

# **Educational Games and Responsiveness: Playfulness, Reading Comprehension and Learning / *Jogos pedagógicos e responsividade: ludicidade, compreensão leitora e aprendizagem***

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## **ABSTRACT**

This article, based on theoretical assumptions of the Bakhtinian theory aims to analyze the characteristics of responsive attitudes of students from two high school classes at a public school in Fortaleza. The research took place during interaction with texts in an educational game for teaching reading in Portuguese. The analysis is based on data collected in a pilot experiment that aimed to analyze the influence of using a Learning Object (LO) in the development of reading strategies. During the task of reading, it was verified that the LO, due to the way the task is proposed and the use of interactive technology for learning, developed, in the student-users of the game, active responsive attitudes during the complementation of meanings of the text.

**KEYWORDS:** Responsive reading; Teaching reading; Educational games; Reading

## **RESUMO**

*Este artigo, embasado em pressupostos teóricos da teoria bakhtiniana, tem o objetivo de analisar as características das atitudes responsivas de alunos de duas turmas de 1ª ano do Ensino Médio de uma escola pública em Fortaleza, durante a interação com textos em um jogo educativo voltado para o ensino de leitura em Língua Portuguesa. A análise é feita a partir de dados colhidos em um experimento-piloto que tinha como objetivo analisar a influência do uso de um Objeto de Aprendizagem (OA) no desenvolvimento de estratégias de leitura. Durante a tarefa de ler, verificou-se que o OA, devido à forma como propõe a tarefa e ao uso de tecnologia interativa para a aprendizagem, desenvolveu, nos alunos-usuários do jogo, atitudes responsivas ativas durante a complementação de significados do texto.*

**PALAVRAS-CHAVE:** *Compreensão responsiva; Ensino de leitura; Jogos educativos; Leitura*

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## Introduction

Teaching through interactive technologies can cause a revolutionary change in teaching-learning processes, since the produced material with these technologies contain resources (colors, sounds, movements and other attractive aspects) which have dynamism and interaction as key words. In this new context, everyone gains new roles: the teachers leave the classrooms and fill computer laboratories to work with new tools (the Learning Objects – LOs) and the students, who are experienced when dealing with technologies, share knowledge among one another and the teacher.

Due to this new context, specific didactic tools and materials have been developed to be utilized in schools as complementary materials. For the elaboration and storage of this didactic material, some governmental actions and programs<sup>1</sup> have been planned with the aim of promoting digital inclusion in schools and producing LOs<sup>2</sup>.

In this article it is analyzed – in a socio interactionist perspective, based on the bakhtinian concept – the utilization of an LO – defined here as any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning (WILEY, 2000, p. 23) – to teach the Portuguese language. The purpose is to analyze, based on the assumptions from the Bakhtinian theory (VOLOŠINOV, 1986), the development of reading comprehension strategies and the interest in reading by high school students.

According to Vološinov (1986), understanding is defined as a dialogical movement, similar to a dialogue form. After all,

(...) any genuine kind of under-standing will be active and will constitute the germ of a response. Only active understanding can grasp theme - a generative process can be grasped only with the aid of another generative process. (...) Understanding strives to match the speaker's word with a *counter word* (p.102).

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<sup>1</sup> An example of these actions is the “Program One Computer Per Student” – POCPS (<http://www.uca.gov.br>), which aims to be an educational project using technology, digital inclusion and growing density of the commercial productive chain in Brazil.

<sup>2</sup> The Project Condigital is an example of the actions from the Federal Government that intended the creation of Learning Objects on audio, video and software media to feed the International Bank of Educational Objects (IBEO).

Thus, in the school context, the student demonstrates to comprehend a text when he takes an active responsive position towards it; that is, “agrees or disagrees with it (completely or partially), arguments it, applies it, prepares for its execution, and so on.” (Bakhtin, 1986, p. 68)

In this paper, there will be analyzed characteristics of responsive reading attitudes from students, through the use of the game “O que vem a seguir” (What comes next), which suggests to develop, in the first place, prediction as a reading strategy, consisting in the capacity the reader has to anticipate himself in relation to the text and in the elaboration of hypothesis on what was written while processing his reading.

To introduce the discussion, this article is divided into four parts. In the first one, the concept of responsiveness is treated in light of the Bakhtinian theory; in the second one, the game “O que vem a seguir” is presented, emphasizing its main characteristics as an LO; in the third, the experiment, the procedures and results are described; and in the last part the results are discussed and the use of the LO is evaluated.

## **1 About the concept of responsiveness**

The Learning Objects, as teaching tools, can bring to the classroom many learning possibilities that pass through new content approaches and also through learning motivation concerning the media in which they are produced. In the case of digital educational games or educational software, the interaction between content and student and the possibility of learning by utilizing digital resources may contribute to the content apprehension and the interest in the task. This content, then, is easily understood and shared among the students/users in an interactive form, which demands from these students an active responsive attitude. Considering the interlocutor’s role in responsive reading, Bakhtin (1986) says:

[He either] agrees or disagrees with it (completely or partially), arguments it, applies it, prepares for its execution, and so on. And the listener adopts this responsive attitude for the entire duration of the process of listening and understanding, from the very beginning – sometimes literally from the speaker’s first word. Any understanding of live speech, a live utterance, is inherently responsive (...) Any

understanding is imbued with response and necessarily elicits it in one form or another: the listener becomes the speaker (p. 68).

According to the Bakhtinian conception, the interlocutor's attitude is always responsive, even though it is not translated into any immediate act or discourse. However, it is possible to speak about different types of reading, considering the form in which the responsive reading displays itself. Regarding the Bakhtinian concept of responsiveness, Menegassi (2009) affirms that the responsive attitude would be immediate when the other, right after comprehending the enunciation, immediately presented to the speaker a returnable response, which means to publicly express his position related to the verbal content addressed to him; the responsive attitude would be passive when the returnable response to the enunciation, formulated by the speaker, displayed itself through the attendance and execution of a request or an order by the other one, testifying a social relation highly asymmetric between the speaker and the listener; it would be delayed when the responsive position from the other was not verified at the exact moment of the verbal exchange, but reflected later, on the following discourses. This way, according to the author, the responsive reading would not be displayed in only one style, but distinct ones, which would depend on the communicative situation in which the speaker and the interlocutor are inserted.

The concept of responsive reading is connected to the notion of identification process, listed in *Marxism and Philosophy of Language*:

The process of understanding is on no account to be confused with the process of recognition. These are thoroughly different processes. Only a sign can be understood; what is recognized is a signal. [...]. Should a linguistic form remain only a signal, recognized as such by the understander, it, then, does not exist for him as a linguistic form. Pure signality is not evinced even in the early stages of language learning (VOLOŠINOV, 1986, p.68-69).

The philologist-linguist tears the monument out of that real domain and views it as if it were a self-sufficient, isolated entity. He brings to bear on it not an active ideological understanding but a completely passive kind of understanding, in which there is not a flicker of response, as there would be in any authentic kind of understanding. (VOLOŠINOV, 1986, p.73)

Connected to this, Angelo (2010) emphasizes:

[...] while in the passive understanding there is the identification of the linguistic elements, the perception of the sign as an indicative object prevailing over understanding, refusing any previous possibility of active reaction, in the authentic understanding there is a position-taking concerning what it is said and understood, since every understanding carries an answer in itself (*online*)<sup>3</sup>.

To Vološinov (1986), every enunciation is directed at someone (social audience). Its sense only becomes complete as the other replies, which means that it has, in relation to the speaker's discourse, a responsive attitude. For this reason, it can be stated through Bakhtin (1986) that:

[...] any speaker is himself a respondent to a greater or lesser degree. He is not, after all, the first speaker, the one who disturbs the eternal silence of the universe. And he presupposes not only the existence of the language system he is using, but also the existence of preceding utterances-his own and others'-with which his given utterance enters into one kind of relation or another (builds on them, polemicizes with them, or simply presumes that they are already known to the listener). Any utterance is a link in a very complexly organized chain of other utterances. (p. 69)

It is the idea that every enunciation generates an active response that conducts the analysis carried out in this article. After a brief concept discussion, there is now the description of the learning object “O que vem a seguir”.

## **2 The game “O que vem a seguir”**

The learning object presented in this paper was created within the Condigital/ Língua Brasil Project and financed by the National Fund for Development of Education

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<sup>3</sup> [...] enquanto que, na compreensão passiva a identificação dos elementos linguísticos, a percepção do signo como objeto-sinal prevalece sobre a compreensão, recusando-se previamente alguma possibilidade de reação ativa, na compreensão autêntica, tem-se uma tomada de posição a respeito do que é dito e compreendido, visto que toda compreensão comporta em si uma resposta (ANGELO, 2010, online).

(FNDE)<sup>4</sup>. The project was an initiative from the Ministry of Education and Culture (MEC) and the Ministry of Science and Technology (MCT), in partnership with *Ágora*<sup>5</sup> – a Cooperative of Professionals in Education. The project involved various institutions from Brazil and intended to produce LOs for a varied number of disciplines, including the Portuguese language<sup>6</sup>.

The main objectives of the game “O que vem a seguir” are to exercise prediction strategy as essential component to the proficient reading; to recognize the role of linguistic cues to the establishment of relevant predictions; to discuss with the text in search of hypothesis confirmation, as a stimulus to progress of the autonomous reading. In agreement with the introductory text from the teacher’s guide which comes with the LO, in the game there is the idea that good readers are “detectives” of the text: they would guess the content from the clues they might have (clues that are inside the text, but that also are related to the previous knowledge from the reader and to the reading objectives).

Therefore, while reading, the student interacts with the text, react to it, getting then a responsive attitude towards what is being read. The progress and improvement of the prediction strategy would be important to the development of reading skills to facilitate this responsive attitude. In the case of the game, when the student tries to guess parts of the text, it means that there is a search for significance in reading and that the student is immersed in it. Moreover, in accordance with some information from the teacher’s guide:

The activity allows the student to be “challenged” to make his predictions explicit about a particular text. From his participation and from the teacher’s intervention, this student will notice that, in fact, the act of reading implies mobilizing linguistic and extralinguistic knowledge, which should be coordinated to reach the production of meaning. Along this path, the more capable of establishing hypotheses

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<sup>4</sup> The author of the game is Valdinar Custódio Filho, and the coordinator of the Project and developer of the game is Nukácia Meyre Silva Araújo.

<sup>5</sup> The *Ágora* – Cooperative of Professionals in Education – is a non-profit civil society organization, created by a group of professionals in education, specialized in different knowledge fields, coming from various educational institutions: Secretary of Basic Education of Ceará (SEDUC), Ceará Television Education Foundation (FUNTELC), which maintain the old Educational Television (TVE) – nowadays called Ceará TV, Federal University of Ceará (UFC) and State University of Ceará (UECE). (extracted from <http://www.coopagora.com.br/>).

<sup>6</sup> More information about the Condigital Project can be seen at <http://www.coopagora.com.br>.

of continuity the student is, as well as confirming or denying them, the more proficient he will be. In the last instance, thus, the activity intends to develop the position-taking (and subsequent autonomy) over an important reading strategy. (CUSTÓDIO FILHO, 2009, p.4).<sup>7</sup>

The adequacy of the game content for teaching reading is clear, since reading demands motivation, clear objectives and strategies. In order to make use of the previous knowledge in texts, to perform inferences to understand them, to identify and clarify points that were confusing, the teaching of reading strategies is necessary. According to Solé (1998), it would be vital for the teachers to make the students aware of the knowledge they are building, seeking and elaborating information to edify learning. Kleiman (1993) shares Solé's point of view when she claims that teaching reading consists of molding metacognitive strategies and development of verbal abilities underlying the automatism of the cognitive strategies.

Returning to the description of the object, the content from the educational software "O que vem a seguir" introduces, as main part, a sequence of activities in which the reading of varied texts is suggested, which are interspersed with questions about what would follow the text. In addition to this, there is a section named "Saiba Mais" (Know more) in which, specifically in this game, the importance of active participation is emphasized, in which the reader elaborates and tests hypotheses to meaning production; there is even a "Guia do Professor" (Teacher's Guide) where the game is presented (the content), comments about the objectives, the technical requirements and the prediction of the activity duration, suggesting other possible forms to work with teaching reading and writing with and without the use of the software, as follows:

Beyond the work at the computer laboratory, with the software, it is possible to arrange the project "O que vem a seguir" with the intention of stimulating the production of texts by the students, who

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<sup>7</sup> A atividade possibilita que o aluno seja "desafiado" a explicitar suas predições sobre um determinado texto. A partir de sua participação e da intervenção do professor, esse aluno perceberá que, na verdade, o ato de ler implica mobilizar conhecimentos linguísticos e extralinguísticos, os quais devem ser coordenados a fim de se chegar à produção de sentido. Nesse caminho, quanto mais capaz ele for de estabelecer hipóteses de continuidade textual, bem como de confirmá-las ou refutá-las, mais proficiente será. Em última instância, portanto, a atividade procura desenvolver a tomada de consciência (e posterior autonomia) sobre uma importante estratégia de leitura. (CUSTÓDIO FILHO, 2009, p. 4).

will challenge the classmates to guess the continuations. The teacher is also able to perform textual production activities from the software texts; the teacher would ask, for example, in one of the narrative texts, the students to choose one of the unconfirmed options and create a new continuation from it. (CUSTÓDIO FILHO, 2009, p.8)<sup>8</sup>

Furthermore, there are, inside the Guide, the answers of the activities and the suggestion of supplementary contents (as the software “Adivinha o que é”) indication, also produced by Ágora, at the Condigital project). Following up, a sample from the *Menu* screen<sup>9</sup>:



Screen 1- *Menu* from the game

Considering the game usability<sup>10</sup>, when clicking on “play” (*jogar*) on *Menu* screen, the student is led to another screen, where there are four text options: firstly, “The lie” (*A mentira*), a chronicle by the writer Luís Fernando Veríssimo; secondly, “The secretary case” (*O caso da secretária*) – also a chronicle by Carlos Drummond de Andrade; thirdly, “For a woman’s freedom” (*Pela liberdade de uma mulher*), an article

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<sup>8</sup> Para além do trabalho na sala de informática, com o *software*, é possível organizar o projeto *O que vem a seguir*, com o objetivo de estimular a produção de textos pelos alunos, que desafiarão os colegas a adivinharem as continuações. O professor também poderá realizar atividades de produção textual a partir dos textos do *software*; poderá pedir, por exemplo, que, num dos textos narrativos, os alunos escolham uma das opções que não se confirmou e inventem uma nova continuação a partir dela. (CUSTÓDIO FILHO, 2009, p.8).

<sup>9</sup> The Teacher’s Guide is available on PDF format at the LO file; because of this, it doesn’t appear on the *Menu* screen.

<sup>10</sup> According to Nielsen (1994), for an application with good usability, it is necessary to be easily learned, efficient in use, easy to remember, with few mistakes and that subjectively fulfilling.

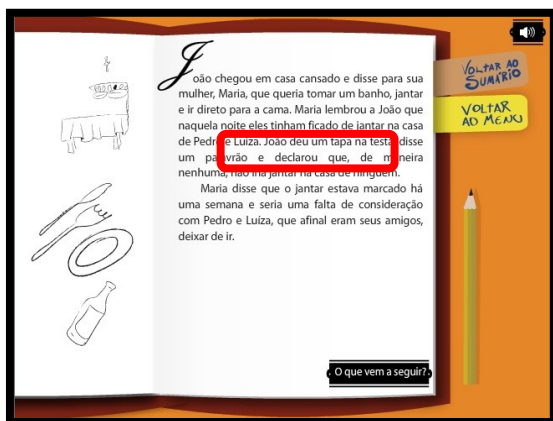


published in a large circulation newspaper, written by Maria Clara Lucchetti Bingemer; finally, the last text, “Wall-E”, written by Carlos Eduardo Corrales.

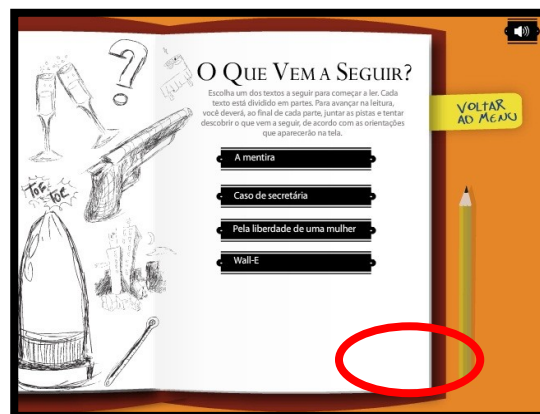
The student/user should choose one of the options to start playing. It is recommended to the teacher, since it is an educational game, to lead the students’ choice, meaning to choose, at first, the texts with predominant narrative sequence; after this, the texts whose main sequence is argumentative. Another recommendation, suggested in the Teacher’s Guide, is to organize the students in pairs to discuss alternatives to be marked, thus, developing the reading strategies during the interaction with the classmates.

Since the game does not have explicit levels, the difficulty increases according to the types of text: at the first and second ones there are two chronicles, essentially narrative texts that, due to their own structure (sequence of facts), already facilitate the tested strategy – prediction. About the last two, there is an article and a review; in relation to the LO, they are predominantly argumentative, whose structure would demand higher reading ability by the student/user, who would be guided through semantic and discursive cues.

After choosing the text, by clicking on its title, the student/user is conducted to the next page where the first part of the text can be found, which will be interrupted by interspersed questions when enough clues are given to him. At this moment, in the lower right corner, the sentence “O que vem a seguir?” appears, as indicated in the images below:

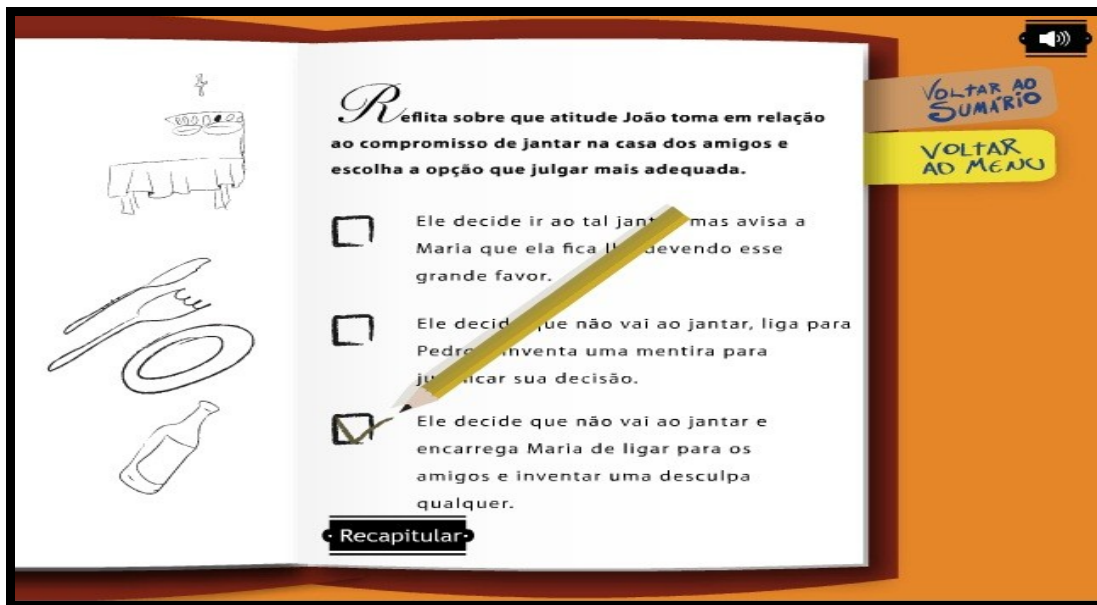


Screen 2- Summary of the texts



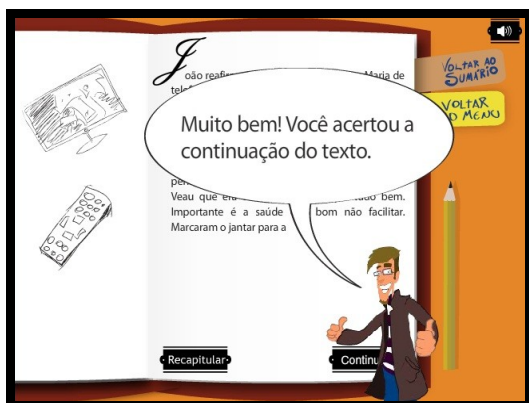
Screen 3- Part of the text (*The lie*)

Three possible continuity options for the text are presented to the reader. He should choose the one which, according to what was read in the previous pages, is more consistent with the continuation of the text. On the options screen, there is still the icon “recapitulate” (*recapitular*) on the left. This option should be used in case of doubt about what was read. The following screen is about the moment of the game when the student chooses the option he may consider the right one:

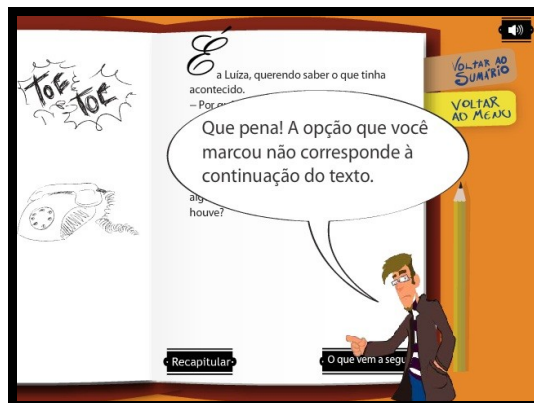


Screen 4- Choice of options

After selecting an option, a character, who represents a detective (whose shadow was the only known element – on the *Menu* screen), appears to interact with the reader/player, to warn if his choice suits the information about to come in the text, or if it does not correspond to the story continuation, as indicated on the next screens:



Screen 5- Correct answer



Screen 6- Incorrect answer

The suggested activity is about reading, in which the student/user interacts with the text in a way that the development of the game measures or stimulates reading comprehension. In case the student/user does not choose the correct option to continue the text, he can reread it and re-evaluate his supposition on what might still appear. This exercise is already representing a reading strategy by itself. The student develops reading abilities while he learns to formulate hypotheses and re-evaluate them as he reads. Along with this, the student uses his world and text knowledge, transforming cognitive strategies into metacognitive ones, since he will have to reflect, reread to create appropriate hypotheses for the establishment of the meaning of what is being read.

Following the game description, there is the experiment description.

### **3 The experiment**

In this section, the description of the experiment will be presented, and there will be comments on the suggested task and the subjects' opinions concerning the use of the LO as a learning tool. The analysis of the responsive attitude of the subjects will be done from the students' comments during the task and from the verbal protocols.

#### **3.1 Development of the task**

To study the relevance of the pedagogic game concerning reading teaching, a pilot-experiment was planned with first-year high school students of both gender aged 14 to 16 years old, from a public school in Fortaleza, state of Ceará, Brazil. Two classes were chosen: A (experimental) and B (controlled). The test was divided into three phases: 1<sup>st</sup>) a pretest was applied, in which the students from both classes answered text comprehension questions and performed a verbal protocol; 2<sup>nd</sup>) only the students from the experimental class used the teaching reading software; 3<sup>rd</sup>) the students from both classes performed a posttest – with the same structure from the previous test – aiming to verify occasional performance changes related to text comprehension. The raised hypothesis is that the utilization of learning objects in the

classroom creates interest, facilitates the learning of reading and that its use leads the students to transform cognitive strategies into metacognitive ones.

In the mentioned exercise, the active reader generates and tests hypotheses on the way to construct the meaning of the text. Through simulations of what happens during the reading processing, the reader acquires new abilities, which makes his reading more proficient. In this article, the students' responsive attitudes are analyzed regarding the development of the activity with the tested software through recorded and registered conversations, as well as comments from the students about the software (how playable it is, the layout and the objectives of the game).

### **3.2 Pretest and posttest**

The pretest and posttest are composed of two parts: a verbal protocol and some reading comprehension questions, from which four are related to the literal<sup>11</sup> understanding level and two related to understanding by inference<sup>12</sup>.

The pretest and the posttest were identical in both classes. The pretest was composed by the chronicle “Uma velhinha em Florença” (An old lady in Florence), by Cecília Meireles and of reading comprehension questions; the posttest, of an adaptation from a news report published in a British newspaper (The world's most experienced driver) and interpretation questions. The students were asked, as they read the texts, to fill out a verbal protocol, in which they would explain how the reading process happened.

During the test, the student should report how the reading was realized, concerning internal factors (in case the student did not understand a particular paragraph, if there was the need to reread for understanding) and external factors (any work that interrupted the reading).

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<sup>11</sup> The literal comprehension level demands the detection of coherence and cohesion relations; the identification of word meanings from contextual cues; the identification of semantic relations established among words; the identification of aspects and specificity of text genres.

<sup>12</sup> The level of understanding by inference demands some knowledge of implicit information; the establishment of conclusions; the establishment of inferences – details, main ideas, cause and effect, etc.; the recognition of semantic effects constructed in the text – irony, humor, criticism, etc.; the recognition of established relations among support, genre, interlocutors and the text purpose.

The following is a reproduction from one of the tests performed by a student from class A:

Aluno: <i>[assinatura]</i>	Série: <i>1º ano A</i>
<p>Durante a leitura do texto a seguir, você deve registrar informações a respeito de seus comportamentos, ações, impressões durante a tarefa de ler. Leia, então, o texto e à medida que for lendo, vá anotando tudo o que você pensar sobre o texto ou sobre a própria leitura. Diga, por exemplo, que hipóteses formulou após a leitura do título e durante a leitura dos parágrafos, se houve palavras cujo significado você não conhecia, o que foi feito em relação a essa dificuldade, que hipóteses foram sendo confirmadas/rejeitadas, etc.</p>	
<p><b>UMA VELHINHA EM FLORENÇA</b></p> <p>Por que me lembraria agora daquela velhinha de Florença? Há sentimentos antigos, dentro de nós, que não perdem a sua força, que não se deixam aniquilar pelo tempo e pelos acontecimentos; estão apenas reclinados como em cadeiras invisíveis, numa obscura sala de espera. Por serem tão antigos, permitem-se ficar de olhos fechados, silenciosos e anônimos, tão inativos como se não existissem. Mas, de repente, acordam, levantam-se dos seus lugares, acendem as luzes, fazem-se tão vivos e presentes que não resistimos ao seu poder e docilmente nos submetemos às revisões da memória e à sua crítica.</p> <p>Pois eu agora olhava para estes jardins úmidos de chuva, detinha-me a descobrir em que arvora cantava o pássaro, e do obscuro salão de espera levantou-se da sua cadeira invisível a velhinha de Florença. A tarde em redor de mim entristeceu, e, por mais que eu deseje ser meiga e solícita, todas as desculpas que lhe dirijo permanecem longe, imóveis, nulas, como esta nuvem escura que paira no céu turvo, sem vento que a desmanche nem chuva que a dissolva.</p> <p>A velhinha de Florença não me diz nada: sou eu que tento dizer-</p>	<p><i>25 PR A</i></p> <p><i>Esse título eu entendi que fala de uma idosa na cidade de Florença. O primeiro parágrafo existem palavras que dificultaram a leitura e com o passar da leitura fica mais difícil de entender como se saise do contexto. Não entendi quase nada, continua as palavras difíceis e o texto fica sem sentido.</i></p> <p><i>O terceiro parágrafo já deu pra entender um pouco, mas as palavras difíceis ainda continuam como benevolência.</i></p>

Screen 7 – Excerpt of a verbal protocol (pretest – class A)

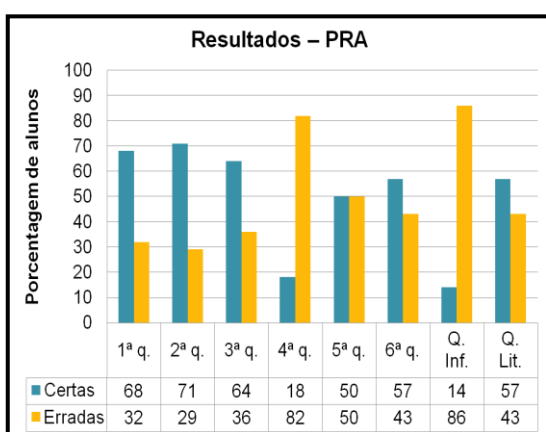
Aluno: <i>[assinatura]</i>	Série: <i>1º A</i>
<p>Durante a leitura do texto a seguir, você deve registrar informações a respeito de seus comportamentos, ações, impressões durante a tarefa de ler. Leia, então, o texto e à medida que for lendo, vá anotando tudo o que você pensar sobre o texto ou sobre a própria leitura. Diga, por exemplo, que hipóteses formulou após a leitura do título e durante a leitura dos parágrafos, se houve palavras cujo significado você não conhecia, o que foi feito em relação a essa dificuldade, que hipóteses foram sendo confirmadas/rejeitadas, etc.</p>	
<p><b>A motorista mais experiente do mundo?</b></p> <p>Uma das centenárias mais ativas da Escócia, a Sra. Morton dirige há quase 80 anos, embora nunca tenha tirado a carteira de motorista. Semana passada ela sofreu seu primeiro acidente – bateu num canteiro quando dirigia seu novo carro rumo à capital.</p> <p>A Sra. Morton, que comemorou seu 100º aniversário em julho, ganhou de presente um carro novinho. Ontem ela comentou o acidente. “Eu não estava em alta velocidade, mas subi no canteiro. Eu não consegui enxergar porque não tinha luz, o que é absurdo. Mas estou bem e por sorte meu carro nem ficou muito amassado.”</p> <p>Apesar do acidente ela não planeja parar de dirigir. “Algumas pessoas nasceram para dirigir e eu me considero uma delas. Nunca tirei a carteira, mas sempre fui uma ótima motorista, desde a primeira vez que entrei num carro. Sou muito fã de música então sei pelo som do carro quando tenho que passar a marcha. As pessoas são muito inconvenientes</p>	<p><i>Por mim o texto título fala de um motorista experiente que já sofreu muitos acidentes no trânsito talvez seja ali o melhor do mundo. O primeiro parágrafo não é muito uma boa motorista não tem muito a ver com o título. Realmente é uma idosa que acho que sabe dirigir, se acha a melhor do mundo, mas isso responde a pergunta do título, e por ela</i></p>

Screen 8 – Excerpt of a verbal protocol (posttest – class A)

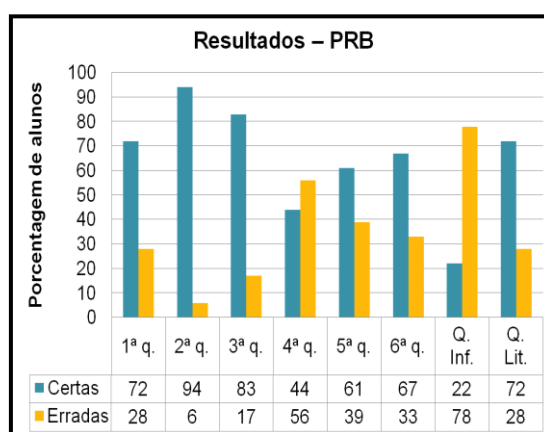
After making explicit the form in which the research was conducted, the analysis of the results will be presented according to the Bakhtinian concept of responsiveness.

#### 4 Testing results

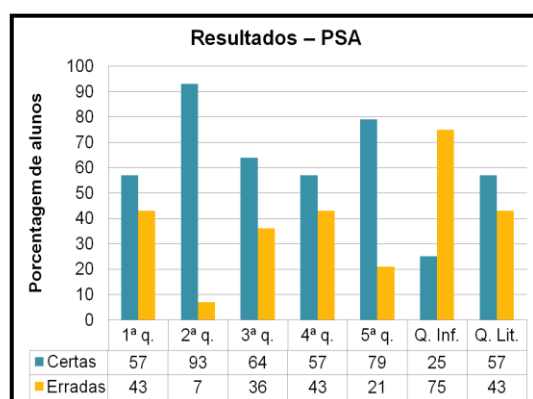
It was observed, during the data analysis that, despite a significantly small difference, the experimental class obtained better results regarding the level of reading comprehension when compared with the controlled one. The representative graphs are below:



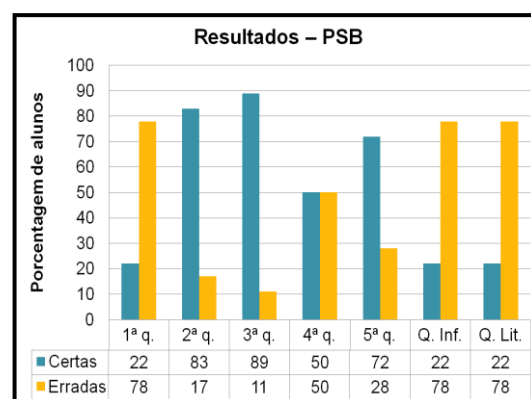
Graph 1- Results (pretest/ class A)



Graph 2- Results (pretest/ class B)



Graph 3- Results (posttest/ class A)



Graph 4- Results (posttest/ class B)

In the reading task development, forms of active responsive displays in higher or lower levels were observed. The level of action by the agent could vary, for example, from silence or lack of practice of any action to a response in the form of an enunciation or action itself<sup>13</sup>. During testing, the students from the experimental class presented responsive displays with an 'active' level lower than during the second testing phase, since they did not set themselves facing the text just read, but performed, after reading each paragraph, summaries (which contained literally the reproduction of the text information). In the example below, an excerpt taken from students' pretest of the experimental class, about the chronicle "Uma velhinha em Florença" by Cecília Meireles:

The first paragraph is about a feeling that is kept and suddenly is remembered [...] [In the sixth paragraph] the person buys a blouse from the old lady. She likes it so much that she wants to buy another, but the store is closing and she asks the old lady to keep a blouse for her to buy the next day (S.5).

Excerpt from the work (first paragraph): Why would I remember now that old lady from Florence? There are old feelings, inside us, which don't lose strength, which don't let themselves be destroyed by time and by events; they are only lying back as on invisible chairs, in an obscure waiting room [...] (MEIRELES, 1976, p. 24).<sup>14</sup>

Excerpt from the work (sixth paragraph): Externally, her store wasn't rich or elegant or artistic. This happens in many stores, in Europe. But the old lady sold such beautiful and original blouses that no woman could be insensitive to their loveliness. And all of a sudden I become the owner of one of them. The sun was setting. The charming Florence was becoming a silver city. I desired for one more blouse: the one who travels is always thinking about joys which, when coming back, could be given to friends. But the store was closing, the old lady didn't deal in dollars (thinking that one day I had dollars): so I separated the second blouse and promised that in the next morning I would appear with my liras (MEIRELES, 1976, p.25).<sup>15</sup>

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<sup>13</sup> For the analysis of responsiveness, only data from class A (experimental) will be used, since the other one did not utilize the digital software.

<sup>14</sup> Trecho da obra (primeiro parágrafo): Por que me lembraria agora daquela velhinha de Florença? Há sentimentos antigos, dentro de nós, que não perdem a força, que não se deixam aniquilar pelo tempo e pelos acontecimentos; estão apenas reclinados como em cadeiras invisíveis, numa obscura sala de espera [...] (MEIRELES, 1976, p.24).

<sup>15</sup> Trecho da obra (sexto parágrafo): Exteriormente, sua loja não era nem rica nem elegante nem artística. Isso acontece em muitas lojas, na Europa. Mas a velhinha vendia umas blusas tão lindas e originais que mulher nenhuma poderia ficar insensível aos seus encantos. E eis que, de repente, me torno possuidora de uma delas. Começava a escurecer. A formosa Florença tornava-se uma cidade de prata. Eu desejava mais



The first paragraph is about memories, old feelings that can't be forgotten, and the memory from that old lady from Florence (...) the fourth paragraph tells that, even if the story is very simple, the author can't forget it because it is very important in her life (S.16).

Excerpt from the work (fourth paragraph): Let nobody see this as a police thriller, or a series of dramatic, moving and poignant events. The story is really so simple that I don't know why it continues to occupy this very important place in my life for such a long time. But that's the way it is (MEIRELES, 1976, p.24).<sup>16</sup>

In the second phase, in which the students from class A used the educational software, positive and negative points concerning the Learning Object "O que vem a seguir" were mentioned by the students/users while they were playing. Generally speaking, the highlighted positive aspects refer to the dynamism of the classes, due to the fact that, according to the students, it is easier to learn by using interactive digital technologies – though some of them complained about the monotony of the classes. The negative aspects are, according to the research subjects, related to the difficulty level on the task performance, which would be high. However, although they might feel some difficulty during the performance of the task, the teenagers seemed to enjoy the new teaching proposal. Following, some students' remarks:

This game is awesome. We can join in pairs and talk about the game, this way is better for us to discuss about what we got right or wrong. Besides that, the class becomes cooler. It's much better than the same everyday class. It would be nice if sometimes the class was like that and not only today. (S.3).

This game is nice, it seems we are really the detectives of the text. You have to pay a lot of attention to get the right continuation. It's a little difficult only because sometimes it tricks us. But I am enjoying it. Not only because it is on the computer. The task is really nice! (S.8).

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uma blusa: quem viaja sempre está pensando em alegrias que, na volta, pode dar aos amigos. Mas a loja ia fechar, a velhinha não negociava com dólares (pensar que um dia eu tive dólares): então separei a segunda blusa e prometi que na manhã seguinte apareceria com minhas liras (MEIRELES, 1976, p.25).

<sup>16</sup> Trecho da obra (quarto parágrafo): Ninguém cuide tratar-se de uma história policial, ou de lances dramáticos, emocionantes e pungentes. A história é mesmo tão simples que não sei como há tanto tempo continua a ocupar lugar tão importante na minha vida. Mas é assim (MEIRELES, 1976, p.24).



It's funny because in the classroom, it doesn't matter what we say, we always hear that we can't open our mouths, because the teacher says that we are not going to learn. But I am learning with this game and there is no one in silence here (S.13).

According to Bakhtin (1986), it can be assumed from the students' utterances that, in fact:

[...] all real and integral understanding is actively responsive, and constitutes nothing more than the initial preparatory stage of a response (in what ever form it may be actualized). And the speaker himself is oriented precisely toward such an actively responsive understanding. He does not expect passive understanding that, so to speak, only duplicates his or her own idea in someone else's mind... Rather, the speaker talks with an expectation of a response, agreement, sympathy, objection, execution, and so forth (with various speech genres presupposing various integral orientations and speech plans on the part of speakers or writers) (p.69).

The students' observations demonstrate that they set themselves facing the texts as active readers and interacted with what was written in the meaning completion. The assigned task seems to have favored the responsive attitude from the involved teenagers in the experiment. They discuss with the text, with their own task and express opinions about this.

Regarding the posttest, the class A, for presenting better results (in hypotheses elaboration, inferences and predictions) demonstrated, consequently, active responsive attitude. Contrary to the response in the pretest, which consists in discursive displays with no expansion and which do not confirm the continuity of the dialogue between the reader and the text, during the third phase from the testing, the student/reader "acted over the *another one's* word, compared this word with his individual experiences, converting it into *own* word" (Angelo, 2010, online). As examples, there are excerpts from the posttests of students from class A about the news story entitled *The world's most experienced driver*:

After reading the first two paragraphs, I noticed that it didn't have anything to do with what I thought, totally changing the idea I had imagined. I was surprised because the story is about a one hundred-

year-old woman who drives. It is interesting that, despite her age, she is brave and very decided (S.5).

Excerpt from the text (first paragraph): One of Scotland's most active centenarians, Lady Morton, has been a driver for nearly 80 years, although she has never taken a driving test. But last week she had her first ever accident – she hit a traffic island when she took her new car for a drive in Edinburgh (OXENDEN; LATHAM-KOENIG; SELIGSON, 2005).

Excerpt from the text (second paragraph): Lady Morton, who celebrated her 100<sup>th</sup> birthday in July, was given the Nissan Micra as a surprise present. Yesterday she talked about the accident. 'I wasn't going fast, but I hit a traffic island. I couldn't see it, because it had no lights, which I think is ridiculous. But I am all right and luckily my car wasn't badly damaged (OXENDEN; LATHAM-KOENIG; SELIGSON, 2005).

About the first paragraph, I thought it was going to be about a driver who couldn't drive, but I was wrong. (...) The fifth paragraph shows that it is not just experience that counts to drive well. The traffic nowadays confuses a lot the people who are learning to drive. I think there are people who were born to drive and she is one of them (S.16).

Excerpt from the text (last paragraph): Lady Morton bought her first car in 1927. The main change she has noticed since then is the traffic. 'It's appalling. I don't mind it, because I am experienced, but I feel sorry for the beginners'(OXENDEN; LATHAM-KOENIG; SELIGSON, 2005).

Through the protocols and reading comprehension activities, it can be observed that the students demonstrated responsive reading attitudes regarding the texts which were read. This coincides with what Bakhtin (1986, p.68) claims regarding the responsive position: "the listener [reader] adopts his responsive attitude for the entire duration of the process of listening [reading] and understanding, from the very beginning - sometimes literally from the speaker's first word".

Considering the interaction form from the student/user with the Learning Object, active responsive displays could be identified in a higher degree (use of reading strategies) and in a lower degree (a superficial text comprehension). Regarding the students who demonstrated a lower level of responsiveness, the teacher, in the classroom, should start contributing to the development of strategies that facilitate the

reading comprehension by the groups, particularly from those whose position towards the text demonstrated less responsiveness.

During the performed activity with the Learning Object, which brings texts and situations which are part of the student's reality, an active responsive attitude by many students was observed by noticing their dialogue with the texts at the moment of reading.

## **Conclusion**

As presumed, educational games can generate a great stimulus to learning not only in the Portuguese language field, but in all disciplines. Concerning the teaching using the mother tongue, as observed through the research, it can be concluded that interest, stimulated by Learning Objects, contributes to the acquirement and development of strategies and abilities that facilitate the reading comprehension of these students.

The obtained data through this pilot experiment, even though confirming the initial hypothesis (progress of the experimental class in opposition to the controlled one), is only an indicator that, if frequently used, LOs can bring more significant advances. However, the experiment results regarding the development of reading strategies involving the utilization of LOs assigned to this purpose could not be confirmed, since it was a pilot experiment and only three types of software were used in it, during the break between the pretest and posttest.

On the other hand, concerning the assessment of the responsive attitude by the students along the text comprehension process, it is possible to affirm that, from the observation of the reading task developed by the research subjects, the utilization of the LO favors a higher level of active responsive attitude.

In this article, the acquired experiences during the software testing "O que vem a seguir" were shared with the intention of demonstrating the importance of LOs to the teaching of the Portuguese language. This can be confirmed through the analysis results, which demonstrated the existence of an active responsive attitude by most students who performed the activities.

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