive or ubiquitous, is the so-called avatar [4]. The Hindu idea of a god among people through a physical manifestation is the origin of the word avatar and the concept behind this virtualization process.

The actions performed behind the avatar's mask reflects a new way to communicate, but also it is related to how people act differently behind different avatars. It gives freedom somehow to people enabling not only to "be" someone else but also to act as someone else.

These aspects implies an interpolation of culture, of what the individual takes to the virtual environment and what he will get from there and more important: the sum of all those experiences.

For consider this process of creation culturally important and because it is the first challenge the user faces inside the MMOG when entering for the very first time, this work aims to discuss more about how to develop a system for distance learning that allows the student to create and customize his own character.

3 Project Outline

The character creation system to be developed starting with the studies here discussed is part of a bigger project. The main research project have the objective of develop a Virtual Learning Environment for Distance Learning Education based on the MMOG. The target-audience in the first moment will be Brazilian students from the basic education.

The prototype should be developed in a modular structure and will be possible to adapt it to many other targets and countries.

The avatar creation involves some characteristics and it is important to define which of them will be present in the project and which will not.

The character creation usually begins with choosing a race. It will reflect in the character's background, its species, physiognomy, history, heritage, philosophy and so forth [1].

In the proposed educational game, there will be only one race: human. Thus, no race choosing will be necessary.

In the games, people want to play other races than human. Players prefer to be elves, dwarves, orcs, goblins and all sorts of fantastic creatures. However, this project intends to be a different type of class. Not for elves or Halflings, but for humans.

The purpose of this is to create a link between the player and character. It will be possible, probably, in the future to change the appearance of the avatar in a variety of ways, but in this first moment, the player is a student, just about to discover an entire new world of knowledge, but still a student.

The second feature to be chosen is the appearance. It will be discussed ahead and because the player will not be able to pick other race than human, it is important to give a special attention to this part of the system.

The third step on character creation is the definition of a class. Again, it is not applied to this game; however, the class represents an important element in the balance of the game affecting directly in the group's gameplay, essential in a MMOG [1]. This factor generates the first problem to solve: how to develop classes among students? It needs to be in the project but how is best way to represent it in a virtual learning

environment?

Some games includes profession choosing in the creation process, but in this project the profession choosing will not be present during the avatar's creation but later in the game and maybe under a different term.

The last step in the avatar creation is usually give him a name.

4 Appearance Aspects

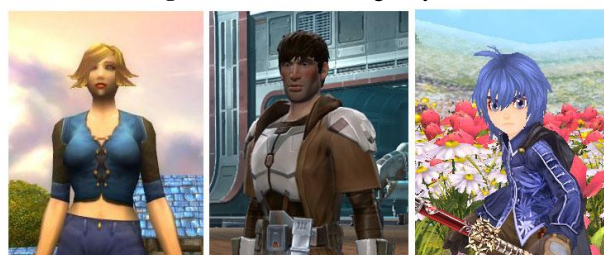
Among the concepts explored so far, the avatar's appearance is most complex to understand and apply in an interactive system. The reason is related to the psychological and sociological aspects involved.

One of these aspects relays in the body and conscious' relationship and how in the postmodern times this connection is not only restricted to a physical body [5].

Three different MMOG were analyzed in order to study the customization mechanics and appearance features. In the "World of Warcraft" and "Ragnarok Online II" the level of customization are limited to more general visual aspects while in the "Star Wars: The Old Republic" deepest changes are allowed, such as scars and make-ups, for instance.

The first difference realized was the design style direction [6]. The "World of Warcraft" shows a more stylized visual and "Star Wars" is directed to a more realistic graphic. Considering the project's target audience and the character design style defined by George Maestri [6], this research will follow an even more stylized visual approach, as seen in games like "Ragnarok Online II". The Figure 1 shows a visual comparison between these three games regarding the character's creation screen, from the left to the right: "World of Warcraft", "Star Wars: The Old Republic" and "Ragnarok Online II".

Figure 1 Character Design Styles



It was decided to keep less options of customization as for the target audience there is no need of scars or make-ups nor facial hair or horns. Therefore the options kept for the prototype development and based on the analysis of the three games will be: body type, height, hair style, hair color, skin color, eye type, eye color, nose and mouth.

A more accurate and deep study should be done for the concept creation of eye, nose and mouth types and for the hair style as well. For the body type, it should not provide a too fat or too thin character, but it must let some freedom for this represents one of the most important aspect of MMOG character concept: player's singularity.

These are characteristics more related to ethnicity than culture,

but both concepts are directly and strictly linked and have an important area of interpolation where the individual's subject exist. Not only eyes, nose and mouth are ethnicity studies dependent but more important: the skin shade.

In the case of Brazilian students, it is more difficult to establish customization parameters based on the ethnicity and culture because of the country's size and history.

It was found very difficult to establish some criteria on how to classify human visual characteristics through the complicated Brazilian categories based on skin shade for it does not reflect the common black-white paradigm [7]. Instead is possible to find four distinct ethnic groups in Brazil from many different origin and mixtures, as show in table 1.

Table 1 Ethnic Groups in Brazil

Group	Description
White	The major part of this population are European descendants, mainly from Portuguese, Spanish, French, Italian, Dutch and Slavic. Most of them lives in the south region of Brazil.
Black	Were forced to work in Brazil as slaves in a past time in the sugar and coffee production. After the end of slavery, they are still concentrated in areas where the work exploration were more intensive, as northeast and southeast regions.
Indian	The native population before the Portuguese colonization. They were almost totally exterminated during the colony period. Actually they live mainly in north and central region of Brazil.
Brown	Originated from the miscegenation between White, Black and Indian.

The Brown ethnic group on the other hand have originated three other distinct groups as shown in Table 2:

Table 2 Brown originated groups

Group	Description
Mulato	Comes from the union between White and Black. They represents 24% percent of Brazilian population and lives mostly in northeast and southeast regions.
Caboclo	Descends from the mixture between White and Indian groups. They represent 16% of Brazilians and lives mainly in the north and central regions.
Cafuzo	The minority group represents only 3% of population. Comes from the miscegenation between Black and Indian and lives mainly on Amazon, northeast and central regions.

Those groups were formed along the History through the combination of five original groups: Natives, Portuguese Colonizers, African Slaves, European Immigrants, Asia and Middle-East Immigrants.

Based on this, there is still one more aspect to consider in order to develop a Brazilian based character creation system: the

immigrants. There are, for instance, a considerable number of Japanese immigrants in Brazil.

Started in 1908 with the Kasato Maru steamboat arriving at Santos Port, the Japanese migration to Brazil represents an important aspect of Brazilian development and culture, especially in the southeast and Amazon regions [8].

Considering that and the fact that today there are many children of Japanese immigrants and other cultures as well, it is possible to assume a student player should be frustrated for not be able to find their own ethnic characteristics in the system.

5 Costume

Evidently, costume is part of appearance, however it is a so complex field, specially associated with culture, the way it always should be, that it was necessary to put it in a separated section.

For now, it is not this work's objective go through aesthetical elements, as fashion design, for instance, but establish the cultural relations between the traditional wearing and the ethnics groups described before.

The main reason for this distinction lays in the fact the character's creation process in the MMOG usually do not show the avatar in the clothes it will use in the beginning of the game. The low-level characters commonly uses very simple equipment in order to acquire more advanced stuff during the game progress.

The problem found in the avatar creation screen is that is very frustrating to create and customize a character wearing too simple clothes. To see the character wearing advanced vestments helps the user to realize how the avatar will be in the future, according to the game progress.

In the game "World of Warcraft" in its latest expansion called Mists of Pandaria, the solution was to put both visions in the character creation screen, showing the future armor set (left) and the starting equipment (fig.2).



Figure 2 Mists of Pandaria Character Creation View

In this project, as a virtual simulation of a school, the initial wearing set should be a common school uniform. Of course, the students will be able to change it to a variety of sets during the game, including different school uniforms.

For a Brazilian student of Japanese origin, for example, it will be possible to change the uniform to a more Japanese style school uniform, what is very different from Brazil. In addition, for the same student, according to his progress, it will be possible to unlock more traditional dressing, like kimonos.

The player's equipment to be shown in the avatar's creation screen in this virtual learning environment project should be based on the different traditional dressing according to the ethnics division found in this research.

The traditional wearing will not be restricted to one ethnic group, but in the character's customization process, this division should help different children to identify their own visual style, what can be freely changed in the game. Body parts' customization will also allow a free combination in a way the players could create a very singular avatar.

6 First Sketches and Visual Directions

Based on the seven Brazilian ethnic groups found and main immigrant's descendants, a character's creation and customization system should be, from now on developed.

The main characteristics of those groups should be turned into archetypes for a starting point of creation. The mixing of these characteristics and costume will give the needed singularity.

First step had taken following the three main groups found (fig. 3), considering that the fourth one is a result of the first three's miscegenation.

In order to develop these first white, black and native visual concept, some factors was taken in consideration. First of all, the drawing style.

As discussed before, the design direction will follow the stylized concept [6] for it would be more suitable to the target audience: Brazilian's junior high-school students (between the 6th and 9th years of school).

Among the many different drawing style around the world, the Manga style was chosen.

Manga is also known as Japanese comic books. A very rough definition though, as Manga still have many differences to its western counterpart [9]. With the popularization of Manga around in Japan and around the world, especially after the

Second World War, this visual and narrative culture become a very distinctive style of art and representation.

In Brazil, during the 1990's, Manga and Anime become very popular, an event known as The Boom of Manga [10]. After this period, many children and young people become more interested in Japanese culture. Today, there are many Manga and Anime officially translated to Portuguese and a variety of fairs is placed over the country every year, with traditional Japanese food, games, manga and anime contents been shared and Cosplay competitions.

Due to this proximity with Japanese culture and the popularity of Manga in Brazil, the visual style for the characters will be based on Japanese Comics.

Some elements were established in order to compose different characters. Hair, eyes, nose and mouth represents a very ethnic visual representation of an individual. Similar characters in Manga were researched. The most difficult one was the Brazilian native. Although there are just a few black characters in Japanese comics, none was found of Brazilian natives.

The first three concepts, each of them representing one ethnic group found here can be seen on figure 3, left to right, black, white and native.



Figure 3 First three visual concepts

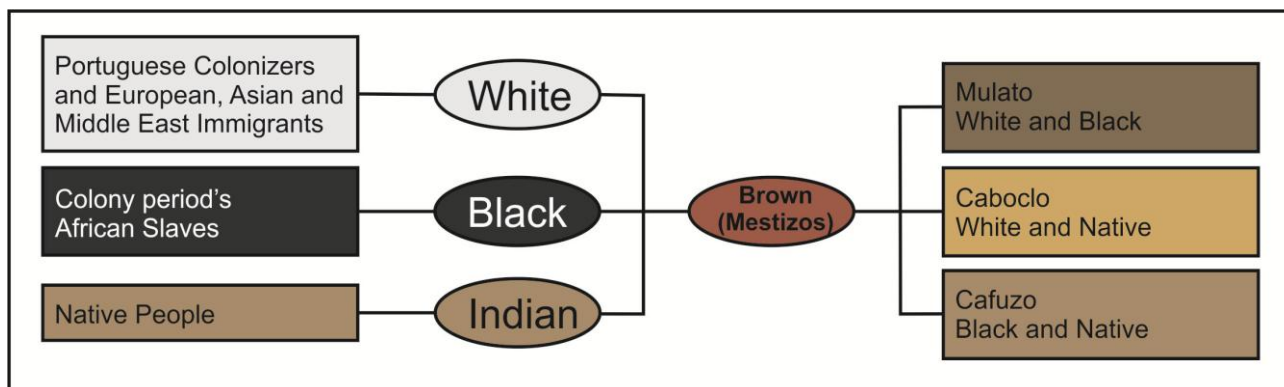


Figure 4 Brazilian Ethnic Groups Graphic

7 Avatar and Educational Process

The relation between humans and avatars in virtual worlds is in fact a very complex condition. Even the relation between the mind and the body has changed since Descartes and his modern philosophy.

After the Modernism, human began to think about body as a separate entity, a biological suit to be modeled according to social environment [11]. Later, with the down of postmodern paradigm, the mind has become a key to understand the very nature of human consciousness and how it is totally apart from physical body.

The consciousness fluidity between many social realities [12] also applies to virtual social realities. Nowadays is common for people to wear their avatar masks and for some time become part of an entire new universe where we can interact with other people and construct new societies.

With this context given, is possible to visualize the role of avatar in people's life. When playing games or discussing in social platforms, the avatars represents a different individual, not the physical subject anymore.

What it have to do with education? When speaking about online education is secure to say: everything. If the avatar represents the identity of a conscious mind, a virtual temporary body, it is, in fact, the interface of mind with the realities.

For a student, constructing its own identity and knowledge, it will represent the self in a virtual version, important to establish the relations with other students.

In the socio-constructivism theory of education, the relation or socio-interaction is the very basis of knowledge construction [12]. As virtual societies are still societies, is plausible to extend that concept to simulacra and its inhabitants: the avatars.

For this understanding, the avatar is the subject of interaction and the temporary representation of mind. Its social relations will construct knowledge, good or not, depending on the simulacra conditions, such as social environment and context learning approach.

A specific virtual world can offer an even more fertile ground for knowledge raising: the games. Play act can be placed as the leading source of development in a child [13].

Imaginary based games, such as RPG (Role Playing Games) and its variations such as the MMOG, are composed by rules of behavior and establishes a reality projection or simulation. Social development comes from these not formulated rules but implicit within the game itself.

Also, the semiotic structure of meaning and object is constructed by play. By dealing with things that carries a meaning, the child replaces the objects by word meanings and start to create a complex semantic sphere [13].

Evidently, all those concepts designated for physical societies must be tested in their virtual versions to confirm the practical appliance of theories. The simulacra is the digital counterpart of us and games comes with behavior rules to define these simulated communities.

Thus, more will be analyzed from this point. Assuming the socio-interactionist post-modern theories of education, the path to be followed is clear enough to start a journey with avatars into contextual learning field of research.

8 Technical Aspects and Design Tools

Besides this article's objective points to a more analytical and theoretical approach, it is important, as a first step in an applied research, establish also some technical aspects for the product development.

The main tool, the Game Engine, should attend for some important requirements, among them, modular development and low cost are the most important.

Other requirements as Online Game Capability (server and client communication), fluid and easy project pipeline, integration with the most popular software available, multi-platform capability and high level of customization were also taken in consideration.

Three of the most popular with a free version available Game Engines were analyzed: "Unity", "Unreal UDK" and "CryEngine" (table 3).

Table 3 Free Game Engines Comparison

Engine	Platform	Script Language	Version Control	Price
Unity	Windows Mac OSX Android iOS X360 PS3 Wii	C# JavaScript Boo	Yes	Limited Free or \$1500 full
Unreal (UDK)	Windows iOS	Unreal Script	No	Limited Free or \$95 + 25% Royalties
CryEngine 3	Windows X360 PS3	C++ Visual Script	No	Limited Free or \$1.000.000 + ?

The table shows that "Unity" engine have many advantages in comparison with its competitors. First of all and based on the user tests also performed, the limited version and the free version of "Unity" does not carry a significant difference. In fact, most of the limitations presented are visual related and not really functional.

The cost is an important point of decision. In Brazil, in despite of a crescent economy, there's corruption and many social problems, including one of the world's worst wealth distribution [14], what results in a society where video games and other cultural entertainment are not the priority at all.

Also, schools usually does not have budget enough to invest in computers or digital laboratories. Unfortunately, is very common to see schools with very old computers or none.

For these reasons, the final product must be light enough to run on slow computers, maybe over the Internet through the Web Browser. The cost should be low, affordable to schools and other Brazilian educational institutions. Here, "Unity" took the advantage again.

“Unity” engine also offers the possibility to publish the game directly on Web Browsers as well, as its native format running under a player plugin (“Unity Player”) or in “Adobe Flash” format, one of the most common Web content players available.

After this analysis it was found that “Unity” is the more suitable tool for this project.

9 Next Steps

This is just the beginning. A good one.

The challenge will be to create a simple system for the target audience but with all the features that reflects the complexity of Brazilian ethnic formation.

Another challenge resides in the modular aspect of the software architecture. The main research presumes a game that can be used by many different educational institutions. Therefore, the software should allow the addition of new characteristics and character’s archetypes in order to work for other countries as well.

It is clear “Unity” should be used as the game engine for this project. Cost and flexibility factors were strong factors and affects cultural and economic aspects of the proposed target audience.

In the end, the system must be submitted to user’s evaluation, in alpha and beta tests, for the final corrections, bug fixes and improvements. The target platform is Web Browsers, but tests with mobile devices such as cellphones and tables will be performed. A multi-platform system is been considered.

For the first sketches of visual concepts presented here, more should be done, of course. Male and female for each main ethnic group plus hair, face, eyes, costume and accessories must be designed to fulfill the conceptual phase of this project.

The variety of customizable parts will make possible to turn all the three main groups into others, according to the user’s will. That should be verified later with the target players.

This Avatar Creation System will expanded to the Non-Player Character Creation System and for the Teacher’s Avatar Creation System. The separated system should work as one in the modular and asset concept and will depend on the profile logged in.

Speaking in profile, the relation between Server and Client should be studied and developed alongside the Avatar’s system design. Issues as security and user’s account must be resolved before the tests. Database such as SQL is been considered but other options will be discussed furthermore, like the third party service called “SmartFox”. Again, cost and flexibility will be taken in high consideration during the decision making process in order to develop an affordable and reliable software.

Finally, it was considered a very complex concept the character’s class assignment. Another parallel research is needed to bring some light to the problem according to educational theories here discussed.

Education is a very complex field and is related not only to culture but human cognition and social relations. An applied research like this should have a theoretical twin by its side. In the near future, the integration between the system to be developed and the concepts found should result in an

educational tool more suitable for students and professors around the world.

With this stated, from now on, this research should follow two paths. Research and development will become the guideline for the next steps that will be achieved starting with the findings here described.

References

- [1] Kelly, R.V., *Massively Multiplayer Online Role-Playing Games: The People, The Addiction and the Playing Experience*, McFarland, pp. 25, 2004.
- [2] Darby, J., *Wizards and Warriors: Massively Multiplayer Online Game Creation*, Course Technology PTR, pp. 1, 2011.
- [3] Steinkuehler, C. A., *Learning in Massively Multiplayer Online Games*, Proceedings of the 6th International Conference on Learning sciences, Vol.6, pp. 521-528, 2004.
- [4] Coleman B., *Hello Avatar: Rise of the Networked Generation*, The MIT Press, pp. 11, 2011.
- [5] Le Breton, D., *La Sociologie du Corpus*, Presses Universitaires de France, pp. 7, 2008.
- [6] Maestri, G., *Digital Character Animation*, New Riders, pp. 9, 2006.
- [7] Chang, H. and Dodd, T., *International Perspectives on Race and Ethnicity: An Annotated Bibliography*, Electronic Magazine of Multicultural Education, Vol.3, No.1, 2001.
- [8] Masao, D., *Pequena História da Imigração Japonesa no Brasil*, Gráfica Paulos, pp. 8, 2008.
- [9] Gravett, P., *Sixty Years of Japanese Comics*, Lawrence King Publishing, pp. 10, 2008.
- [10] Vasconcellos, P. V. F. *Mangá-Dô: os caminhos das histórias em quadrinhos japonesas*, PUC-Rio, pp. 19, 2006.
- [11] Shirley, F. (org.), *The Wealth Report 2012: A global perspective on prime property and wealth*. Think Publishing: 2012.
- [12] Le Breton, D. *Adeus ao Corpo: Antropologia e Sociedade*. Miosótis, 2004.
- [13] Berger, P. L., Luckmann, T. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Open Road, 2011.
- [14] Vygotsky, L. S. *Educational Psychology*. St. Lucie press, 1997.
- [15] Vygotsky, L. S. *Play and its Role in the Mental Development of the Child*. All About Psychology, 2011.