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Minna Koskinen

Teacher's Manual

Video-supported collaborative learning

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EILA BURNS & MINNA KOSKINEN (EDS.)

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TEACHER'S MANUAL

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JAMK University of Applied Sciences

PUBLICATIONS OF JAMK UNIVERSITY OF APPLIED SCIENCES -SERIES

Eila Burns & Minna Koskinen (Eds.)

VIDEO-SUPPORTED COLLABORATIVE LEARNING
Teacher's Manual

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ABSTRACT

Eila Burns & Minna Koskinen (Eds.)
Video-supported collaborative learning
Teacher's Manual
(Publications of JAMK University of Applied Sciences, 286)

Videos have been used in teaching and learning for decades. However, international studies have discovered that a lot of teachers still do not know how to use videos systematically in teaching and, in particular, in teaching that supports collaborative learning. Just showing a video is not enough to learn from it collaboratively. It appears that most teachers do not use video tools in a way to develop conceptual thinking and problem-solving skills that are relevant work-life competences of the knowledge worker.

Thus, based on international analyses we discovered that both the education and business sector lack suitable pedagogical models and structures to promote collaborative learning from and with videos.

This Teacher's Manual seeks to inspire teacher educators, teachers at all educational levels and education organisation managers to try using videos to support learning and particularly collaborative learning. It provides a brief theoretical background of Video-Supported Collaborative Learning (VSCL) and a description of the pedagogical model as well as a business-higher education co-creation model developed in the Video-Supported Education Alliance (ViSuAL) project. Our solution combines: evidence-based pedagogical use of videos and computer supported collaborative learning into video-supported collaborative learning, as well as co-operation and development together with education technology companies to capitalize on the latest video solutions and tools.

We argue that video can be an excellent tool when combined with collaborative learning. Video bridges theory and practice, which develops students' reflection skills and supports the development of agency. This Teacher's Manual introduces some practical examples on how and why educators across Europe have applied pedagogical models in their teaching and learning activities. The manual can be used at any educational level to start implementing the principles and ideas of video-supported collaborative learning.

Keywords: video, collaborative learning, video-supported collaborative learning, professional development, teacher training

TO THE READER

The manual provides all educational professionals a brief theoretical background of video-supported collaborative learning and some examples on how and why educators have applied it in their teaching and learning activities. The authors hope that the examples and resources provided in this manual will spark new ideas among educational professionals to develop and share further activities to use videos to support collaborative learning. The manual can be used at any educational level to start to implement the principles and ideas of video-supported collaborative learning.

The Teacher's Manual is organised in three main sections.

1. **The first section "Background to pedagogical models"** describes the theoretical background. It takes you through an overview of existing models to facilitate collaborative learning with the help of video and describes the pedagogical model for video supported collaborative learning developed in the ViSuAL project. It will also give you an insight to a collaboration model between Higher Education and Business to enhance innovation through knowledge exchange.

2. **The second section "Examples of using videos to support collaborative learning"** focuses on describing the experiments conducted. In other words, it offers concrete examples of how video-supported collaborative learning (VSCL) has been designed and implemented in different educational contexts. This section of the Manual seeks to provide educational professionals with practical knowledge that is easily transformed into action.

   The overview of each experiment responds to the same questions notified below, although the text layout might differ.

   - What is the focus of the experiment (overview and objectives)?
   - What was the context of the experiment (educational level, number of students etc.)?

- What was the pedagogical approach of the experiment?
- Which technology or tools were used?
- How the experiment was conducted (step-by-step descriptions)?
- What were the results and/or user experiences of the experiment?

3. **The third section ”Practical advice for VSCL”** highlights and concludes the findings discovered and offers some suggestions for those who are planning to include video-supported collaborative learning in their teaching and learning activities.

VIDEO-SUPPORTED EDUCATION ALLIANCE (ViSuAL) TO PROMOTE COLLABORATIVE PEDAGOGICAL USE OF VIDEO IN LEARNING AND VIDEO LEARNING ENVIRONMENT DEVELOPMENT

Frank de Jong & Rik van Steenbergen

The Video-Supported Education Alliance (ViSuAL) envisages an increased use and demand for videos in education. Video accounted for over 60 % of global internet bandwidth consumption in 2019. While the upward trend in global bandwidth allocation for video is not new, the distribution of sources for the video material is. With the advent of consumer electronics (i.e. smartphones and laptops) capable of recording, processing and conveniently presenting high quality video material, increasingly more people are uploading their own videos onto the internet. Videos have several advantages over written texts as a learning medium in that they can convey information over both the auditory and visual processing channels resulting in more effective learning (Mayer 2014).

However, much is still to be done for the transition to video in education. ViSuAL's commercial company partners' product user analysis conducted among 150,000 users in the European context shows that most teachers still use slide-show technologies like PowerPoint instead of video for reflecting on practice. Also, a needs analysis by the alliance and its work with teachers' professional learning groups on e-learning shows that most teachers do not know how to use video systemically in their teaching practice. A deep understanding of using video is missing. The educational sector and businesses alike lack pedagogical models and structures to promote learning from video (Krauskopf, Zahn, Hesse, & Pea 2014). Most teachers do not use video tools in a way that contributes to developing conceptual thinking and problem-solving skills as relevant work-life competences of the knowledge worker e.g. building knowledge and understanding together (De Jong 2015, 2019; Scardamalia & Bereiter 2014; Stahl, Koschmann, & Suthers 2014; Zahn, Krauskopf, Hesse, & Pea 2012). Europe-wide, there is a need for e-competent teachers in utilizing e-learning with leading digital collaborative learning solutions. The same holds for pedagogical knowledge of designers in educational technology companies. Video-based e-learning and knowledge building are 21st century approaches (Sawyer 2014); the modernization of European Higher Education Institutions (HEIs) calls for a workable pedagogy

and skilled teachers to take on the up-to-date video-supported collaboration solutions for creative teamwork in online environments.

ViSuAL is a consortium of six higher education institutions' teacher education (HEIs-TE) organisations and six education technology (EdTech) companies that co-created an evidence-based pedagogical model for video-supported collaborative learning. Its solution develops students' critical thinking and problem-solving skills that are important for navigating the increasingly turbulent, knowledge-intensive and entrepreneurial work-life, and society. The model bridges school and practice, which is important for vocational education and training (VET) and teacher-educators (TE). Furthermore, it encourages video content creation and sharing as a rising work-life competence. It is designed to be used and taught in teacher education so that student-teachers become familiar with Video-Supported Collaborative Learning as an educational tool. Our solution combines evidence-based pedagogical use of video and CSCL into video-supported collaborative learning. We argue that video can be an excellent tool when combined with collaborative learning.

Working collaboratively, the information exchange and use of each other's knowledge and expertise in this co-creating alliance modernizes teaching and learning of HEI and VET teacher education and thereafter HEI and VET education.

The ViSuAL project produced the following main outputs:

1. Evidence-based, practical, pedagogical model for utilising video-supported collaborative learning.
2. Practical principles for a sustainable HEI-TE and EdTech co-creation partnership.
3. Pedagogical design principles and workable pedagogy practices for EdTech companies to enhance use of their products in education.

Therefore, this Teacher's Manual is just one product in a larger range of products and services provided by the ViSuAL project. As such, it works best in conjunction with other free to use resources available at your discretion. For academia, some of these products and services include scientific publications. For educational purposes, products and services include this manual, a MOOC, a MESH guide, the pedagogical model, the HEI/EdTech collaboration model and the design principles. We encourage policy makers and executives to use these materials for continuous professional development amongst other goals. For EdTech companies, we encourage the use of all these resources and specifically the HEI/EdTech collaboration model.

http://visualproject.eu/

Acknowledgements

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ViSuAL: Video-Supported Education Alliance

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BACKGROUND TO PEDAGOGICAL MODELS

INTRODUCTION

Eila Burns & Minna Koskinen

As a visual species we find videos and other audio-visual contents engaging and memorable, a notion that is widely used, for example, in digital marketing. Educational organisations should utilise the full potential of this notion to support learning, not simply regard it as a nice option. The importance of learning with videos, not only as part of students' education but also as a means of preparing to enter the modern workforce can be thought of as a necessary future skill.

The use of videos in learning has been valued for its ability to increase student engagement and achievement, and a tool to create an attractive, collaborative environment for both students and staff. Educational organisations should be at the forefront of helping students acquire the skills they will need in the future. Teachers should offer varied and sophisticated opportunities to use videos and, thus, allow their students to practice their video and digital skills before they enter the workforce.

The power of video combined with collaboration is not just a great way of learning for students alone but also for teachers to facilitate their own professional development. According to the literature review conducted by Ramos, Cattaneo, & de Jong (2020), video-supported collaborative learning is gaining relevance for teacher education and professional development. Video provides an opportunity for observing one's own and other's teaching practices, sharing videos with peers and engaging in collaborative reflective dialogues that grow from watching their videos (Lebak & Tinsley 2010), as well as an opportunity to bridge theory and practices within teacher education, professional development and vocational education and training (Youenset et al. 2014). Video-supported learning has also been used as a strategy to promote the development of teacher agency (Leijen et al. 2020).

To use videos in more diverse ways for teaching and learning, teachers need an understanding of different pedagogical approaches and technical skills on how to implement the chosen pedagogy in online environments. International studies suggest that along with the additional training in information and communication technology (Ainley & Carstens 2018), teachers also need suitable pedagogical models and structures to promote collaborative learning from and with videos. Here, as its name video-supported collaborative learning suggests, we want to bring together the elements of collaborative pedagogy

and the use of video technology to suggest pedagogical strategies that organisations or individuals could adopt to meet the needs of ever-increasing technology-mediated education.

Research on collaborative learning has highlighted its importance in the contemporary models of learning which could be applied in education and working life contexts (Murtonen & Lehtinen 2020). Collaborative learning can be achieved by means of many activities that support collaborations, such as sharing different ideas and information, group interactions, negotiations, and dialogues (Dochy & Segers 2018; Stahl, Koschmann, & Suthers 2014). Within the context of the video-supported collaborative learning manual, we underline the importance given to social interaction as a fundamental dimension of collaborative learning. Social interactions that focus on the development of common ground and shared knowledge can be formed through negotiations. This may be a dialectic conversation of agreeing and disagreeing via messages and making one's position known to group members (De Jong 2015).

A positive and confidential mutual interdependence is essential in collaborative learning; thus, contributions of all members need to be valued and listened to. Collaborative learning requires good cooperation and interpersonal skills in order to activate different learning mechanisms and enable the building of collaborative knowledge (Dochy & Segers 2018). Meta-analyses on collaborative learning emphasise that this type of learning supports students' moral deduction, inner motivation, creative thinking, mutual understanding and appreciation as well as social skills more efficiently than studying alone (Kyndt, Raes, Lismont, Timmers, Cascallar, & Dochy 2013).

OVERVIEW OF THE RESEARCH

José Luís Pires Ramos

Videos have been widely used as tools in teaching for decades. However, international studies have discovered that most teachers do not know how to use videos systematically in teaching (TALIS 2013 Results), and that they need more training in information and communication technology (ICT) (Ainley & Carstens 2018). Just showing a video is not enough to learn from it (Van Gog, Verveer, & Verveer 2014), thus it appears that teacher education lacks suitable pedagogical models and structures to promote collaborative learning from and with videos.

A comprehensive literature review consisting of 100 papers was conducted in the ViSuAL project to discover existing pedagogical models to facilitate collaborative learning and teachers' professional development with the help of videos. The review revealed a number of models that were used to support collaborative learning in different contexts such as initial teacher education, teacher's professional development, vocational education and training and other professional training (Ramos et al. 2020). The following table shows selective results of the analysis indicating some examples of the pedagogical models that could be used in education.

TABLE 1. Selective summary of the literature review		
Pedagogical model	**Characteristics of the model**	**Authors**
Teachers' Video Club	Teachers record their lessons for self-reflection, sharing and collaborating to get dialogical and constructive feedback to improve the quality of students' learning.	Gonzalez et al. 2016 Tripp et al. 2012 van Es et al. 2014
Teachers' Video Traces	Traces are selected video segments or still images corresponding to moments or events of a lesson, creating a short "history" of the lesson. Traces are shared and collaboratively discussed with other teachers, supervisors, coaches or mentors.	Zottmann et al. 2013; Milner-Bolotin, 2018 Rich & Hannafin, 2009
Teachers' Video Cases	Teachers use expert or exemplary professional practices from other experienced teachers or specialists. Video-cases can be embedded in pedagogical approaches as case-based learning, situated and authentic learning	Goeze et al. 2014; Arya et al. 2014; Gallant & Mayer, 2012
Hypervideo i.e. Interactive Digital Video	Advanced model of digital video offering different ways of interactivity. The model incorporates the video annotation tools allowing students and teachers to develop various collaborative learning activities.	Cattaneo et al. 2018

Scholars in education have shown evidence that students who learn together, for example, using pedagogical approaches such as 'knowledge building' (Scardamalia 2014), computer supported collaborative learning (CSCL) (Stahl 2014) or responsive learning (de Jong 2015), outperform students whose teachers use frontal, 'knowledge telling' pedagogy.

We concur that video can be an excellent learning tool when combined with collaborative learning. It develops students' critical thinking and problem-solving skills that are important for the development of entrepreneurial skills and attitudes. Video also seems to be a promising tool to bridge theory and practice, which is crucial in the vocational education and training (VET) system, and for teacher educators.

PEDAGOGICAL MODEL FOR VIDEO-SUPPORTED COLLABORATIVE LEARNING

Alberto Cattaneo

As we can easily infer from its name, our Video-Supported Collaborative Learning (VSCL) pedagogical model is grounded on two main pillars: a collaborative pedagogy on one side and the use of video technology on the other one.

As per the former, it can be realized through many different activities based on collaboration, like it is in the case of group interactions, negotiations and sharing of meanings (Beers, Boshuizen, Kirschner & Gijselaers 2005; Kirschner, Beers, Boshuizen, & Gijselaers 2008; Stahl, Koschmann, & Suthers 2014). This happens in activities like consultations, discussions, conversations, dialogues, as well as in processes like providing feedback, reflecting, using authoritative sources, analysing practices and situations, and the like. Such a dynamic and dialectic exchange often takes the form of creative processes leading further than collaborative learning, to real knowledge building (Scardamalia & Bereiter 2014). A provisional, incomplete list of illustrative activities of this first pillar appear in the yellow circle on the left of Figure 1.

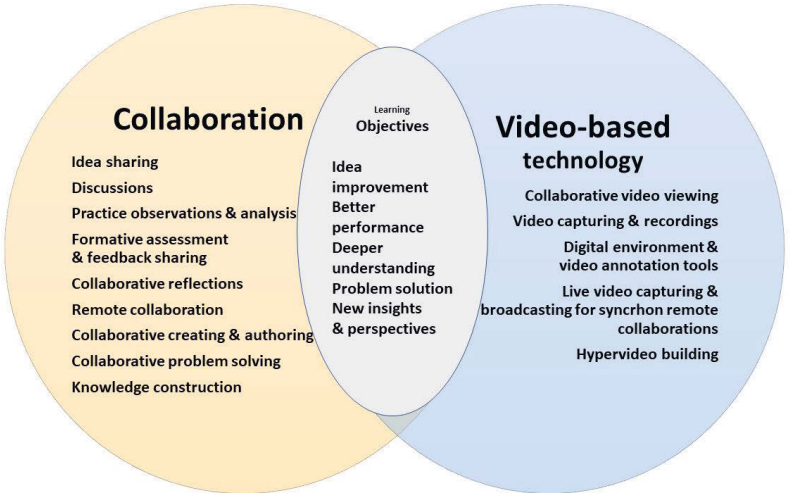

Figure 1. Main pillars of the pedagogical model

As per the latter, the use of video technologies interacts with the above-mentioned pedagogy in providing tools that support collaborative processes. In this sense, illustrative activities appearing in the blue circle on the right of Figure 1. refer to the possibility of viewing, capturing (recording), editing, enriching and annotating videos; these are all activities related to a video pedagogy (Cattaneo et al. 2019; Evi-Colombo et al. 2020; Ramos et al. 2020).

What we are proposing here is a pedagogical model. Therefore, it is important to make explicit that the interaction and intersection between the two pillars from which we started is aimed at fostering learning and professional development. For this reason, a third pillar appears from the combination of the previous two, giving immediate relevance to the intentional learning objectives which any VSCL activity is functional to (see intersection in Figure 1.). We set learning objectives at the beginning, we design and plan an effective use of our video solutions and our collaborative pedagogies, and finally we aim at specific learning outcomes, that can be measured (Figure 2).

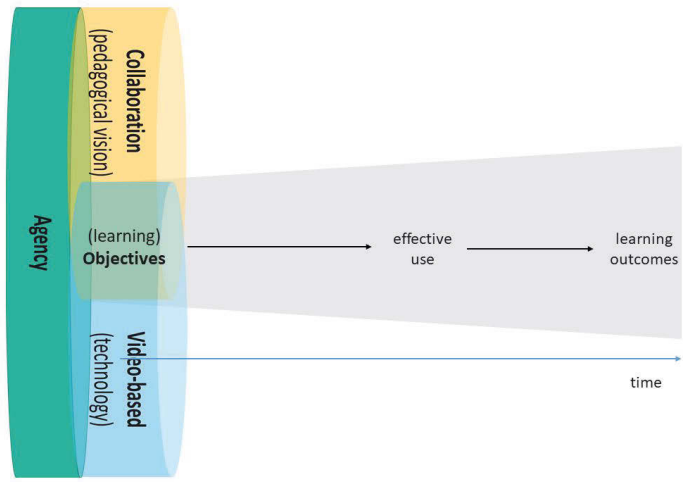

Figure 2. Base of the pillars.

Finally, in Figure 2. one can also realize that there is a further base on which our pillars ground. This applies both to teachers and learners and has to be meant as a sort of pre-condition for the engagement of the actors in the VSCL system and for learning, agency. Agency implicitly concerns both personal and professional values, beliefs, and resources (knowledge, skills, and attitudes, i.e. the main components of competence), as well as the actor's engagement and final behaviour enacted in a situated activity (Leijen, Pedaste, & Lepp 2019).

So, basically, this constitutes the foundations – and at the same time the support – of our model, this being the first layer that gives the impulse to in-form (to give form) to the model itself. The model represents the instructional choices on which a VSCL pedagogical scenario is based and is constituted by two axes (see Figure 3). The x axe represents time. The y axe represents a set of possible VSCL learning activities, as it is already the result of the previously commented intersection. Just to mention a few, these include for example creating, designing, analysing videos (through reflections, comments, discourses, use of authoritative sources, dialogues,…) in different learners' group compositions (couples, small groups, circles, whole class), including or not tutors and coaches (see Figure 3. y axe). Such activities can happen in presence or at distance, and in this latter case synchronously or asynchronously. Moreover, we can distinguish if the analysis and reflection activities happen within the video (e.g. via writing, through a video annotation tool) or out of the video (e.g. via an oral discussion), and by whom (e.g. peers or teacher). As a result, the model can be used as a designing tool to visualize complex VSCL scenarios.

For example, in Figure 3. we see the representation of a teacher education scenario. It starts from the individual video capturing of a professional situation (a lecture) happening in presence individually. The next step is an asynchronous activity where peers give feedback on the video-recording putting their comments directly in the video. After that, again at distance but synchronously, a group session based on feedback follows, preluding to a next session in presence for dialoguing with the whole group. Something similar then is repeated again, but this time the conclusion comes to an assessment at distance.

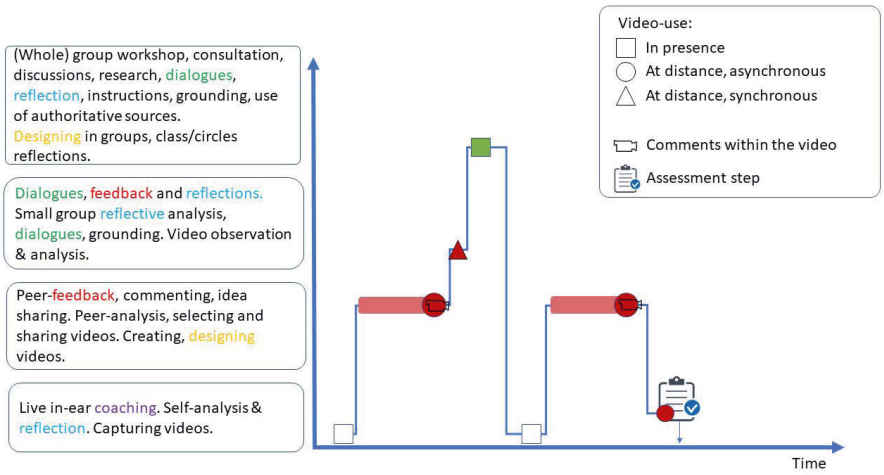

Figure 3. Illustrative example of a VSCL scenario. We used shape coding to represent synchronous vs asynchronous, in presence and at distance activities, and colour coding to represent different kinds of collaborative activities.

Although the y axe also gives somehow a hint on the social implications of the scenario, what is still missing is a third dimension, explicitly referring to the nature of the collaboration (see Figure 4). This can be further integrated in the design graph or not, but it is surely worth explicit consideration when designing the learning scenario.

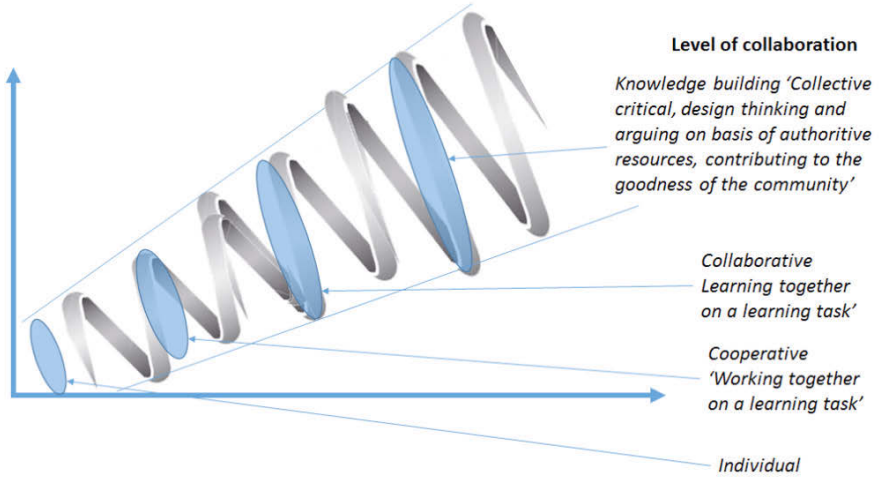

Figure 4. The third dimension of the model, concerning the nature of the collaboration in the VSCL scenario.

BUSINESS – HIGHER EDUCATION CO-CREATION MODEL

Sirpa Laitinen-Väänänen, Satu Parjanen, Mirva Hyypiä & Anni Küüsvek

MODEL BUILDING

In the video-supported collaborative learning a joint pedagogical vision of teacher educators and education technology companies and the collaboration between them is enhancing innovation through knowledge exchange. Educational institutions need education technology companies that offer services and platforms for storing and editing videos produced by teachers or students. The purpose is to define the significant factors of university-industry collaboration in the context of video-supported collaborative learning (Parjanen, Hyypiä, & Laitinen-Väänänen, (forthcoming). Within the ViSuAL project, a model describing the Business (BUS) – Higher education (HEI) co-creation was collaboratively produced (Figure 1).

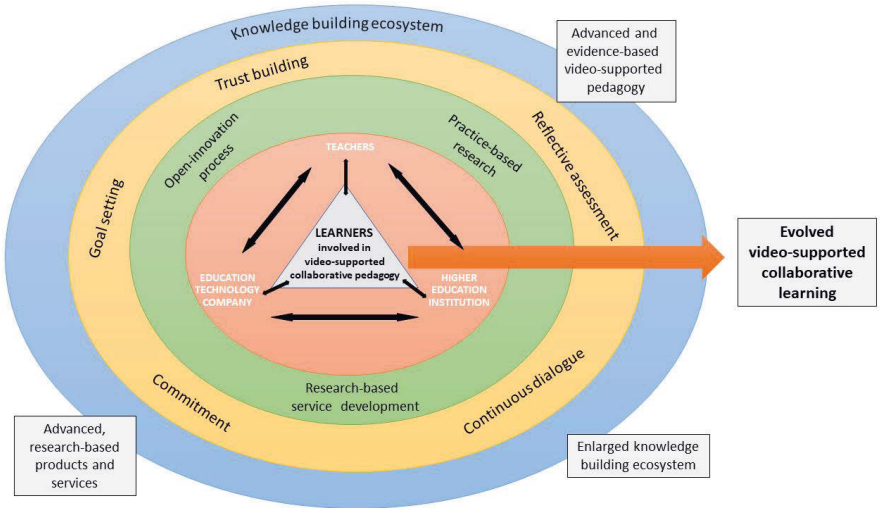

Figure 1. Business – Higher education co-creation model.

THE BUSINESS – HIGHER EDUCATION (BUS-HEI) CO-CREATION MODEL

Higher education institutions play a key role in generating the knowledge, innovation and human capital required to increase international competitiveness in a knowledge-based economy. To accomplish this task, universities require modern and fresh approaches towards research, innovation and knowledge transfer. One of the core strategies is the university-industry collaboration (Parjanen, Hyypiä, & Laitinen-Väänänen (forthcoming); Mora, Detmer, & Vieira 2010). The constructed BUS-HEI model consists of three layers around the core target of the process: learners involved in video-supported collaborative pedagogy. The layers describe different factors referring to the societal environment, the prerequisites, processes, and key-actors in facilitating the development of video-supported collaborative learning.

Knowledge building ecosystem

The outermost layer refers to the understanding that the collaboration between partners builds each partner's knowledge and the networks have similarities with the ecosystem way of working. Virolainen, Heikkinen, Laitinen-Väänänen, & Rautapuro (forthcoming) consider the use of the learning ecosystem concept to describe the nature of contemporary cooperation between education and the world of work. In the model, the concept *knowledge building ecosystem* refers to a process where knowledge is considered to be co-constructed in collaboration between equal partners.

Goal setting, commitment, continuing dialogue, reflective assessment and trust building

The second layer focuses on the pre-requirements relevant to the development of the video-supported learning. These factors are necessary for the BUS-HEI collaboration. **Goal setting** is necessary for directing the joint process. **Commitment** is something each partner individually is responsible for. **Continuing dialogue** and **reflective assessment** are processes done together with the partners to build **trust** and shared understanding.

Open innovation process, research-based service development, practice-based research

The third layer consists of processes crucial in opening the possibility for both HEIs and companies to receive added value from the collaboration. In the **open innovation process**, organizations use ideas and knowledge of external actors in their innovation activities (Laursen & Salter 2006). The search for new product or service ideas and solutions to existing problems goes beyond the organization's boundaries (Chesbrough 2003). In this model, the technology users (teachers and students) are active participants. User-driven innovation processes are often interpretative – the goal is to discover new meanings via interaction and continuous dialog among people and organizations with different perspectives and backgrounds. The process is on-going and open-ended (Lester & Piore 2004). In this kind of process, the commitment of the participants is essential. **Research-based service development** and its measurable outcomes help assess the effects of the used technology and thus provide effective teaching and learning. The goal of the company is to gain such knowledge of their product or service, that can be polished to better serve current and potential users, and thus, make the collaboration profitable for them. The scientific objectives may not be in parallel with the company view. It is important to chart the common motives together at the beginning, to help them jointly build a process that benefits both sides.

According to **practice-based research** approach organizational contexts should be studied by adopting a 'pragmatic view' able to explore the dimension of knowledge 'localized, embedded and invested in practice' (Carlile 2002, 445). It is essential to explore how users of the technology solve their problems, how they construct their competence in practice. Practice is the dimension able to convey the process by which an actor's know-how is built: the 'trial and error' process (Carlile 2002, 446). Understanding the practices of teachers and students enables interpretation of the situated learning processes that take place in teaching and learning.

Teachers, Education technology companies and Higher education institutions are seen as **key actors** in the collaboration. Education technology companies need to be in contact both with the teachers or teacher educators and institutions. Teachers bring the ideas into the institutions and after that the formal contract between businesses and institutions are made. The collaboration itself takes place in many different ways and forms. However,

the early mentioned prerequisites and processes need to be considered and applied to ensure the co-constructive nature of the collaboration.

Digital and distance learning has taken a huge leap recently. Digital learning practices ask for platforms and tools to promote studying and interaction taking place during the learning process. HEIs needing those tools will collaborate with companies providing such utilities. From the company perspective, in further developing their products and services, companies need users' feedback and for that teachers and students are an important source. On the other hand, teachers need experience to make full use of the potential of digitalisation so that it is in line with HEI's pedagogical approaches and practices. In order to achieve the goals of both, cooperation and close interaction together with research are needed (Parjanen, Hyypiä, & Laitinen-Väänänen, (forthcoming).

In the core of the model are the **learners involved in video-supported collaborative pedagogy.** The use of videos in education has an impact on different stakeholder groups like teachers, students, educational technology personnel and technology providers (Hyypiä, Parjanen, & Melkas 2020). Collaborative learning is thus an activity that takes place both in education, in working life and in between those. It is important to make students' perceptions explicit and take them into account when designing teaching processes. A multi-faceted, human-oriented vision and a very clear aim for using video-supported collaborative learning solutions in higher education are essential (Hyypiä, Parjanen, & Melkas 2018).

EXAMPLES OF USING VIDEOS TO SUPPORT COLLABORATIVE LEARNING

INTRODUCTION

Eila Burns & Minna Koskinen

YouTube, vlogging, SnapChat, TikTok, smartphones and video in WhatsApp is what youth and adults use in their daily and working life to communicate. We are visual thinkers, observational learners and thus social learners, so using visuals in education has many benefits.

Video can be an excellent tool when combined with collaborative learning. It develops students' critical thinking and problem-solving skills that are important for developing entrepreneurial skills and aptitudes required in the future.

Showing or just watching a video is not the best way to support learning. Video tools should be used in a way that they contribute to developing conceptual thinking, problem solving skills and reflection. Those are relevant work-life competences of the knowledge worker.

This chapter describes different examples of real cases where video has been used in collaborative learning. Teachers and students across Europe, from teacher education to music instrument learning, from management to nursing describe the practices and reflect the pros and cons of their experiments. These examples and experiments will give you an insight into the use of video-supported collaborative learning and ideas and tips to try it with your students.

VIDEO DIARIES AS A TOOL FOR LEARNING

Liina Lepp

WHAT IS THIS EXPERIMENT ABOUT?

The experiment was conducted in the University of Tartu, Estonia with student teachers. The goal was to find out how video diaries suit reflection and learning from each other's experience in the first school practice of teacher training. The study was designed based on previous research by Corbin Frazier and Eick (2015), Parikh, Janson and Singleton (2012) and Clarke (2009). Students had an aim to analyse learning and teaching activities during a one-week practice period. One group kept written diaries in Moodle and the other uploaded video diaries onto Flowbox Online Video Platform. Students were asked to comment on their fellow students' diary posts to enable collaborative learning and group reflections.

The following research questions were formed:

1. What are the advantages of the video diary format, compared to written reflection, based on the opinion of student teachers?
2. What are the disadvantages of the video diary format, compared to written reflection, based on the opinion of students?
3. Which diaries (written or video) did fellow students comment on the most during the practice and what are the justifications for their choices?

BACKGROUND TO THE EXPERIMENT

This experiment relied on social constructivism. Students were given an opportunity to share their video and written diaries with peers and lecturer to support collaborative learning and integration into a knowledge community.

The research was conducted in the "Pedagogical Practice" course (3ECTS) that is mandatory for student teachers. The practice was conducted during one week in February 2019 and February 2020. A total of 46 students from the second year of bachelor studies participated in the study – 36 were women

and 10 men. The majority of students were between the ages 21–25. 18 students chose to keep written diaries and 28 chose to use video diaries (Table 1). All the students gave permission to participate in the research.

TABLE 1. Background data of the subjects and the form of the diary used.			
	2019 (n=26)	2020 (n=20)	**2019+2020 (n=46)**
Written diary	12	6	**18**
Video diary	14	14	**28**

Students recorded their videos with their phones or computers, and they were uploaded to Flowboard (www.flowbox.fi) where comments were posted as well. Written diaries were uploaded in a Moodle forum.

STEP-BY-STEP DESCRIPTION OF EXPERIMENT

The study group was divided into two based on their own choice: some of the students reflected their practice experience in written format, the others used video diary format.

The task for all students was to reflect on their practice experience and activities every day with the help of the following questions: What was planned? What went well? What was surprising? What did you learn as a student teacher and as a future teacher? How has your perception of the work as a teacher changed and why? Written diaries were posted in Moodle and the video diaries in Flowboard. Students were encouraged to read or watch the reflections of their peers and to leave comments and questions. All students who took part in the practice had access to both written and video diaries and the opportunity to write comments in both environments.

RESULTS AND USER EXPERIENCES

Sixty-nine per cent of students preferred to watch **video** reflections during the practice week. Students considered that video diaries were a great experience for them. It offered them an important and valuable learning place during the practice period. At first, the students were hesitant and reserved to express their experiences, but after making some video reflections they talked freely about their thoughts. Students said that they became more courageous as they dared to stand in front of the camera and talk. Pre-service teachers liked the possibility of discussing collaboratively as it boosted their confidence. It

also allowed them to share their knowledge and experiences and to learn from the comments made by fellow students and their lecturer. Students also saw ways to use videos in their future work.

Advantages of the video diaries (compared to written diaries) based on the student questionnaire responses at the end of the course:

- Richness and authenticity of emotions (facial expressions; less polished; seeing environment)
- A nice change (interesting, different)
- Faster (changing written text and checking grammar takes time; possible to record when moving, e.g. on the way home from the practice school, waiting for the bus)
- Getting used to your own image and voice

Disadvantages of the video diaries format (compared to written diaries) based on the student questionnaire responses at the end of the course:

- Fear of camera / recording (content; opinion of others)
- Issues with technology (internet connection; phone memory)
- Place to record (quiet place needed without bystanders)
- Logic and thoughtfulness of the text (text in video may be less structured)

Thirty-one per cent of students had no preference – they read and reviewed **both** diary formats.

Using video diaries enables a more diverse teaching and learning experience for students and lecturers. Students can practice creating videos and it gives them courage to use videos in their future work. Both the lecturer and the students thought it was valuable – a pleasant change and a great experience. The content and depth of reflections in video diaries compared to written diaries needs further research. It is also important to analyse the feedback process of video diaries from the lecturer's point of view.

- ✓ **When students practice creating videos, it gives them courage to use videos in their future work.**
- ✓ **Ensure a quiet place with adequate lighting to make a recording.**
- ✓ **Practice being in front of camera and using technology.**

VIDEO ANNOTATIONS TO SUPPORT FEEDBACK ON TEACHING PRACTICE AND TEACHERS' REFLECTIVE CAPACITY

Elena Boldrini

WHAT IS THIS EXPERIMENT ABOUT?

This experiment is related to teachers' (1) professional competence development, (2) delivering feedback and (3) reflection on action via a collaborative video-annotation process on teaching professional practices. The experiment aimed to test the use of collaborative video-annotation as a means to support multiple feedbacks on teaching practice and to foster teachers' reflective capacity. More information on video-annotation and teacher education can be found in Evi-Colombo, Cattaneo, & Bétrancourt 2020.

1. The experiment aimed to use a video annotation tool for individual and (progressively) collaborative analysis of authentic teaching practices and to analyse its suitability to be included in the teachers' training curriculum.
2. It intended to evaluate the impact of reciprocal and individual video annotation on teachers' reflective capacity, as well as to assess the effects of using video annotation on the quality and quantity of reciprocal feedback among participating teachers and on one's own practice.

BACKGROUND TO THE EXPERIMENT

Fifty-six student teachers participated in the experiment that took place within a 3-year in-service basic training for VET teachers in Switzerland, i.e. in the curriculum to get the Diploma for Vocational Teachers. The participants were student teachers in different subjects or the Vocational Education and Training programme, namely 37 in the professional baccalaureate subjects and 19 in the professional subjects divided into two cohorts.

- Participants in the first cohort: 37 student teachers from November 2018 to March 2020.
- Participants in the second cohort: 19 student teachers from May 2019 to November 2020.

All participants took part on a voluntary basis and were allocated one or two different training modes, video annotation mode (26 teachers), or direct observation mode (30 teachers).

PEDAGOGICAL APPROACH OF THE EXPERIMENT

1. **Situation-based instructional approach** enables easier connectivity between real and authentic professional practices experienced by teachers at schools. A situation-based approach is intended to foster the development of real professional competences and a better integration of theoretical, explicit knowledge with implicit practical knowledge (Boldrini, Ghisla, & Bausch 2014).

2. **Reflective training.** Design and construction of transversal and longitudinal activities throughout the training is particularly relevant in order to allow a continuous progression in the reflective competence (*reflection-on-action; reflection-for-action*) on their own practice with the ultimate aim of consolidating skills in practice (e.g. Kember, McKay, Sinclair, & Wong 2008).

3. **Collaborative video-supported learning.** Sharing practices by delivering and receiving feedback from peers and from supervisors through video-annotations, and through face-to-face collaborative discussions, consolidates effective routines and develops critical perspectives on one's own professional behaviour. Moreover, sharing different perspectives on teaching practices and referencing the underlying theories enables the co-creation of shared teaching guidelines, as well as the development of teachers' noticing and professional vision (van Es, et al. 2017).

TECHNOLOGY USED

The video annotation software used in the training was iVideo (www.ivideo.education).

It allows users to transform traditional videos into interactive ones, through hyperlinks (called *active points*) that enrich the video with additional multimedia content, and annotations synchronized with the specific segments of the video.

The iVideo tool allows:

- capturing of a real situation in an authentic context (video-recording of a teaching situation)
- sharing view of video-recorded lessons with colleagues and supervisors
- analysis through video-annotation of the video in a precise and accurate way, allowing annotation and comments to be located and synchronized with respect to what happens in the video timeline
- sharing of reciprocal feedbacks on the practice observed by colleagues and supervisors and opportunities to discuss within online sessions (e.g. replying to existing comments)
- keeping track of the shared reflections and discussions, exporting them in a pdf document that can be downloaded by teachers and supervisors and that keeps the visual reference (the frame) together with the related comments.

STEP-BY-STEP PROCEDURE OF THE EXPERIMENT

In line with the pedagogical model summarized above, the study was articulated according to a training sequence over time (2 years per cohort), alternating between in-presence and distance activities, combining individual (capturing, creating), peer-to-peer feedback (peer-commenting in couples) and collaborative activities (group conversations, dialogues, grounding) and class shared reflections exploiting videos. In the end each participant was asked to self-observe themselves and self-comment their own teaching practice (See Figure 1).

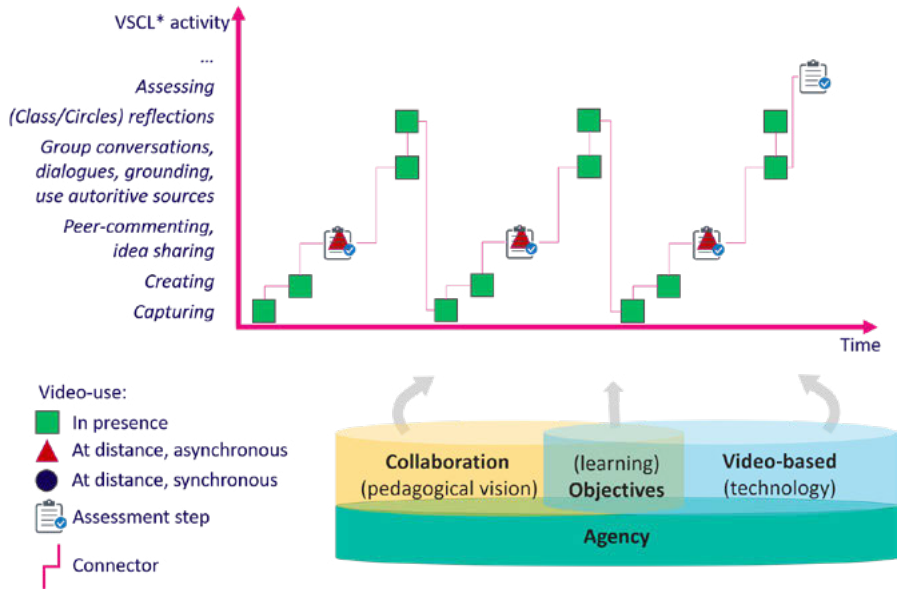

Figure 1. Overall training process over time for each cohort based on VSCL approach.

As presented in Figure 2, the participants took part in activities provided in-presence (4 sessions), and activities related to analysis in distance learning (3 intersessions).

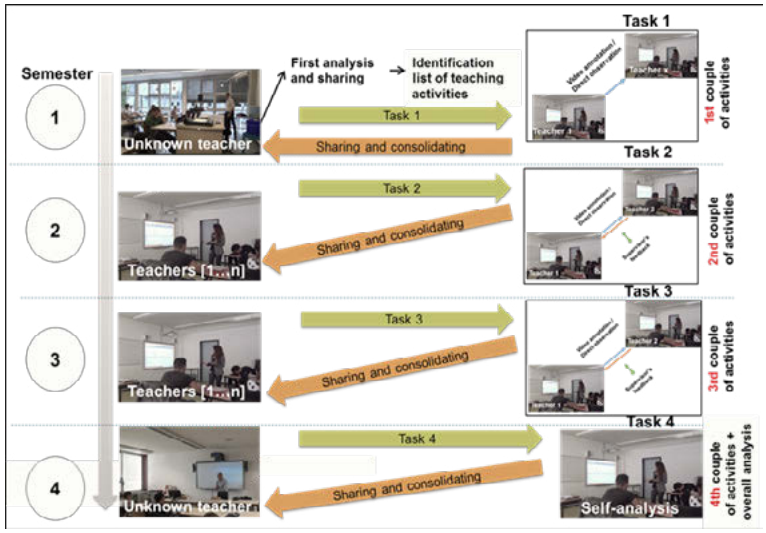

Figure. 2. The training tasks over time.

Session 1. In the first meeting participants analysed the video of a lecture by a teacher not participating in the training group defined as "unknown teacher". This activity was completed first individually and then collaboratively. The aim was to identify the recurrent activities that a teacher normally carries out in their practice and to define a list of about 10–15 relevant didactic activities (e.g. giving feedback to students, introducing the lesson, etc.).

Intersession 1. intersession task: teachers collaboratively defined two activities on which to focus their attention for the observation and feedback during the intersession period. The participants worked in pairs and video recorded a part of their lesson in which the defined activities were carried out. Videos were uploaded using iVideo software for each pair to write feedback to their colleagues. When the participants had given their feedback, then one of the two course tutors entered their comments in iVideo.

Session 2. In the in-presence meeting, analysis was completed and shared. The results were collaboratively discussed and generalized in order to define common best practices with respect to the selected activities. The result of the discussion was progressively reported in a written document, then shared with the whole group at the end of the discussion.

Intersession 2. Next two instructional activities were identified from the list as the objects for the next intersession period.

Session 3. In the third meeting, the analysis and the feedback of the intersession were shared and consolidated into general guidelines for good practices, as in session 2.

Intersession 3. Each teacher student video-recorded a longer section of a lesson (20 minutes) and self-analysed their own practice, focusing on aspects from the list.

Session 4. In the last meeting, the results of the self-analysis were then thematized in the group. The students conducted another analysis of a whole lesson by an unknown teacher, which functioned as the final measure of the programme. Questionnaires on online satisfaction and perceived usefulness were submitted at the end of the session.

RESULTS AND USER EXPERIENCES

The experimentation highlighted several preconditions for successful implementation. Firstly, it was noticed that the participants' intrinsic motivation for collaborative, reflective, analytical activity and their own professional practice is required. Motivation is needed to make reflections as it takes

time. Furthermore, working on video-annotation requires sufficient computer literacy to use the software accurately.

Secondly, the sense of shame and inadequacy was felt when dealing with the video recordings of their own lessons. This emotional aspect also seems to be relevant with experienced teachers and must be considered at the beginning of a training course.

Thirdly, from the collaborative working perspective, sometimes the participants reported difficulty in giving critical feedback to colleagues. The in-presence collaborative sessions aimed at sharing and knowledge building, depending on the groups and their actual involvement, could be either teacher-driven or student-driven. In hindsight, a greater care should be taken when using observations and more attention to the guidelines on the reference theories should be paid.

These two modes (video annotation and direct observation), both have specific features and added values as well as critical aspects. A training methodology that blends them could be envisaged to experience the exercise at least once to assess its usefulness for student teachers' professional growth.

- ✓ **Consider the emotional aspect of videoing one's own work: it might feel embarrassing or frightening.**
- ✓ **Support on how to give (and receive) critical feedback.**

VIDEO-RECORDED MICRO-TEACHING (VRMT)

Eila Burns

WHAT IS THE EXPERIMENT ABOUT?

This experiment focused on exploring the suitability of video-recorded microteaching activity (VRMT) for professional teacher development at the School of Professional Teacher Education in JAMK University of Applied Sciences. Other studies on VRMT have found promising results, such as enhanced teaching competencies, developed teacher identity and increased self-confidence (Shin, Takashi, & Masao 2019; Dixon, Hall, & Shawon 2019). In our experiment, VRMT activity was used in order to enhance student teachers' process of professional development as a facilitator of learning.

The objective was to explore student teachers' perspectives on how micro-teaching activity influenced their development of professional expertise as a facilitator of learning. Our investigation aimed to offer the student teachers, with help of a structured microteaching activity, a safe environment to reflect on their teaching practices, receive feedback and thus, further improve their professional teacher competence by linking the elements of expertise (theoretical knowledge, practical/experiential knowledge, metacognitive knowledge).

The experiment uses the principles of inquiry-based learning and the integrative pedagogy to support the development of professional teacher identity. Both approaches have deep roots in social constructivism, which meant that in this case the student teachers shared their experiences within a group and worked collaborative to create new knowledge and understanding.

BACKGROUND TO THE EXPERIMENT

Our investigation was conducted as a part of a Facilitating Learning course, which is one of the core contents of the International Pedagogical Teacher Education studies. This education programme is implemented in a hybrid learning environment i.e. some students are simultaneously online and some face-to-face. The group consisted of 19 international post-graduate students of which 10 were female and nine male representing 10 different nationalities. The VRMT activity was carried out from the end of August 2019 to the end of January 2020. The video technology used in this investigation was IRIS Connect video platform.

STEP-BY-STEP DESCRIPTION OF THE EXPERIMENT

The VRMT activity was divided into three different phases (see Figure 1).

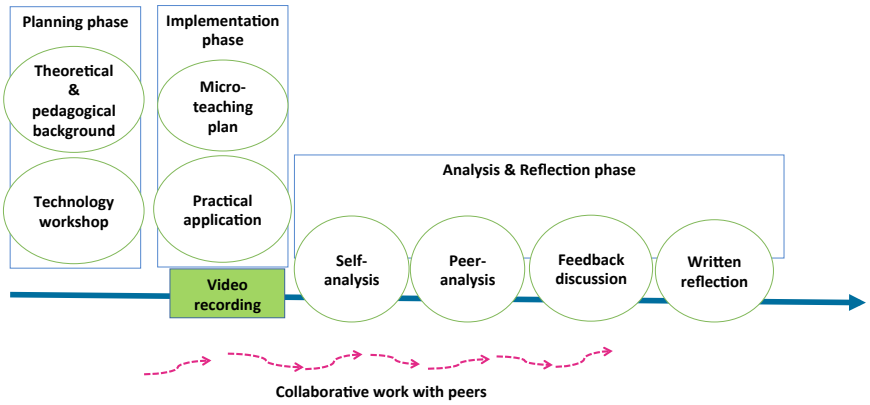

Figure 1. Phases of the experiment.

In the planning phase, the theoretical, pedagogical, and technological aspects of VRMT were introduced and discussed with the students. The implementation phase included the design of a micro-teaching session (of 15 minutes) either in pairs or independently, and its implementation either in students' own organisations or in a hybrid learning environment at JAMK. All sessions were video recorded using an IRIS Connect Discovery Kit or students' own devices and uploaded onto the IRIS Connect platform. The analysis and reflection phase included the completion of structured self and peer analysis tasks in the IRIS Connect, a reflective discussion led by a teacher educator and a written reflection of the whole micro-teaching process.

RESULTS AND USER EXPERIENCES

We noticed that the collaborative work on the videos helped students to identify various important aspects in facilitating learning and the areas of pedagogical expertise they want to develop further. The phases that most supported the student teachers' learning were the reflective analysis discussions and the analytical self-analysis of micro-teaching videos. Collaborative work helped them to understand the context of the learning process and the ways they facilitate learning and interact with their students. Viewing a peer's video seemed to help the students uncover and even challenge their prior philosophies of teaching and learning while developing new understandings of facilitation of learning in collaboration with others. One of the students mentioned that:

> ***"It gave me new ideas and insights on how teaching in practice is different from theory. I found out that teaching is a multidimensional process that includes not only teachers and learners but many other elements such as feelings, views, voices, settings etc."***

VRMT activity increased the connection of theoretical, practical, and metacognitive knowledge, thus, supported the development of student teachers' sense of professional expertise. This method is well suited to VET contexts as well as teachers' professional development training. Watch our short video https://youtu.be/vhzoyFRnsyY

KNOWLEDGE ACQUISITION IN NURSE EDUCATION THROUGH HYPERVIDEOS

Alessia Evi-Colombo

WHAT IS THE EXPERIMENT ABOUT?

This study was conducted in the authentic setting of a Nurse Education course. It focused on a collaborative Learning-by-Design (LBD) scenario with a digital video authoring and video annotation tool (iVideo.education), with the goal of enhancing participants' knowledge on the procedure of inserting a urinary catheter.

This experiment aimed at describing how video-based technologies, specifically the hypervideo and video annotation software iVideo.education were employed to foster procedural knowledge acquisition in a collaborative learning-by-design scenario involving second-year nursing students. The following hypothesis informed the experiment:

Procedural knowledge can be attained through a collaborative use of digital video editing and authoring technology in an authentic video-supported collaborative learning-by-design (VSC-LBD) pedagogical scenario.

This hypothesis guided the following research questions:

1. Does VSC-LBD allow better knowledge acquisition compared to a traditional lesson?
2. Does a VSC-LBD scenario where a video is created from scratch, provide better learning outcomes, compared to a VSC-LBD scenario where learners work on a pre-existing video?

BACKGROUND TO THE EXPERIMENT

Sixty second-year nursing students from a higher education institution located in Switzerland were involved in this experiment. The study sample reflected the usual constituent of nursing cohorts; predominantly female and aged between 20 and 47 years. In nurse education, one of the main aims is to promote knowledge building by encouraging students to take some responsibility for their own learning (Ousey 2003). The idea of the collaborative design task had

been developed not only according to the rationale of the experiment, but to make it compatible with the course curriculum of the participants (the steps in the procedure of a urinary catheter insertion).

TECHNOLOGICAL AND PEDAGOGICAL APPROACH

For this experiment the technology of choice was the video annotation and hypervideo authoring software iVideo (www.ivideo.education). It allows users to transform traditional videos into interactive ones, through hyperlinks that enrich the video with additional multimedia content. This software allows users to insert annotations (collaboratively or individually) in correspondence with chosen video segments.

Social and situated constructivism (Vygotsky 1962; Jonassen 1994) posits that learners construct knowledge by using social patterns that are employed to interpret objects, events and perceptions. The process of negotiation that takes place during a learning experience fosters knowledge building. Resulting from these concepts, Computer Supported Collaborative Learning (CSCL) concerns group negotiation and discussion; when learners are engaged in group tasks towards a common goal, such goal becomes the causal agent for peer collaboration and interaction. Collaborative problem-solving and designing tasks that are supported and facilitated by the use of video software can promote exchange between individual and group knowledge.

Stemming from these theoretical frameworks, Learning-by-Design (LBD) is defined by Stahl, Finke and Zahn (2006) as a realistic and complex problem-solving task that can only be approached through a collaborative effort, where learners are engaged in negotiation of information that will promote co-construction of knowledge.

STEP-BY-STEP PROCEDURE

Participants were required to collaboratively design a hypervideo that will become a learning resource for their peers. The purposes are hence threefold. First, the LBD activity should allow for a deeper knowledge acquisition on the topic procedure. Second, students learn to deal with authentic, time-sensitive problems that need to be solved collaboratively. Third, this collaborative design task requires students to develop their communication and negotiation skills, thus strengthening their teamwork abilities.

Class 1: Eleven students completed a pre-test to assess their theoretical knowledge on the insertion of a urinary catheter. Then, divided into three

small groups, they created the script to be used for the video recording of the simulated practice on the medical mannequin. Later the students were asked to turn the raw videos into hypervideos by inserting links to theoretical material to instruct their peers on the target procedure. On the same day, students completed a post-test.

Class 2: Thirty-seven students, divided into small groups, completed a pre-test to assess their theoretical knowledge on the insertion of a urinary catheter. Later the students were instructed by the researcher on the functionalities of the iVideo.education software, which they were to use to turn the raw video created by Class 1 into a hypervideo. Once the videos were turned into hypervideos, the instructor randomly assigned a hypervideo to each group, so that each could watch and analyse the product of another group. The hypervideos and their feedback were finally discussed in a plenary session, where a video was deemed ”the best product” to teach peers with no prior knowledge on the topic. On the same day, students completed a post-test.

Class 3: (control group): Twelve students attended a traditional frontal lesson where their teacher instructed them on the insertion of a urinary catheter. Before the beginning of the lesson they completed a pre-test to assess their theoretical knowledge on the target procedure; at the end of the day they administered a post-test.

GUIDELINES BASED ON THE EXPERIMENT

A crucial characteristic of this experiment was that it was run on a single course day (one 8 hour-day with each class), so the following considerations must be taken into account:

Time management. Time management is a key. Learning-by-design task requires time for students to negotiate, discuss, reflect and create content, and work collaboratively. Tasks of this kind are complex and can be taxing for learners. It is good to offer the activities in a structured and scaffolded way. Also, time to digest the concepts that are being processed, and appropriate number of breaks must be taken into account. Some of the students involved in this experimentation reported feeling tired and fatigued due to the amount of activities that required to be completed using a computer throughout the day.

Instructor’s guidelines. LBD activities can be hard to master by learners unless they are given structured guidelines by their instructors. Concrete guidelines will help ensure that the tasks are completed within the established timeframe and without losing the focus and the sense of the activity.

Infrastructural prerequisites. Certain infrastructure prerequisites concerning the physical settings of the experiment must be ensured:

1. A robust Wi-Fi connection. Being a one-day operation that focuses on video usage, it is important to check the functional ability of the software (upload and edit raw video to create hyper-version) within the timeframe established before the beginning of the experiment.
2. Up-to-date and fully functional computers that can host the digital video authoring software of choice.
3. A short but exhaustive training on the software of choice must be offered to all participants.

Adequate setting. Working on a collaborative LBD task, students need to have enough space to work in groups without being a nuisance to each other. Ideally, the classroom should be big enough to accommodate all the groups working on their computer, without interfering with the task of the other groups.

Group composition. It is important for the instructor to create the groups before the experiment. The groups need to be well balanced in terms of the participants' skills and competences, and heterogeneity within and between the groups.

Artefact relevancy. It is important to ensure the relevancy of artefact that the students create in the experiment. This relevancy can be guaranteed by giving learners the opportunity to share their thoughts and ideas about it at the end of the experiment, as well as by making sure that said artefact will remain available to them as a study resource, or as a tool to further develop. For these purposes, at the end of the experiment, some time (15 to 30 minutes) should be dedicated for a plenary discussion with the whole class on the activities they have been engaged in. It is crucial for the students to be able to take advantage of a safe environment to share their impressions, thoughts and points of view. Further, this discussion will allow the instructor to gather preliminary hints on the success/failure/improvements needed of such activity.

RESULTS

This study compared three nursing students' classes learning a professional procedure. Two of them adopted a VSC-LBD approach. Our findings show that the students adopting VSC-LBD outperformed their peers in the control group, evidencing a significant increase in learning gains. However, results concerning the difference related to a VSC-LBD procedure where learners use a pre-made video, versus a VSC-LBD procedure where a video is created from scratch, show that the latter condition does not increase students' knowledge gains. In fact, learners involved in the creation of a video from scratch did not report stronger learning gains when compared to the VSC-LBD scenario where a pre-existing video was used.

In general, such findings confirm that VSC-LBD allows for better procedural knowledge acquisition, compared to a traditional lesson. Findings also reinforce the assumptions about the role of the pedagogical affordances of digital video-based tools in higher education and in the Professional Education and Training (PET) system. It contributes to the improved professional practice through the acquisition of procedural knowledge in authentic learning environments. Further, this design scenario provides an opportunity for an effective integration of collaborative VSC-LBD pedagogy in nurse education, a learning context where the rigorous assessment of theoretical and procedural knowledge is crucial in guaranteeing the acquisition of learning gains. Finally, these findings have a practical time-management impact. Instructional designers wanting to use VSC-LBD scenarios for knowledge acquisition will not have to deploy the resources and workload that creating a video from scratch requires.

- ✓ **Give structured and concrete guidelines.**
- ✓ **Students adopting VSC-LBD outperformed their peers in the control group.**
- ✓ **Make sure you have functioning technology: robust Wi-Fi connection, up-to-date computers.**

THE VIRTUAL SCHOOL AND JOURNALISTS IN THE DIGITAL AGE

José Luís Ramos, Rui Gonçalo Espadeiro & Ricardo R. Monginho

INTRODUCTION

Information is a fundamental element for the functioning of modern and developed societies. Educating the new generations in a markedly digital society and in a context also marked by information overload, requires a wide range of skills, including those that some authors call 21st century skills. Among these, we address in this educational project the skills related to informational and digital literacy as well as transversal skills such as collaboration and autonomy. To be able to create learning scenarios which could promote the development of those skills is a very complex task for teachers to have in their hands. The information literacy includes competences for planning, searching (searching for information, searching the web) and evaluation (suitability and reliability of information source and currency of information). The theoretical background can be found within an educational perspective based on video-supported collaborative learning through the creation of videos and authorship, in which inquiry-based learning played a central role and was crucial in enabling students to become producers and employees (Berg 2016) on their own. This model involves different types of learning experiences, since ”both learning and teaching are considered active processes for the construction and reconstruction of knowledge, skills, values and attitudes based on previous and new experiences that participants share in the learning environment.

OBJECTIVES AND THE PEDAGOGICAL APPROACH OF THE EXPERIMENT

This experiment was designed with the aim of supporting the development of students’ informational, digital and collaboration skills and help them to learn from, for and with each other.

Due to the fact that there is an overload of information available nowadays from multiple sources, having the opportunity to give access, explore and work with carefully selected/created and pedagogically oriented content such as the ones that Bloco Gráfico provides in their Escola Virtual platform

to students and teachers was a very relevant resource in this experiment. In fact, it was precisely that facilitated access that granted part of the success of this experiment since it gave guarantees to the teacher that the main part of the students' tasks, which was to do research on specific topics, was going to be done in a safe and reliable environment. The Escola Virtual platform was thus used as a research resource for both teachers and students and supported them in assuming their choices and creating their pathway in most of the activities based on collaborative learning and knowledge building pedagogical perspectives. The pedagogical approach was based on inquiry-based research and in collaborative learning in a way that students could benefit from a sustained and innovative pedagogical exploration of video technologies and the support from a company such as Bloco Gráfico at the content level (books, videos and other pedagogical material).

By using this combination of technology and pedagogical perspective our expectations were that the students would be more engaged in their own learning process and that it might help them to collaborate and acquire a deeper knowledge about the topics they were going to study. The digital technologies used during this experiment allowed teachers to keep track of the students' progression through student project video clips – including competence development and content mastery, and also record their interactions for further appreciation.

BACKGROUND TO THE EXPERIMENT

We used Bloco Gráfico's educational digital resources platform – Escola Virtual (https://www.escolavirtual.pt/) and other digital technologies while conducting this experiment in a primary school in Évora (Portugal) which involved one primary teacher and nineteen k4 students (eleven females and eight males), aged between nine and ten years old.

This platform provided interactive support for the students to develop their research on the topics approached. In this platform they had access to different types of content such as videos, books, exercises and other interactive material.

None of the students had previous experiences of using video to learn and had very little experience at peer and group collaboration level. The teacher is qualified and experienced in collaborative learning but with less experience of using technologies in the educational environment. A workshop prepared by the Bloco Gráfico experts was provided in order to learn how to make the

best use of the Escola Virtual platform and its resources. Besides that, the research team from University of Évora also gave the teacher regular support inside and outside the classroom.

THE CHALLENGE

In order to engage the students even more with their own learning process the teacher wanted to challenge them and had the idea of creating an imaginary scenario of a school TV network in which each of them would have different roles with the respective tasks associated. Groups of students were created and each one was given a different topic to research and make a video report. Students presented the video report to all school fellows, teachers, and families as a result of their learning and collaboration as a group of journalists.

STEP-BY-STEP DESCRIPTION OF THE EXPERIMENT

Inquiry-based learning was adopted for this experiment and the activities were carried out in several steps, making use of tablets and software applications to do planning, research and preparing storyboards, record and editing video and also to share information, pictures and videos within the classroom. Examples of the topics included personal safety related to some external threats such as a flood or a fire.

PREPARATION PHASE

- Create groups of journalists and find topics for video reporting.
- The first task was to do research at home using Escola Virtual video clips and other content related to the topic the students were given – special attention was given to searching for and evaluating the information that was collected and its quality and reliability.

DEVELOPMENT PHASE

- After that they gathered with their group colleagues and discussed what they had learned about the topic.

- The following step was to create a first storyboard in which they presented the three most meaningful ideas about the topic each group of students had to research and to create a video to show their colleagues from other groups what they had already learned, sharing and discussing their knowledge.

OUTPUT CREATION PHASE

- From then on the students no longer worked inside the classroom but instead in a separate part inside the school, as an editorial board group of journalists. The idea was to give the students a comfortable space to help them develop their ideas and go deeper in their knowledge about the topic they have been working on.
- As the teacher asked the students to be the school TV journalists, they had to create a final storyboard to help them record a final video in which they had to help their colleagues to learn about their topic.
- The students collected and recorded the images on video and edited them in the final video, including captions and technical information sheets with the aim of adapting the knowledge acquired to the language of a journalistic report, in terms of duration and content.

ASSESSMENT PHASE

- The last activity consisted of a session open to school fellows, teachers and families where the students watched all the video reports and after that the teacher gave them the opportunity to answer several questions regarding each group's video and their topics, this was done through an online platform called Kahoot (https://kahoot.com/).

RESULTS AND USER EXPERIENCES

The analysis revealed that this experiment helped the students to be more autonomous in their learning process but also gave them the skills needed to be able to collaborate in a better and deeper way with their colleagues. Collected videoblogs and video ethnography gave evidence of the classroom dynamics and collaborative learning dialogues, sharing and discussion ideas. A particular dimension to be underlined is how students assumed the video reporting journalistic role. These sources provided the possibility of tracking how the students' own ideas were developed throughout the project and how those ideas were discussed and improved upon. By the end of the experiment most of the students were able to make better use of information and got wider research skills, which allows us to say that their overall information literacy improved. Besides that, we also observed improvements in the level of their digital literacy skill, proven by the fact they had managed to capture, record, edit, create and share videos with pedagogical content.

Regarding the teacher's professional development, besides what we observed, the teacher stated that "(...) the use of videos in my classroom gave my classes a new dynamic, giving my students greater autonomy in terms of collaborative work."

This experiment has also contributed in a way to change the teacher's perspective on the use of video. As previously said *"Before, I saw the use of video only as a complement to explain certain topics during classes. Now, I see video as another tool that can be used both by me and my students to explore a certain topic"*. This allows us to see that there was a significant and meaningful change from a "secondary resource" to a much more pedagogically relevant and versatile tool.

Moreover, the teacher also stated that the fact that the students had to organize themselves into working groups (not only to do research but also to prepare the final outputs) and "(...) transmission of knowledge through the use of video was very significant for them [the students] and promoted learning in an unexpected way".

- ✓ **Students assumed the video reporting journalistic role.**
- ✓ **We observed improvements in the level of the students' digital literacy skill.**
- ✓ **"The use of videos in my classroom gave my classes a new dynamic, giving my students greater autonomy in terms of collaborative work."**

MUSIC TEACHER TRAINING WITH THE HELP OF VIDEOS

Tiina Takkinen & Eila Burns

WHAT IS THE EXPERIMENT ABOUT?

This experiment took place at the School of Music in JAMK University of Applied Sciences (UAS) in a degree programme from which students graduate as music instrument teachers. The students taking part in the experiment specialised as music teachers with an instrument called *kantele.* Kantele is an old Finnish national 39 string instrument that is played and studied by only a small number of individuals nationwide. The experiment focused on exploring how video-observations could support collaborative learning in kantele music teacher training among the small number of students.

BACKGROUND TO THE EXPERIMENT

The main aim was to motivate student teachers to collaborate, share knowledge and learn cooperatively by using the video sessions. The experiment utilized peer assessment theory where peer reflection was used formatively to support student teachers' learning. In order to achieve individual learning objectives, the students needed each other's contribution. Peer reviews were implemented with the video technology that allowed students to collaboratively reflect on each other's teaching sessions. The experiment also aimed to develop the music students' practical training to test if video technologies could be included as a natural part of the study programme. This experiment followed student-centred and collaborative learning models where the teacher acted as a facilitator of learning and gave more room for students' peer feedback and assessment processes.

Three BSc students from the kantele teacher training programme participated in the experiment. The first round of the experiment was organized from November 2018 to May 2019 and the second from September 2019 to May 2020. The technology used was Iris Connect video technology.

STEP-BY-STEP DESCRIPTION OF THE EXPERIMENT

Students video recorded their own music teaching practice sessions by utilising Iris Connect Discovery Kit with two cameras. The recorded sessions were uploaded into the Iris Connect video platform as shown in Figure 1.

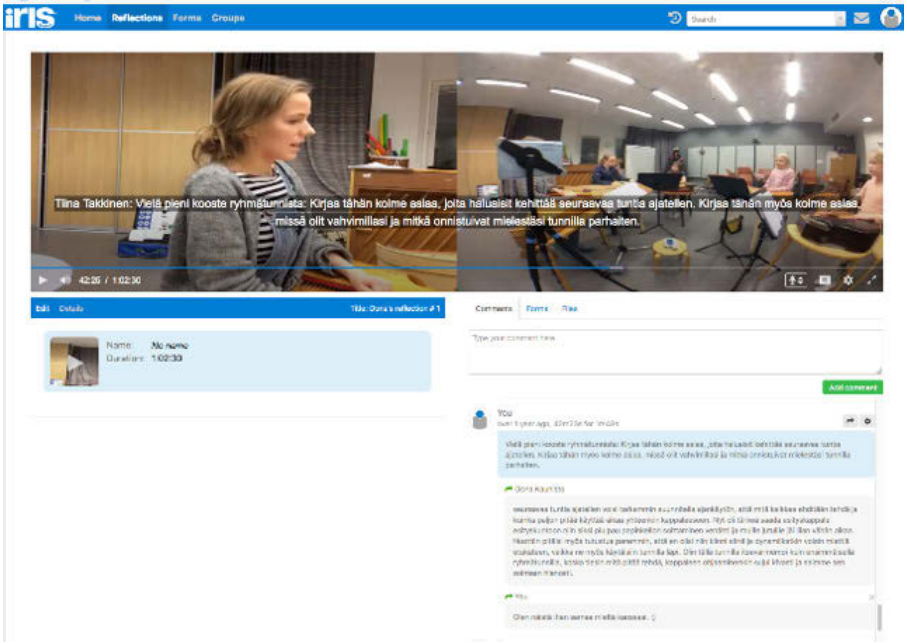

Figure 1. Using two cameras and giving feedback.

The same environment was used to share and analyse the kantele-instrument playing teaching sessions. Students took the sole responsibility for the recording schedule that needed to take place once a month. They needed to plan their music teaching lessons in accordance with the curriculum.

After the self-analysis of the videos the students shared the recorded sessions within the Iris Connect platform with the teacher and their peer students. The teacher and the peer reviewers analysed the video recorded music lessons and wrote their comments and feedback onto the video timeline. After this step, a detailed timetable for the discussions were agreed on through Iris Connect.

The teacher, the peer reviewers and the student discussed the video recorded teaching sessions together. After the joint discussion, the teacher

and the students together set new learning objectives and aims for the next lesson. Students planned their next lesson plans to incorporate the new objectives by sharing fresh ideas and working collaboratively in the Iris Connect online platform's comments section and by utilising WhatsApp-messages or other online meeting systems. The subsequent music teaching lesson was video recoded and analysed again. All learning materials, including lesson plans and the notes of the music to be played for each session were uploaded and attached to the files section of the corresponding video on the Iris Connect online platform. Figure 2 illustrates the process and steps taken in this experiment.

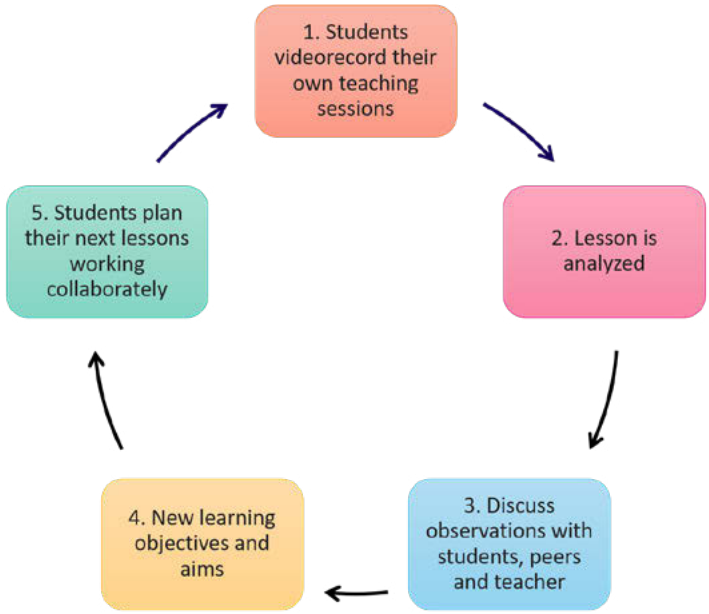

Figure 2. Process description of the experiment.

RESULTS

The experiment showed that deployment of video-based technologies can give an opportunity to improve self-analysis and peer-analysis in music teaching. It also supported reflection and knowledge sharing in the group that created new insights and solutions. Working together the students improved their problem-solving capabilities and they learned to give realistic

and constructive feedback. Video-observations in music education was perceived to be a powerful tool to offer the music students possibilities of collaboration independent of time and place. Although face-to-face meetings could improve trust creation between group members, it was not possible in this experiment, because the students lived in different cities around the country. In this case the video technology offered an arena for collaborative work. Maintaining positive interaction within the experiment group members was essential, as well as the encouragement of each member's responsibilities for active participation.

A group size of three students was considered appropriate for this learning method although according to the students the group size could also be slightly larger. The amount of students' effort varied in the beginning of the experiment, but later on they considered collaborative learning motivated them to do their best. Greater responsibility for their individual work was perceived further strengthening learning.

According to the students, this experiment was successful. The members of the group trusted each other which enabled effortless collaboration. Collaborative learning skills proved to be exceptionally valuable in the second round during spring 2020, when pandemic restrictions suddenly changed all face-to-face music lessons to distance learning mode. Many of the conventional teaching methods had to be adapted or reinvented to suit distance learning. This change was easier with the help of video collaboration skills that the students had mastered during the ViSuAL experiment. They considered video assisted learning to be a natural part of teaching. In this new situation student teachers shared ideas and experiences of best practices and developed innovative problem-solving skills.

The students also valued synchronous review meetings with the teacher. Students eagerly adopted the use of video technology. Representing Generation Y, they were technology savvy and capable of communicating over the Internet with the provided equipment or their own smart devices. The Iris Connect technology proved to be a suitable solution for this experiment, although, some challenges were faced. Sometimes we had problems in reserving and transporting the Iris Connect Discovery Kit equipment as the kits are used collectively at the UAS. In terms of technology, the sound quality of the recordings was not quite high enough for this music instrument. However, the video image quality was good. The findings of this experiment suggested that video technology could be used as natural part of music students' teacher diploma training.

See our video of the experiment.
https://youtu.be/ogUqgPWYS7I

- ✓ **Maintain positive interaction within the group members.**
- ✓ **Encourage each member's responsibilities for active participation.**

MANAGEMENT AND LEADERSHIP PRACTICES WITHIN YZ-GENERATION EMPLOYEES IN TOURISM AND HOSPITALITY

Anita Hukkanen & Elina Vaara

WHAT IS THE EXPERIMENT ABOUT?

Videos have been proposed to promote reflective processing that may result in changing one's interaction practices in social situations. Therefore, videos may be utilized to support recognition of individual managerial behaviours as interaction practices in social situations with different generations.

This experiment took place at YZ-Generation Management Development Project (JAMK University of Applied Sciences, School of Business) from November 2019 to March 2020. The aim of the project was to develop management and leadership practices in order to enhance the commitment of employees of YZ-generation in Tourism and Hospitality business organizations in Central Finland. A total of 11 managers from four companies participated the experiment.

WHAT WERE THE OBJECTIVES?

The purpose of the experiment was to improve managerial behaviour utilizing reflections enhanced by video-recorded managerial contemplations and situations with YZ-generation. Thus, the aim was to support managers to recognise their way of thinking and behaviour in social interactions with YZ-generation. The role of videos was to awaken and support the process of becoming aware of consequences of their own behaviour when dealing with younger employees. Hence, videos were utilized as a starting point in discussions to enhance collaborative learning and to develop leadership skills and management practices at work.

PEDAGOGICAL APPROACH OF THE EXPERIMENT

This experiment explored how videos can support collaborative learning and the development of leadership skills and practices through experiential learning. As pedagogical tools self- and peer reflections, knowledge sharing and dialogical discussions were used. Managers were learning by discussing

and reflecting together on the aspects raised as reflection can be a tool to turn experiences into learning (Boud, Keogh, & Walker 1985; Zeichner & Liston 1985).

As the aim was to promote changes in managerial behaviour, and more precisely communication and interaction practices, authentic videos from social situations can promote reflective processing (Tochon 2007). Reflection might endorse this gradual change by supporting the observation cycle from concrete authentic experiences on behaviours, to the formation of more abstract understanding (Kolb & Fry 1975 cited in Boud, Keogh, & Walker 1985). Also, Kirkpatrick's model (1994) suggests that behaviour may change after phases of learning and understanding. Additionally, if reflective processing is supported with appropriate scaffolding, it also supports participants' individual zone of proximal development. It was postulated that in this way it is possible to influence the development of managerial practices. The video technology used for collaborative learning was Flowboard by Flowbox (www.flowbox.fi/en/home/).

STEP-BY-STEP DESCRIPTION OF THE EXPERIMENT

Overall, the development process in this experiment consisted of three joint workshops with company participants and in-house video training sessions between the workshops. This was required as the managers had limited prior experiences of using videos. They had mainly used videos to give work instructions but had no experience of utilizing videos for self-or professional development.

Prior to the experiment starting the managers were asked to fill in a pre-survey to assess the current leadership and interaction practices at work. Authentic video recordings and reflective discussions took place both in the workshops and in between them. Managers used videos to capture their everyday managerial contemplations and situations to reflect on their behaviour and managerial practices with YZ-generation employees.

In the first workshop, managers were asked to create a short video on the topic "me as a manager". The emphasis of the video analysis was on so-called, factual reflection (Zeichner & Liston 1985). After this process step, personal contacts, encouragement and individual support were needed to build up trust and boost the use of videos. It was therefore crucial for the experiment to visit the business organizations and conduct an appreciative interview (Cooperrider, Whitney, & Stavros 2003). During these meetings, managers collaboratively reflected on their experiences and more in-house video training

was facilitated by the two tutors. This was an opportunity for the managers to co-construct their understanding of managerial behaviour stimulated by the video-recordings and the discussions with their tutors.

RESULTS

For future practice-based educational research, this experiment reveals challenges in utilizing videos, and the importance of building trust in face-to-face meetings. Joint discussions and sharing examples of practices over the company boundaries introduced new ideas, promoted thinking and allowed participants to see their own managerial work in a new light via the videos.

As practical results, utilisation of videos in a supported way was not an easy process. However, it can be a successful tool for reflections, if and only if, there is enough time and support available. In this experiment, it was recognized that more time was required for discussions and technical support, as the process of making videos was challenging despite the easy technical application used.

The experimentation showed that the joint workshops, dialogic discussions, sharing experiences and making reflections based on the video-recordings, supported collaborative learning among the participants. However, the participating managers highlighted the importance of face-to-face discussions for knowledge sharing to build professional competence. Managers found the use of videos interesting but a challenging and time-consuming activity, particularly at the beginning as they had limited prior experience of their use.

It was discovered that to change managerial behaviours in the hectic hospitality sector, calls for intensive training sessions and supported reflection processes at times most suitable for the managers. As authentic videos and reflections can both be utilized as a tool to promote recognition of behaviour and managerial practices in daily work situations, they could be useful in educational training interventions. Hence, video technologies may support recognizing one's managerial behaviours with different employees and can function as an initiator of reflection. Still, to recognise changes in one's thinking process, dialogue and sharing experiences also seem to be vital. Consequently, to see any changes in actual managerial behaviours, a longer time period with intensive intervention would be needed.

This experiment underlined the importance of discussions and reflections to broaden understanding of generational differences and to promote the development of managerial behaviours and general well-being at work.

Overall, initial findings revealed that, after getting used to making videos, analysing one's management practices in a structured and supported way, could be a tool in changing thinking, and may result in changes in managerial behaviours. Previous research shows that the need to recognise current behaviour and attitudes is the first step in the lengthy process of bringing about changes in leadership styles. Moreover, continuous or unpredictable and sudden changes in the business environment challenges the systematic development of one´s professional competence as the reflection and learning process requires resources, time, structure and energy, in managerial work.

- ✓ **Build trust, encourage and boost the use of videos in face-to-face meetings.**
- ✓ **Make sure there is enough time and support available for technical issues.**

DIGITAL FLORAL CREATION

Janneke Camps

WHAT IS THIS EXPERIMENT ABOUT?

Students in this experiment created a digital demonstration of their floral creation lessons. The videos were created by student teachers as teaching materials for VET students who studied floral education in their own college. The student teachers studied on a part-time basis, which meant that they had one study day a week at the Aeres University of Applied Sciences (UAS) and two or three practical teaching days a week at a secondary school for vocational education. During the lessons at the Aeres UAS, 11 studentteachers took part in the experiment by creating videos about their lessons and also gave comments to the others. Their digital creation process followed the eight guidelines introduced by van der Meij and van der Meij (2013) for the design of instructional videos for software training.

Photo 1 below shows a capture of a floral video creation.

Photo 1. Capture of a floral video creation.

PEDAGOGICAL APPROACH OF THE EXPERIMENT

The educational approach of this experiment relied on social constructivism and knowledge building. The intended learning outcome was to develop the students' understanding of a digital demonstration. At the beginning, students needed to understand what a digital demonstration is and to consider the audience the demonstration is intended for. Students practiced and shared their ideas about practical demonstrations, thus, students socially constructed new understanding and learned together.

From the knowledge building perspective students started from their initial ideas (e.g. opinions, questions, own -practical- theories, curiosities). They tried out their ideas and added what they heard in lectures or read in literature, and then shared these 'knowledge' experiences with others through video recordings of their teaching practice. Students learned to build their understanding and to improve their ideas together.

STEP-BY-STEP DESCRIPTION OF ACTIVITIES

By using the guidelines (van der Meij & van der Meij 2013), students started by writing a plan in pairs for creating a video demonstration of floral creation. They shared their ideas about the principles of creating video-demonstrations in the Knowledge Forum environment. After the plan was created, they video recorded one part of their demonstration and uploaded the video on iVideo platform. Students gave each other feedback and supported one another with the video recordings. This process was repeated several times in order to create the final floral video demonstration for VET-students.

See Figure 1 of the flow of course activities. The green squares indicate activities taking place face-to-face (in presence), the red triangles show activities conducted at asynchronous distance learning, black dots indicate those conducted at synchronous distance learning. The icon of a document shows the places of assessment.

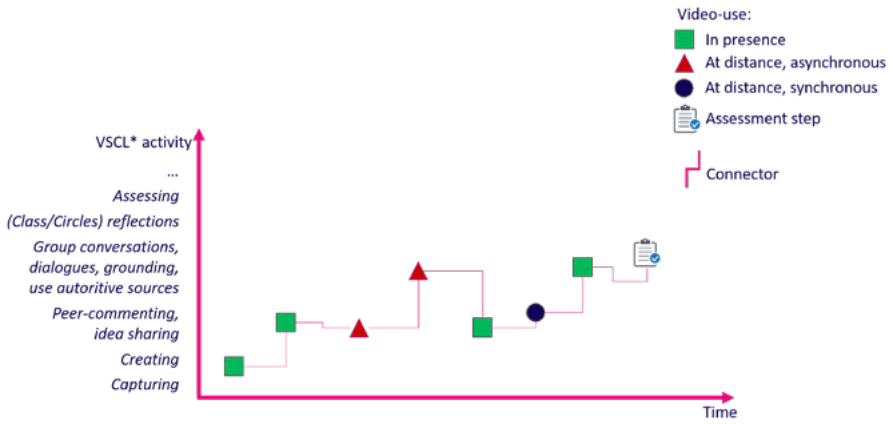

Figure 1. Flow of the activities.

USER EXPERIENCE AND TEACHER REFLECTION

Students were enthusiastic about the experiment and they were keen to support each other with video creations. However, working with iVideo was considered quite difficult. Especially uploading videos was considered challenging, which was due to different computers the students worked on. Some computers did not allow the use of all functionalities of the iVideo programme and thus, hindered the progress. The support given by the iVideo company was helpful and supportive which motivated the students and the teacher in charge to continue with the experiment.

PROS AND CONS

- Students felt more guided.
- Peer review was easy.
- Learning from each other's recording and lessons was useful.
- Quality of the digital demonstrations increased.
- Improved creativeness to find solutions to technological issues.
- The digital platform must function smoothly, otherwise students cannot use it and loose motivation.

- ✓ **Improved students' creativeness to find solutions to technological issues.**
- ✓ **Digital platforms must function smoothly, otherwise students loose motivation.**

VIDEO SUPPORTED ACTIVATED DIDACTICS AND COLLABORATIVE LEARNING

Marije Bent

INTRODUCTION

This experiment was conducted in the AERES University of Applied Sciences, the Netherlands with student teachers. In this experiment students followed lessons about activating didactics and collaborative learning. The goal was to facilitate collaborative learning and connecting practice to theory on activating didactics and collaborative learning. The lessons started in September 2019 and ended in February 2020. The comments they gave were from October till February and the reflections were written in February. The group of studentteachers consisted of 5 female students and 11 male students aged between 21 and 58. They were all part-time students which means they attended classes one day a week at Aeres UAS and taught two or three days a week at a school for secondary vocational education (VET). In this experiment, Iris Connect and Knowledge Forum (KF) were used in conjunction (Figure 1). Iris Connect was used as a platform to upload and provide feedback on video material and KF was used for further online collaborative discourse on theory. However, combining the two platforms proved to be difficult.

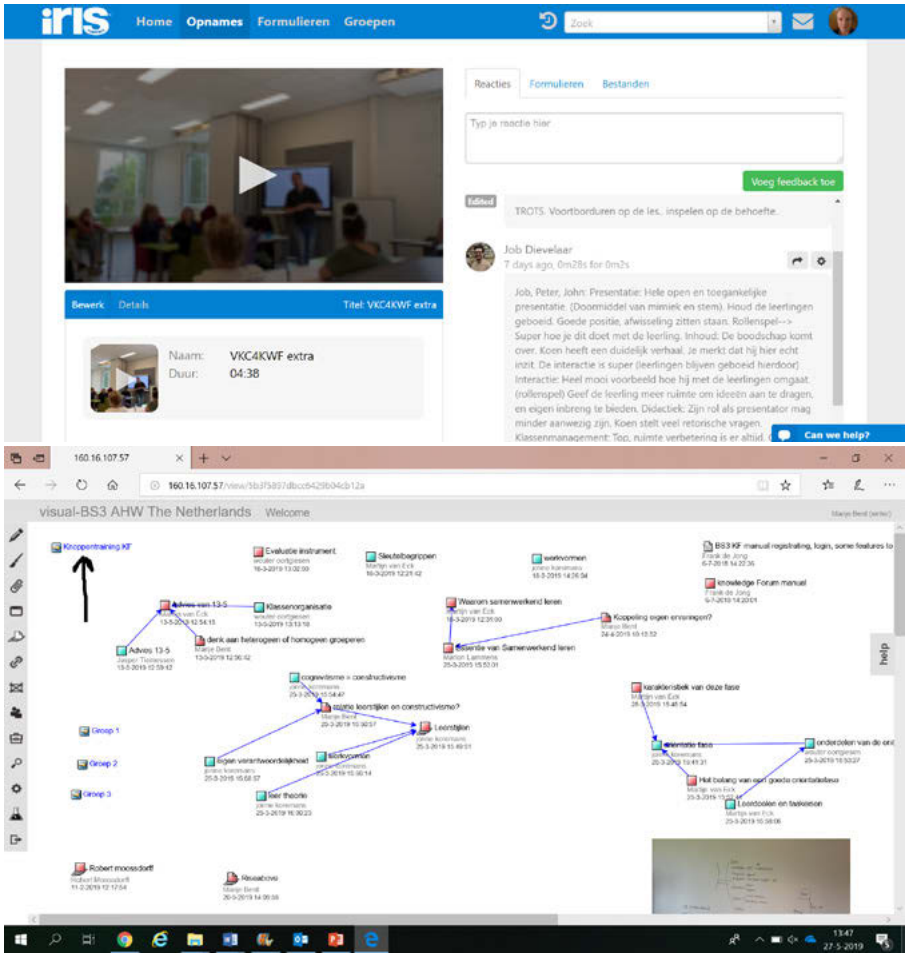

Figure 1. Technologies used for this experiment were Iris Connect and Knowledge Forum.

PEDAGOGICAL APPROACH OF THE EXPERIMENT

The educational approach of this experiment relied on social constructivism. From the beginning participants had to understand what collaborative learning is and how it can be implemented in their lessons. They had to practice and share their practice and ideas about their teaching. From social constructivist theory the students learned together and shared knowledge collaboratively. The aim was to provide students with an insight into each other's authentic practice environment (i.e. their classrooms)

with video and facilitate collaborative learning by sharing and discussing this video while connecting to the theory on activating didactics and collaborative learning.

STEP-BY-STEP DESCRIPTION OF ACTIVITIES

During the course four small groups (N=+/- 5) recorded videos of their teaching and reflected together on the teacher roles by discussing and giving feedback on each other's lesson recordings each month. The groups had three different foci each: keep order in the classroom, teaching methods and the 6th role of a teacher. Two groups had the same focus of keeping order.

We also had a reference group of students who did not make use of video recordings but instead commented on each other in micro lessons. In month four students from the experimental and reference groups wrote an individual reflection on the teacher's roles. It seemed that students only started to read the literature just before writing their final individual reflection. However, it is accepted that students may also absorb concepts while attending lectures.

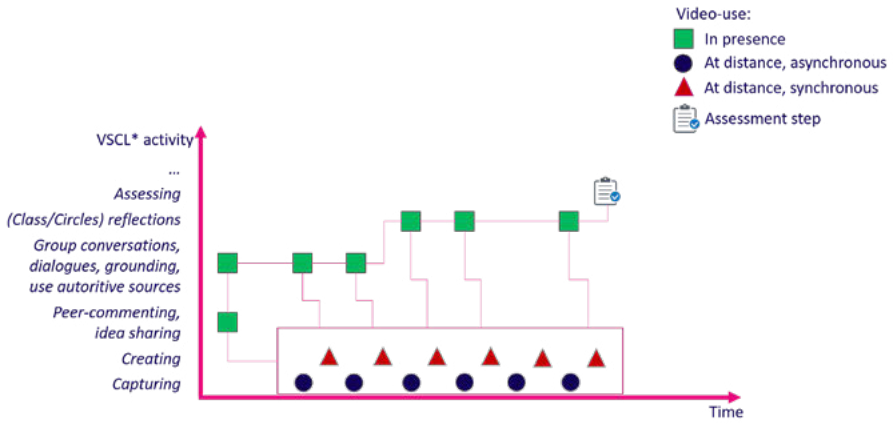

Figure 2. Illustration of the learning scenario of the experiment.

USER EXPERIENCES AND TEACHER REFLECTION

Students were positive about the use of a platform such as Iris Connect to collaborate, share videos and give comments on them. They reported feeling more guided about their teaching from distance. They also found it very

positive that they could watch each other's lessons and learn from each other's practice. However, the students had some suggestions for improvement such as creating longer videos, thinking about the different levels every student has.

The teacher had positive experiences about the platforms but working with two different platforms was considered quite difficult. Students needed time to understand the platforms and the different goals of using each of them. Unfortunately, there is not always enough time for practicing with new technology. Iris Connect was experienced to be more intuitive than KF and this could be a factor in students' and teacher's preference towards working with Iris Connect over KF. Students learned how to give feedback and how to use different learning strategies. This is something the teacher really has to be aware of.

PROS AND CONS

- Students feel more guided.
- Peer review is easy.
- Learning from each other's authentic practice environment through videos and lessons.
- Students can practice on their own level.
- It is difficult for part-time students to work on two platforms.
- Students need to learn how to give feedback.

✓ **Students found it positive that they could watch each other's lessons and learn from each other's practice.**

✓ **Students needed time to understand the platforms and the different goals of using each of them.**

PRACTICAL ADVICE FOR VSCL

PRACTICAL HIGHLIGHTS FROM THE EXPERIMENTS

Eila Burns & Minna Koskinen

In the ViSuAL project 16 teachers from five countries with hundreds of students were experimenting with different video technologies on how to support collaborative learning. These experiments deepened our understanding of the theory and practice of using videos and videoing in collaborative teaching and learning. The video-supported collaborative learning (VSCL) pedagogical model described earlier in this manual provides theoretical background for using videoing in learning contexts. Based on the results, experiences and reflections gained from the ViSuAL experiments, there are also some practical perspectives to consider when applying VSCL. We have grouped these practical highlights into three clusters, which we would like to share with the readers for future experiments.

TECHNOLOGY AND PEDAGOGY HAND IN HAND

For effective use of VSCL, technology and pedagogy need to go hand in hand. It is impossible to design VSCL scenarios unless you are aware of the possibilities video technologies and platforms offer. On the other hand, mastering technology but lacking an understanding of pedagogical principles does not lead to good learning results either. It is important for the teacher to know and test the video tools and platforms they will use to ensure the chosen technology functions as planned to support the collaborative pedagogy. For example, if students' videos are to be analysed and comments offered online either verbally and /or in written format, the Wi-Fi connection must be robust. When teachers give tasks for students to record a video, it is also advisable for teachers to know some basic principles that affect audio and video quality, such as sufficient lighting and quiet surroundings. This would help teachers to guide their students not to make basic mistakes, thereby improving the quality of their work from the outset. A final useful tip related to videoing refers to the emotions arising when being in front of a camera. When you make videos and ask your students to do the same, allow yourself and your students ample of opportunities to practice being in front of a camera before the actual recording tasks occur.

PRACTICALITIES TO CONSIDER:

- **Practice the technology, platform and tools to confirm they support the chosen collaborative activities.**
- **Make sure the technology functions: robust Wi-Fi connection, up-to-date computers.**
- **Make sure recording takes place in a quiet place with sufficient lighting.**
- **Practice being in front of a camera.**

STRUCTURED INSTRUCTIONS AND SUPPORT NEEDED

When a teacher is familiar with the selected video technology and confident that it can support the chosen collaborative activities, it is easier to give structured and concrete instructions and support to students. Collaboration online or supported by videos is challenging, thus, students need guidance, support and structure to make sense of the given tasks and learning processes involved. A teacher's presence and support is necessary to promote understanding of the task and interaction in groups. Students might need support not only for technical but also for communicational issues (e.g. giving and receiving constructive feedback) to sustain collaborative learning. A teacher is a role model, having a crucial role in advising students at the pedagogical and personal levels and modelling a complex VSCL activity.

PRACTICALITIES TO CONSIDER:

- **Give structured, concrete and well-articulated guidelines for the activities and a process for students to follow.**
- **Make sure there is enough time and support available for technical issues.**
- **Support students in giving and receiving constructive feedback.**

EMOTIONAL ASPECTS ARE CRUCIAL

Teachers are also role models in creating a trusting atmosphere and social presence for all learners. This is particularly evident in VSCL, as emotional aspects related to recording oneself or one's own work come to the fore. Being in front of a camera and recording yourself for others to review is often something new and can be frightening. Therefore, it is essential to maintain positive interaction and build an atmosphere of trust with students. Everyone is responsible for active and respectful participation, but it is teachers' responsibility to encourage, inspire and motivate students.

PRACTICALITIES TO CONSIDER:

- **Maintain positive interaction within the group members.**
- **Consider the emotional aspect of videoing one's own work: it might feel embarrassing or frightening at first.**
- **Encourage collective recognition that all students are responsible for their own active participation.**
- **Build trust, encourage and boost the use of videos in face-to-face meetings.**
- **Understand that getting used to your own image and voice on video takes some time.**

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Video-Supported Collaborative Learning (VSCL) offers possibilities for students and educators alike to develop their digital pedagogical competences, seen as crucial for navigating the increasingly knowledge-intensive and entrepreneurial mind-set working life and society. The manual provides a brief theoretical background of VSCL and some examples on how and why educators have applied it in their teaching and learning activities. We hope that the examples and resources provided in this manual will spark new ideas among educational professionals to develop their use of videos to support collaborative learning. The manual can be used at any educational level to start to implement the principles and ideas of video-supported collaborative learning.

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