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Multiscopic, analysis of a Virtual Community of Practice in Physical Education

Multiscopic, análisis de una Comunidad de Práctica Virtual en Educación Física

Pablo del Val Martín

Pontificia Universidad Católica de Ecuador (sede Santo Domingo)

Contact: dipostgrados@pucesd.edu.ec

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Abstract

Multiscopic is a professional and training platform that focuses on the analysis of school physical education practices. Created with the goal of becoming a community of practice that serves as a meeting point for multiple educational agents who want to share their knowledge to create a joint idea of Physical Education. The research is based on a qualitative approach and was conducted at school of the municipality of Frómista in Palencia (Spain). He went weekly to record the session PE of a particular group of 6th of Primary Education (EP). Data with qualitative results Nudist 8.0 program were analyzed. The results were that users Multiscopic felt that the idea of this project is very interesting and has great potential. But the platform required improvements since many users think that is complex and has low participation in it.

Keywords

Multiscopic; Community of Practice; school practice; educational platform.

Resumen

Multiscopic es una plataforma profesional y formativa que se centra en el análisis de prácticas escolares de Educación Física. Nace con el objetivo de convertirse en una Comunidad de Práctica que sirva como punto de encuentro para múltiples agentes del ámbito educativo que quieran compartir sus conocimientos para crear una idea conjunta de Educación Física. La investigación realizada parte de un enfoque cualitativo y se llevó a cabo en el colegio del municipio de Frómista, en la provincia de Palencia (España). Se acudió semanalmente para grabar la sesión de Educación Física de un grupo, en concreto de 6º de Educación Primaria (EP). Se analizaron los datos de los resultados con el programa cualitativo Nudist 8.0. Los principales resultados fueron que los usuarios de Multiscopic consideraron que la idea de este proyecto es muy interesante y que goza de un gran potencial. Pero la plataforma requiere de

mejoras ya que muchos usuarios opinan que resulta compleja y tiene baja participación en la misma.

Palabras Clave

Multiscopic; Comunidad de Práctica; práctica escolar; plataforma educativa.

Introduction

The concept of community, virtual community and legitimate peripheral participation

According to the Royal Academy of Language (2013), the word community derives from the Latin, communĭtas / -ātis, and means a set of people linked by common characteristics or interests. Sanz Martos (2005) points out that a community of practice (hereinafter CoP) is "a group of people who carry out the same activity or professional responsibility and who, preoccupied with a common problem or driven by a common interest, deepen their knowledge and expertise in this matter through continued interaction "(Sanz, 2012: 33). The emergence of Web 2.0 allows for the possibility of creating communities of practice whose members do not interact directly. Brown and Duguid (2000) refer to these as communities of virtual practice or practice networks (PR). This definition was completed by Cabero (2006) when establishing the prior need to share common values and interests. In short, Cabero and Llorente (2010) characterize this concept as "communities of individuals who share common values and interests, and who communicate through the different communication tools offered by telematic networks" (Cabero and Llorente, 2010: 2). The main potential of virtual practice communities is the fact that, thanks to information and communication technologies (ICTs), geographic and time barriers disappear (Johnson, 2001), unlike in traditional communities where time and space have always been main conditioning factors and where learning is relevant (Martínez et al., 2004; Burgos & Koper, 2005). This claim is refuted by McDermott (1999), who points out that "the key to driving the change towards sharing knowledge lies in communities of practice" (McDermott, 1999: 26). They are, therefore, a very dynamic tool that allow for the possibility of exchanging and ratifying ideas, feelings and opinions, of raising points of view, doubts and concerns and of reaching deeper reflections than those carried out individually (Monereo and Durán, 2002). Parallel to the virtual CoP concept, another concept is emerging; Legitimate peripheral participation. In reality, virtual practice communities are the support of a true community of practice, but in order for it to succeed, members must be full members of the community (Johnson, 2001), a process that will only

come through legitimate peripheral involvement. Therefore, we must understand legitimate peripheral involvement as the process by which an individual learns from a given context by participating in community activity and by interacting with other members who are more or less knowledgeable with the field of work. In this way the individual progressively learns from the community's knowledge as he approaches full participation in the group. In this sense, Vásquez Bronfman (2011) proposes what the problems to implementing a CoP are:

- People do not want to share their best work methods, their best ideas, their knowledge, because for fear of losing their main assets as employees of a company.
- People do not always want to use the ideas of others, for fear of being perceived as incompetent.
- People like to think of themselves as experts on a certain topic and do not like that other experts exist.
- How can you convince people who work long days that they should stay at work a little longer in order to write and publish their best ideas and work methods on the intranet?

In line with what Howard and McKeown (2011) pointed out in a study indicating poor teacher participation in a CoP, it is argued that poor participation is due to the fact that teachers' don't consider this practice to be part of their role as teachers. In other words, this could lead into an identity problem, or the lack of a "leader" who is able to convince them of the advantages of participation. However, these research findings clash with Weerasinghe, Ramberg, and Hewagamage (2012), who analyzed the participation results of some students in four online courses with and without the support of a facilitator. It was found that students can engage in deep and meaningful learning via online discussions, even when there is no facilitator interaction.

It is for this reason that Wenger (2001) proposes that certain factors be taken into account in order to create a CoP and avoid these potential problems. The factors are:

- Every CP must have an animator.
- In every community there are different levels of participation.
- The rhythm between face-to-face and virtual conversations is essential.

The virtual environment chosen to develop this research is the Multiscopic portal (http://multiscopic.ning.com/). Multiscopic, also known as "multiple views of the same phenomenon," is an educational platform focused on Physical Education, which acts as a social network and whose basic idea is to serve as a meeting point for multiple agents of the community who are interested in sharing their knowledge (Plaza Fraguas, 2013). The idea's potential relies on the multi-profile nature of its users and the potential that it has to create an environment of democratized knowledge. The idea of Multiscopic is to give the children involved an opportunity to track their own actions and progress. At the same time the intention is that via Multiscopic, family members are able to see their children's progress in school and are able to collaborate on their children's educational development. Meanwhile, there are other agents within the educational field which are also present in Multiscopic and whose participation also has relevance. For example, for student teachers it is an opportunity to gain experience in educational practice, to exchange viewpoints with professional experts and families, and to get acquainted with the profession. On the other hand, for expert teachers it is a space to share points of view and to enrich their analysis of practice. And finally it gives the researchers access to alternative viewpoints, the opportunity to exchange information regarding analysis procedures as well as to publicize their results (Sánchez Liquete, 2013).

In short, what we are looking for is the construction of knowledge and meaning in a collaborative way, and not simply a cooperative one, because, as Greca and González (2002) point out, "a collaborative task differs from a cooperative one in the sense that the latter is a division of labor and not a joint action in the pursuit of the same objective "(Greca and González, 2002: 232).

Method and material

Multiscopic objectives

The main objective of the research was to analyze the performance of the Multiscopic platform. This objective is based on the needs that emerged when the platform was created, which were written as specific objectives (Guerrero Arasti, 2013):

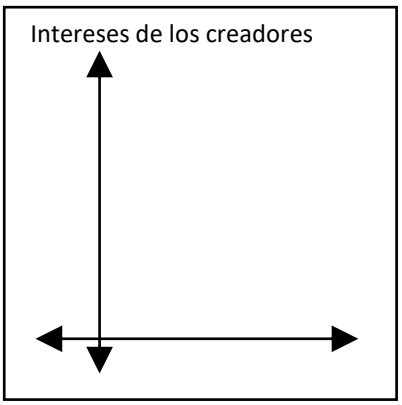
- Objective 1: To consolidate and internationalize a shared work space in which university students, students of Primary Education and their family members, together with teachers and researchers from different countries construct meaning and shared

knowledge.

- Objective 2: To make university students understand some of the phenomena and problems that occur in their professional field, the implications they involve, as well as their possible solutions.
- Objective 3: To encourage student participation in the analysis, planning and evaluation of strategies which attend to those problems which have been raised in educational centers regarding the body and motor skills.

The definition of these objectives is directly related to the query on which the research process is focused: "Is Multiscopic meeting the initial expectations and reaching the objectives proposed by its creators?". Central to the fact that the discrepancies regarding the use of the platform had already been recognized, one is led to ask whether or not it even constitutes as a CoP. The approach of this query, as the backbone of our research, responds to the fact that as time passes we have been able to verify that those initial principles by which the platform was created have been transformed, and thereby different queries have arisen around the platform's approach and functioning. Consequently, following Lewellen's scheme (2003), an image of the initial approach is shown, and the last section illustrates the evolution of the same scheme.

Figure 1. Lewellen's tension diagram (2003)



Platform operation

Below we describe how the Multiscopic platform works and what steps we take each time we want to launch a new tutorial on the Web. Worth mentioning is that the school which made this project possible is located in the town of Frómista in the Province of Palencia (Spain). Here, we attended weekly Physical Education classes in order film a specific group. The

group that we have been working with this year has completed its last year in the center, 6th grade in Primary School, but the work and filming has been carried out with this group since 2009/2010. This is an important fact to take into account, considering that initially we had wondered if the children could be overacting in front of the camera, which could alter their behavior. But this turned out to be far from true, as the students payed no attention to the filming. It is interesting to note that there on certain occasions there were more people observing the activity than children participating in class, but at no time did this affect the quality of the sessions. Upon entrance to the school, we meet with the Physical Education teacher and the details of the session are finalized. In this way we become aware of any changes which may have occurred last minute that might influence how and where the recording ought to take place. After this, a video camera with a tripod is placed in a quiet area of the classroom or the patio where it will not bother anyone throughout the lesson, and the session is then filmed in it's entirety. Once have the video of the session, we use a video editor such as PINACLE. It is edited and stored on a server hosted by the Transdisciplinary Center for Research in Education (CETIE) at the University of Valencia (UVA). The server is called Cyberduck. After that it is transferred to the web domain (http://multiscopic.ning.com/). Once the video already located in Cyberduck, we then create a new blog entry that houses the video and any complementary material: the unit on which the recorded session is based, the lesson plan (what was intended to be done in class that day) and the lesson profile (what actually happened in class that day). This profile is very important in the long run as it helps the user to put the practice into context, to know when each event took place and, enables the user to back the information up with photos and small fragments of video that were recorded from other instruments of technology (mobile phones, Ipads, etc.).

Figure 2. Image of a Multiscopic login page

Regarding the process of analyzing practices, the platform operates in groups, depending on the pedagogical trend to which it adheres and the objectives it pursues. In this way each group analyzes the practice in accordance with some ideas or others. Within each group there is one person or several people (usually one), who is in charge of the management of the group itself and of motivating group participation. Multiscopic offers its users a set of tools which allows them the ability to construct meaning and share knowledge, such as: comments, discussion forums, direct messages, chat rooms and a main room and internal mail, through which users can exchange information privately. Collaborative work is sought out, via this work proposal, in accordance with what Greca and González (2002) recognize as "a synchronized, coordinated activity which results from continuous attempts to construct and maintain one single approach to a problem "(Greca and González, 2002: 232). The research we present aims to analyze a small part of a very complex whole, and responds to an interpretive-narrative approach which converges on the elaboration of a case study of a intrinsic nature (Stake, 1995). Using this approach we hope to be able to explain a small previously defined case and belonging to a much broader context (Jorrín Abellán & Rubia Avi, 2013). We shall start with the basic tension which arose between the interests of the organizers and those of the users. Many research questions resulted from this tension, but in this article we will focus mainly on two: What modifications exist in relation to the ideals of the creators? What are the dynamics of operation within the platform?. In order to answer these questions, a case study methodology has been used, following Stake's (2005) approach, in which the information collection techniques have been very varied: questionnaires, interviews, emails among users, discussion forums, or comments from the participants in the platform. Likewise, there have been multiple informants: primary school children, the students parents or close relatives, student teachers, as well as expert teachers and researchers. This further enriches the information. The following is a figure that aids in understanding how to best follow a case study approach. Through this arrangement we can visualize the context in which the research will be carried out, as well as learn about other previous experiences which are related to ours (Jorrín Abellán, 2006).

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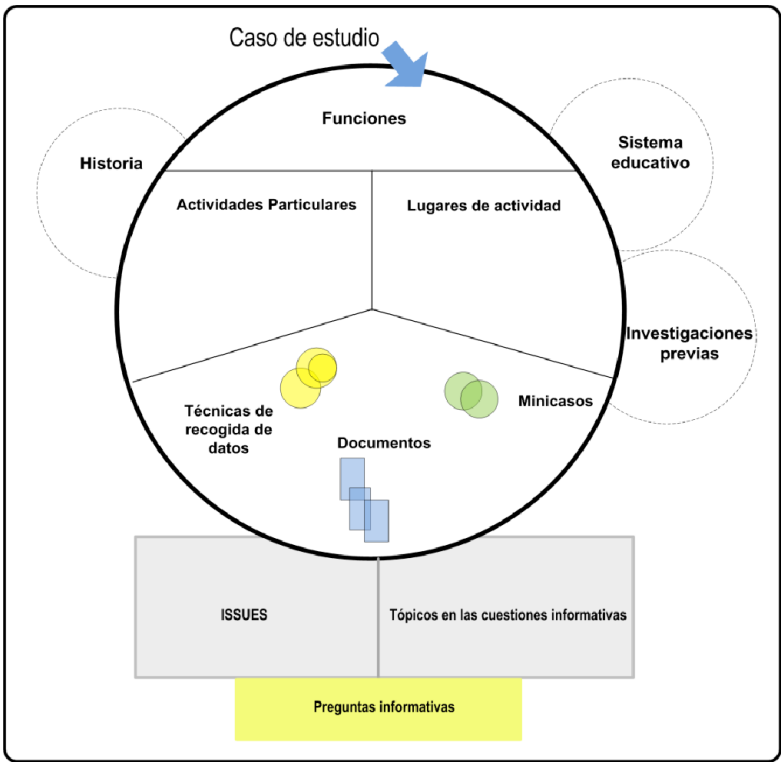
Figure 3. Generic structure of an adapted case study (Jorrín Abellán, 2006)



The context from which Multiscopic was developed is quite varied, from the Primary Education center in which the practice sessions were filmed, to the university classrooms where the student teachers analyzed the videos, and to the different research groups which held a presence in the platform. All of these have only one factor in common: the analysis of one school's Physical Education practice (Sánchez Liquete, 2013). Figure 4 represents the different aspects that were taken into account when carrying out the case study (Martínez & Noriega, 1997). The central circle represents the case to be studied and its limitations. It reflects aspects related to the collection and analysis of information. You can see that the circle is subdivided into three small sections: the locations where the investigation was carried out, the activities that were carried out, and in the third and final section, information collection techniques (questionnaires, interviews, emails, conversations and comments) and the informants (primary school children, PE teachers, high school teachers (ESO), student teachers, University faculty and researchers). The context in which the research has taken place is detailed on the right side of the circle, while previous research related to ours is shown on the left side of the circle, which helps to create a theoretical basis.

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Figura 4. Graphical representation of the Stake case study (1995) and Denzin and Lincoln (2005)

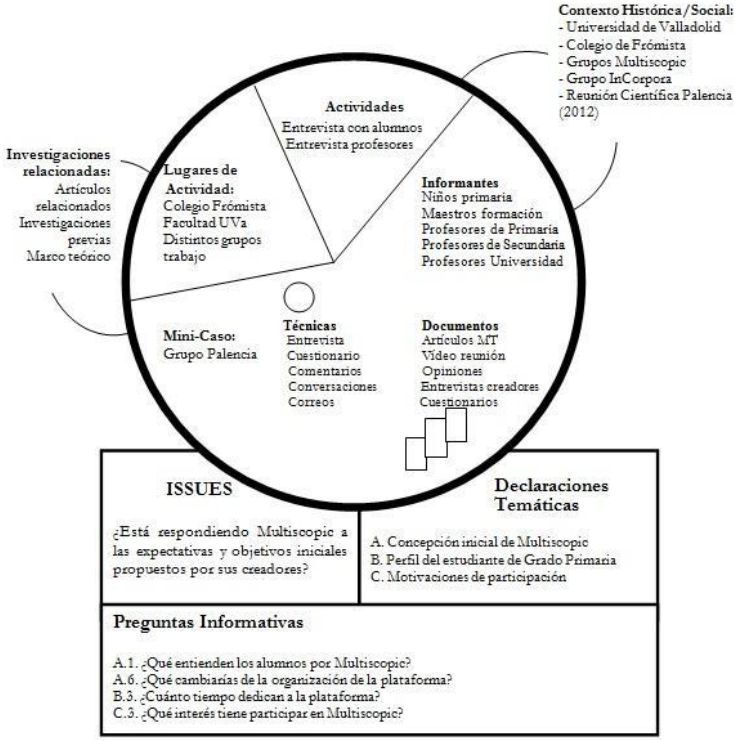
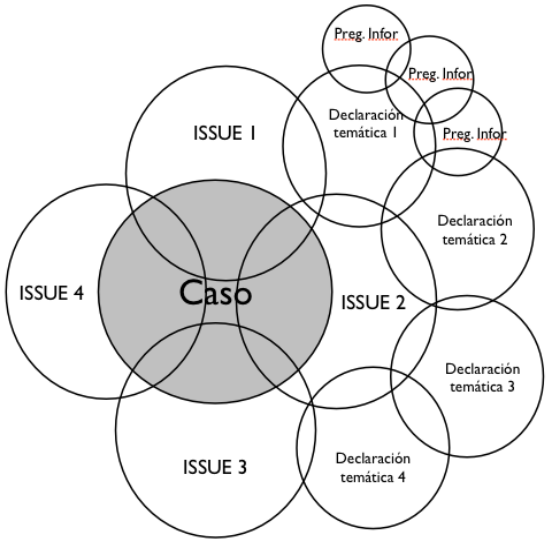


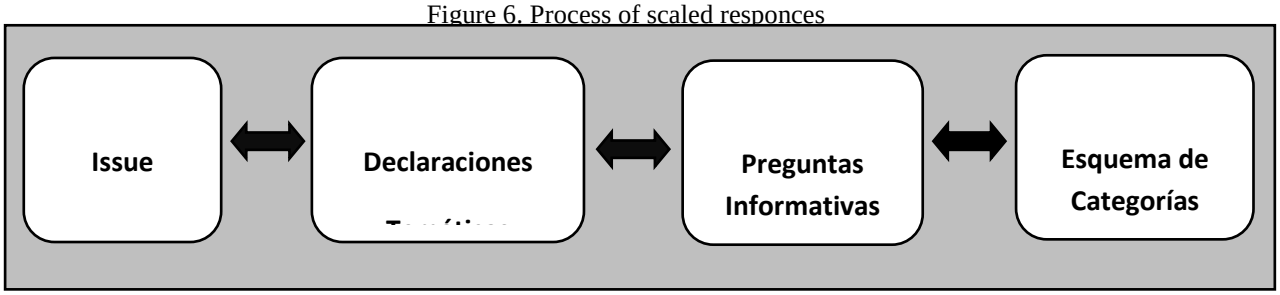
Figure 5 shows the reductive process followed when using a case study as a research methodology.

Figure 5. Miles and Huberman's adapted early reduction scheme (1994)



The anticipated reduction scheme proposed by Miles and Huberman (1994) allows us to shed light on the tension or the particular issue that marks our research via a scale of responses, as shown in Figure 6.

Figure 6. Process of scaled responces



For the categorization process and subsequent triangulation of the information, the following processes have been taken into account in Table 1:

Table 1. Information gathering techniques and Sources

Technique	Sources and Informants	Amount
Interview	Primary school students Palencia	7
	Platform creators	2
Questionnaire	Researchers and University Professors	5
	Secondary school teachers	1
Internal mail and the Multiscopic platform	Primary school students Palencia	4
	Secondary school teachers	1
Multiscopic chats	Primary school students Palencia	2
	First year Student teachers	1
Multiscopic group comments	Researchers and University Professors	3
	Primary school teachers	1
Profile comments	Secondary school teachers	10

In order to analyze the above mentioned data we have used a qualitative categorization tool such as Nudist 8.0 (QSR International Pty Ltd., 2008) which has already been used in similar studies (Martín et al, 2014). The information collected via this tool was codified according to a series of previously established categories along with others that arose during the process.

Discussion

The assessments collected regarding the Multiscopic platform were generally positive, as shown below. The users consider this to be a very interesting concept with great potential. Below are some of the most interesting contributions made by users. To do so, we have presented the phrase transcribed, to whom the questionnaire belongs, as well as its coverage with the percentage and the coded references (as they appear in Nudist, therefore in spanish):

An Internet platform that makes it possible to meet and exchange ideas between EF teachers from all over the world
<Elementos internos\Cuestionario Marcelino> - § 2 referencias codificadas [Cobertura 10,47%] Referencia 1 - Cobertura 7,95%

A place from which I can learn and teach Physical Education because I can share.
<Elementos internos\Cuestionario Nico> - § 3 referencias codificadas [Cobertura 20,07%] Referencia 2 - Cobertura 8,05%

A platform that allows the exchange of electronic knowledge and compares this knowledge and understanding about E.F.
<Elementos internos\Cuestionario Reiner_traducido> - § 3 referencias codificadas [Cobertura 13,23%] Referencia 3 - Cobertura 4,68%

Although, as has been verified with the previous data exposure, the positioning of users before the platform is positive and therefore can defend its usefulness and the interest in it, neither can we ignore that problems have arisen which have crippled the operation, and that the platform is in need of improvement.

[...] there is not much social or affective reward, therefore, there is little possibility of the recognition of the others.
<Elementos internos\Cuestionario Juan Mañeru> - § 4 referencias codificadas [Cobertura 16,12%] Referencia 2 - Cobertura 5,49%

[...] that there is a "false" community. We all may think that we are talking, but each one of us is simply looking out for his or her own group [...]
<Elementos internos\Cuestionario Lucio> - § 3 referencias codificadas [Cobertura 16,18%] Referencia 3 - Cobertura 6,32%

[...] it seems to me that a negative aspect is that I find it a little complex, when it comes to access, to find my group's comments [...]
<Elementos internos\Trans_entrev_alumnos 1-2-3> - § 1 referencia codificada [Cobertura 2,43%] Referencia 1 - Cobertura 2,43%

One of the negative handicaps that has hampered the smooth functioning of the platform and with which we have met repeatedly has been its low levels of participation.

[...] I have found it difficult to situate myself, I am not very skilled with technology, but I find it confusing and time consuming to get to where I need to go.
<Elementos internos\Trans_entrev_alumno 7> - § 1 referencia codificada
[Cobertura 2,22%] Referencia 1 - Cobertura 2,22%

[...] I have had the feeling that there is a lot of information on the platform, and you do not know where to go to respond to your activity.
<Elementos internos\Trans_entrev_alumnos 1-2-3> - § 2 referencias codificadas [Cobertura 4,51%] Referencia 1 - Cobertura 1,40%

[...] there is no tangible product or reward (type credits), which people are accustomed to having.
<Elementos internos\Cuestionario Juan Mañeru> - § 4 referencias codificadas [Cobertura 16,12%] Referencia 3 - Cobertura 4,23%

One aspect which could be improved would be for the teacher to be able to receive comments without it having to be made public [...]
<Elementos internos\Trans_entrev_alumno 7> - § 3 referencias codificadas

[Cobertura 44,29%] Referencia 1 - Cobertura 34,55%

Conclusions

In view of the results we obtained, a series of conclusions can be drawn which are quite useful in making us aware of certain aspects which were not previously analyzed in Multiscopic. Most of the technical aspects are discussed, with the intention of redistributing the platform in order to improve its development. Some of the insights are:

- The need to expand the lesson profile

The students mentioned that the profile was very useful in order to follow the development of the class and would have liked it to be further expanded. In this case we are unsure as to whether the profile was truly a complement to the video, or on the other hand (if expanded) perhaps it could be used as a substitute for the video. The extension of the lesson profiles does not exceed a single page, with the purpose of contextualizing the action, and is accompanied by a written narrative and some photos demonstrating what took place.

- Possibility of being quoted (when someone else uses your contributions)

This is one of the conclusions that leads us to think that the students do not really understand what a CoP is, or that the approach we take is not entirely correct.

If we consider Sanz (2012), he points out that a CoP is "a group of people who carry out the same activity or professional responsibility and who, worried about a common problem or driven by a common interest, broaden their knowledge and expertise in the matter via continuous interaction" (Sanz, 2012: 24).

However, the students, reluctant to believe that their contributions are in any way rewarded, are less inclined to participate.

This line of thinking clashes with the basic approaches of a CoP, where knowledge sharing is the basis of group work. Perhaps it is our fault. Perhaps our approach is not the best, considering that students demand recognition, knowing that their work can be plagiarized by other colleagues. After all, they are looking for a passing grade.

- How will they be evaluated? Author recognition (in both quantity and quality)

According to the use of Multiscopic as a teacher assessment tool, the interviewed students asked for more information from the teacher regarding the subject of evaluations. Concerns arise when the students are unsure whether "quantity over quality" or "quality over quantity" is the best option in regards to participation. They demanded, as previously noted, that their work be recognized. On this particular occasion, the person who generated debate for other colleagues was the one raising concerns.

- Establish a sort of random assignment so that all comments are read a minimum number of times

This assessment was based on one of the activities proposed by a university professor, in which he asked his students to respond to another colleague's comment, thereby offering constructive criticism to their classmate. We found that in class not everyone received a comment, which led to a certain sense of abandonment. In addition we found complaints by some pupils who had recognized that their comment was the basis of another student's comments but in this way they had not received credit for the initial observation. Basically, another student had attempted to claim authorship of their comments. The initial scheme presented by Lewellen (2003) (that which opposed vertical and horizontal interests) is confirmed based on certain aspects and forms a conceptual basis by which to tackle the study; However, in light of the data, a more dynamic scheme should be taken into consideration, one which reflects the diachronic changes produced as well as the large influence the participants made on the process, which lead to a dynamic and constantly changing system. In short, a scheme in which the organizers, influenced by user interaction, are continually generating new structures in a game that, perhaps over time, will come to dilute its function.

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