

# Too Many Looks at Online Grade Books: The Relationship Between Frequency of Access to Online Grade Books and Student Motivation and Academic Stress

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## Abstract

Over 13,000 districts, 32 million students, 2 million teachers, and 66 million parents are currently using the online parent portal called PowerSchool. Eighty percent of students and parents with access to the portal use the system at least once a week, and many users check more than once a day (PowerSchool.com). The present study investigated the relationship between checking grades online, motivation, and stress. One hundred and twenty-seven students in grades nine through twelve received a 31-question survey that was administered online via surveymonkey.com. Three scales were included on the survey: The Educational Stress Scale for Adolescents, The Motivated Strategies for Learning Questionnaires, and Frequency of Access Scale. Analyses revealed that students who checked PowerSchool more than once a day had significantly higher levels of extrinsic motivation ( $p = .004$ ) and significantly higher levels of stress ( $p = .009$ ) than those who checked PowerSchool weekly or less often. Additional analyses revealed that students whose parents that checked PowerSchool once a day or more also had significantly higher levels of extrinsic motivation ( $p = .004$ ) and significantly higher levels of stress than those who have parents that checked PowerSchool weekly or less often ( $p = .007$ ). Students who checked PowerSchool and students whose parents checked PowerSchool more than once a day reported the highest levels of extrinsic motivation and stress. These findings suggest that there is a strong correlation between the frequency of access of PowerSchool of students and parents and extrinsic motivation and academic stress.

Keywords: online grade books, student motivation, academic stress

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## Introduction

The implementation of online grade book systems has increased the stress and motivation levels of students across the world (Corrin & de Barba, 2014). Having access to this online device 24/7 allows students immediate and constant access to check their academic standings, but little is known about the potential effects of these systems. The present study investigated the relationship between student and parent access and motivation levels and student stress.

## Motivation

There are two basic types of motivation: intrinsic and extrinsic. Intrinsic motivation is when one has the desire to carry out an action based off of personal fulfilment and satisfaction. Extrinsic motivation is when one has the desire to carry out an action based off of external rewards such as food or money.

Studies have shown that student motivation is positively correlated with the ability to view feedback from their classes via an online dashboard. This motivation may be in the form of intrinsic

motivation or extrinsic motivation; however, seeing that students are becoming increasingly interested in their grades due to the creation of online gradebooks, it is likely that it is students' extrinsic motivation that is increasing (Brothen, 1996; Corrin & de Barba, 2014). A study conducted in 1996 examined this relationship by analyzing the number of times undergraduate students checked their online gradebook in the 45-day period leading up to their final examination. Additional studies show that students report being more academically motivated when their parents are kept updated on their grades (Grusec & Goodnow, 1994).

### *Stress Levels*

Stress levels in teenagers have been increasing significantly over the past years and are continuing to increase due to factors such as school. According to a survey done by the American Psychological Association in 2014, on a 10-point scale the average American teen reported a stress level of 5.8, when the healthy stress level is 3.9. Even during the summer, between August 3 and August 31, 2013, when the survey was conducted again, teenagers still reported a 4.6 stress level. An average of 36% of teens reported feeling tired or fatigued, and about 23% of teens reported skipping a meal due to stress. Only 16% of teens reported that their stress levels had decreased in the course of the past year. In fact, 31% reported that their stress levels had increased (Bethune, 2014). According to a survey done by *The Washington Post*, 83% of teens reported that "school was a somewhat or significant source of stress" (Shapiro, 2014). Twenty seven percent of those teens reported experiencing "extreme stress" during the school year, which dropped to 13% over the summer (Shapiro, 2014). Denise Clark Pope, a lecturer in the School of Education from Stanford University and the author of *Doing School: How We Are Creating a Generation of Stressed Out, Materialistic and Miseducated Students*, says that the pressure from parents and schools to have top scores begins as early as elementary school and has gotten so high that some educators regard it as a health epidemic (Palmer, 2005).

Giving students 24/7 access to their grades may only exacerbate this issue. Studies have shown

that stress levels among high school students have drastically increased since the use of online grade books. Access to online gradebooks was measured via a survey administered to participants in which they were asked to identify how often they access the online gradebook (Geddes, 2009; Reimers & Neovesky, 2015).

### *Hypotheses*

This study will test the following hypotheses:

(1) There will be a positive correlation between student stress levels and frequency of use of online grade books.

(2) There will be a positive correlation between extrinsic motivation and frequency of use of online grade books.

### **Method**

#### *Participants*

Students were recruited in English classes of a mid-sized, suburban high school on Long Island. Participation was voluntary, and data were anonymous. Participants ( $N = 128$ ) were entered into a raffle to win a \$50 Amazon Gift Card.

#### *Dependent Measures*

The design of the study was correlational. A 32-question survey was created and distributed and included two different scales. These scales were adapted in number of items used from previously existing scales used in other studies. An adapted version of the Educational Stress Scale for Adolescents (ESSA) was included in the survey (Sun, Dunne, Hou, & Xu, 2011). The adapted scale consisted of 7 items, each with 6 points ranging from "Strongly disagree" to "Strongly agree." A sample item from this scale is "I feel a lot of pressure in my daily studying." The other scale was adapted from The Motivated Strategies for Learning Questionnaire (Lin & McKeachie, 1999). This adapted scale consisted of 10 items, each with 6 points ranging from "Strongly disagree" to "Strongly agree." This scale consisted of items

regarding both intrinsic and extrinsic motivation. A sample item from this scale is “I work really hard because I enjoy learning new things.”

In addition to the two adapted scales used, there was an opening series of five questions to match the cover story given to participants. The cover story told students that the purpose of the study was to investigate technology in the high school. Additionally, a series of questions at the end of the survey asked participants regarding the frequency of their access and their parents’ access to the online portal used in their school, PowerSchool. The final series of questions at the end of the survey consisted of demographic questions.

**Results**

ANOVAs were run to investigate the relationship between frequency of student or parent access and student stress or motivation. Frequency of access of students was split into three groups: more than once a day, daily, or weekly or less. Frequency of access by parents was also split into three groups: daily or more than once a day, weekly, or infrequently or never.

*Student Access*

Student access had a significant relationship with average student extrinsic motivation,  $F(2, 112) = 2.69, p = .004$ . Further analysis revealed that students who check PowerSchool more than once a day had significantly higher levels of extrinsic motivation as compared to those who check weekly or less.

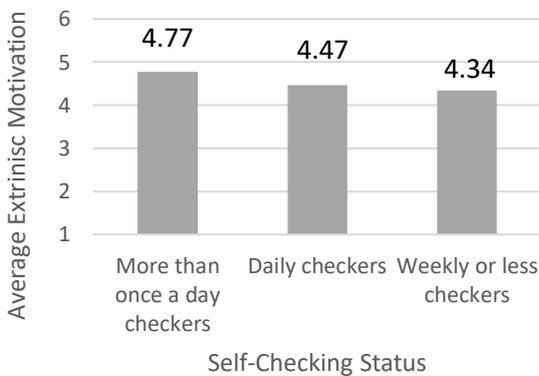


Figure 1: Student access on average extrinsic motivation

Student access was also significantly related to average academic stress,  $F(2, 112) = 4.87, p = .009$ . As shown in Figure 2, post hoc tests revealed that students who check PowerSchool more than once a day and students who check PowerSchool daily had significantly higher levels of stress as compared to those who check weekly or less.

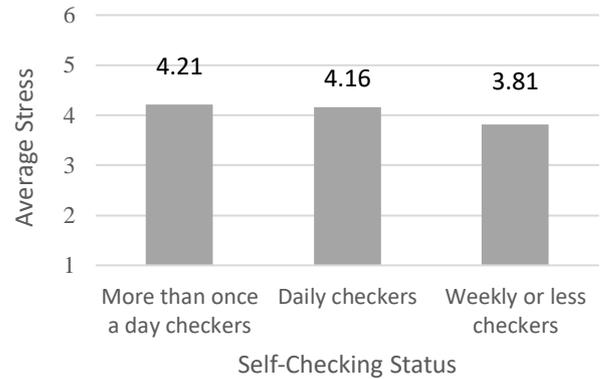


Figure 2: Student access on average stress

*Parent Access*

Parent access had a significant relationship with average student extrinsic motivation,  $F(2, 112) = 4.87, p = .004$ . Students whose parents who check PowerSchool daily or more than once a day had significantly higher levels of extrinsic motivation as compared to students whose parents check PowerSchool weekly.

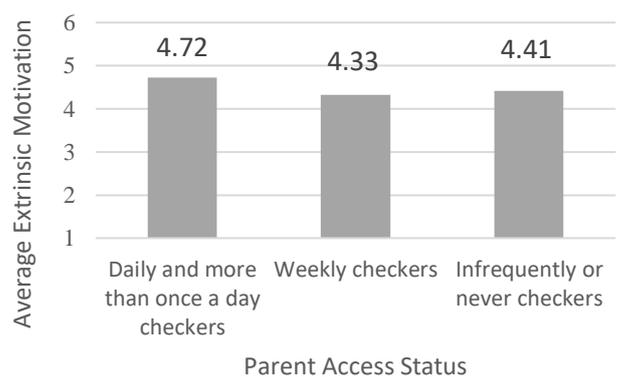


Figure 3: Parent access on average extrinsic motivation

Parent access also had a significant relationship with average student academic levels,  $F(2, 112) = 5.23, p = .007$ . Students whose parents who check PowerSchool daily or more than once a day had significantly higher academic stress levels as compared to students whose parents check PowerSchool weekly and students whose parents check PowerSchool infrequently or never.

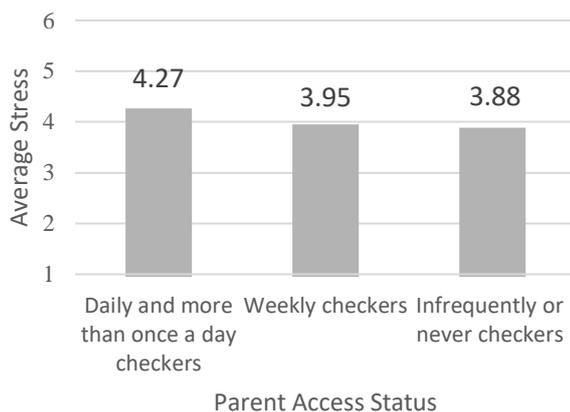


Figure 4: Parent access on average stress

## Discussion

### Motivation and Stress

The current study reveals that there is a positive correlation between frequency of access of parents and students to online gradebooks and students' academic stress and motivation. Students who check PowerSchool most frequently and students whose parents check PowerSchool most frequently had the highest levels of stress and motivation. Past research has suggested that the relatively new and common switch to an online gradebook system has increased stress and motivation levels among students (Corrin & de Barba, 2014), but it is now clear that these results are translated into a high school setting where the frequency of student and parent access is also related. It is noted that students struggle with "extreme stress" throughout the school year (Shapiro, 2014), and it is possible that online gradebook systems such as PowerSchool are contributing.

It is essential to recognize that the causality of the stress and motivation cannot be determined by the results of the current study. Thus, while it can be noted that there was a relationship between frequency of access and motivation and stress, it is unknown what the cause of that relationship is.

### Limitations and Further Study

There are some limitations to the present study. The first is that data were collected only from one suburban high school on Long Island. The second limitation is that not every high school uses an online gradebook system; thus, the study only applies to those that do use an online grading system. Additionally, not every school that does use an online gradebook system uses PowerSchool; some schools use other online grading software such as Schoology or LearnBoost. There are various ways in which the present study could be extended. One would be to explore if the results obtained in the current study are the same or similar to that of college students that have an online gradebook system. Another possible extension would be to explore the motivation and stress levels of students in schools that have restrictions on their online gradebooks. For example, some schools may close the portal after 7 p.m. each night.

Seeing that there is a rise in the use of online gradebooks, studying the impacts of such platforms is extremely important. While frequency of access was positively related to higher levels of stress, PowerSchool may have some benefits. It allows parents to stay updated on their children's school lives, and students can now track their academic progress. However, these benefits may only exist so long as online gradebooks are used in a moderate way; the aforementioned restrictions on other gradebook systems may be a good balance.

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