Exploring Intercultural Communication Online: Video annotation in teacher education

Laurent Tessier, Virginie Tremion

Institut Catholique de Paris (France)

Abstract

In post-Web 2.0, the role of video has become increasingly important, both in e-learning and in blended learning systems. This article aims to identify how video annotation can help explore communication in teacher training. With the necessity to take into account the great diversity of pupils, collaborative work and online exchanges may help increase understanding of intercultural communication. Firstly, we begin with a presentation of collaborative video annotation to observe the place and the role of interaction in this system. Then, we seek to uncover elements of the design process in a design-based research project on *Celluloid*, a video annotation device through the description of two experiments: their contexts, the videos used, the consultation modalities and the annotation processes developed to increase interaction.

Key words

Explorando la comunicación intercultural en línea: la anotación en vídeo en la formación de docentes

Resumen

En la post-Web 2.0, el papel del vídeo se ha vuelto cada vez más importante, tanto en el e-learning como en los sistemas de aprendizaje semipresencial. Este artículo pretende

Contacto :

Laurent Tessier, Institut Catholique de Paris, l.tessier@icp.fr

identificar cómo la anotación en vídeo puede ayudar a explorar la comunicación en la formación de profesores. Habida cuenta de la necesidad de tener en cuenta la gran diversidad de alumnos, el trabajo en colaboración y los intercambios en línea pueden contribuir a aumentar la comprensión de la comunicación intercultural. En primer lugar, comenzamos con una presentación de anotaciones en vídeo colaborativo para observar el lugar y el papel de la interacción en este sistema. A continuación, tratamos de descubrir elementos del proceso de diseño en un proyecto de investigación basado en el diseño sobre el celuloide, un dispositivo de anotación de vídeo a través de la descripción de dos experimentos: sus contextos, los vídeos utilizados, las modalidades de consulta y los procesos de anotación desarrollados para aumentar la interacción.

Palabras clave

Investigación basada en el diseño; vídeo; anotación; comunicación intercultural.

Introduction

In post-Web 2.0 digital learning environments, the role of video has increased, both in e-learning and blended learning systems (Peraya, 2017). At the same time, the formative uses of video have been the subject of criticisms, concerning both the ability required to use it accurately as well as the passivity of learners that it might induce. According to cognitive load theory (Sweller, 1994), there are also psycho-pedagogical risks of overload associated with the use of learners' resources (cognitive, affective, motivational) while they have to manage such information (e.g. audio and visual).

The purpose of the *Celluloid* project (Bourgatte & Tessier, 2018b) is to offer an answer to the question of the uses of video -in particular about the conditions under which learners are put into activity. At the same time, it has been touted as a pedagogical solution handling heterogeneity in classrooms and communication between students. Designing learning tools and courses in response to an international learning context leads to consider triggering interaction. Rather than focusing on particularities of national structures or cultures that may lead interculturality to "differential" (Dervin, 2016), we search threads (Holliday, 2018) to make students connect. This means to engage in interaction and collaboration as a means to cross boundaries -real or imaginary.

The founding hypothesis of the *Celluloid* project is that an online collaborative annotation device can be a potential asset for training and an environment that may encourage new forms of interaction between students. After identifying and analyzing the annotation practices of different existing audiences and devices, the project consisted in the development of a digital collaborative annotation device. It was also designed in order to allow the implementation of blended learning educational projects (Charlier, Deschryver & Peraya, 2006). The development of this device, in the form of a web application, is resolutely part of a *design-based research* (now DBR) or "design-oriented research" approach (Hoadley, 2003; Sanchez & Monod-Ansaldi, 2015). According to the principles of this type of research, it is not only a question of researchers participating in the design of

the device, but above all of testing it collaboratively with the public concerned (engineers, practitioners and learners), who are explicitly integrated into the research process.

This contribution therefore seeks to describe some of the ways in which video annotation is tested with students in training during the design phase of the device. The two test groups are made up of ninety-four Bachelor of education students and twenty-six Master of education students who experimented with *Celluloid* in the context of blended learning courses during the year 2018.

Learners interaction with video?

According to Kolb (1984), the construction of knowledge occurs during the experience of the individual. In the context of school and education, the student develops an experience that involves interactions with the world of things, the social world and the subjective world (Mezirow, 2001). In this context, the design of educational systems invites training actors not only to question the individual needs of students, but also the modalities leading to the development of experiential learning (Dewey, 1938) and of interactions. Activity, as understood here, is defined as the result of contextualized interactions between subjects and objects in their social, cognitive and psychological dimensions (Linard, 1989). Thus, the question of the activity and interactions of student requires a look into the social and physical environment in which it takes place (Theureau, 2015).

From this perspective, observation of the technical dimension (i.e. the functionalities of the tool) may be taken into account in relation to the development of knowledge. However, the multiplication of the modalities specific to *hybrid* training, where face-to-face learning times are combined, on a variable scale, with distance training times through digital environments, tools and various media, implies various forms of learning activities and interaction. In this sense, online learning activity can be thought as "an organic whole, an unbreakable unity that cannot be understood if we approach moments separately and in isolation" as Albero and Guérin (2014, p. 31) indicate.

In this context, the learner's use of a psychological instrument (Vygotski, 1978) entails increasing complex practices beyond traditional face-to-face interaction. Therefore, the use of online video, which will occupy us here, as well as any other material or symbolic object, should be considered in interdependence with the context of structuring and carrying out the training activity together with existing mediations (Albero, 2010).

Due to its multimodal nature, the consultation of video in education raises questions. The visual selection of information from a video or animation is cognitively demanding for the user (Erickson, 2007). In addition to this, the use of video makes great demands on learners' attention and memory skills (Tricot & Amadieu, 2014). To facilitate its pedagogical uses, some therefore suggest that adjustments be made in terms of the presentation and structuring of the information in the videos. This may include, for example, the integration of markers (Brunvand, 2010) such as titles, chapters, etc. The objective is then to provide assistance, support to the learner in order to encourage appropriation.

In the professional development of teachers, video is frequently used in the classroom, particularly for observation and practice analysis activities (Gaudin & Chalès, 2012). The objective of the activity with video is thought of in a perspective of transformation: it is to allow students to analyze training and education contexts and to project themselves into professional situations. While the development of exchanges between subjects and interactions can be assumed in intercultural communication, the use of a digital environment, in distance learning for example, raises the question of the implementation and articulation of three levels: that of practice, interactivity and collaboration. It seems therefore relevant to question from an experimental environment how and in what way these three poles can be mobilized in order to answer the questions raised by the use of video in transforming learners' activity.

Celluloid: a collaborative video annotation system

As we can see, despite the recurrent injunctions to use video in training, their real influence on learning is not clear. In this second part, we will describe a project specifically aimed at facilitating the use of video in education by encouraging learners to become active.

The first principle of this project is based on the use of annotation as a collaborative means. Annotation, as we know, is in a way consubstantial with learning and research activities: annotating a book in its margin, underlining, highlighting a text are all essential activities for any student or person in training, not only in the context of personal learning time, but also in an aim of exchange with other learners. Working collaboratively with learners on physical texts is a common practice facilitated by many dedicated, accessible and inexpensive tools: from the pocket book that can be annotated and lent, to photocopies and other paper boards. Similarly, collaboratively annotating digital text has become a simple and daily practice for many learners, thanks to proprietary tools such as Google Docs or open source wiki tools (Mabillot, 2012).

However, beyond the simple illustration, real collaboration around videos remains a complex activity in a formative context. Teachers have received little training in these approaches, and adapted annotation tools are still lacking, even though, outside the educational or training framework, video annotation practices have become more widespread in recent years. Just think of the uses of Snapchat or the instagram "Stories" that are now popular (Mercklé, 2016): they are based on annotations and written comments written directly on short video sequences, in order to exchange between peers. It is therefore understandable to use annotation in video-based training practices: both to build on this new form of digital literacy (Le Deuff, 2012) potentially present among young adults, while answering the question asked earlier: that of activation from a medium a priori designed for passive consumption. In order to address this issue, several video annotation device projects have been designed in France and abroad (Bourgatte & Tessier, 2018a). Among them, the *Celluloid* project is based on two specificities:

- It allows you to write directly on the image, inspired by the textual practices mentioned above (annotate a paperback book, writing directly on the text). Writing directly on the subject studied, it is in any case our intuition, would make it possible to reduce the

cognitive load otherwise generated by back and forth between two supports. This hypothesis was formulated in particular on the basis of our experience with MOOC in France Université Numérique (FUN): MOOCs on FUN are based centrally on a series of video capsules. However, to interact and collaborate around these videos, learners and facilitators of a MOOC must use a discussion forum on a separate web page. These tedious round trips make it difficult to have fine interactions around a specific sequence. Last but not least, using open forum in MOOC might lead to the expression of ideologies and prejudicial discourses with no interaction as specified in a study on intercultural communication in MOOC (2018).

- Compared to other devices, one of *Celluloid*'s specific features is to allow the distinction between the roles of trainer and learner, each having different rights, making it possible to collaborate in a secure framework and guaranteeing the privacy of learners (Rallet, Rochelandet & Zolynski, 2015). More precisely, *Celluloid* takes the form of a web application that allows a teacher or trainer to share a video with a group of learners. The trainer generates a code, which he can transmit to the group and which allows them to work in a closed space, a virtual classroom. After accessing this virtual classroom, learners discover, in text form, about the objectives and activities planned by the project creator. The trainer can annotate different sequences of the video. Learners can do the same. Each annotation can give rise to a thread that can be scrolled down.

Iterative experimentation phase and Celluloid appropriation

We now propose to observe how the *Celluloid* tool is used to set up young adults in training, based on the presentation of two use cases. The purpose here is to describe two experiments carried out with teachers and students of bachelor's and master's degrees in the educational sciences. These will be analyzed and used for the iterations that will be developed in the second phase of the project, according to the DBR logic that drives it.

The first experiment was conducted between October and January 2018 with a group of ninety-four students enrolled in the first year of the Bachelor of Education at the Institut Catholique de Paris. In this eighteen-hour course entitled *Otherness and Interculturality*, the aim was to explore the concepts underlying intercultural approaches in education. To this end, the social and linguistic aspects of interpersonal exchanges are explored through the design and analysis of video documents. Here, the use of the video annotation tool was thought up by the teacher in relation to the collaborative activities to be carried out by students in groups outside the classroom. More specifically, students are asked to design a video of an intercultural learning activity that they will present to the rest of the group, deposit it on a streaming viewing platform and annotate it collectively. Three phases can be identified in this experience of using *Celluloid*:

- the discovery of the tool by students and collective experiments in sub-groups of its functionalities during a classroom course;

- the use of *Celluloid* alone but in group work outside the course to carry out the activity;

- individual feedback on the experiment.

The classroom sessions provided the teacher with the necessary regulations to use the tool and support students facing difficulties in technical manipulation. For the researcher, this weekly support also makes it possible to understand how to appropriate the tool from one session to another, through written online interactions between students but also through individual reflective productions made by students. This data, if it could not yet be the subject of a discourse analysis itself during the experiment, is integrated into the application development process.

The parameters of the second experiment are very different. We are dealing here with a group of twenty-six students enrolled in Master 1 MEEF (Professions of Teaching, Education and Training) in a course dedicated to educational executives. This group is composed of "adult" students enrolled in continuing education or in vocational retraining. In order to adapt to their rhythms, the year is made up of four one-week physical groupings, with the rest of the training taking place at a distance. Our experiment took place in the first half of 2018-2019, as part of a course on digital mediations in education. This course consists of three three-hour classroom sessions and nine hours of distance learning. After having defined the theoretical issues of digital mediation and analyzed different types of existing mediations, the project is presented to the students as well as the objectives of the course and the evaluation methods. By using remote working time, students must create a digital mediation project adapted to their own professional context (current or targeted) using Celluloid. In concrete terms, they must therefore find a video on YouTube (or create one and upload it to this platform). Then they must create a project on Celluloid from this video, developing objectives, activities and annotations on different sequences of the video, allowing to initiate the activity and the collaborative work of the learners.

In addition to presenting the objectives of this experiment in this course, the students are also included in the logic of the DBR: we explain to them that this application is in a beta-test phase and that we also expect their feedback as education professionals and their insights in order to improve the system. After the face-to-face launch session, students can start the activity independently, and report on their progress via a dedicated discussion forum open on the Moodle platform. Due to the limited number of face-to-face learning sessions, they have plenty of time to work on their project (12 weeks). This will allow them to present the projects and discuss them. During these 12 weeks, as students' projects are put online, they are also instructed (and this is also evaluated) to participate in other projects presented by their colleagues, putting themselves in the role of the learner. Students are therefore placed in a doubly reflective situation, since they must on the one hand place themselves in the position of a trainer, but also in the position of students who must appropriate a blended learning system. Let us take here two examples of projects proposed by the students that will allow us to report on how they appropriate such a tool. The first project is entitled by the student who designed it "Clair-Obscur". It is presented as follows:

"The aim of this project is to be presented to young people aged 14 to 18 living in a Social Children's Home, over a period of animation of community life".

Its general objective: "To raise awareness among young people about addiction".

The proposed activities are as follows:

1. From the viewing of the video, name the different steps the character has gone through (To be annotated on the video)

2. In your opinion, what emotions does the character feel according to these different steps?

3. Give examples of addictive substances

4. Do you know the steps to follow to benefit from support if you or a loved one is a victim of addiction? If yes, name them.

The second project is entitled "School drop-out from different perspectives":

"Different visions of school drop-out to better understand and cope with it".

Its general objective:

"Show all educational staff that dropping out is an accumulation and that the young person is not the only one responsible. Prove that any child can do this if means are put in place that are adapted to their needs.

The following activities are planned:

What are the profiles of dropouts? What makes you want to quit? As teachers, what should we be aware of?

Using the annotations, what are the links between the different definitions of drop-out? Is there a difference with Jean Michel Blanquer's definition?

What is Jean Michel Blanquer's definition of drop-out?

Using the annotations, tell us what these young people are blaming the school system for? And what solutions do they propose?

By annotating the video you will notice similar ideas between the young people and Jean Michel Blanquer.

When reviewing the answers and your opinion, say what can help a child who is dropping out? What can be implemented at the classroom level? At the school level?

What did this video bring you? Do you have any other vision of dropping out?

In each of these projects, the activities are specified by annotations directly on video sequences, which should allow the target audience to exchange among themselves and

with the teacher on the proposed themes. For example, in the first project, the video chosen is a small allegorical animated film that represents the different phases of addiction. The project creator annotated each distinct phase, asking participants to describe the specificity of that phase and what distinguishes it from previous ones. In the second project, the chosen video presents different excerpts from interviews. Contextual annotations therefore make it possible to focus more specific questions on specific elements of speech ("what does this person mean when he or she uses this expression" for example).

The students, as has been said, were in no way influenced in the choice of their subject, except that their project had to be thought of as something that could be implemented with the audiences of their real professional activity. It can be seen that the majority of the students observed (16 out of 26), like these two cases, first consider such a system as a means of collecting the learners' points of view, with a view to an exchange in the form of a debate to take place in person. The fact of carrying out more advanced collaborative activities within the framework of a remote digital device requires a didactic elaboration that seems to remain beyond their reach at this stage. We are therefore mainly faced with devices that resemble the "type 1" reverse classes described by Lebrun (2015): content designed as prerequisites or prerequisites is provided to learners before a classroom course, which will concentrate most of the activities.

This could be explained by representations related to their professional practice that should be explored, but probably also more prosaically by anticipating difficulties related to the solitary and remote use of new technologies by learners whose digital skills are unequal. The reflexivity situation generated by this course pushes them in a certain way to this observation: learners see the technical difficulties that a part of them encounter to connect to the platform, create an account, go through the different steps of creating an online project, share the link of their project, connect to other learners' projects, etc.

Conclusion

As we have shown (2019), teachers who implement blended learning devices such as reverse classrooms face the technical difficulties encountered by learners when accessing online resources on their own, outside of class time. We anticipated this risk by opening a dedicated forum. Sixty-two messages were collected during the weeks of online project development, 43 of which related to basic technical problems (connection difficulties, loss of identifiers, etc.). In addition to the tedious aspect for the teacher, who finds himself in a position to manage a hotline instead of exchanging with the students on the strictly pedagogical questions relating to their projects, these difficulties illustrate another important point, if we compare this experiment to the one carried out with Bachelor students described above. In the previous experiment, collaborative classroom work is carried out at the beginning of the project. Students, working in small groups, can help each other to get started with the tool (creating accounts, exchanging project connection codes) because in each group, one or more students with more assured digital skills will be able to support their peers in the first steps. The teacher, who circulates between the

groups, can also easily overcome unexpected difficulties. Thereafter, students will be able to work independently by focusing on the content of their project and not on technical obstacles. On the other hand, students who have to carry out a project alone and at a distance can easily find themselves blocked and discouraged, even though they are much more advanced in their academic and professional careers.

This contribution aimed to demonstrate the value of a design-oriented approach to observing and understanding the learners' experience and interactions in intercultural education. We asked ourselves to what extent a mixed university digital training environment, through the use of video annotation, could influence the activation of learners collaboration and interaction. We were able to observe that individual and collective dynamics were indeed at work in the two groups we tested, in connection with the video annotation application and the course.

At last, the complexity and multifaceted concepts of communication and interaction is to be found between every pole of a DBR project; each time a student, a teacher, a research, a technician has to collaborate – i.e to negotiate - with others. If technology can be used to develop new forms of interaction, it might also imply a shift in the goals of the project towards a critical reflection on collaboration through established structures, whether you call it culture, identity or profession.

References

Albero, B. (2013). L'analyse de l'activité en sciences de l'éducation : entre aspirations scientifiques et exigences pragmatiques. *Travail et Apprentissages*, 12, 94-117.

Albero, B. & Guérin, J. (2014). L'intérêt pour l''activité' en sciences de l'éducation. Vers une épistémologie fédératrice ? (Note de Synthèse). *TransFormations : Recherches en éducation et formation des adultes*, Institut CUEEP, Lille 1, 11, 11-44.

Bourgatte, M. & Tessier, L. (2018a). Les outils d'annotation vidéo pour la recherche. In É. Cavalié, F. Clavert, O. Legendre, & D. Martin (Éd.), *Expérimenter les humanités numériques : Des outils individuels aux projets collectifs* (p. 19-35). Canada, Montréal : Presses de l'Université de Montréal.

Bourgatte, M. & Tessier, L. (2018b). Celluloid : usages de la vidéo pour l'enseignement et annotation collaborative [Billet]. Document accessible à l'adresse suivante : https://celluloid.hypotheses.org/1178, consulté le 05 décembre 2018.

Brunvand, S. (2010). Best practices for producing video content for teacher education. *Contemporary Issues in Technology and Teacher Education, 10*(2), 247-256.

Charlier, B., Deschryver, N., & Peraya, D. (2006). Apprendre en présence et à distance. *Distances et savoirs*, 4(4), 469-496.

Dervin, F. (2016). *Interculturality in education: A theoretical and methodological toolbox*. Springer.

Dewey, J. (1938). *Experience and Education*. USA, New York: Macmillan Company.

Erickson, F. (2007). Ways of seeing video: Toward a phenomenology of viewing minimally edited footage. *Video research in the learning sciences*, 145-155.

Gaudin, C. & Chaliès, S. (2012). L'utilisation de la vidéo dans la formation professionnelle des enseignants novices. *Revue française de pédagogie*, 178, 115-130.

Hoadley, C. & al. (2003). Design-Based Research: An Emerging Paradigm for Educational Inquiry. *Educational Researcher*, 32(1), 5-8.

Holliday, A. (2018). Designing a course in intercultural education. *Intercultural Communication Education*, 1(1), 4-11.

Le Deuff, O. L. (2012). Littératies informationnelles, médiatiques et numériques : de la concurrence à la convergence ? *Études de communication. Langages, information, médiations*, 38, 131-147.

Lebrun, M., Lecoq, J., & Becchetti-Bizot, C. (2015). *Classes inversées : enseigner et apprendre à l'endroit !* France, Poitiers : Canopé éditions.

Linard, M. (1989), (1996, nouv. éd. réactualisée). *Des machines et des hommes. Apprendre avec les nouvelles technologies.* France, Paris : l'Harmattan.

Mabillot, V. (2012). Le wiki : un dispositif d'écriture « émergente » publique et coopérative ? *Communication & langages*, 174(4), 69-84.

Mercklé, P. (2016). Les réseaux sociaux en ligne : une révolution ? *Repères*, 71-94.

Mezirow, J. (2001). *Penser son expérience : une voie vers l'autoformation.* France, Paris : chronique sociale.

Peraya, D. (2017). Au centre des Mooc, les capsules vidéo : un renouveau de la télévision éducative ? *Distances et médiations des savoirs*, 17. Document accessible à l'adresse suivante : http://journals.openedition.org/dms/1738, consulté le 05 décembre 2018.

Rallet, A., Rochelandet, F., & Zolynski, C. (2015). De la Privacy by Design à la Privacy by Using. *Réseaux*, 189(1), 15-46.

Sanchez, E. & Monod-Ansaldi, R. (2015). Recherche collaborative orientée par la conception. *Education & didactique*, 9(2), 73-94.

Sweller, J. (1994). Cognitive Load Theory, learning difficulty, and instructional design. *Learning and Instruction*, 4, 295–312.

Theureau, J. (2015). *Le cours d'action : l'enaction & l'expérience.* France, Toulouse : Octares.

Tremion, V., & Dervin, F. (2018). De Cultura aux MOOCs de communication interculturelle: quelles opportunités pour l'apprentissage interculturel à distance? *International Journal of E-Learning & Distance Education/Revue internationale du e-learning et la formation à distance*, 33(1).

Trémion, V. (2019). Etude de représentations sur les innovations en classe inversée à l'université. *Spirale*, 63, 11-21.

Tricot, A. & Amadieu, F. (2014). *Apprendre avec le numérique : mythes et réalités.* France, Paris : Retz.

Vygotski, L. S. (1978). *Internalization of higher psychological functions. Mind in society.* USA, Cambridge, Massachusetts: Harvard University Press.