


A Meta-Analytical Review on the Effect of Twitter Use in Education

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ABSTRACT

The recent decade has been witnessing an increasing number of studies committed to the use of Twitter in education. It is necessary to determine the effect of Twitter use on education through a meta-analytical review since related meta-analyses are scanty and previous findings are inconsistent. By searching a number of databases, the authors selected 23 publications to examine the effect of the use of Twitter in education. It is concluded that the use of Twitter exerts a significant and positive effect on general education ($d = 0.40$), that the use of Twitter exerts a significant and positive effect on academic achievements in education ($d = 0.63$), and that there are no significant gender differences in the effect of Twitter use in education ($d = 0.54$). Other social media could also be included in future research into the effect of their use on education.

KEYWORDS

Academic Achievement, Education, Gender Difference, Meta-Analysis

INTRODUCTION

Twitter Use in Education

With various functions, Twitter has rapidly grown in popularity since it was founded (Hitchcock, & Young, 2016). Twitter, a popular technology connecting people, could be used in education except for interpersonal communication. Micro-blogging via the Twitter platform potentially encourages engagement, reflection, and cooperation (Gao, Luo, & Zhang, 2012). Users could communicate with each other through tweets or a series of instant messages. Similar to other social media such as Facebook and Whatsapp, users of Twitter can post messages, read texts, or watch videos via e-devices. Teachers and students could learn knowledge through the platform of twitter (Chapman, & Marich, 2020). Use of Twitter could improve academic results in General Surgery Residency Programs (Hill, Dore, Em, McLoughlin, et al., 2021). Twitter with learning contents directly in the tweets could improve learning outcomes of radiology (Kauffman, Weisberg, Zember, & Fishman, 2021).

Positive reports have been made regarding the use of Twitter in education. Twitter has been widely used in various disciplines for the educational purpose such as social work (Hitchcock & Battista, 2013; Young, 2014). The use of Twitter can facilitate engagement and collaboration, improve critical thinking abilities, and cultivate an atmosphere of academic communication (Greenhow & Gleason,

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2012). Teachers can encourage students to participate in discussion and extracurricular activities via Twitter (Chamberlin & Lehmann, 2011; Gao, Luo, & Zhang, 2012).

The Effect of Twitter Use on Academic Achievements in Education

Recent years have witnessed a great deal of research into Twitter-assisted academic achievements in education. With the rapid development of social media, the educational system has undergone a radical shift toward globalization assisted with social media (Arceneaux, & Dinu, 2018). Facebook has been demonstrated able to globalize and facilitate education although other social media have not been included (Davis et al., 2014). The use of Twitter platform could improve learners' performance in the classroom, leading to better academic achievements in numerous ways (Feezell, 2019). Teachers and students could raise and answer questions by using Twitter conveniently and anonymously, which promotes the effect of learning and improve academic achievements (Young, 2009). Outside the classroom, students could discuss and solve difficult problems through the Twitter platform, share different opinions, increase their interactions, and improve academic achievements (Manzo, 2009). Through tweets out of class, they could conceptualize and memorize psychological issues better than they had done in class (Blessing, Blessing, & Fleck, 2012).

Although there have been a great number of studies committed to the effect of social media on education, very few of them have conducted a meta-analytical review on the effect of Twitter on education. Therefore, the first research objective in this study is to address the effect of Twitter on education in general.

The Effect of Twitter Use on Gender Differences in Education

A number of researchers have studied the effect of Twitter on gender differences in education. Results of the effect of Twitter on gender differences are inconsistent and diverse. In Twitter-assisted learning of principles of economics courses, male students outperformed females in several specifications such as the final course grade and gap-closing measure (Al-Bahrani, Patel, & Sheridan, 2017). With social media, males uttered more than females and the latter could disregard disadvantages and catch a new opportunity to join the conversation (McConnell, 1997). Females contributed much more than males in online discussions (Davidson-Shivers, Muilenburg, & Tanner, 2001).

There are also significant gender differences in the preferences for the variety of posts in teacher Twitter spaces. Male students tend to upload online resources, advise peers, broaden their popularity on the Twitter platform, and sometimes criticize others they dislike. But, female students tend to post positive comments to encourage chat partners on the platform (Kerr, & Schmeichel, 2018). These different styles may have cultivated different learning strategies. Male students tend to keep open in online learning assisted with social media, while females closed. The open-minded learners may be able to absorb more knowledge but they are subject to distractions. The closed learners may be more absorbed in what they are learning and thus understand the contents more comprehensively.

In the social media-associated cyberspace, the interactions are free of gender but males and females interact in different ways. Males prefer progressive languages while females like defensive ones (Herring, & Stoerger, 2014). The progressive learners may focus more on information outside the learning contents, while the defensive learners tend to concentrate on their own discipline. It is thus not surprising that males are more easily influenced by distractions than females and that males tend to post more on the platform than females.

The new decade has been witnessing an increasing number of both male and female users of social media. US adult women (72%) who use social media such as Twitter have outnumbered adult men (66%) based on a 2017 Pew report (Pew Research Center, 2017). However, Pew Research Center reported that male Twitter users outnumbered females and users of other social media such as Reddit failed to strike a balance between males (71%) and females (29%). Recent research interest has shifted

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