

## Effective integration of hypervideos in teaching and learning scenarios

Alberto Cattaneo, Alessia Evi-Colombo, Swiss Federal Institute for Vocational Education and Training SFIVET

### 1. Introduction


In a technology-pervaded society where people watch an average of one billion hours of YouTube videos every day, and where the MOOC phenomenon strongly revealed the opportunities to use videos for teaching-and-learning purposes, we are still lacking a strong video pedagogy and clear evidence on how to fully exploit the **video potential** to support **digital teaching and learning**.


It is in this cultural framework that **iVideo.education** has been developed by the Swiss Federal Institute for Vocational Education and Training (SFIVET), trying to exploit the added values **hypervideo** (or **interactive videos**) offers.


iVideo.education enables trainers, teachers and students with no particular computer skills, to **customize** and **structure** instructional material for their own learning, teaching or training activity, using existing or self-made footage and producing their own hypervideos through an intuitive, graphical user interface.

### 2. System Components

iVideo.education is made of 3 components:

 An **Editor**, which allows to turn raw videos into hypervideos.

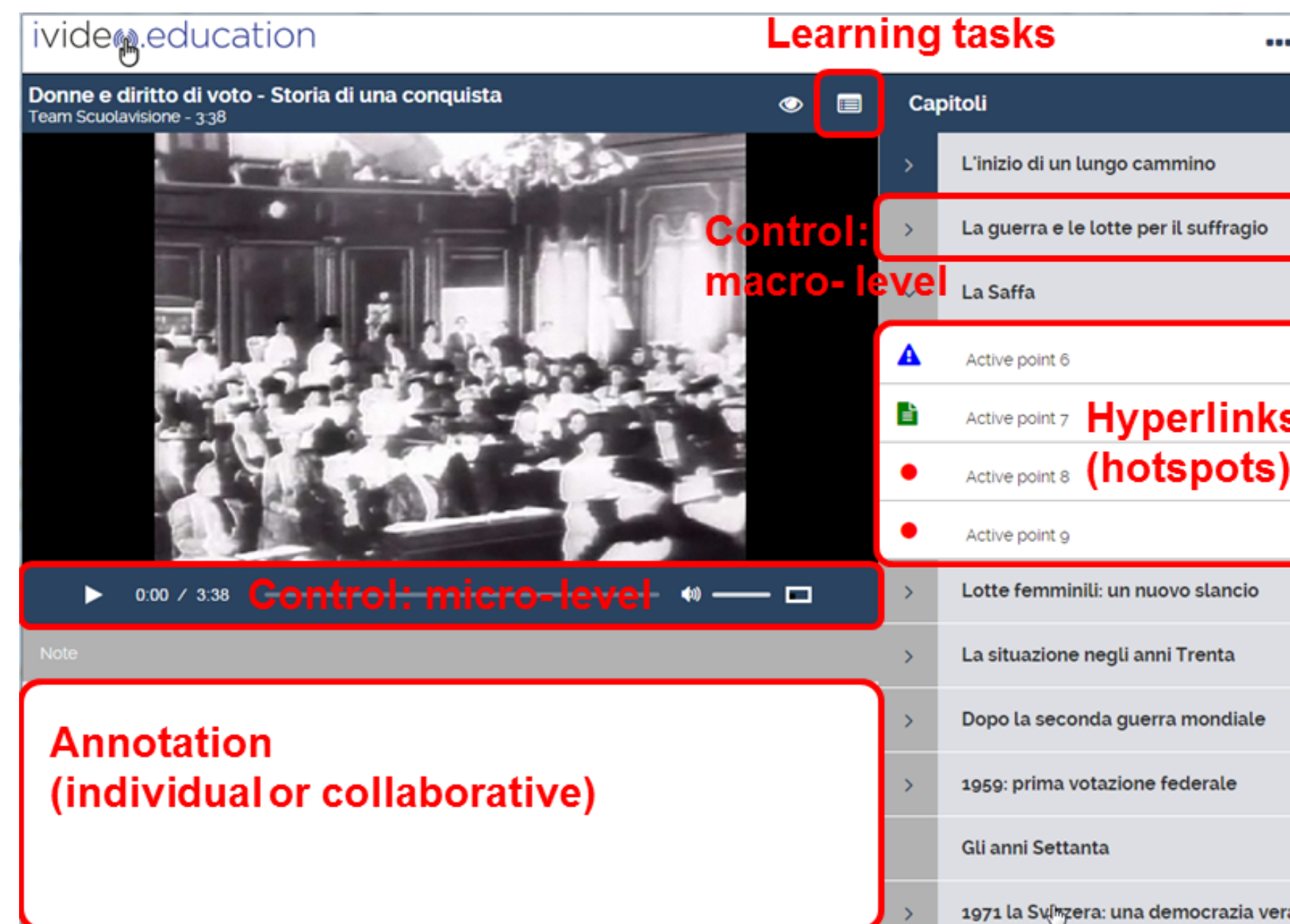
 A **Player**, which allows to view the edited videos.

 The **Web Portal**, an online repository in which users can share their hypervideos and access advanced features.

Both Editor and Player are available on MacOS, Windows, Linux desktop platforms; the Player is also available on mobile platforms (Android and IOS).

The **Portal** URL address is : [www.iideo.education](http://www.iideo.education).

To access to a **video presentation** of the system, please scan the **QR code** on the right.



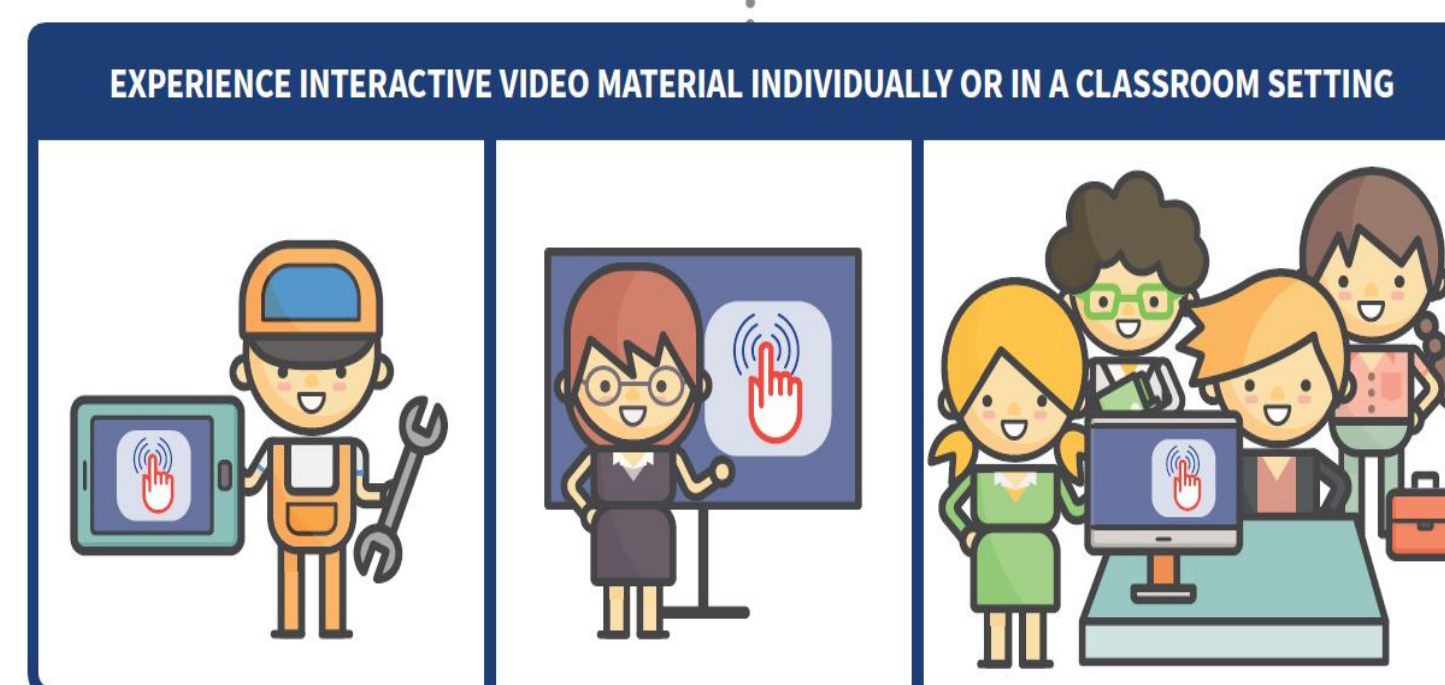
The player interface and its main features

### 3. Structure and Affordances

As shown in a literature review by Sauli, Cattaneo, and van der Meij (2018), **hypervideos (HV)** prove to be effective learning tools in a variety of instructional scenarios.

Hypervideos add to the benefits of a traditional video four main features:

- **Advanced navigational control:** it allows users to explore the video under non-linear trajectories, through a panel-like table of content which segments the video in sub-sections;
- **Hyperlinking function:** it enables to insert blinking markers in the video to focus the attention on specific relevant details and linking the marker to additional information (images, texts, external documents or web pages) in order, for example, to anchor theory to practice;
- **Quiz function:** it allows to insert questions in the video to immediately provide learners a formative feedback;
- **Video-annotation function:** it permits to individually or collaboratively annotate the video to support analytical tasks and foster reflective skills development.



Hypervideo allows for a flexible and varied integration

### 4. A pedagogical model for HV

We implemented iVideo.education in a wide **variety of educational contexts**, from in-service teachers, to apprentice chefs and fashion designers, to surgery room technicians, nursing students and masters level students, both in Switzerland and abroad. Based on a review of the literature and on the analysis of such experiences (e.g. Cattaneo, Nguyen, & Aprea, 2016), iVideo researchers developed a **model** (Cattaneo, van der Meij, Aprea, Sauli, & Zahn, 2018) to facilitate the design of effective instructional scenarios integrating HV. This model includes two intertwined dimensions : the (hyper)video related design phase and processes (including a preparation, a production, and a use phase) and the involvement of the different actor(s) therein (connected to the instructional strategies a teacher may want to employ).

		TEACHER	STUDENT individually	STUDENT in groups
PREPARATION	Raw video	A	B	C
PRODUCTION	Interactive video	D	E	F
USE	Interactive video	G	H	I

A visual representation of the design model

### 5. Implications for Practice

The model provides the possibility for a **flexible and effective integration of HV** in different teaching and learning contexts. Believing that technology is not an added value *per se*, instead, it needs a strong pedagogical rationale behind, we started to **investigate under which conditions** using HV is effective for teaching-and-learning (e.g. Cattaneo, van der Meij, & Sauli, 2018; Cattaneo, Boldrini, & Lubinu, 2018). We are still continuing this fascinating investigation, which already gave us the possibility to draft **specific guidelines** for teachers and educators (Cattaneo & Sauli, 2017) to support the design of HV-based learning scenarios.

#### Contact

Prof. Dr. Alberto Cattaneo  
[alberto.cattaneo@iuffp.swiss](mailto:alberto.cattaneo@iuffp.swiss)  
Alessia Evi-Colombo  
[alessia.evi-colombo@iuffp.swiss](mailto:alessia.evi-colombo@iuffp.swiss)

### References

- Cattaneo, A., Boldrini, E., & Lubinu, F. (2018). "Take a look at this!". Video annotation as a means to foster evidence-based and reflective external and self-given feedback. A preliminary study in operating room technician training. *Peper submitted for publication*.
- Cattaneo, A., Nguyen, A. T., & Aprea, C. (2016). Teaching and Learning with Hypervideo in Vocational Education and Training. *Journal of Educational Multimedia and Hypermedia*, 25(1), 5-35.
- Cattaneo, A., & Sauli, F. (2017). Integrating Interactive Video in a Learning Scenario. Guidelines from IV4VET Project. Lugano: Swiss Federal Institute for Vocational Education and Training.
- Cattaneo, A., van der Meij, H., Aprea, C., Sauli, F., & Zahn, C. (2018). A model for designing hypervideo-based instructional scenarios. *Interactive Learning Environments*. doi:10.1080/10494820.2018.1486860
- Cattaneo, A., Van der Meij, H., & Sauli, F. (2018). An Empirical Test of Three Instructional Scenarios for Hypervideo Use in a Vocational Education Lesson *Computers in the Schools*, 35(4).
- Sauli, F., Cattaneo, A., & van der Meij, H. (2018). Hypervideo for educational purposes: a literature review on a multifaceted technological tool. *Technology, Pedagogy & Education*, 27(1), 115-134. doi:10.1080/1475939X.2017.1407357