

The Impact of Social Network on High School Students' Physics Homework: An Experimental Study

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Abstract

Learning physics is often considered as a difficult task by teachers and students. Homework is introduced as a way to tackle this difficulty. But most of the students are not motivated enough to do their homework. Therefore, finding some motivational factors to encourage students in completing their homework seems necessary. Supervisions by skilled teachers and web-based homework were frequently cited as typical solutions to improve their motivational factors. Thus, this study focuses on investigating the benefits of using Facebook as a motivational web-based tool and as a bridge between the teachers and students to assist students in completing their homework. The present study was conducted in an Iranian high school with 39 students in Year 11. A 'Pre-Experimental' design was used to conduct the research. A Facebook page including five sets of physics homework, on the topic of capacitor, was developed and distributed among the participants. The level of students' academic performances and their perception regarding the role of Facebook in supporting their physics homework was measured through different instruments. The obtained data was analysed by calculating the central tendency and conducting a t-test, using Microsoft Excel and SPSS software. The findings show that students have a positive tendency towards using Facebook to support their physics homework completion. Their level of academic performance was also enhanced significantly after using the so called Facebook page. The results of this project could be used to replace the traditional pen and paper homework system to motivate the students in physics homework completion and improve their physics learning.

Keywords: Motivation, Facebook, Physics homework completion, Physics learning.

1. Introduction

Several studies show homework is one of the most important factors to help the students in the learning process. Homework helps to reinforce students in their education progression and practicing skills (Kelley, 2006) (Grodner & Rupp, 2013). Many instructors assert homework as a contribution to the improvement of learning and academic accomplishment (Hong, Wan, & Peng, 2011). It especially has a specific affect in learning of physics' concepts and helps physics' problem solving (Park, Lee, Jeong, Yuk, and Lee 2009). Findings demonstrate that homework completion problems don't resolve across time and students often deny doing their duty (Langberg et al., 2016). Teachers have long experienced the frustration of students who do not or will not complete their homework (Wilson & Rhodes, 2010). Students enlighten several reasons for their denying. As an example: they believe that homework does not have value because teachers do not really care about collecting, reading or marking their homework, let alone using the

result for an evaluation of the students' improvement (Hinchey, 1996). Some of the students asserted their homework is irrelevant to the lesson of the day (Darling-Hammond & Olivia, 2006). A number of students feel that homework is boring; some others do their homework only to satisfy their parents and/or their teachers (Xu, 2010). It seems that finding some motivational factors to stimulate the students in their entire learning process generally, and doing homework particularly, would be the way of rescue. Type of motivation for doing homework is important. Students must be supported to adopt a more self-governing type of motivation (Katz, Eilot, & Nevo, 2014).

Parental support is introduced as an approach to inspire the student in homework completion. But this support is eventually going to decrease, especially when students enter high school (Bempechat *et al.*, 2011). It may be because of the lack of parents' enough knowledge (Cosden *et al.*, 2001). It appears that, students especially high school and more especial lower achieving ones need to be supervised by skilled teachers (Cosden, Morrison, Albanese, & Macias, 2001). Therefore, the need for a tool