

# How Can We Be Serious in a Game?

João Catarino, Tiago Moreiras, Pedro Faria Lopes, Joaquim Esmerado, Isabel Machado  
Alexandre

ADETTI, DCTI-ISCTE

Ed. II, Av. Forças Armadas, 1646-026 Lisboa, Portugal

joaomscatarino@sapo.pt, tiago.moreiras@netcabo.pt; { pedro.lopes, joaquim.esmerado, isabel.alexandre}@iscte.pt

## Abstract

In this paper, we explore the application of a commercial *anime* - Naruto - for the development of a Narrative Learning Environment aiming at disseminating a citizenship and pedagogical message “*All different, all equal*”. With this application, we want to explore a new medium, with a cross cultural acceptance to convey a running concern to the worldwide community. In this research project, we introduce novel techniques in the storytelling research domain and at the same time develop a game that can have a positive impact on the development of conscious awareness of current social and global issue.

## Introduction

In this paper, we explore the application of a commercial anime - Naruto - for the development of a Narrative Learning Environment aiming at disseminating the moral and pedagogical message “*All different, all equal*”. An anime is the name given to Japanese animations or cartoons, which have been quite popular worldwide. The main goal behind the usage of such environment is the fact that is already well-known and accepted by a wide community, which is perfect to convey a pedagogical and moral message. This kind of animation has a distinct design which makes very easy to portray emotions, moods and even personalities. The Campaign “*All different, all equal*”, that driven the choice of our pedagogical message, was created by the European Council in 1995 with goal of fighting racism, xenophobia, anti-semitism and intolerance. This campaign is now on its 2<sup>nd</sup> edition – from June 2006 to September 2007 - and there are several initiatives running in the different EU countries which now advocate the following goals: promote the debate about Human Rights; promote and celebrate Diversity and, promote Human Rights and Diversity through participation. To portray such message and goals, we think that a role-play approach is quite appropriate - Naruto is a role play game (RPG) - since it embeds the message in the form of a story, which is a familiar structure to any of us from early childhood. In a role play situation, each person

should choose a role to play and act in accordance with it within the role-play scenario. In this environment, it is not only important to be in character during the role playing game, but also emotionally engaged and informed about the feelings of the other participants in the story. One of the paths within theory of mind - the “simulation-theory” - suggests that our capacity to attribute mental states to others and ourselves comes not only from the folk psychological theory of mind reading but also from the capacity to mentally simulate the situation involving the other person and identify this person by projecting oneself imaginatively into his or her situation – empathy appears in this approach.

Within a learning context, Jones [Jones, 1990; Cotton, 2001] identifies some of the fundamental ways that empathetic understanding is seen as an important trait for a successful learning process:

Successful students often recognize that much of their success involves their ability to communicate with others... they are also able to view themselves and the world through the eyes of others. This means... examining beliefs and circumstances of others, keeping in mind the goal of enhanced understanding and appreciation... Successful students value sharing experiences with persons of different backgrounds as enriching their lives.

Role taking and role-playing activities require people to act the role of a real or fictional character and to imagine or act out that person’s feelings and behaviors. Role-playing activities are important because not only they promote people’s development of empathetic behavior, but also they can relate the lessons learned within the role-play activity to real life. The role-play activity should be followed by a debriefing session in which a role player leader guides the debate to help the children in identifying what they have experienced (their attitudes, feelings and behaviors) when assuming a particular role. Galo (Galo, 1989; Cotton, 2001) summarizes the benefits of role taking activities as an empathy training method by stating that it: fosters insight into different perspectives and promotes genuine open-mindedness; discourages hasty and superficial problem examination; facilitates construction of more fully elaborated problem models; discourages belief rigidity; encourages cognitive and personal flexibility, and

practices persistent probing, engaged examination of an issue in alternation with reflective distance.

In light of these theories and concepts, we devised the narrative learning environment here presented.

## The Role Play Game as a Narrative Learning Environment

In this section, we present the context story of the commercial RPG that is applied in our Narrative Learning Environment (NLE). Following we present the conceptualization of the characters devised in this project, as well as the narrative approach taken to convey the underlying story of our environment. Special attention is paid to the ways of providing means for the player to interact within the environment – which is discussed in section Interaction. The reason behind this particular emphasis rises from the fact that if we fail to provide a meaningful communication tool to the players they will be discouraged to interact, and indirectly we also fail to portray the pedagogical message.

### The Context

The development of the *Naruto Unleashed* - a narrative learning environment (NLE) – was inspired in the *Naruto* role play game (RPG). The story covered in this anime is similar to other *animes*, which makes it accessible and popular to its targeted public (teenagers, adolescents and even adults) all over the world.

*Naruto* is a manga by Masashi Kishimoto with an anime TV adaptation, and its main character *Naruto Uzumaki*, is an adolescent ninja who constantly searches for approval and recognition, as well as to become *Hokage*, acknowledged as the leader and strongest of all ninja in the village [En.wikipedia1].

### The Story World

The story being portrayed in this NLE is based on *Naruto* RPG, but it only simulates a small part of the original world. One country may have different villages – shinobi villages - but for our particular environment, it was only considered to exist one, *Konohagakure* (literally Village Hidden Among Leaves). The leader of the village is also called a *Kage*. Each village has different buildings, such as the character's house, the school, different shops (weapon, scroll and jutsu)<sup>1</sup>. The character's home is the place where it rests or keeps its items. The school's concept does not exist in the original anime. The purpose of this building is to house infants and prepare them for the Academy. In these first quests, the player learns concepts about being a ninja and how to evolve his character. To graduate from school the player has to perform an exam consisting of a set of quests. School time is mainly used to teach the basics

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<sup>1</sup> In this initial stage some of the possible buildings were not considered.

of jutsu abilities and introduce some of the anime story. Any ranked ninja can enter the school and do a quest. In the shops the characters can acquire some of the possible items (e.g.: scrolls, weapons, books, potions, food, etc.).

### The Characters

The environment is populated with two types of characters, player-controlled and autonomous characters. The introduction of autonomous characters is derived from the need to control the narrative being told in order to convey the targeted pedagogical message.

Nonetheless, the user can evolve his character as he wishes so that he can build his personal narrative. In this RPG, the characters were defined as *classless*, in the sense that each character does not have a specific role to play, meaning that the player is free to build his own narrative evolving his character as he wishes. The players choose the direction of their characters as they play, usually by adding points to certain abilities. Each time a player fulfills the experience bar he will be asked to choose two out of the three abilities of the character: Health, Stamina or Chakra.

This approach of a *classless* character can be also interpreted as a template that provides a set of guidelines for the player to evolve his character. Although no strict classes exist, one can become a specialized player in a certain area if he trains and develops some specific skills. This can be seen almost as a "pseudo" classless categorization, since as long as the player evolves will definitely be part of some kind of "pseudo" class due to his developed skills. The evolution of the character is translated by his experience (from another perspective the player's level). This experience is meaningful in a contest situation. The experience will be ranked in an interval from 1 to 80 - see [Moreiras *et al.*,2007 ] for further details. Varying the evolved character abilities it is possible to have a group of characters with different potentials which can be organized as friendly or opponent teams. This potentiality is explored in the narrative approach to convey the pedagogical message.

### The Narrative Approach

By trying to shape a RPG in a NLE some important decisions have to be made in order to bridge the gap between an interactive game and a story oriented learning environment. In a RPG one of the principal concepts to preserve is the *agency* [Murray, 1997], the power to directly influence the behavior of the characters, and indirectly in the story. But this obviously falls in one of the typical problems of interactive narratives/stories:

The higher degree of freedom that is given to the user to intervene in the narrative flow, the weaker is the power given to the author to decide on the progress of the story [Clarke & Mitchell, 2001].

In this environment, we try to overcome such problem following a character-centered approach [Bailey, 1999], which defines a set of *behavior templates* for the autonomous synthetic characters. This behavior templates

were inspired in ABL (A Behavior Language) defined by Mateas and Stern [Mateas&Stern, 2004]. By adapting ABL, we defined *behavior templates* as being represented as a set of goals, each one of these can be sub-divided in sub-goals. The sub-goals can be achieved through series of steps which can be executed in parallel or sequentially. Different from Façade, where ABL was applied, we do not envision the introduction of a centralized drama control. In our research approach, we follow an emergent narrative stream [Aylett, 1999], meaning that the story objectives are going to be ensured by the interaction of player-controlled and autonomous characters. As mentioned before in section **The Characters**, to accomplish story coherence it might be necessary to have several characters playing as a group. One of the particularities of our approach is the consideration of a *God-like*<sup>2</sup> working memory for each autonomous synthetic character which allows them to act in accordance to the story being portrayed. To ensure an interesting story in our RPG with a pedagogical message, synthetic characters have different levels of experience. The more experienced autonomous synthetic characters, propose quests to the player characters in order to test them. The quest is defined in such a way that the player controlled characters can only pass it if they join efforts with other characters - and in this way conveying and understanding the pedagogical and civic message. From another perspective and tackling one of the important features of a RPG, we also envision a reflection mechanism – similar to the one developed in SAGA [Machado, 2005] - that may be used to understand the motivation of the players when not cooperating to the achievement of a particular quest – simulating a debriefing session. Since, we rely on the interaction between autonomous synthetic characters and player-controlled characters to reach the pedagogical message, it is particularly important to understand the motivations of the players if they do not cooperate or behave in accordance with their characters’ developed skills. This reflection mechanism is envisioned as an interaction between the player-controlled character and an autonomous synthetic character - with a higher level of experience, in order not to damage the story sense of immersion [Murray, 1997]. To provide a consistent and meaningful interaction between different types of characters special attention is paid to the ways of interacting - which is described in the following section.

## The Interaction

The interaction within the NLE starts with a brief introduction to the background story. The NLE is developed in the form of a multi-level game where the player gradually evolves his character. In order to evolve his character’s level of experience the player user must engage in conversation with other characters (autonomous or user-controlled characters). At this point of the research,

<sup>2</sup> The term God-like means that each agent can sensor the information of the whole world.

we are only interested in the first level of experience (*infant*). This level is essentially an exploration level in which the user learns about the Naruto’s world, the village, characters, etc. Part of this knowledge must be acquired through conversation with the autonomous characters. To do this, we developed an agent platform based on *SpeechActs* and *LanguageActs* defined within the context of the FearNot! demonstrator [Dias et. al, 2005], including some modifications due to the context of this particular application. This platform allows for the interpretation of Natural Language by matching templates of user created sentences. *SpeechActs* can be used in human to agent (or vice-versa) but also in agent to agent communication and they have the following syntax:

```
<?xml version="1.0" encoding="utf-8" ?>
<speechACT>
  <!-- the names of the speaker and recipient -->
  <sender> Tiago </sender><receiver> João
</receiver>
  <!-- the class of language act to utter -->
  <type> greeting </type>
  <!-- the utterance -->
  <utterance> Hi João </utterance>
  <!-- arbitrary context variables -->
  <context name="mood"> normal </context>
  <context name="location"> ISCTE </context>
  <!-- any other agent-defined tags can go here. --
  >
  <agentContext>
    <var name="age"> 21 </var>
  </agentContext>
</speechACT>
```

### Section of Code 1 – SpeechAct File

A *LanguageAct*, as previously referred is a simpler way of grouping sentences into classes. Sentences are represented by a *phrase* element containing a little more than only a mere sentence. Phrases can also have what is called a *phrase token*, as implemented in the FearNot! demonstrator. Tokens are static references to a word or group of words which are expanded to create the final utterance. Most of them obtain their information from the context variables. Some examples of *phrase tokens* are:

```
[ME] - the speaker’s name;
[YOU] - the name of the recipient of the speech
act;
[CONTAINS] - used in user input to match a part of
a sentence;
... - many others like: [HIM], [TOPIC], [INSULT],
[BEGINS], [ENDS].
```

### Section of Code 2 - Phrase Tokens

*LanguageAct Databases* contain the *LanguageActs* known by the agents and a small synonyms database that helps them not to always utter the same words in a sentence. The root words are then replaced by a synonym that can be easily found in the *Spell Checker’s Thesaurus* of the *Orthography Checker* or in its own pool of synonyms. The last component of the *LanguageAct Database* is the pool of context variables that helps to represent, in some way, part of the agent’s current state. *LanguageActs Databases* have the following syntax:

```

<?xml version="1.0" encoding="utf-8"?>
<languageActDatabase>
<languageActs>
<!-- a greeting language act -->
  <languageAct name="greeting" nextIdentifier="4">
    <phrase id="1" numberOfOccurrences="0"> Hello
  </phrase>
    <phrase id="2" numberOfOccurrences="0"> Hi [YOU]
  </phrase>
    <phrase id="3" numberOfOccurrences="0"
      mood="cross"> Hey [YOU] what's up? </phrase>
  </languageAct>
</languageActs>
<!-- The synonym dictionary -->
<synonyms>
  <word> hit, thump, bash, clout </word>
</synonyms>
<!-- The context variable declarations -->
<contextVariables>
  <var name="topic" type="global"> unknown </var>
  <var name="insult" type="global"> idiot </var>
</contextVariables>
</languageActDatabase>

```

### Section of Code 3 - LanguageACT File

**User Input.** Since the interpretation of user input is done with sentence templates, special care was taken with the quality of the input because a wrongly spelled sentence could be as useful as no sentence at all. An alternative could be to avoid this wrongly spelled sentence with a system exception like “illegal command” or “system does not understand”. As described in Façade [Mateas&Stern, 2005], this type of sentences/commands should never be uttered because they inevitably break the user’s *suspension of disbelief*. To create a more engaging and dramatic play, and realizing that most users will have some difficulty in correctly memorizing and spelling Japanese words related to the anime, an orthography checker was created.

**Orthography Checker.** The orthography checker consists of two major parts, a **Grammar Checker** and a **Spell Checker**. The **Grammar Checker** aims to resolve all the problems which are not related to misspellings such as joint words, duplicated words, wrong use of article accordance such as “a” and “an”, etc. The **Spell Checker** is developed to be very easily adapted to the language of the system in use. It has a set of dictionaries: a *Glossary*, a *Thesaurus* and a *Phonetic Dictionary*.

### Technical Perspective

The player and computer controlled characters are represented by 3D models. These models were created concerning the player evolution through the game and with a cartoon-like appearance. In an early stage of the game the player model has an appearance of a child, and each progression in the level of experience complies with a different model with an older appearance, to signal that the player has aged

The game is being developed on the Microsoft’s XNA Framework, which provides a set of tools and technologies for game developers. XNA manages all the game components, game engine, models, input and sound.

All these features allow games to be ported, meaning that our game can be played on Microsoft Windows and Microsoft XBOX 360 – needing still some minor adaptations on controls, display and others.

### Conclusions and Future Work

In this paper, we present a narrative learning environment in its early stage of development. With this NLE we aim to explore different approaches, namely the different application of successful narrative approaches and techniques - ABL and reflection mechanism - in a RPG context, taking also as granted the acceptance of the Naruto commercial anime. From a technical perspective, we explore the new possibilities provided by Microsoft XNA platform, in order to develop game that can be either for Windows OS or XBOX 360.

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