

"Teaching Trends and Challenges in Contemporary Learning Environments: The Secret of Fire"

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Abstract: This article presents data from the planning, implementation and evaluation of the online project "The Secret of Fire", which has been included in the context of an annual tribute of the Directorate of Secondary Education in the Prefecture of Drama in the context of the 2nd International Experiential Learning Conference entitled "Teaching Trends and Challenges in Modern Learning Environments". The project was designed and implemented on the basis of the theoretical model "Reflective Interaction through Virtual Participants" and the application of techniques of Gamification in online learning. From its evaluation it became clear that the online learning activities which increase social interactions are essential and should be sought within a context of communication and collaboration with the learners so as to be close to their interests and desires.

Keywords: Education, Learning, e- Learning, Cooperation, Interaction, Gamification

Introduction

An important element of modern online learning environments is their evolution into collaborative environments. A combination of interactions is required so as an online learning environment can be developed and a common goal can be achieved. The learners in online learning are in a different educational environment, which makes them more independent and as such, capable of undertaking initiatives. They become also responsible in relation to the control of their learning process. Under these conditions learning occurs as a result of the interactions, the activities and the initiatives developed (Anastasiades, 2006).

Yacci (2000) states that interaction, especially in distance learning, is a critical variable that needs to be clearly defined. In this context, he makes a very analytical structural approach to the concept of interaction and defines it as a closed circuit where a message starts from an entity (man, machine or something else), directs to another entity and returns to the original, thus closing the circuit. With regard to internet interaction, he points out that this does not end if the message does not pass the circuit from the learner to the recipient and returns to him/her. He notes that the benefits of interaction in teaching are both cognitive (achievement

of learning goals) and emotional (emotions and value-added to learning products) on the other. Lastly, he points out that there must be mutual consistency between the messages exchanged between the sender and the recipient (Boffiliou, 2013).

It is a fact that interaction is one of the most interesting issues of counter-presentation and study over time, for every form of education and of course for distance learning (Mouroidis, 2009; Woo & Reeves, 2007). As a process it attaches great importance to the social relations and reactions of the participants in each learning environment and in this sense it can positively contribute to the achievement of the goals set. Research data show that increased interaction in online learning leads to better learning outcomes (Koustourakis, 2003). In parallel, there are important questions concerning the nature and extent of the interaction, as well as the impact it has on participants' benefits in an online course (Picciano, 2002).

This study aims to contribute to this problem through the planning, implementation and evaluation of the online project "The Secret of Fire" that we implemented at the asynchronous e-learning platform of the Directorate of Secondary Education in Drama (<http://elearning.didedra.gr>) during September 11th to December 31st, 2017 period.

The project was included in the frame of the annual (2017-2018) tribute of the Directorate of Secondary Education in the Prefecture of Drama entitled "Teaching Trends and Challenges in Modern Learning Environments". This tribute was held in the perspective of the 2nd International Conference on Lifelong Learning (Drama, 27-29 April 2018).

The project was planned and implemented on the basis of the theoretical model Reflective Interaction through Virtual Participants (Kioulanis, 2013, 2016) and the application of Gamification techniques (Pelling, 2011) to online learning.

The purpose of the process in the context of its implementation was the training of teachers involved in modern learning techniques, but also the research of the interaction between the participants in online training and the ways in which it could be enhanced at distance online learning environments. In particular, we investigated whether the presence of Virtual Participants in online learning using Gamification techniques, contributes effectively to the learning process, both quantitatively in terms of increasing interaction and qualitatively in achieving the goals set.

1. Theoretical data

In order to enhance the interaction and the development of a social learning environment, Kioulanis (2016) introduced the Reflective Interaction through Virtual Participants (RIVi.Ps), the basic scenario of which is linked to four (4) Virtual Participants VP1, VP2, VP3, and VP4 who participate and interact with the participants in the process, moving in specific theoretical frames.

A detailed description of the uses of Gamification in education with well-structured and meaningful knowledge was made by Kapp (2010) in his book "The Gamification of Learning

and Instruction". In essence, however, the term "Gamification" was introduced by Pelling (2011) and refers to the use of computer game methodology and techniques, translated into texts and activities, to improve users' learning experience and to enhance their engagement in the learning process.

Based on the above, transferring the philosophy of electronic games to the learning process, we use the psychological predisposition of students to play. However, the goal is not the game. Kapp (2010) defines Gamification as the process leading to interaction and engagement that leads to meaningful learning.

Jakubowski (2014) states that Gamification has been presented as a trend around 2010 as it has begun to be used globally in various areas from business to education. He proposes that two concepts should be used in its interpretation: According to the first Gamification is the use of game design elements in non-game environments, while the second concept is the process of thinking games and game engineering for user loyalty and problem solving.

2. General description of the project

"The Secret of Fire" was an interactive online project that transposed Gamification's logic into online learning. In this project key heroes of The Jungle Book were transformed into Virtual Participants of the process to interact with project participants.

Gamification techniques used were: Levels, credits, rewarding, continuous feed-back, scaling with new levels, surprises, etc. These elements were designed to mobilize and emotionally engage participants, their dedication, the effectiveness of the actions, and the general change in their behavior in order to create a positive predisposition towards the process.

The aim for the teachers involved in the project was to get in touch with models and techniques that develop the social content of learning in online education, to collaborate and create, as a final product, a repository of theoretical principles and good practices related to current trends of teaching in modern learning environments.

The project was implemented in 2017-2018 school year and was included in the general frame of the annual (2017-2018) tribute entitled "Interdisciplinary Calls to Modern Learning Environments". This tribute was in preparation for the 2nd International Experiential Learning Conference on "Teaching Trends and Challenges in Modern Learning Environments" (Drama, 27-29 April 2018).

The project process started on September 11th 2017 and was completed on December 31st 2017, consisted of five levels (Levels). The aim of the participants was to complete the fifth level, but to achieve this, they had to carry out the tests they met there, to secure five credits (one credit per level), two credits (badges) and a torch at the last level with the help of which the flame would eventually emerge.

Among the levels there was no time constraint as one could perform the trials at his/her own pace. Those who completed the fifth level received a certificate of participation and completion of the project. However, all those who participated had access to all the material that worked as a repository of good practices regarding trends and applications of modern methodology.

3. Basic scenario and goal of project

The basic scenario on which the whole process was based was:

"Behind Bengal's threatening and vengeful tiger, Sir Hahn, Moglie is lost in the depths of Burma's exotic and distant jungle when abducted by Louie, the king of a colony of wild and wicked monkeys. Louie's goal is to seize the secret of fire from Moglie and this will make the educational process in his kingdom exciting, interesting and effective. He knows very well that Moglie knows the secret of the fire and for this reason he will employ every means to achieve his goal. In the beginning he uses sweet language, but if Moglie does not tell him what he wants to learn then he (Louie) is sure to show his real face! Moglie seems to have guts and confidence and insists that he does not know "how man lights a fire", but survival in the inhospitable jungle of Burma is never a given! He looks tough, but he is also emotionally vulnerable. He resists and keeps well hidden the five credits that can unlock the relevant truth. He wants to give credits only to those who really deserve it and fight for them. However, the pressure he receives from Louie is great ... He knows of course that his friends, a huge bear, Baloo, and the imposing and methodical panther Bagira are looking for him and will not just leave him. Baloo is a loyal friend of Moglie. He has subversive thoughts and is certainly not a formula that fits the average. He has his own rules and encourages Moglie to do the same. He is charming and with a special humor, but always ready to get into trouble. Luckily in the difficult moments, the always methodical and wise Bagira, keeps the balance, with discipline and logic. However, in the depths of the Asian Gulf, well hidden in the dense vegetation, the terrible and troubling Sharekhan will always stumble. Maybe it never occurs, but any meeting with him can be fatal. He is ready to squeeze anyone who finds himself on his way. He is not afraid of anyone, except the fire ... "

The common goal of the participants in the project was, with the help of Baloo and Bagira, to free Moglie from Louie's hands and protect him from the fierce moods of Sharekhan. To do this, the participants have to overcome the challenges of each level and persuade Moglie to trust them the five credits (one credit per level) that sequentially unlock the levels and lead to the ultimate goal of lighting the torch at the fifth level. However, since Moglie loves and trusts his two friends Baloo and Bagira, before trusting each credit to participants, they had to ensure the banquet of exploration from Bagira and that of socialization by Baloo. However, in any case, all had to have their eyes open, as every meeting with Sharekhan could be proved catastrophic ...

4. Protagonists in action

In the course of the process, Moglie gave the credits to those who completed the activities of each level and after first having secured the two badges from Bagira and Baloo. In particular, Bagira gave the badge of exploration to those who sought information and presented views, while Baloo gave the badge of sociality to those who actively participated in the discussions and interacted with the others. On the other hand, Sharekhan had the ability to remove a credit from a person and lead him/her back if he/she did not actively participate in the discussions having innovative ideas and practices. Each time one of the participants drew a credit from Moglie the symbol * appeared next to his/her name.

The project started with a video (https://youtube/VqF5T8DO_5w), which concerns the performance in Greek of "I Wanna Be Like You" by "The Jungle Book," by Disney and Partners - Jungle Book (1967), which presents the background of Ludwig's abduction of Moglie and the initiatives taken by the friends, Baloo and Bagira to save him.

4.1. The First Level

The instructions given to the participants to conquer Level 1 were:

"Considering that the above scenario is the beginning of the project in which you are participating, enter the game and continue writing the story according to your own view. You are now familiar with the protagonists and you are ready to give Moglie your own help. Initially introduce yourself to Moglie and talk to him about yourself and your expectations from your participation in the project. Consider the phrase "Education is not the Filling of a Pail, but the Lighting of a Fire" and talk to Moglie about the flame that can give a different dimension to the educational process. Louie believes that if he learns the secret from Moglie everything will obtain a magical dimension and become easy for him and his kingdom. However, Moglie seems to be sure that the credits will have to be taken by those who fight for them. Those who do not look for magical recipes, do not copy, but struggle for what they believe and love. Talk about all these to Moglie and maybe you finally convince him that you are the ones who deserve the credits. And do not forget that in order to convince him, you must have secured both of his faithful friends. Show then courage, faith in your strengths and readiness as Louie always lurks ... "

4.2. The Second Level

On the second level participants had to watch two films and write a brief review on one of them in relation to our Age, in terms of contemporary cultural, social and educational facts. The process followed the idea of learning through the aesthetic experience with emphasis on cinema literacy, namely Bazalgette's "3 Cs" (2009), Critical, Cultural and Creative approaches.

The two films were:



HALL 1: Between the Walls - Entre Les Murs 2008 | Color | Duration: 128' (French film, directed by Loran Kante with: Francois Begondo, Ven-san Kair, Esmeralda Kertani, Karl Nannor).

"In a deprived neighbourhood of Paris, a young teacher and all 25 high school students start a school year that will test their values and their beliefs ..."

Hall 2: "The teacher that let children dream " by Daniel Losset.2006 | Color | Duration: 1.32.50 '

"It is a film whose script relies on the life of the French educator and reformer Freinet (1896-1966) whose basic principles of pedagogy were the following (Freinet, 1993)":

- pedagogy of labour, ie students are encouraged to learn by producing products or offering services.
- learning based on trial and error
- collaborative learning
- children's centers of interest, ie their interests and natural curiosity as starting points for a learning process.
- the method of the environment, namely authentic learning using the real experiences of children

4.3. The Third Level

On the third level participants were invited to present a concise teaching plan based on the following axes:

- Classroom, lesson, teaching module.
- Target group (peculiarities if there is a level of learning as a previous one, previous knowledge, etc.)
- Organization of teaching (strategies / methods and teaching techniques to be used to achieve the objectives set)
- Theoretical data of techniques and methods
- Supervisory means and materials to be used
- Evaluation of the teaching (evaluation techniques to be used to control the objectives set)
- Conclusions from the application (optional if the proposal was implemented)
- Critical analysis of teaching (personal assessment of positive elements, weaknesses, difficulties in planning and implementing of teaching)

A basic prerequisite for this project was the participants to use modern techniques and methods of cooperative and creative learning.

4.4. The Fourth Level

The instructions given to the participants in the fourth Level were the following:

"Return to the third level forum to see your colleagues posts (lesson plans), select one of them with your own criteria, which you do not need to report and then study it. Afterwards go to the fourth level forum you are in, and make a critical and creative approach to your chosen lesson plan / project, according to the SWOT (T= Threats., O= Opportunities., W = Weaknesses., S = Strengths) and TOWS Analysis tools. Firstly, write about the lesson plan you have chosen and which are its strengths, weaknesses, opportunities and threats".

Then convert the SWOT table to TOWS according to the following:

(S-T) Exploitation of strong points to avoid or reduce threats. (S-O) Exploitation of strong points to exploit opportunities. (W-T) Defensive tactics to limit weak points and avoid threats. (W-O) Improving of weak points which prevent opportunities being exploited.

4.5. The Fifth Level

The instructions given to the participants in the fifth level were the following:

- (a) You can see the words chosen as the most important in terms of the perspective of the school of the future by the teachers participated in the online training project. "Building the school of the future". Watch the video and put in your "shopping trolley" four to five words to give them to Moglie in return for the fifth credit.
- (b) Read the poem "Fourteen Children" by Nikiforos Vrettakos (given to the participants) and put in your shopping trolley four to five verses to give them to Moglie in return for the fifth credit.
- (c) See Henri Jules Jean Geoffroy's "The Children's Class", adopt the teacher's position and add three to four words that can change the culture of the class. Place these words in your trolley and give them to Moglie in return for the fifth credit.
- (d) See Theophile-Emmanuel Duverger's picture "The Naughty School Children", give it your own title and put it in the trolley for Moglie in return for the fifth credit.
- (e) Write the final letter to Moglie explaining why he should trust you the fifth credit. Remember to take things out of your trolley and include them in your letter. That is, the four to five words you have chosen from the educators' words, with which you have unlocked the school of the future, the verses you have chosen from the poem "Fourteen pupils" by Nikephoros Brettakos, the title you have given to Theophile-Emmanuel Duverger's picture "The Naughty School Children", as well as the words with which you would change the culture of the class at the teacher's post in the "The children's class" by Henri Jules Jean Geoffroy."

5. The lighting of the torch, the entrance to the "village of people" and the letter of Moglie.

Those who completed the fifth level obtained access to another level, which was the "village of people". Unlike previous levels to which everyone had access but different membership rights, at this level had access only those who completed the entire process and acquired the fifth credit.

The first thing they met on this level was a general description of the "village of people", that it is a small village in the depths of northeastern India, in one of the most impressive jungles on earth, between two hills crossed by rivers and streams

However, the description was interrupted by some extraordinary news from "Jungle TV", according to which little Moglie received a fierce attack from Sharekhan. But the courageous little boy, with the help of his friends, resisted bravely when the flames of a fire from a lightning gave the solution, as the tiger went away, since the fire was the only thing that it really feared. This incident created intense mobility in the people's village, as many were the ones who now wanted to learn the secret of the fire.

But that element which was of particular importance was a letter found by those who entered the village. It was a letter from Moglie to all those who managed to overcome the difficulties of the jungle and reach the last level. He revealed them the secret of the fire.

The letter began with Moglie's feelings:

"Dear friends, I am very happy to have done it!" And he continued with a description of the latest events concerning the fierce attack he received by Sharekhan and how the lightning of the flame led him to flee. He then talks about his early years in New Delhi and the improvised school under a bridge he went to, but also to the events that led him to the jungle chased by, Sharekhan as well as to his adventures because of his kidnapping by Louie. "What I have learned" he says characteristically "is to struggle hard and methodically, to create, to live in a positive mood the daily things of life because these are very important and to learn from everyone and from what is happening around me." "I'm sure," Moglie continues, full of emotions and tears of joy in the eyes, "that you really deserve the secret of fire. You deserve it because you fought for it, because you really did it, you made it, you struggled hard, you fell sometimes but you got up and you kept going and you still keep going! " And his joy becomes even greater as he sees more and more people coming to the village when a silence succeeds his original enthusiasm:

«... suddenly I froze! "he writes and continues:" A silence succeeded my original enthusiasm "and" looking at Vangelis, Olga, Thanassis, Maria and all I saw around me waiting for an answer from them. I think, that everyone understood what I wanted to ask when my glance pinned on the edge of the church, next to the tributary and behind the foliage, in two large green eyes that looked at me insistently. Sharekhan, I whispered!

- Sharekhan is here!

- Sharekhan is here, too?

There followed a few seconds of silence when the silence was crossed, like winged knives between the foliage surrounding them, by the followers of the king along with King Louie himself, who emerged from the surrounding dense vegetation. I looked, almost frozen Louie to quench some dry leaves and I had the feeling that he was looking at my eyes whispering for one more time "I wanna be like you"..

I did not stand it any more, it is true, and I think that I was panicked and I exclaimed with all my power:

- Oh my god! everyone is here!

I was looking around, from side to side when I noticed that Bagira was staying by me looking at me with love as always. He was so calm, polite and smiling that my initial concern was followed by relief.

- All these, Moglie, he told me, (referring apparently to Sharekhan, Louie and his followers), will be again with us. But now you should not be worried at all.

The truth is that I did not understand much. I threw only a quick look at Sharekhan, Louis and his company, and I quickly looked back at Bagira waiting for the sequel. And Bagira continued with the same always calm and steady voice.

- Now Moglie, they all have no authority over us. No one will ever disturb us. Besides, it is not possible for us to leave them back, is it?

I did not take long to understand what wise Bagira meant. I was absolutely sure that we could not leave them back, as I was even more confident that the point is not to leave them behind because our small and picturesque village is just in the center of the Indian jungle. The fire that now burns inside us will keep them at a distance so that they will really have no power on us! "

This was Moglie's letter, and the last lines of this letter were also hiding the secret of the fire: "Our small and picturesque village is only at the center of the Indian jungle. But the fire that now burns inside us will keep them at a distance so that they will really have no power on us!"

The project finished with an online evaluation questionnaire by the participants and a final reflection forum where one could write about his experience of participating in the project or alternatively one could write his own letter to Moglie.

6. Research data

Two hundred and fifty four (254) teachers were registered in the project from 42 regions of Greece and 2 of them from abroad (Brussels and Cyprus). Most entries were from the following cities/regions:

Table 1. Registrations per region

Drama	57
Thessaloniki	45
Athens-Piraeus	28
Kavala	14
Serres	8
Trikala	8
Larissa	8
The Aegean Sea	8
Crete	6
Volos	5
Pella	5
Evros	5
Peloponnese	5

The teachers who completed each level out of the 254 registrations, were (Table 2):

Table 2. Completion per level

1o Level	2o Level	3o Level	4 Level	5o Level
85	55	50	48	48
33,46	21,65	19,69	18,90	18,90

Altogether, 473 debates were opened in the project and 6774 responses were given. Analytically by level (Table 3):

Table 3. Discussions and answers per level

LEVELS	DISCUSSIONS	DISCUSSIONS
1st	165	2048
2nd	144	1653
3rd	64	1548
4th	56	1051
5th	44	474

"The Secret of Fire" is an online project that carries the Gamification logic into teacher training. In the question whether the educators who participated in the Gamification project know the term before participating in the project 44% replied that they had heard the term for the first time (Figure 1).

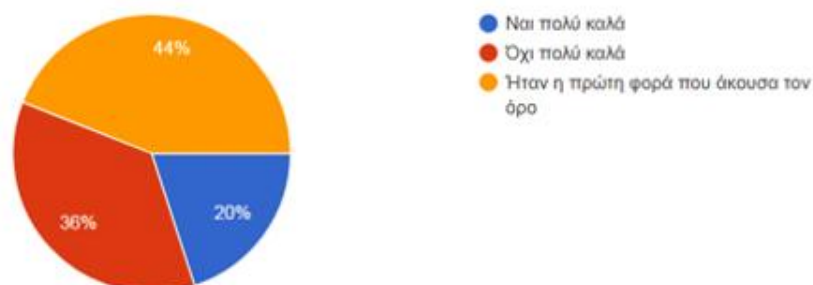


Figure 1. Acquaintance with the term Gamification

The main heroes of The Jungle Book (Moglie, Louie, Sharekhan, Bagira, Baloo) participated in the process as Virtual Participants. In the question how much they contributed to the success of the project the answer was 76% (Figure 2).

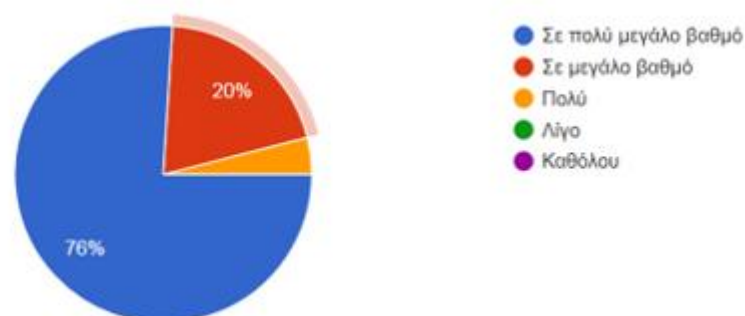


Figure 2. Contribution of the Virtual Participants to the success of the project

In the question which factors had a positive effect on the participation of the heroes of The Jungle Book, people questioned chose (Table 4):

Table 4. Positive effect of Virtual Participants

In achieving the cognitive goals of learning and acquire knowledge	44%
In creating a pleasant climate among the participants	92%
In achieving metacognitive goals	64%
In changing attitudes towards online learning	56%
None of these	0%

Finally, in the question concerning the extent to which the presence of Moglie, Louie, Sharekhan, Bagira, Baloo, contributed to the enhancement of the interaction between the participants in the process, 60% of the respondents stated that it helped very much (Figure 3).

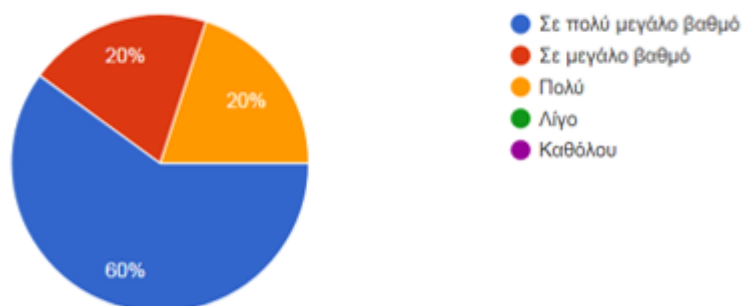


Figure 3. Enhancement of interaction

In the open question what are the strengths and the advantages of the process, in their opinion, in which they have participated, some of the views recorded are the following:

- The scenario with the credits and the interaction among the participants
- The interaction among the participants and the characters of the seminar.
- The convenience of time.
- The original activities at each level
- The asynchronous learning
- The interaction of the participants and the exchange of views. The creation and evaluation of scenaria, the new knowledge acquired, the colleagues who shared time and thoughts, the play with the jungle heroes. The advantage that we could keep our own pace, the climate that existed among the participants and the gamification technique, the TOWS method.
- Possibility of reflection and interaction, cooperation, acquisition of new knowledge ...
- The fact that we wanted to produce and analyze. Also, it had game elements / hidden treasure
- Interaction, use of the internet, critical thinking, imagination, development of opinions
- Interaction among the participants, the freedom to handle time.
- Interaction, the whole set-up of the process, the ability to monitor our own time.
- Variety in activities, interaction, sense of engagement in history - evolving scenario, use of artwork, targeted review.
- Innovation in learning, participants' exchange of views, retention, implementation time.
- Exchange of views in fora.
- Different way of learning. It was also the draft to design my own lesson with this method.

- Freedom of time management.
- The environment of the game in which we were active involved agony to move to the next level, so the interest was important.
- Did I get the credit? Did I finally go to the other level? In this way what we had to do at each level gained a very interesting perspective and everyone tried to do it as good as possible.
- The judgment of my personal work by teachers of other specialties.
- I learned a lot of interesting things.
- Interaction of participants

The Gamification techniques that there were no tight timelines for successive 5-level completion, the frequent appearance of the heroes of The Jungle Book.

Correspondingly in the question: What are, in your opinion, the weaknesses or limitations of the process in which you have participated? some of the views recorded are:

- 1) I do not think there were any weak points
- 2) The great difference between the participants in the levels.
- 3) None.
- 4) I did not find anything
- 5) They did not exist
- 6) I personally had no problem.
- 7) Many times you can be missed, there were so many written texts and comments from fellows I had to read, and I did not have time. Other times I did not know what to comment on.
- 8) You had to wait for an answer from other participants and your progress partly depended on the course of others (which was not always a disadvantage of course)
- 9) The many different scenaria, many specialties, many levels of education: I can not evaluate my own suggestions on the one hand, a window to see perhaps the peculiarity of other lessons from the other ...
- 10) I believe that the objectives of the course have been achieved.
- 11) A great deal of information that could hardly be absorbed by some
- 12) Waiting for the badges.
- 13) I have not spotted weak points
- 14) I would like to have an update when there was a post on my subject or a subject I had attended.
- 15) Waiting for the next level
- 16) Impossible to wait for the level - we did not know what to do to get the badges and move forward, although I finally realized that we had to write posts with scientific content or based on a personal teaching experience
- 17) No weak point
- 18) The incredible number of parallel discussions

- 19) I was a little tired of the fact that I had to comment on other people's posts. I know that part of the process is the evaluation of others and the achievement of a fruitful dialogue, but in a distant environment I feel embarrassed.
- 20) Nothing!!!

7. Conclusions

Using Gamification techniques in the learning process improves collaboration among participants in online learning environments. In e-learning, activities that increase social interactions are essential and must be sought within a context of communication and collaboration with trainees so as to be relevant to their interests and desires.

The implementation of the course and the research showed that the application of the Gamification principles in combination with the interactive model Reflective Interaction through Virtual Participants maximize the development of relationships leading to cooperation and consequently help in building knowledge. This is reflected in the learning products and the quality of learning.

From the implementation of the learning process, the emotional goals of learning have been achieved to a very large extent, while the quest for knowledge in the context of project collaboration has also greatly contributed to the meta-cognitive learning objectives. Through these data, the cognitive goals of learning were also achieved, while it is important that the participants in the process felt that a change of attitudes was achieved, too.

The fact that there were no tight timelines in the implementation of the project, as the participants were working in their personal pace, was positively evaluated while the large amount of information gathered in the fora created some embarrassment for the participants in their approach.

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