

Didactic-Pedagogical Approaches in e-Learning: Teaching Authorship, Multireferential Methodology, and Gamification

Ana Nobre

<https://orcid.org/0000-0002-9902-1850>
Universidade Aberta (UAb), Portugal
ana.nobre@uab.pt

Jasete Maria da Silva Pereira

<https://orcid.org/0000-0002-3389-2514>
Universidade Federal de Alagoas,
Portugal
jasete.silva@ifal.edu.br

Abstract

In this educational research study, we reflect on the possibilities of combining teaching authorship in e-learning, multireferentiality, and gamification from a didactic-pedagogical perspective. We intend to bring up some contributions of Jacques Ardoino's multireferential approach to understand social phenomena within the field of education, specifically focusing on some epistemological developments. We base our research on theorists who discuss these themes and, to reveal possible similarities, the first part of the text brings consolidated reflections on these authors. Besides, we highlight the common characteristics between the Multireferential Approach and Online Teaching Authorship/Virtual Environment. Then, we present the analysis of Didactic Categories (Theoretical Reflections) and data generated by the subjects that attended a curricular unit planned with amplificativo-oriented methodological strategies. We adopt a qualitative research approach using an online questionnaire, a technique that supported the content analysis of the participants' contributions. It is concluded that the epistemological harmony of the triad shows signs of promoting the expansion of the student's knowledge.

Keywords (Source: Unesco Thesaurus)

Electronic learning; online learning; e-learning; educational research; gamification; multireferential approach.

Recepción: 02/04/2019 | Envío a pares: 23/10/2019 | Aceptación por pares: 04/02/2020 | Aprobación: 13/02/2020

DOI: [10.5294/edu.2020.23.1.2](https://doi.org/10.5294/edu.2020.23.1.2)

Para citar este artículo / To reference this article / Para citar este artigo

Nobre, A. & Pereira, J. M. S. (2020). Didactic-Pedagogical approaches in e-Learning: teaching authorship, multireferential methodology, and gamification. *Educación y Educadores*, 23(1), 31-46. <https://doi.org/10.5294/edu.2020.23.1.2>

Abordajes didáctico-pedagógicos en *e-learning*: autoría educativa, metodología multirreferencial y gamificación

Resumen

El estudio presenta las posibilidades de combinar, en una perspectiva didáctico-pedagógica, la enseñanza de autor en e-learning, la multirreferencialidad y la gamificación. Traemos a discusión algunas contribuciones del enfoque multirreferencial, desarrollado por Jacques Ardoino para la comprensión de los fenómenos sociales y, más específicamente, aquellos que están circunscritos en el ámbito de la educación. Partimos de un análisis teórico, soportado en reconocidos autores sobre el tema. Destacamos las características similares del Enfoque Multirreferencial, la Autoría de enseñanza online, y el entorno virtual. Adoptamos el enfoque de investigación cualitativa, por medio de la aplicación de un cuestionario en línea. El estudio concluye que la armonía epistemológica entre la tríada muestra signos de promover la expansión del conocimiento del alumno.

Palabras clave (Fuente: tesoro de la Unesco)

Enseñanza online; aprendizaje en línea; e-learning; investigación educativa; gamificación; enfoque multirreferencial.

Abordagens didático-pedagógicas em e-learning: autoria educativa, metodologia multirreferencial e gamificação

Resumen

Este estudo apresenta as possibilidades de combinar, em uma perspectiva didático-pedagógica, o ensino de autor em e-learning, a multirreferencialidade e a gamificação. Trazemos à discussão algumas contribuições da abordagem multirreferencial, desenvolvida por Jacques Ardoino para compreender os fenômenos sociais e, mais em específico, os que estão vinculados à Educação. Partimos da análise teórica, apoiada em reconhecidos autores sobre a temática. Destacamos as características semelhantes da abordagem multirreferencial, a autoria do ensino on-line e o ambiente virtual. Adotamos a abordagem de pesquisa qualitativa, por meio da aplicação de um questionário on-line. O estudo conclui que a harmonia epistemológica entre a tríade mostra sinais de promover a expansão do conhecimento do estudante.

Palavras-chave (Fonte: tesouro da Unesco)

Ensino on-line; aprendizado on-line; e-learning; pesquisa educacional; gamificação; abordagem multirreferencial.

Introduction

The accelerating technological avalanche has transformed social relations in the last century, requiring changes in habits in the usual contexts of human beings (Barnett, 2017). We observe that the actions of individuals are more dependent on programs and computerized devices to solve daily-life problems. In this reality, professionals ask their agents to be more creative and to apply and reveal strategies to deal with the preponderance of a producing society, a phenomenon that has impacted the world education system too.

Given the pertinent technological dimension, this article presents in its textual outline the possibilities of an epistemic-didactic-pedagogical reconciliation among teaching authorship developed for e-learning educational spaces, multireferentiality, and gamification in a Portuguese distance-learning public university. The theorists cited have researched into and collaborated on topics that address discursive aspects related to complex and subjective similarities that juxtapose and suggest latent links among online authorship, multireferentiality, and gamification. About gamification, we asked students about a strategically planned course unit whose didactic and methodological approaches use elements of game in a narrative format.

To initiate the analysis regarding the aspects of teaching authorship in e-learning, multireferentiality, and gamification, we contextualize these themes with the statements of the author's scientific partners to gradually situate the reader on the didactic harmony among them.

Origin, concepts, and understandings of multireferentiality research

Our work is based on studies and discussions that assimilate definitions, non-linear cognitive amplitudes, and plural meanings that permeate the epistemology of the multireferential approach. Thus, we can weave, build, talk about the subject, and pro-

duce knowledge, reflecting on the heterogeneous reality of academic spaces harnessed by the web.

In this sense, we searched for theoretical support in Ardoino (1998) and some followers such as Barbosa (2008), Burnham (2003), and Martins (2004) to comprehensively glimpse the epistemological perspectives of the multireferential approach. They propose, from different angles and according to distinct reference systems, an explicitly plural reading of situations, practices, phenomena, and facts of an institutional nature, particularly in the educational field. Ardoino reflects on the hypotheses raised by the teaching practice, flanked by mutually dependent heterogeneous elements, to adopt a flexible stance from a "bricolage" perspective: the need "to go here and there to eventually obtain by indirect deviation what cannot be directly achieved" (1998, p. 203).

Ardoino's multireferentiality is based on three key ideas:

1. Any conflict can and must be read at different levels (intelligibility).
2. Any conflict simultaneously involves five levels (people, interactions, group, teaching, and institution).
3. Some conflict resolution strategies apply appropriately to some levels but are not very effective for others.

For Martins (2004), Ardoino's suggestion (1998) is innovative as it clarifies social phenomena and values the contributions of other theories and approaches as a scientific assumption to show the multiple, complex, and multifaceted aspects of the multireferential approach. The author states, "a restored space (classroom) allows us to encompass the speech of a speaking subject, freeing the man from their condition of object" (Martins, 2004, p. 93).

As educators and researchers working in a fluid and agile society, it is impossible to ignore the complexity of educational environments achieved

in an intergenerational network. The categorical diversity between subjects and objects (Aparici, 2012) involves the objective of researching with the multiple languages of media resources and participants. For Barbosa (2008), it is necessary to create a condition of search and construction on the part of the apprentice so that they insert in the process as actors, able to filter what they hear according to their interests, and do not position themselves as mere spectators whose approval or censorship of what they hear is due to a certain subjectivist view.

The collaborators of these theorists allow understanding the multireferential methodological scope by integrating subject's participation, adaptation, and listening in the course of research and valuing their effective involvement in the process. For Andrade and Rosa (2011), multireferentiality comprises the complex dimension of a given reality. Thus, it is necessary to question the field of classical science and its methodological format, having as a basic principle a plural reading of the complexity present in practical and theoretical objects.

Because of the above, this textual production shows understandable indications of the application of the approach because its objective is to inquire about how the students enrolled in a degree course offered by the virtual learning environment of the Universidade Aberta (UAb) of Portugal envision the authorship in online environments. The professor developed methodological strategies, from a perspective of reordering and re-signification of knowledge, adopting an inverse pedagogical position to what is commonly observed in teaching practice.

Involving communicative resources and students and enabling the actors of the educational base to demystify the cultural, social, and technical complexities of teaching practice in virtual learning environments escape from the "molds" of non-reflective theories and approach the multireferential perspective. According to Barbosa, "the role of the educator is to construct with the student a meaning

of the world" (2008, p. 215) so that cultural differences and all ways of feeling the reality are respected, without the imposition and assimilation of an excluding truth.

We present the characteristics of online authorship and its similarities to the multireferential approach hereafter.

Online education and authorship: contingent similarities to the multireferential approach

The discursive core of this text minimizes methodological questions when we inquire into the students' opinion as a way of collaborating with the appropriate professor in producing actions for classrooms in e-learning. In other words, we give voice to the actors who work with teachers in the educational spaces of the network society to broaden knowledge from the perspective of enabling more meaningful learning. Following this logic, Castells (1999) reminds us that the parameters that permeate a society are responsible for revealing the territory in which it is inserted. So, just look around to realize that we are instinctively connected to each other and dialoguing through links that enable the use of multiple, heterogeneous, and complex languages.

In the educational scenario, the adherence to technology is seen as encompassing academic spaces. For the current context, we highlight the particularities of the educational modality responsible for the mediation and sharing of knowledge in virtual learning environments. For Moore and Kearsley (2008), the way to plan and promote learning in distance education will require the development and adoption of differentiated art and course creation techniques, teaching methods, and diversified technological communication.

Thus, the teacher must have specific methods, techniques, and processes to act in cyberspace. To analyze a possible relationship between the multireferential approach and online teaching, Bakhtin

states, “The interaction of an individual conscience with another individual conscience is a process that becomes complex when the form and substance of this communication are seen as signals that constantly interact in specific spheres and fields, evident in multiple discourses” (1999, pp. 37-38).

Meanwhile, for Ardoino (1998), the similarities between the specificities of distance education and e-learning and the multireferential approach consists in observing situations, practices, phenomena, and episodes that occur in educational action. He comprehensively proposes a plural reading of subjects and objects from various angles and systems, without disregarding their importance. To demarcate the possible cross-cutting relationship of pedagogical situations in virtual spaces, online authorship converges with the particularities of multireferentiality as shown in Table 1.

The analogy made in the second column reveals a researcher diagnosed with probabilities of acting in the multireferential approach. The involvement of students who experience real teaching situations

makes them experience and awakens the subject necessary under construction (Barbosa, 2008).

Thus, after verifying the similar categories between the multireferential approach and online authorship, we have identified strategies and communicative resources that students inferred from the teaching-learning process. The themes discussed in this text consider that “the educator and the student are part of the same circle of understanding, expression, and intensities whose universe is marked by an enormous amount of intertwined and unknown desires” (Barbosa, 2008, p. 215).

In opposition to online teaching authorship, the studies and reflections on multireferential research provide the plural contributions of the theoretical partners Ardoino (1998), Andrade and Rosa (2011), Martins (2004), and seize on the scientific foundations that underpin the multireferential approach. The epistemological perspective agrees with the intellectual conception of Burnham (2003) by engaging in the experiential situation of the pedagogical practice of other human talents. Through

Table 1. Features of the multireferential approach and online authorship

Characteristics of the Multireferential Approach	Characteristics of Online Teaching Authorship/Virtual Environment	Categorical Similarities
Situates the subject in current contexts, practices or phenomena (Ardoino, 1998)	Transposes the authorial domain into a traditional classroom	Complexity Subjectivity
Requires an open, flexible research stance of process construction (Burnham, 2003)	Produces media materials that enable interaction and interactivity among subjects	Open education Flexibility Feedback
Presupposes the opinion of and respect for multiple voices (Barbosa, 2008)	Creates and uses resources and various communication tools	Plural communication
Leads the subject to grasp the reality through observation, research, listening, comprehension, and narration, using different systems and views in different languages (Burnham, 2003)	Able to expand the teacher’s knowledge to become familiar with teaching practices led by Digital Information and Communication Technologies	Plurality Multiple references

Source: Own elaboration.

the exchange of knowledge, the articulated speeches achieve new theoretical-methodological configurations concerning teaching authorship harmonized with the network society.

Theoretical contextualization: e-learning, multireferentiality, and gamification

Constructing a path to try to discern the educational alignment among online teaching authorship, the multireferential methodological approach, and gamification is only possible with the help of Digital Information and Communication Technologies (DICTs or Digital ICTs). This scientific paper is located in a virtual learning space of the UAb of Portugal, a distance-education public university. For research purposes, 82 research subjects represent the sample.

The sign-in frequency of professors and students in the virtual classroom is verified through reports and statistical data archived in a database and administered by a computer network. That is, wires and optical fibers connected to the Internet are responsible for the operational coordination of teaching processes, intending to provide communication, interaction, and interactivity among users. By bringing a mix of informational technical language, we intend to demonstrate the metamorphosis capacity of these devices, which can significantly contribute to various social segments, including education. As Levy points out, "There is no stable identity in computing because computers, far from being the material exemplars of an immutable Platonic idea, are networks of interfaces open to new, unpredictable connections that can radically transform their meaning and use" (1987, p. 62).

With the perspective of connective links in digital systemic networks, communicative fluidity arises in academic spaces with possible cognitive inferences, following the logic of knowledge acquisition and expansion. Its structural teaching organization is almost always supported by teaching strategies that stimulate the subjects involved in the educational

process to anchor themselves in the diversity of linguistic resources, such as static and moving images with or without multimedia resources. Thus, they approach Norman's claims (1993) in the following way: Individuals usually act in their social contexts from rationed intelligence, a result of the mental conviviality with instruments, their understanding of the world, and their cooperative relationship with other people. The author's contributions allow us to analyze and rethink the scope of DICTs.

The powers of cognition come from abstraction and representation: the ability to represent perceptions, experiences, and thoughts in some medium other than that in which they have occurred, abstracted away from irrelevant details. This is the essence of intelligence, for if the representation and the processes are just right, then new experiences, insights, and creations can emerge. (Norman, 1993, p. 3)

In this representative logic, the pragmatic nuances of online teaching reverberate, embedded in the insights of creation and consolidated through tactics, devices, methods, and tools that provoke, motivate, and promote learning. In this way, teachers, when planning their teaching strategies to socialize in virtual spaces, should resort to more engaging and encouraging didactic forms. Thus, students develop their autonomy. We observe teaching positions that opt for the potential of gamification for methodological purposes. This perspective has its origin in the logic of games, characterized by problematizing, reflexive, dynamic, and challenging elements that should be the basis of the professional engaged in the art of teaching.

Fardo (2013) admits that the use of games is a normal daily practice in academic spaces to promote learning following technical and operational procedures, characterized by methodological factors such as:

- Outlining plans and goals to achieve objectives;
- Need for feedback;

- Scoring the activities planned and fostering participation in projects.

According to this author, the difference lies in the participants' greater familiarization with the culture oriented to the techniques of games, resulting in greater motivation, interest on the part of the "player," and the high probability of achieving the objectives. Thus, we detected the rotational movement to flow synergistically with Digital ICTs since the online teaching and gamification authorship duo have common values in communication, as Coll and Monereo explain: "All ICTs rest on the same principle: the possibility of using sign systems—oral language, written language, static images, moving images, mathematical symbols, musical notations, etc.—to represent certain information and transmit it" (2010, p. 17). These perspectives clarify more accurately the foundations of the pedagogical similarity detected; that is, digital technologies have communication artifacts that, in turn, will collaborate with the authorial performance of virtual environments. On the other hand, there is teaching autonomy to strategically plan resources that bring students cognitively closer to their goals.

The teaching exercise needs to be carried out in a continuous dialogue with subjects that can help to understand certain topics and minimize the difficulties and complexities that the teacher faces every day. To justify the meaning of the recent considerations, Arduino asserts that the multireferential approach "is a response to the complexity of social practices and an effort to give a somewhat more rigorous account of this complexity, diversity, and plurality" (1998, p. 205). From this analogy, the links of proximity among online teaching authorship, gamification, and multireferentiality are amplified and complement each other. The teacher practices (Arduino, 1998) the movement of discovering and rediscovering pedagogical strategies, drawing and remaking the pedagogic course to convey their authorial construct, and deals with the heterogeneity, complexity, and plurality present in their daily work.

From this perspective, the theoretical support (Bakhtin, 1988; Barthes, 1984; Foucault, 2002) comprises the hegemony of the themes under discussion, enabling the authorial process to always build a partnership with people who dialogue, discuss, and strengthen ideas and opinions related to a particular subject or statement. Silva (2008) and Morin (2000) also participate in the philosophical composition that precedes the appropriate textual creation for virtual environments and theoretically provides the readings to understand the analysis of the parameters between gamification and multireferential elements.

Kapp (2012), Busarello et al. (2014), and Fardo (2013) contribute to understanding gamification by analyzing the techniques of games as possible strategies of adequacy for educational planning. Alves asks, "How much more do we have to walk to understand that play should be present in learning situations? [...] When should we approach the semiotic universe of our students?" (2012, p. 5).

As for multireferentiality, Arduino's speech (1998) and other scientific collaborators were crucial for assimilating the "epistemological position, which is structured based on the recognition of the plural character of social phenomena" (Martins, 2004, p. 7). We add Lage et al. (2012) to the list of bibliographical references, as perhaps this approach is the "vision to hunt the unprecedented, the unforeseen, the daring of the subjects/cultural practitioners in acts" (Ribeiro & Santos, 2016, p. 297). To summarize the epistemological understanding of the triad, Table 2 clarifies the central objective of this writing and the didactic overlap among online authorship, multireferentiality, and gamification.

In the case of authorship, we perceive that the creator of a text, regardless of their form of linguistic communication, exercises some authority over it from their affinity, communion of ideas, and literary similarities with other writers. In this predominance, we have the impression that complexity as

“part of phenomena is concurrent and antagonistic, respects the diverse coherences that unite in dialogic and polylogic, and with this, faces the contradiction in several ways” (Morin, 2000, p. 387). The act of personalizing a piece of writing is present when it is established in the author’s condition. In general, it is necessary to resort to one, two or more texts to make some words disappear; even changing the points of application, introducing the replacement of the words in the game, the significant position is perennial (Foucault, 2002).

In this circumstance, didactic-pedagogical strategies are aesthetically configured as gamification, as they conjecture the educational system as an “emerging phenomenon, resulting from the popularity of games, digital literacy in cyberculture, and its ability to motivate actions, solve problems, improve learning in various fields of knowledge” (Martins & Giraffa, 2015, p. 44). When highlighting these peculiarities, it is observed that in an authorial proposal for gamification of virtual education environments, participants’ interest and involvement in taking on challenges, solving problems, and carrying out activities increase, resulting in a higher probability of re-signification. These facts are complex, unique, and plural (Macedo & Chrysallis, 2002) because by encouraging the participant/student to commit themselves to the “rules” of the game, they somehow take new paths in search of something that is in the process of finishing.

Nevertheless, it seems that the multireferentiality detected in the reference bases of authorship and gamification defends the explanation of the analyzed phenomena from its complexity and multiple references (Alves et al., 2014). The authorial records consulted so far are strengthened by the categorical links between the themes through the methodological process. The approach is based on the presupposition of the impossible domain and a given object, even if it is based on the reciprocal limitations of other disciplinary bases, that is, “nobody exhausts the object, nobody can be reduced

to another, or nobody can be explanatory of another field” (Tourinho, 2013, p. 3).

Method

DICTs are available and accessible, regardless of the terrestrial space surrounding the individual. Perhaps if we researched the movement of users in social spaces using the technical and technological apparatus to communicate, we would certainly have a valuable database with possibilities to bring compatible results to the networked society. This impression is confirmed by the information published in the 2018 issue of the Instituto Nacional de Estatística de Portugal (2018, p. 50) since it reveals that 82% of people aged between 16 and 74 years in the metropolitan area of Lisbon have internet access.

The numbers show a reality that fits the purpose of the UAb of Portugal when it states, through the Virtual Pedagogical Model, the intention to spread a teaching and learning methodology fully supported by technological interfaces.

To provide methodological coverage to the research process, we chose qualitative research. The diversity of the material available in the virtual environment demands from researchers and students a plural, subjective, and complex look. Just as Bachellard (2005, p. 82), we believe that “every scientific culture must begin with an intellectual and affective catharsis.” The most difficult task then remains: to put scientific culture in a state of permanent mobilization, to replace closed and static knowledge with open and dynamic knowledge, to describe all the experimental variables, to finally offer a reason for reason.

Therefore, it is not the numerical representativeness of participants what is questioned, but the deepening of the understanding of the Goldenberg’s object (2004) because the student track record is located in a curricular unit of the UAb of Portugal, in two distinct classes in 2017-18. The students were invited by e-mail to participate in the research.

In this regard, the responsibility for researching and analyzing the data collected from the research subjects followed the methodological line that prevails in the multireference approach. The theoretical bases (Ardoino, 1998) reveal the importance of perceiving phenomena in the human sciences from various points of view and perspectives; we understand the complexity of objects and that complex means uncertainty and imprecision. For Morin, “it means that we abandon a linear explanation for a moving, circular explanation, where we go from the parts to the whole to the parts in order to try to understand a phenomenon” (2000, p. 54).

In view of this understanding, we adopted the approach as a research parameter whose purpose is based on the foundations of complexity and defined as a didactic-pedagogical strategy to organize the virtual classroom with an authorial identity, using gamification as a reference. To make the methodological proposal clearer, Morin considers, “strategy is the art of using the information that appears in the action of integrating it, formulating schemes of action, and being apt to gather the maximum certainty to face the uncertainty” (2000, p. 192). The student’s view is essential to analyze the theoretical opinions about how the movement of encounters, disagreements, and involvements flowed, giving research subjects greater motivation to learn (Tolomei, 2017).

It is important to note the analogy that preceded the act of research and data collection with students, that is, observing the planning and strategy of a curricular unit offered in the first semester of the 2017-2018 school year, to “understand practices, interactions, and events that occur in a specific context from within, as a participant, or from the outside, as a mere observer” (Flick, 2009, p. 21). Thus, it was possible to later dialogue with the actors directly involved to perform interpretations and parameters and to detect if teaching authorship, using the pedagogical model and gamification, reached the objectives planned for the discipline.

The data were collected through an online questionnaire to capture their opinions, having as support the beliefs, interests, and expectations of real-life experience. Students were geographically located in different countries. Since it involves a holistic view of the analyzed phenomena, the interpretation reveals that social events are always complex, historical, structural, and dynamic (Godoy, 1995). These aspects demonstrate that online authorship is directly associated with the epistemological precepts of strategic educational purposes that combine with gamification and multireferentiality. In addition, interpretation requires a careful analysis of the data, which followed the advice of Bardin (2009), since the analytical treatment chosen prescribed the reading of “obscure messages that require interpretation, messages with a double meaning whose deep significance can only arise after careful observation or charismatic intuition. Behind the apparent discourse, which is usually symbolic and polysemic, there is a sense that must be unveiled” (Bardin, 2009, p. 14).

In this way, Bardin once again takes up the analysis of rhetorical data: “a) organization of the analysis; b) coding; c) categorization; d) treatment of results; e) inference, and f) interpretation of results” (2009, p. 280) The sequence continued from the contextualization of this text, when a previous analysis of the theoretical frameworks was conceived, making it possible to identify a didactic approach among online authorship, gamification, and multireferentiality.

In this stage of the analysis, we obtained the results shown in Table 2, referring to these triad with the counterpart of some authors referenced in the text. To pursue a palpable sample, Ardoino’s suggestions (1998) were used, exercising the movement of going, retreating, advancing, doubting, without pretending to materialize an object that needs to be in a permanent process of construction. Thus, Table 1 was cut out and copied, and then, the last column was added to distinguish the categories responsible for cognitive inferences among online authorship, gamification, and multireferentiality.

Table 2. Analysis of didactic categories - Theoretical reflections

Authorship / Online Authorship	Multireferentiality	Gamification	Categories
“The word ‘work’ and the unity it designates are probably as problematic as the author’s individuality” (Foucault, 2002, p. 39).	“[...] to go here and there to eventually obtain by indirect deviation what cannot be directly achieved ” (Ardoino, 1998, p. 203).	“A game is a system in which players engage in an abstract challenge, defined by rules, interactivity, and feedback, which results in a quantifiable outcome, often provoking an emotional reaction” (Kapp, 2012, p. 7).	Complexity Plurality Participation Multiple references Subjectivity
“The ‘explanation’ of the work is always sought from the side of the person who produced it as if through the more or less transparent allegory of fiction it was always the voice of the same person, the author who gave us his confidence” (Barthes, 1984, p. 50).	“The role of the educator, in this case, will always be to maximize the use of multiple opportunities and endless intensities so that subjects become more and more citizen authors” (Barbosa, 2008, p.9).	“[...] does not imply creating a game that addresses the problem, recreating the situation within a virtual world, but rather using the same strategies, methods, and thoughts used to solve those virtual-world problems in real-world situations” (Fardo, 2013, p. 2).	Multiple references Complexity Participation Feedback Problem-solving
“The teacher proposes knowledge in the manner of hypertext. This is how you re-size it. No longer the prevalence of talk-dictating, of the distribution of information, but the perspective of the complex proposition of knowledge to the collaborative participation of the participants, the actors of communication and learning” (Silva, 2008, p. 72).	“[...] instead of seeking a unitary explanatory system [...] human sciences need explanations, or looks, or points of view of plural perspectives of the complexity of objects” (Ardoino, 1998, p. 4)	“The narrative experience in the individual is generated both by the act of accompanying —reading, watching, listening, etc.— a story like playing. This narrative experience leads to a cognitive experience, which translates into an emotional and sensory construct of the individual when they engage in a structured and coordinated life” (Busarello et al., 2014, p. 20).	Plurality Complexity Participation Feedback Multiple references Problem-solving
“In the field of almost every utterance there occurs an interaction and a conflict between the word of one and the word of another, a process of delimitation or mutual dialogical enlightenment” (Bakhtin, 1988b, p. 153).	“[...] introduces the notion of a plural look at objects and phenomena — which are plural themselves— and the use of multiple languages to grasp them in their constitutive plurality. The research is done through the analysis of the cognitive process of knowledge construction, which does not stop at the object of knowledge, but at the process itself, to be grasped more globally through familiarization” (Burnham et al., 2012, p. 80).	“Use of mechanics, aesthetics and game-centered thinking to engage people, motivate the actions they take, promote learning, and solve problems” (Kapp, 2012, p.10). “Games can be the gateway for teachers and students to enter the universe of digital culture and take ownership of a new form of literacy that goes beyond coding and decoding processes” (Alves, 2012, p. 5).	Participation Feedback /Interaction Multiple references Participation Plurality Problem-solving

Source: Own elaboration.

After the enunciations of the corpora, the methodological analogy reveals the textual mirror provided by the students of the UAb of Portugal. Thus, we analyzed the contributions of the research subjects in relation to the pertinent possibility of the teacher to develop the process of online authorship through gamification, in communion with the theoretical precepts of the multireferential approach.

The communicative rubrics of the referenced authors and the students are under the technical-scientific prism of content analysis, since “the messages were classified by means of their significant peculiarities” (Bardin, 2009, p. 35). The empirical collaboration in research is backed up by ethical respect; before responding to the online questionnaire, students were invited to create a fictitious name and explained the need for it to preserve their identities. With this pretext, the sample universe reveals the opinions of respondents, expecting that the following plural results could provide important clues to the conduct of new studies on the subjects.

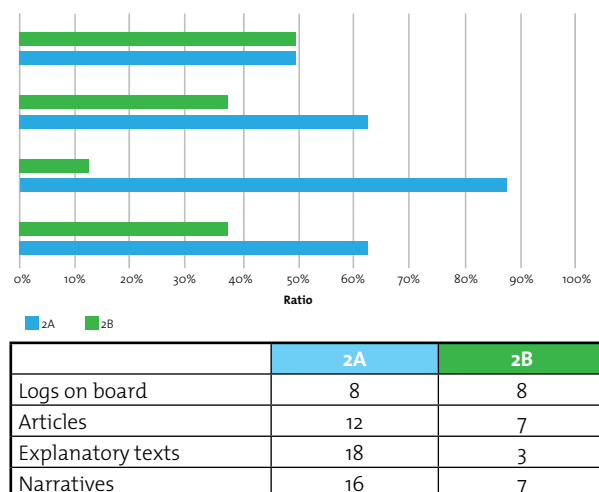
Results

This work, from the beginning, intends to analyze the epistemological elements that are interwoven in the authoring process in the web, using the gamification strategy aligned to the marks of similarity with the multireferential approach, to contribute to the cognitive inference of the subject. For this, the first analyses are linguistic and theoretically based on Alves et al. (2014), Ardoino (1998), Bardin (2009), Burnham (2012), Busarello et al. (2014), Fardo (2013), Foucault (2002), Kapp (2012), Macedo and Chrysallis (2002), Martins (2004), Martins and Giraffa (2015), Morin (2000), Ribeiro and Santos (2016), Tolomei (2017), and Tourinho (2013). In the descriptions of these literary sciences, it is perceived that complexity, plurality, participation, multiple references, subjectivity, feedback/interaction and problem-solving talk coherently and at the same pedagogical rhythm.

This first analysis posits a question: if online authorship, gamification, and multireferentiality converge in the same ideological belief, what will be the opinion of the student inserted in the e-learning context of a distance-learning university in Portugal be when they seek to expand knowledge with the support of strategic methodologies shaped by gamification? To meet this expectation, it is assumed that the questions asked and made available to the students through a virtual link can confirm such possibilities. Thus, the questionnaire sought to identify the didactic-methodological elements planned for the subject that motivated the student to think about, know, and learn the programmatic contents.

From this perspective, they had the option of choosing two categories: the first category called “essential” was the didactic resources available during the course considered fundamental to or an anchor for learning. The second, called “complementary”, flagged the didactic materials and strategies that, when virtually accessed by the students, had an additive effect on the other items of study, increasing knowledge. The choices made by the students are stated in the following formats (Figure 1): logbooks, excerpts, explanatory texts, and narratives.

Figure 1. Analysis of motivational didactic resources



Source: Own elaboration.

The items listed in the table above were used in the authorship process organized and structured by the professors of the curricular unit. Thus, the data reveal the priority of the resources and communication tools that contributed to the student's knowledge, of which three of them stand out as "essential" for future planning and teaching author on the web. With strategic origins linked to the game system, 18 participants chose texts and 12 students chose article and narrative excerpts.

For Busarello et al., "a cognitive experience translates into an emotional and sensorial construct of the individual when he or she engages in a structured and organized life" (2014, p. 16), which is why the mediating professor of the discipline opted for this pedagogical practice. "In addition to intending to support the attendance to any university course, the professor insisted on the organization of thought and forms of communication and proposed to prepare for the successful performance of some verbal interactions typical of contemporary societies" (Nobre 2017).

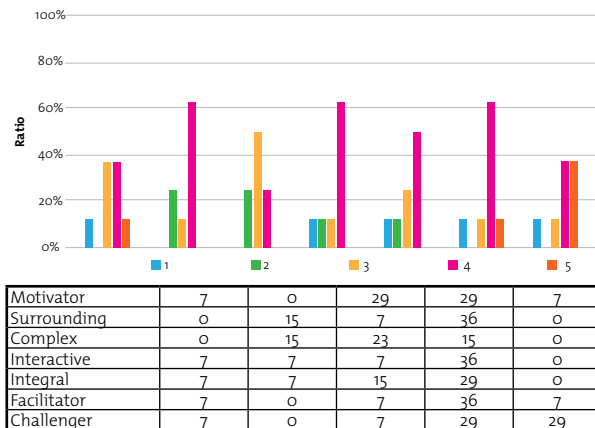
For the "complementary" category, the second option of the online questionnaire, of the 59 students participating in the research, 29 highlighted the daily on-board teaching resource, followed by article (35) and narrative (36) excerpts.

To know the priority given to the production of materials and didactic resources with specific characters for virtual classroom spaces, we also asked the students about the strategy used by the teacher of the curricular unit. Thus, when the students of the study were asked to rate on a scale of one to five the motivating, involving, complex, interactive, complementary, challenging, and propitiating aspects of learning, they made a qualitative analysis of the professor's proposal to plan the authorship of the curricular unit.

Faced with these revelations, the database allowed us to perceive that the epistemological bases of the themes concerned are strengthened and es-

tablished. Thus, the authoring process appropriate to virtual teaching and learning rooms, as shown in Figure 2, achieves pedagogical consistency.

Figure 2. Qualitative analysis of the didactic/gamified strategy



Source: Own elaboration.

The visual, numerical, and textual representations present in data and facts to express the stratum of the students' speech, in parallel with the categories identified in the theorists' contributions, allow concluding that there is a scientific unifying brotherhood among teaching authorship, multireferentiality, and gamification.

Conclusions

Developing a writing that brings coherent and meaningful conclusions was only possible due to the readings, analyses, and reflections of the theoretical contributions cited throughout the paper. As recommended by the consulted authors, we found that the strategic structure of the communicative signals related to the online creation process can be combined in epistemological and didactic harmony with gamification and the multi-referential approach. Thus, in this prospect of subjectivity and complexity, we managed to understand the legacy of the premises that discuss and defend the teaching practice permeated by plural looks, participation, and continuous feedback.

In addition to the scientific theories, it was necessary to look for multiple references, such as empirical voices of students who, when indicating the elements and factors that contributed to their studies and learning, express that the professor's authorship in the virtual academic context have the same complex and dependent conditions as listening to the other. The strategies based on gamification enable students to develop autonomy and fluidity in decision-making and taking action, which meets the demand of the contemporary world that requires

the gathering of people, phenomena, and objects to restructure social and educational practices.

It is concluded from this study that the characteristics detected in the gamification system and the multireferential approach are compliant and consistent with the didactic-pedagogical profile of online teaching authorship. All three are close to each other and rooted in the same epistemological precepts, namely, complexity, plurality, participation, multiple references, subjectivity, and interactivity.

References

- Alves, L. (2012). *Games: colaboração e aprendizagem*. The Open University.
- Alves, L. R. G., Neves, I. B. da C. N., & Paz, T. S. (2014). Constituição do currículo multirreferencial na cultura da mobilidade. *Revista e-Curriculum*, 12(2), 1248–1269. <http://revistas.pucsp.br/curriculum/article/view/20106>
- Andrade, M. C., & Rosa, C. A. (2011). Dispositivo intercessor – uma perspectiva multirreferencial de produção de conhecimento. *Revista de Psicologia da UNESP*, 10(1), 171–183. <http://seer.assis.unesp.br/index.php/psicologia/article/view/575>
- Aparici, R. (2012). *Conectados no ciberespaço* (L. Menezes Reis, Trans.). Paulinas.
- Ardoino, J. (1998). Abordagem multirreferencial (plural) das situações educativas e formativas. In J. G. Barbosa (Ed.), *Multirreferencialidade nas ciências e na educação* (pp. 24–41). Editora da UFSCar.
- Bachelard, G. (2005). *A formação do espírito científico* (5th Ed., dos Santos Abreu, E., Trans.). Contraponto.
- Bakhtin, M. (1988). O discurso no romance. In M. Bakhtin, *Questões de literatura e de estética. A teoria do romance* (A. F. Bernardini J. Pereira Junior, A. Góes Junior, H. S. Nazário, & H. F. De Andrade, Trans., pp. 71–210). Unesp; Hucitec.
- Bakhtin, M. (1999). *Marxismo e filosofia da linguagem: problemas fundamentais do método sociológico na ciência da linguagem*. (M. Lahud & Y. F. Vieira, Trans.). Hucitec.
- Barbosa, J. G. (2008). Multirreferencialidade e produção do conhecimento: diferentes histórias de aprendizagens. *Revista Educação em Questão*, 32(18), 209–223.
- Bardin, L. (2009). *Análise de Conteúdo* (4th Ed.). Edição 70. <https://periodicos.ufrn.br/educacaoemquestao/article/view/3922>
- Barnett, R. (2017). Constructing the university: Towards a social philosophy of higher education. *Educational Philosophy and Theory*, 49(1), 78–88. <https://doi.org/10.1080/00131857.2016.1183472>

- Barthes, R. (1984). *A câmara clara* (J. Castañon Guimarães, Trans.). Nova Fronteira.
- Burnham, J. (2012). Developments in Social GRRRAACCEEESSS: Visible – Invisible and Voiced – Unvoiced. In: Krause, I.-B. (Ed.), *Mutual Perspectives: Culture and Reflexivity in Contemporary Systemic Psychotherapy* (pp. 139-160). Karnac.
- Burnham, T. F. (2003). *Pesquisa multirreferencial em educação ambiental: bases sócio-culturais-político epistemológicas*. Encontro de Pesquisa em Educação Ambiental, Santa Catarina, Paraná, Brasil.
- Busarello, R. I., Ulbricht, V. R., & Fade, L. M. (2014). A gamificação e o sistema de jogo: conceitos sobre a gamificação como recurso motivacional. In L. M. Fadel (Ed.), *Gamificação na Educação*. Pimenta Cultural.
- Castells, M. (1999). *A sociedade em rede*. Paz e Terra.
- Coll, C., & Monereo, C. (2010). Psicologia da educação virtual: aprender e ensinar com as tecnologias da informação e comunicação (N. Freitas, Trans.). Artmed.
- Fardo, M. (2013). A gamificação aplicada em ambientes de aprendizagem. *Revista Renote: Novas Tecnologias na Educação*, 11(1). <https://doi.org/10.22456/1679-1916.41629>
- Flick, U. (2009). *Introdução à pesquisa qualitativa* (3rd Ed., Costa J. E., Trans.). Artmed.
- Foucault, M. (2002). *A ordem do discurso*. Loyola.
- Gil, A. C. (1999). *Métodos e técnicas de pesquisa social* (5th Ed.). Atlas.
- Godoy, A. S. (1995). Pesquisa qualitativa tipos fundamentais. *Revista de Administração de Empresas São Paulo*, 35(3), 20–29. <https://doi.org/10.1590/S0034-75901995000300004>
- Goldenberg, M. (2004). *A arte de pesquisar: como fazer pesquisa qualitativa em Ciências Sociais* (8th Ed.). Editora Record.
- Instituto Nacional de Estatística de Portugal (2018). *Área Metropolitana de Lisboa em Números / in Figures 2016*.
- Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education*. John Wiley & Sons.
- Lage, A. L., Burnham, T. F., & Michinel, J. L. (2012). Abordagens epistemológicas da cognição: a análise cognitiva na investigação da construção de conhecimento. In T. F. Burnham (Ed.), *Análise cognitiva e espaços multirreferenciais de aprendizagem: currículo, educação a distância e gestão/difusão do conhecimento* (pp. 79-100). edUFBA.
- Levy, P. (1987). *La machine univers, création, cognition et culture informatique*. La Découverte.
- Macedo, R. & Chrysallis, S. (2002). *Currículo e complexidade: a perspectiva crítico-multirreferencial e o currículo contemporâneo*. Edufba.

- Martins, J. B. (2004). Contribuições epistemológicas da abordagem multirreferencial para a compreensão dos fenômenos educacionais. *Revista Brasileira de Educação*, 26, 85–94. <https://doi.org/10.1590/S1413-24782004000200007>
- Martins, C. & Giraffa, L. M. M. (2015). Gamificação nas práticas pedagógicas: teorias, modelo e vivências. *Nuevas Ideas en Informática Educativa TISE*, 11, 42–53. <http://www.tise.cl/volumen11/TISE2015/42-53.pdf>
- Moore, M. G., & Kearsley, G. (2008). *Educación a distancia*. Cengage Learning.
- Morin, E. (2000). *Ciência com consciência*. Bertrand.
- Nobre, A. (2017, October 30). Personal communication.
- Norman, D. (1993). *Things that make us smart*. Perseus.
- Ribeiro, M. R. F., & Santos E. (2016). Pesquisa-formação multirreferencial e com os cotidianos na cibercultura: tecendo a metodologia com um rigor outro. *Educação e seus sentidos no mundo digital*, 25(59), 295–310. <http://periodicoscientificos.ufmt.br/ojs/index.php/educacaopublica/article/view/3676>
- Silva, M. (2008). Cibercultura e educação: a comunicação na sala de aula presencial e online. *Revista Famecos*, 15(37). <http://revistaseletronicas.pucrs.br/ojs/index.php/revistafamecos/article/view/4802>
- Tolomei, B. V. A. (2017). Gamificação como estratégia de engajamento e motivação na educação. *EaD em Foco*, 7(2), 145–156. <https://doi.org/10.18264/eadf.v7i2.440>
- Tourinho, M. A. de C. (2013, August 28–30). A simplicidade, a complexidade e a multirreferencialidade: caminhos que se entrelaçam. X Colóquio do Museu Pedagógico, Vitória da Conquista, Bahia.