Instructional use of hypervideo: towards a design model supported both by theory and authentic implementations

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Despite the fact that the concept of hypervideo exists since the early days of hypertext, it has not yet progressed as expected even though technical aspects which used to be a limitation are nowadays mainly solved (Tiellet, et al., 2010): using hypervideo to support learning still remains limited to few experiences. We refer to hypervideo as «video based hypermedia that combines nonlinear information structuring and dynamic audio-visual information presentation» (Zahn, 2006).

We conducted a literature review of the use of hypervideo in education with two aims: on the one hand, for researchers, to map the state of the art and identify new directions worthy of further investigation; on the other hand, to generate first recommendations for VET teachers to design lessons integrating hypervideo.

We proceeded in two parallel ways. On the one side, we identified studies in the scientific literature. We specifically sought for studies using hypervideo for learning purposes; we excluded purely technological contributions. On the other side, we could integrate this literature review with some observations of teaching through hypervideos carried out within the vocational education system in Switzerland. The integration of the two paths enabled us to outline a preliminary framework setting out the main steps in the adoption of hypervideos to support learning.

The review helped us to identify which are the main meanings for “interactivity” when speaking about video. We identified three distinct affordances for interactivity: control features, hyperlinks, and exchange options. They will be explained at the workshop.

The combination of the literature analysis and the monitoring of implementations in the field further allowed us to derive a model for designing hypervideo-based teaching and learning scenarios. The model is based on two intertwined dimensions that the teacher must consider: the (hyper)video-related design phase and processes and the involvement of the different actor(s) therein.

The first dimension deals with the phases and tasks involved in the design of hypervideo-based learning scenarios. More specifically, this dimension includes the following:

1) A preparation phase, comprising both the identification of the reference raw video and its editing;
2) a production phase, devoted to making the video interactive, thus producing a hypervideo; and
3) a use phase, in which the hypervideo is employed as learning material.

The second dimension refers to the instructional strategies that a teacher may want to employ. Smith and Ragan (1999) characterize these strategies according to their locus of control. That is, the authors distinguish the contrasting generative and supplantive strategies. In generative strategies, most of the responsibility for making the decisions in preparing, producing, and using a hypervideo-based learning scenario primarily rests with the student. In contrast, in supplantive strategies the same responsibility lies on the teacher. The two strategies are not a matter of either/or; rather, they demark the poles of a continuum in which the instructional designer/teacher has to make a decision on the optimal degree of instructional facilitation, considering at the same time (a) the specific prerequisites of the learners (cognitive, motivational, attitudinal); (b) the type of task; and (c) the context (e.g., goal priorities and available resources).

Based on these two dimensions we drew up a preliminary table (*Figure 1*) which summarizes the hypervideo integration process in three stages and distinguishes actors involved. The first step consists in identifying a raw video, which can be from existing footage or produced both by teachers (box A) and by students, alone (B) or as a group activity (C). The second step concerns the construction of hypervideos, which can be done by teachers (D), or proposed to students as an individual (E) or collective (F) learning by design activity. Finally, the hypervideo can be used directly controlled by teachers as a support for their lessons (G), or manipulated by students, who can interact with it individually (H) or in groups (I).

Process			Teacher	Student	
				alone	in group
1	Preparation	Raw video	A	B	C
2	Production	Hypervideo	D	E	F
3	Use	Hypervideo	G	H	I

Figure 1: Integrating hypervideos in instructional scenarios

The combination of these possibilities generates several paths of integrating hypervideos in learning activities, some of which will also be presented at the workshop.

References

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