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Gender differences in motivation, engagement and achievement are related to students' perceptions of peer—but not of parent or teacher—attitudes toward school

Ronnel B. King

Department of Curriculum and Instruction, The Education University of Hong Kong, Hong Kong

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ABSTRACT

The aim of this study was to examine gender differences in students' motivation, engagement, and achievement. Participants were recruited ($n = 848$) from two public secondary schools in the Philippines. Boys showed a more maladaptive profile in terms of academic motivation, engagement, and achievement. Path analyses indicated that these gender differences were associated with peer attitudes toward school. Boys perceived their friends to have more negative attitudes toward school. These perceptions of negative peer attitudes toward school were associated with boys' lower levels of motivation, engagement, and achievement. There were no significant gender differences in terms of perceived parental and teacher support. Theoretical and practical implications are discussed.

1. Introduction

Gender differences in school outcomes have received much attention. The consensus is that overall girls do better in school (Stoet & Geary, 2015; Voyer & Voyer, 2014). While numerous studies have been conducted to give a better understanding of the nature and extent of these gender differences, the existing literature also suffers from a few shortcomings.

First, previous studies that examined gender differences have focused either on the role of macro societal-level variables (e.g., Else-Quest, Hyde, & Linn, 2010; Nosek et al., 2009) or on specific individual difference variables (e.g., Freudenthaler, Spinath, & Neubauer, 2008; Hicks, Johnson, Iacono, & McGue, 2008; Steinmayr & Spinath, 2008). For example, several studies have linked gender differences in school performance to the extent to which men and women have equal opportunities in society and to other broad socio-cultural factors (Else-Quest et al., 2010; Guiso, Monte, Sapienza, & Zingales, 2008; Reilly, 2012; Stoet, Bailey, Moore, & Geary, 2016). Other studies have looked at the key role played by personality traits such as trait conscientiousness in shaping gender differences (Duckworth et al., 2015).

As with other educational phenomena, it is likely that gender differences in school functioning can be explained across multiple levels of analysis (e.g., Carvalho, 2016; Reigle-Crumb, King, Grodsky, & Muller, 2012; Stoet et al., 2016). Focusing solely on macro-level societal variables or individual difference factors gives an incomplete picture of gender differences. Students' proximal social environment likely plays a key role in predicting gender differences in school outcomes but has received limited attention.

Second, most studies on gender differences have only focused on a narrow range of educational constructs such as academic achievement. There is a need to cover a broader range of psycho-educational constructs in order to give us a more nuanced picture of the nature and extent of gender differences in school outcomes.

To address these limitations I focused on the role of social factors—parental support, teacher support, and peer attitudes toward learning (positive and negative)—in predicting gender differences in key school outcomes. Social factors are key predictors of school success (Juvonen & Knifsend, 2016; Wentzel, 2016), but they have been relatively unexplored in the gender differences literature. In this study, I focused on students' perceptions of support from their parents, teachers, and peers given that these three groups are the most relevant people in a students' social network.

I "cast a wider net" in this study by including a diverse range of school outcomes encompassing both subjective and objective measures of academic success. In particular, I examined gender differences in motivation as indexed by students' goals, engagement and its opposite disaffection, as well as teacher-assigned school marks. By focusing on a wider range of key educational variables, this study can give a more comprehensive picture of gender differences relevant to the school context.

I extended the study of gender differences by drawing on a Philippine sample. Most of the existing studies on gender differences

E-mail address: ronnel@eduhk.hk.

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have focused on Western, particularly, North American populations. There is a need to expand the discussion on gender differences to other cultural contexts where research has been relatively sparse. The gender gap in school achievement is not just an exclusively North American or a Western phenomenon but is a critical international issue (e.g., Lam et al., 2016; OECD, 2013; Stoet & Geary, 2015; Voyer & Voyer, 2014).

The aim of this study was to explore gender differences in students' motivation, engagement, and achievement and to examine whether these gender differences are related to social factors such as parent support, teacher support, and peers' (positive or negative) attitudes toward learning. I will first review the existing literature on gender differences in achievement, motivation, and engagement. Next, I will give an overview of the research on the role of social factors in shaping gender differences in school outcomes. I will then provide an overview of Anderman's (1999) social-motivational model which will be used as the theoretical framework for the current study.

1.1. Gender differences in achievement

Studies have shown that girls receive higher grades than boys in many school subjects (Downey & Yuan, 2005; Halpern, 2006; Stoet & Geary, 2015). This phenomenon has been observed across different parts of the globe (USA: NCES, 2004, 2009; Europe: Fischer, Schult, & Hell, 2008; Steinmayr & Spinath, 2008; Asia: Wong, Lam, & Ho, 2002; King & Ganotice, 2014b; Australia: Martin, 2004, 2007; see Lam et al., 2012; for a cross-cultural example). A recent meta-analysis conducted by Voyer and Voyer (2014) which included data from more than one million students found that females outperformed males in terms of school marks (see also Duckworth et al., 2015; Lindsay & Muijs, 2006). This female advantage in school marks appeared for all subjects although the female advantage was more pronounced for language and least pronounced for math courses. These gender differences, however, are not always consistent across nations. For example, Stoet and Geary (2015) analyzed the 2009 Program for International Student Assessment (PISA) dataset and found that girls outperformed boys in 70% (52 out of 74) of the countries whereas boys outperformed girls in 4% (3 out of 74) of the countries in terms of reading, mathematics, and science achievement.

1.2. Gender differences in motivation

Researchers have also examined gender differences in motivation. For the purposes of this paper, I operationalized motivation as the types of goals that students pursue in school (Elliot, 2005). There are different types of goals that have been the subject of intensive research—achievement goals (aims or purposes for task engagement), work avoidance goals (wanting to avoid exerting effort at school), and social goals (social reasons for wanting to study in school) (Urdan & Maehr, 1995).

Early research on achievement goals has usually focused on two types of goals—mastery (attaining competence relative to self-set standards) and performance goals (demonstrating one's competence before others) (Elliot, 2005). Later revisions of the theory have led to a greater refinement of the achievement goal construct incorporating approach and avoidance dimensions (Elliot, 2005). This led to four types of achievement goals: (1) mastery-approach goal, which refers to wanting to achieve to gain new knowledge and improve one's competence; (2) performance-approach goal, which refers to wanting to achieve to outperform other students and to demonstrate competence before others; (3) mastery-avoidance goal which refers to wanting to avoid misunderstanding and the loss of one's skills; and (4) performance-avoidance goals which refers to wanting to avoid showing incompetence before others.

Early studies that focused on gender differences in mastery and performance goals have yielded mixed results. Some studies did not find significant gender differences in mastery goals (Patrick, Ryan, & Pintrich, 1999; Ryan & Pintrich, 1997), while other studies found that girls had higher levels of mastery goals (Meece & Holt, 1993; Nolen, 1988; Yeung, Lau, & Nie, 2011). There were studies which reported that boys had higher levels of performance goals (Anderman & Midgley, 1997; Roeser, Midgley, & Urdan, 1996; Ryan, Hicks, & Midgley, 1997; Stipek & Gralinski, 1996), but there were also studies which did not find any gender difference in performance goal pursuit (Dowson, McInerney, & Nelson, 2006).

More recent studies that used a wider range of achievement goals have also yielded ambiguous findings. For example, Nie and Liem (2013) compared Chinese boys' and girls' mastery-approach, performance-approach, mastery-avoidance, and performance-avoidance goals. They found that girls had higher levels of mastery-approach and mastery-avoidance goals, but did not find significant gender differences in performance-approach and performance-avoidance goals. Ingles et al. (2011) found that Spanish adolescent girls had higher scores on both mastery-approach and performance-approach goals. In terms of work avoidance goals, boys were found to have higher levels of work avoidance goals compared to girls (Spinath, Stiensmeier-Pelster, Schoˆne, & Dickhaˆuser, 2002).

Social goal researchers usually focus on five types of social goals: social affiliation (wanting to do well in school in order to enhance interpersonal belonging), social approval (wanting to do well in school in order to gain approval from parents and teachers), social concern (wanting to do well in school in order to help others), social responsibility (wanting to do well in school in order to fulfill obligations and conform with social expectations), and social status (wanting to do well in school in order to gain status in later life) (Dowson & McInerney, 2003, 2004; King & Watkins, 2011; Urdan & Maehr, 1995).

Studies that focused on gender differences in social goals have yielded mixed findings. A study by King, McInerney, and Watkins (2012) found that boys scored higher in social affiliation, while females scored higher in terms of social concern, social responsibility, and social status goals. Another study by Dowson et al. (2006) found that the only significant gender difference pertained to social affiliation goals with boys endorsing it to a greater extent. On the other hand, Ingles et al. (2011) found that boys had higher levels of social approval goals compared to girls.

Taken together, studies on gender differences in students' goals have yielded mixed results. This suggests the need for additional research. Many studies have only investigated a limited range of achievement goals. Some studies only measured one (Yeung et al., 2011), two (e.g., Ablard & Lipschultz, 1998; Meece & Holt, 1993), or three types of goals (Ingles et al., 2011; Kenney-Benson, Pomerantz, Ryan, & Patrick, 2006). I addressed these gaps in the literature by including a wider range of goals such as achievement goals (mastery-approach, performance-approach, mastery-avoidance, and performance-avoidance), work avoidance goals, and social goals (social affiliation, social approval, social concern, social responsibility, and social status).

1.3. Gender differences in engagement

Engagement pertains to the quality of students' involvement in school (Fredricks, Blumenfeld, & Paris, 2004). Researchers have divided engagement into different dimensions. In this study, I focused specifically on behavioral and emotional engagement. Behaviorally engaged students exert effort, demonstrate on-task behavior, and participate in class. Emotionally engaged students are enthusiastic in school and enjoy the learning process (Skinner, Kindermann, & Furrer, 2008).

The opposite of engagement is called disaffection (Connell & Wellborn, 1991). It can also be divided into behavioral and emotional components. Behavioral disaffection includes passivity, effort withdrawal, and lack of initiation. Emotionally disaffected students exhibit emotions such as frustration, dejection, boredom, and anxiety (Skinner et al., 2008).