

## EDITORIAL

by Giovanni Bonaiuti and Rossella Santagata

### Focus on: Learning Through Enhanced Video

We are witnessing a growing and unstoppable interest in the use of video. Data are impressive. YouTube has more than 1 billion users and, accordingly to the owner<sup>1</sup>, the number of hours of video people watch on YouTube each month increases by 50% year after year and 300 hours of video are uploaded every minute. The growth of interest in video is due to several factors including the increase of internet bandwidth and the spread of powerful mobile devices. Smartphones and tablets have made it easy to create, share and use video. Also in this case the numbers are meaningful: about half of YouTube views are on mobile devices.

Video is an important resource for learning. Next to the traditional use of video for information and entertainment, today we are witnessing a growing interest in video for educational purposes: from corporate training to operational support, from the documentation to the observation and reflection on practices. Video can facilitate the development of professional competence, artistic and sports skills, complex behaviors such as public speaking or classroom management. Multiple websites collect and distribute short videos that are designed to answer specific questions (i.e., “how to” videos), while textbooks and manuals are increasingly replaced or accompanied by video clips. Even schools are involved in this phenomenon. Large archives of video allow teachers to focus their class time on interactions with students while students learn about the material by watching videos that bring the outside world into the classroom. The advent of interactive whiteboards and video projectors leads teachers to increase the use of documentaries and animations to explain facts and concepts. The availability of tablet and mobile devices allows students to access content across settings: inside and outside of school. Computer labs, with their tight rows of desks, are rapidly disappearing. Many schools are experiencing the flipped classroom approach: what is normally done in the classroom and what is normally done as homework is switched or flipped. Students watch video-

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<sup>1</sup> cfr. <https://www.youtube.com/yt/press/statistics.html>

recorded lectures at home and, in the classroom, teachers organize hands-on activities and discussions that engage students in interactive learning (Bishop & Verleger, 2013). Most universities have launched extensive programs of distance learning based on videos. The use of Moocs (massive open online courses) is striking: millions of people from all over the world follow online courses that are aimed at unlimited participation and open access via the web (Pappano, 2012; Pantò & Comas-Quinn, 2013).

Video is also used extensively in teacher education and professional development. While classroom teaching has been historically characterized as a private activity, in recent years many classroom teachers have opened their doors and made their daily practice public. Video is used to illustrate effective practices, to develop teachers' analysis and reflective skills, and to provide guidance and mentoring to teachers as they attempt to improve their practices (Blomberg *et al.*, 2014).

When researching the word "video" in the fields title, abstract or keyword of the international scientific literature of psychology and education through Scopus, one notices a striking and constant increase of publications over time: 1028 in 2011, 1274 in 2012, 1318 in 2013, 1241 in 2014<sup>2</sup>. According to Girod *et al.* (2007) most research on video in education falls into three categories: video to foster analysis and reflection on teaching practices; video to create and use cases for analysis; and video to produce unique teaching materials for classroom use. This issue of Je-LKS, dedicated to video, collects contributions in these areas.

The first manuscript by **James Stigler**, **Emma H. Geller**, and **Karen B. Givvin**, entitled "*Zaption: A Platform to support teaching, and learning about teaching, with video*", introduces an innovative online platform that is designed to create interactive learning paths centered on videos. The platform designers emphasize that for video to become an effective tool, learners need to actively interact and engage with its content. Zaption offers several features that make it very easy for educators to create video-enhanced activities for students that require active viewing and interactions with others. The software also allows to track viewer activities and as such it becomes a powerful tool to study learning from video and to compare different video viewing activities.

The following two manuscripts discuss the use of video as a learning tool for students in two specific settings. **Alberto Cattaneo**, **Anh Thu Nguyen**, **Florinda Sauli** and **Carmela Aprea**, in the paper "*Scuolavisione: Teaching and learning with hypervideos in the Swiss vocational system*" exploit the potential of videobased multimedia, particularly in the form of hypervideos, to make

<sup>2</sup> Search key: TITLE-ABS-KEY ( video ) AND ( SRCTITLE ( \*learning\* ) OR SRCTITLE ( \*teach\* ) OR SRCTITLE ( \*instruction\* ) OR SRCTITLE ( \*education\* ) OR SRCTITLE ( \*psych\* ) OR SRCTITLE ( \*pedagogy\* ) ). Total sources identified: 144.

teaching and learning as motivational—but, at the same time, effective—as possible. The study is part of a project supported by the Swiss Secretariat for Education, Research and Innovation (SERI), that aims to use videos to capture or reproduce professional situations to be used in the vocational school to foster the link between theory and practice, abstract and practical knowledge, thinking and acting. Moreover, in this approach videos favor learning across sites through processes such as reflecting, sharing and comparing.

**Letizia Cinganotto** and **Daniela Cuccurullo** in the paper “*The role of videos in the teaching and learning of content in a foreign language*” explore the opportunities provided by video in the CLIL (Content and Language Integrated Learning) methodology. Some examples of possible use of videos are shown and, among these, a particular consideration is reserved to the new role of the student as a content generator. Video clips can play an important role also from teachers’ perspective: they are useful in the context of Initial Teacher Education as well as in teacher-training pathways in Continuous Professional Development. Some specific models are explored as possible ways to reflect and share ideas and opinions about a CLIL lesson among the community of teachers, practitioners, trainers, educators.

With the fourth manuscript the focus switches from video as a learning tool for students to video as a learning tool for teachers. **Blair Stevenson**, **Janne Länsitie**, **Christian Kogler**, and **Petra Bauer** in “*Exploring co-creation of educational videos in an international collaborative context*” describe an international project in which future teachers participate in a video challenge to co-create educational videos. While the videos are intended as support for classroom learning, the authors explore the learning experiences of the video creators. The co-construction of videos in fact facilitates a dialogue about the process of teaching and learning.

The fifth contribution by **Valentina Toci**, **Loredana Camizzi**, **Serena Goracci**, **Rachele Borgi**, **Francesca de Santis**, **Laura Coscia**, **Francesco Perrone**, **Maria Elisabetta Cigognini**, and **Maria Chiara Pettenati**, entitled “*Designing, producing and exemplifying videos to support reflection and metacognition for in-service teachers training*”, introduces a six-phase video production process to produce classroom videos that can be used for teacher professional development. The manuscript describes the collaborative process and the roles that different participants take and provide concrete examples of videos that were created in various content areas. In addition, the authors present a taxonomy of types of videos and their learning purposes that can be used to classify videos in open repositories for teacher autonomous professional development.

The following contribution by **Lionel Roche** and **Nathalie Gal-Petitfaux** entitled “*A video-enhanced teacher learning environment based on multimodal*

*resources: case study in PETE*” illustrates the use of video as a tool to prepare future physical education teachers. The study adopts a course-of-action theoretical approach to examine both cognitive and emotional aspects involved in learning to teach. Video is discussed as a powerful tool to examine the corporeal aspects of teaching which are essential in physical education, but also important in the teaching of all other disciplines.

The manuscript “*The use of video recorded classes to develop teacher professionalism: the experimentation of a curriculum*” by **Pier Giuseppe Rossi, Laura Fedeli, Silvia Biondi, Patrizia Magnoler, Anna Bramucci, Cristiana Lancioni** presents a study aimed at validating the hypothesis that videos used as a supporting strategy in teacher training courses can foster the development of students’ professional vision. Several studies highlighting the advantages of the use of videos exist; less is known about the specific curriculum in which video is embedded. The aim of this manuscript is thus to present a tried-and-tested curriculum for teacher professionalization that involves, over the time span of 5 years of initial training, the alternation of theoretical lectures, stages, and workshops in which each year the use of video has specific goals. The study addresses the effectiveness and the impact of the use of video recordings during a prospective teacher training program.

Finally, in “*Adaptive video streaming for Technology-Enhanced Learning in workplaces*”, **Maurizio Megliola, Michele Sesana, and Roberto Sanguini** the use of video is approached from the point of view of engineering information systems. The paper introduces the Smart Multi-Channel Streaming Platform, a standard-based component of a novel operational framework developed within the research project TELL ME, with the aim to enable the context-based intelligent delivery of full multichannel streaming services for media contents to blue collar workers directly at workplaces. Thanks to the innovative use of HTTP adaptive streaming at workplaces, learning video quality adapts to the different Internet bandwidth and device capabilities, keeping a video playing and allowing workers to successfully conclude their job while having at their disposal the video as support in a stable and uniform quality.

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