Does the Medium Matter?

A Research Proposal to Explore the Possible Effect of Using Electronic Planners to Help

Students with ADHD Keep Better Track of Homework Assignments

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Abstract

   With the increase in rigor with respect to standards of learning, the prevalence of Attention

Deficit Hyperactivity Disorder (ADHD) and its effects on self-efficacy, and the simultaneous

increase in the use of a variety of apps on mobile devices by adolescent students, this study

begins to explore the possibility of increasing the percentage of homework assignments

completed via the use of an electronic homework app as opposed to a traditional paper-based

agenda book, given direct instruction in time management, planning, and organizational skills

and to ascertain whether student self-efficacy would show concurrent improvement as a result of

better academic performance.

Key Words: Attention Deficit Hyperactivity Disorder (ADHD), executive function, high school,

time management, homework

High school aged students who have been diagnosed with ADHD often manifest evidence of challenges with executive function, particularly with respect to time management and organizational skills. Forgotten assignments and due dates often lead to zeros on homework grades. The impact of missing assignments can be devastating to overall subject area grades as well as to their perception of themselves as successful students. Additionally, time management and organizational skills are often not directly taught, though many high schools offer paper based agenda books to aid in tracking assignments and due dates. However, with society's ever increasing immersion into digital technology, including smart phones, tablets, and the like, paper based agendas may appeal less to high school aged students than electronic agendas accessible through a homework app on their mobile device.   In fact, Fitton (2013) found that adolescents articulated just how integral technology is in their everyday lives, that fluent use of it is a key factor in their cognitive and academic development, that it will be key in their future careers, and that they enjoy their high level of technological literacy. This would seem to support the idea that the use of such a device may very well be preferable to the use of a paper agenda book.

Key Problems/Limitations

Both Abikoff, et.al (2013) and Langberg (2011) found that students with ADHD can benefit from direct instruction in time management and organizational skills. Bellanti (2011) found that students with ADHD struggle with self-regulation as can be seen in the challenges they have with monitoring their environment and managing their behavior in response. She also found that such students can benefit from the use of external tools such as planners and agendas

to support their mental structures and reduce the level of stress placed on their memories. Langberg (2013) further found that teaching students with ADHD how to use a binder system to organize their papers and assignments helped them get and stay organized. Finally, Major (2013) found that female high school students with ADHD had lower perceptions of themselves as successful students than did their peers who did not have ADHD.

The apparent gap in the literature has to do with exploring the possibility of improved time management and organizational skills through the power of technology and adolescent interest in the use of mobile devices. Does it stand to reason that with the shift to technology that paper based agenda books are becoming obsolete? Would high school students with ADHD be more likely to use an electronic agenda than they would a paper-based one and would their self-efficacy improve as a result of better academic performance?

Research Purpose

The purpose of this research is to answer the following two questions. Will students with ADHD-related challenges with time management, planning, and organizational skills show an increase in the percentage of homework assignments completed if they used an electronic agenda app rather than a paper based agenda book, given equal instruction in both time management and organizational skills? And, would their perceptions of themselves as successful students improve in concurrence?

Hypothesis

Given equal direct instruction in time management, planning, and organizational skills high school aged students using an electronic homework app would not show a significant increase in the percentage of homework assignments completed. Secondarily, given equal direct

instruction in time management, planning, and organizational skills high school aged students using an electronic homework app, participants' self-efficacy ratings would not be affected.

Method

This proposal would be quantitative in nature. Data would consist of scores collected using the Morgan Jinks Student Efficacy Scale; a Likert-type scale which asks students to evaluate themselves with respect to their performance in the classroom. This scale has been validated and deemed reliable using Devillis's (1991) Scale Development: Theory and Applications. (Jinks, 1999). Data would also be collected by comparing the percentage of homework assignments completed before and after the intervention to see if there is a significant difference between students using a paper agenda book and those using an electronic agenda book. The electronic app used would be myHomework. It is available at iTunes for free and is compatible with iPhone, iPad, and iPod Touch with iOS 7 or later. The intervention curriculum would be based on *The Seven Habits of Highly Effective Teens* by Sean Covey (2014), a nationwide training program that focuses on achieving goals through the development of effective life skills.

Participants

This study would involve high school aged students who have been diagnosed with ADHD and whose academic record indicate a high number of missing homework assignments. Recruitment would involve working with the Special Education department head, the principal, the district administration, and the parents of said students. In the interest of maintaining confidentiality, the Special Education department head with the support and approval of school administrators would contact the parents of students meeting the criteria to explain the nature of

the study, the content of the direct teaching intervention, and the use of an agenda or planner to

manage homework assignments. They would also request permission for their students to

participate in the study.

Setting

The intervention would take place over the course of a nine week period and would

ideally occur for both groups (students using paper based planners and students using electronic

planners) during the school day and during the second grading period of the year. (This would be

dependent on administration's approval and may need to be changed to accommodate the

requirements of the school day.) To increase participant count, participants from multiple

schools would be included and to avoid contamination between groups, participants at each

school would have only one type of homework tracking device (paper planner or electronic

homework app).

Variables

The independent variables would be the instructional intervention which both groups

would receive and the two different types of planners used. The dependent variables would be

the percentage of homework assignments completed and the student responses to the Morgan

Jinks Student Efficacy Scale. Data regarding both of the dependent variables would be collected

before and immediately after the intervention as well as at the end of each successive grading

period.

Instruments

The Morgan Jinks Student Efficacy Scale remains the standard by which student self-efficacy is measured today. *The Seven Habits of Highly Effective Teens* by Sean Covey was first published in 1998 and updated in 2014 for the digital age and has helped countless teens learn effective life skills such as decision making, time management, planning, and organization.

Data Collection Procedures

After all appropriate permissions are obtained, teachers of participating students would be asked to report the percentage of completed homework assignments and the overall subject area grades for the first grading period. Participating students would be asked to complete the MJSES at the conclusion of the same grading period. Intervention would take place during the second grading period along with the introduction of the agenda books and the homework app to the groups. Explanations for how to use each would be given to each group respectively.

Following the intervention, teachers would be asked to report the percentage of completed homework assignments and the overall subject area grades for the second grading period. Students would again be asked to complete the MJSES. This process would be repeated at the end of the third and final grading periods to ascertain retention of newly learned skills and habits.

Data Analysis Procedures

Analysis of the homework completion data would involve an interval scale of 0-100% of homework assignments completed as measured (counted) before and after the intervention.

Analysis of this data would involve comparing students' overall scores and individual scores on the MJSES to see if there is any significant difference between them from prior to the

intervention to after the intervention. Questions 1, 2, 5, and 9 would be of particular interest as

they relate directly to student effort with respect to assignments. Analysis of overall scores on

the MJSES would look at the mean, mode, and median and compare those gleaned after the

intervention to those gleaned before it to see if there is a significant difference.

Connections to Previous Literature

At the conclusion of this study, the null hypotheses could then be confirmed or rejected.

It would then be possible to see if the previous findings described in the literature were repeated

in this study with respect to training in time management, planning, and organizational skills.

Did the training help the students increase the percentage of homework assignments they

completed? Did the type of homework tracking device used make a difference? It would also be

possible to see if their self-efficacy rating improved.

Limitations of the Study

The size of the sample would greatly impact the representational validity of this study. A

small sample size would not necessarily generate results that could be generalized to all high

school students with ADHD. Additionally, mobile devices that are compatible with the

homework app may not be owned by all participants and would have to be provided, purchased,

or borrowed for the duration of the study. Care would need to be taken to ascertain whether any

gains experienced were due to factors other than the training and the type of homework tracking

device used.

Implications for Further Research

A larger sample size would be needed and repeated executions of the study across

cultural and socio-economic lines would need to be done to generate results that may be

generalizable to the total population. Additionally, the same training and tracking devices could

be used with all students at the given high school(s), whether or not they have been diagnosed

with ADHD, to see if there is an increase in the percentage of homework assignments completed

and an improvement in students' self-efficacy ratings. Whatever the direction further research

may take, the need for it seems clearly indicated.

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