



Longitudinal evaluation of the importance of homework assignment completion for the academic performance of middle school students with ADHD

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ARTICLE INFO

Article history:

Received 23 February 2015

Received in revised form 26 August 2015

Accepted 16 December 2015

Available online 11 January 2016

Keywords:

ADHD

Academic functioning

Grades

Homework

Attention-deficit

ABSTRACT

The primary goal of this study was to longitudinally evaluate the homework assignment completion patterns of middle school age adolescents with ADHD, their associations with academic performance, and malleable predictors of homework assignment completion. Analyses were conducted on a sample of 104 middle school students comprehensively diagnosed with ADHD and followed for 18 months. Multiple teachers for each student provided information about the percentage of homework assignments turned in at five separate time points and school grades were collected quarterly. Results showed that agreement between teachers with respect to students assignment completion was high, with an intraclass correlation of .879 at baseline. Students with ADHD were turning in an average of 12% fewer assignments each academic quarter in comparison to teacher-reported classroom averages. Regression analyses revealed a robust association between the percentage of assignments turned in at baseline and school grades 18 months later, even after controlling for baseline grades, achievement (reading and math), intelligence, family income, and race. Cross-lag analyses demonstrated that the association between assignment completion and grades was reciprocal, with assignment completion negatively impacting grades and low grades in turn being associated with decreased future homework completion. Parent ratings of homework materials management abilities at baseline significantly predicted the percentage of assignments turned in as reported by teachers 18 months later. These findings demonstrate that homework assignment completion problems are persistent across time and an important intervention target for adolescents with ADHD.

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1. Introduction

Children and adolescents with attention-deficit/hyperactivity disorder (ADHD) frequently experience clinically significant academic impairment (DuPaul & Langberg, 2014; Frazier, Youngstrom, Glutting, & Watkins, 2007; Kuriyan et al., 2013), and difficulties at school is one of the most prominent reasons youth with ADHD are referred for treatment (Loe & Feldman, 2007; Wolraich et al., 2005). Prevalence rates reported for comorbid learning and/or achievement problems in ADHD samples range from 50% to 80%, depending on the definition (DuPaul & Stoner, 2014). Children and adolescents with ADHD have lower school

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Action Editor: Laura Pendergast

grades and are significantly more likely to be retained a grade and to drop out of school in comparison to their peers (Barbareis, Katusic, Colligan, Weaver, & Jacobsen, 2007; Barkley, Fischer, Smallish, & Fletcher, 2006; Molina et al., 2009). Although a majority of youth with ADHD experience academic impairment, there is significant variability in the presentation, severity, and causes of this impairment (Martin, 2014). A clear understanding of the factors that contribute to the academic performance of youth with ADHD is needed to develop and refine interventions.

1.1. The role of homework in academic outcomes

Homework is a teacher-assigned task designed to be completed during non-school hours (Cooper, 1989) and is a core component of the educational curricula in the United States and abroad (Cooper, Robinson, & Patall, 2006). On average, secondary school students in the United States report spending approximately 1 h of after school time on homework each day (Kalenkoski & Pablonia, 2012; U.S. Department of Education, 2008), and time spent on homework is even higher in other industrialized countries (e.g., 2.9 to 3.9 h per day in India; Loyd, Grant, & Ritchie, 2008). Given the broad utilization and emphasis on homework in education, multiple aspects of the homework process have been studied in relation to academic performance, including amount of work assigned, time spent on completing homework, difficulty level of work, and frequency of homework assignments (Cooper, Lindsay, Nye, & Greathouse, 1998; Cooper et al., 2006; Grodner & Rupp, 2013; Trautwein, 2007; Trautwein & Köller, 2003; Trautwein, Köller, Schmitz, & Baumert, 2002). Overall, extant research suggests that time spent on homework is positively correlated with academic performance (Cooper, 1989; Cooper et al., 1998), with the relation being moderated by grade in school and stronger in the secondary school grades (Cooper et al., 2006).

1.2. The homework completion cycle

The “homework completion cycle” (see Fig. 1) is complex, and consists of several temporally ordered behaviors. In order to be successful with homework, students must accurately record assignments in sufficient detail, bring home the necessary materials, plan ahead for the completion of work (i.e., not procrastinate), complete work efficiently and effectively (i.e., stay focused and complete work accurately), and bring the completed work back to school for submission. Although parents and teachers often provide some support for aspects of the homework completion process (e.g., parents may check completed homework for accuracy; Cooper, Lindsay, & Nye, 2000; Rogers, Wiener, Marton, & Tannock, 2009), the primary responsibility resides with the student. As such, self-regulation of behavior is necessary for successful homework completion (Xu & Wu, 2013), and may in part explain why many youth with ADHD experience significant homework problems. Specifically, individuals with ADHD often exhibit deficits in executive function (Barkley, 1997; Biederman et al., 2007), resulting in struggles in managing, monitoring, and self-correcting their own homework management and completion behaviors (Langberg, Dvorsky, & Evans, 2013). The literature indicates that youth with ADHD experience homework problems defined broadly (e.g., Langberg et al., 2011a; Mautone, Marshall, Costigan, Clarke, & Power, 2012; Power, Werba, Watkins, Angelucci, & Eiraldi, 2006; Rogers et al., 2009), with approximately 75% of youth with ADHD exhibiting clinically significant homework problems in comparison to 30% of typically developing youth (Coghill et al., 2008). These difficulties become particularly apparent and salient with

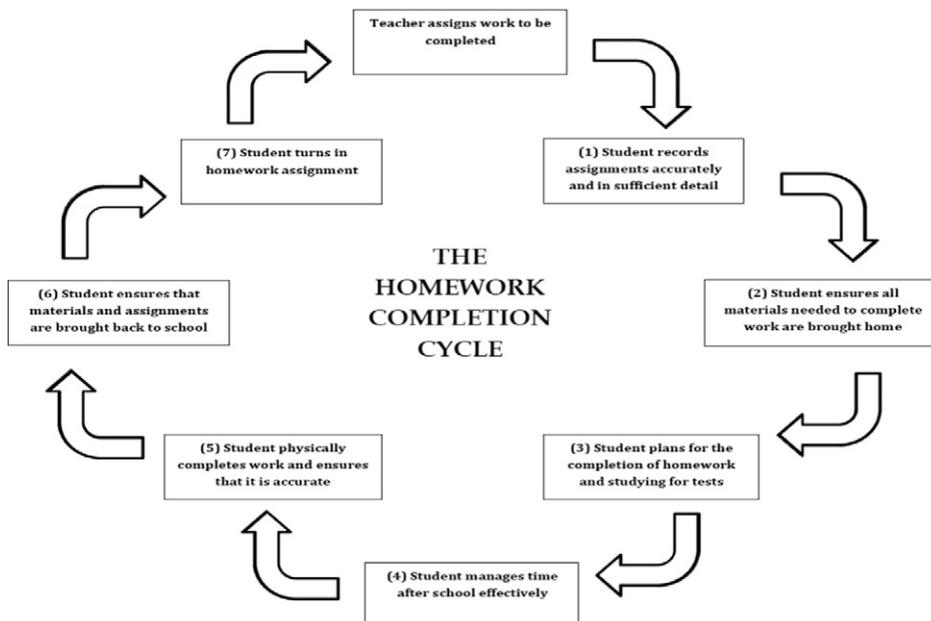


Fig. 1. Visual representation of the independent steps students must follow to successfully turn in assignments.

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