Engagement, disengagement and performance when learning with technologies in upper secondary school

# Details

## Year

2020

## DOI

10.1016/j.compedu.2019.103783

## Issued

2020

## Language

English

## Volume

149

## Start Page

## End Page

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## Type

Journal article

## Journal

Computers Education

## Publisher

Elsevier BV

## Topics

## Implications For Educators About

* STEM Education
* Professional development
* School innovation
* Other

## Implications For Stakeholders About

Researchers

# Abstract

Students need to engage in order to learn. As digitalisation changes the conditions for learning, it is essential to consider how student engagement might be affected. This study explores the relationship between students' level of engagement in technology-enhanced learning (TEL) and academic outcomes. More specifically, we developed and validated an instrument LET (Learner–Technology–Engagement) using principal component analysis and confirmatory factor analysis, and distributed this to second and third year upper secondary school students. We then matched student responses (n = 410) with their school grades. Using a bivariate correlation test, a one-way ANOVA test, and a post hoc test, we analysed the associations between low-, average-, and high-performance students and their reported engagement and disengagement when learning with technologies. The analysis reveals that high-performance students find it easier to concentrate when working with learning technologies than do average and low performers. We also found significant correlations between low grades and reported time spent on social media and streaming media for other purposes than learning (e.g., YouTube). There were also significant correlations between a decrease in students’ performance and the occurrence of unauthorised multi-tasking via learning technologies while in class: the lower the grades, the more frequently students reported using digital technologies to escape when lessons were boring. Conclusively: high-performance students seem to develop strategies to use digital technologies in supportive and productive ways. Thus, in order for schools to use digital technologies to ensure that disadvantaged students do not remain disadvantaged when learning with technologies and to not replicate problems in analogue classroom interactions, insights how different performance groups engage and disengage in TEL is critical for learning.

# Outcome

High-performance students have the competencies needed to use technologies to engage in their learning. However, using digital technologies for learning can be problematic for low-and average-performance students.