

# Student-made videos in the spotlight: How to raise interest with a learning video?

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Many students complain about math-specific fear (Houghton et al., 2019) and this anxiety hindering their understanding, however, positive emotions contribute to creativity and flexibility in thinking (Picard et al., 2004). Therefore, we aimed at raising students' interest by giving them a task to create a video. During the Covid pandemic, learning videos experienced their prime time. This makes it necessary to understand how such videos influence the way students learn. It was found that many learning videos were not as popular with students as expected (Wijnker et al., 2019) because they failed to raise interest. These two issues motivated us to design and analyse video tasks. In this paper, we present two video tasks: the first one was to cheer up students during the first lockdown. As students liked the task, the second task was designed with some modifications. The analysis of Wijnker and colleagues (2019) on the effectiveness of learning videos turned our attention to student-made videos as a possible source to find out what features make a learning video more effective than another. We will present the video tasks and aim to identify these features.

## Theoretical framework

Students creating a learning video enjoy the procedure of creating, as stated by constructivism, and learn by doing (Harel & Papert, 1991). The MIT MediaLab's research on the role of interest, and affection also found positive emotions beneficial for learning (Picard et al., 2004). Further, the method of "learning by teaching" introduced by Martin and Kelchner (1998), that is, asking students to teach their classmates positively influences students' attitudes. Creating learning videos requires creativity, and cooperation and turns students into teachers as they must explain mathematical content. These three aspects could create positive emotions in students and therefore enhance learning as claimed by Picard et al. (2004). Raising students' interest and creating positive emotions were our motivations to set the video task and this frames the tasks.

## Methods, Description of the video tasks

We collected data from a grade 6 class and the same class a year later through a questionnaire focusing on the students' views on and experiences with technology implementation. For this paper, the question about students' likes and dislikes concerning technology implementation is of special importance. Additionally, we rely on our in-class observations made while watching and evaluating the videos. In the first cycle, students had to explain how triangles are classified, in the second one, the main topic was fractions. We analysed these videos by studying aspects such as storyline, sound, and visual effects as also done by Wijnker et al. (2019), focusing on the existence or non-existence of these features, as they seemed to be of special interest to students based on their comments made while evaluating the videos. There were more than twenty videos, we selected 8 of them students especially praised. In 2020, during the first lockdown, students managed the task by using mobile phones to make recordings, which set natural limitations to the videos' quality concerning special

features. A year later, being back to school, students could work in groups. Being more experienced with using technology and equipped with iPads, students could add special effects such as sound effects, and how the change between scenes is designed. The last stage of both projects was watching the videos in class, discussing them, and giving constructive feedback. Based on these videos, and the in-class discussion we can present the following findings.

## Findings

Based on the questionnaire about technology implementation, we found that students especially liked the video tasks and games, as these are creative, and they could work in groups. We found features all videos share and therefore seem to be important to raise students' interest. There was a hero figure solving a problem in all videos and in two a fairy tale element. In one of the videos, the students used the usual classroom setting with a blackboard, and students sitting at desks. One had a workout session and presented the different angles holding her arms. When discussing the videos, students praised especially the ones where there were sound effects or music to catch the attention. In all videos, there was a story with heroes acting out a scene, and a setting, and there was tension coming from the expectation of what is going to happen next.

## Discussion and conclusion

Comparing the findings of Wijnker and colleagues (2019) to our observations, we can conclude that students prefer some videos to others, which influences students' attitudes to the content presented. As we had a small sample and students had to evaluate their classmates' videos, their evaluation may have been biased. Further study is needed to identify features of learning videos with a positive learning effect. We can claim, however, that creating learning videos has a motivating effect especially if it involves teamwork.

## References

- Harel, I., & Papert, S. (1991). *Constructionism: Research reports and essays, 1985-1990*. Greenwood.
- Houghton, A., Oldknow, A., Diego-Mantecón, J. M., Fenyvesi, K., Crilly, E., & Lavicza, Z. (2019). KIKS Creativity and Technology for All. *Open Education Studies*, 1(1), 198–208. <https://doi.org/10.1515/edu-2019-0014>
- Martin, J.-P., & Kelchner, R. (1998). Lernen durch lehren [Learning by teaching]. In J. P. Timm (Ed.), *Englisch lernen und lehren – Didaktik des Englischunterrichts* (pp. 211–219). Cornelsen.
- Renkl, A. (1997). Lernen durch Lehren [Learning by teaching]. Deutscher Universitätsverlag eBooks. <https://doi.org/10.1007/978-3-663-08696-3>
- Picard, R. W., Papert, S., Bender, W., Blumberg, B., Breazeal, C., Cavallo, D. M., Machover, T., Resnick, M. B., Roy, D., & Strohecker, C. (2004). Affective Learning — A Manifesto. *Bt Technology Journal*, 22(4), 253–269. <https://doi.org/10.1023/b:bttj.0000047603.37042.33>
- Wijnker, W., Bakker, A., Van Gog, T., & Drijvers, P. (2019). Educational videos from a film theory perspective: Relating teacher aims to video characteristics. *British Journal of Educational Technology*, 50(6), 3175–3197. <https://doi.org/10.1111/bjet.12725>