What is the Impact of Stress-Coping Skills on Levels of Motivation in Adolescents?

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Abstract

Stress-coping strategies are identified by researchers as conditions used suitable to a situation when adolescents have a change in their environment or a stressor that they cannot control. The purpose of this manuscript is to explore the impact of stress-coping strategies on perceived levels of intrinsic motivation. According to the research, stress results from an imbalance between the requirements of the environment and one's ability to cope with it (Aldwin, 2007). The inquiry was conducted in a high school of convenience where the researcher had access to the students available to participate in quantitative research design. Research has shown that adolescents often benefit when they can combine one or more coping strategies to address the stressor. Since strategies have benefits and costs associated with them, it is necessary to identify the long lasting stressors adolescents face in order to find a response related to or based on the context of the stressor. The descriptive analysis of the pre-survey and post-survey, implementation of strategies was analyzed to determine the impact stress-coping strategies have on perceived stress levels of intrinsic motivation. A Chi-Square Goodness of Fit was used to indicate the distribution of responses along with the percentage of agreement between respondents on the whole item. The pre-survey and post-survey design was performed to determine a correlation between perceived levels of and motivation. The data from the quantitative design was reviewed to determine a relationship using a Pearson correlation and t-test. Results, strengths of the study and limitations are discussed.

Keywords

Stress/coping, Adolescents, Motivation, Stress-coping strategies

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Abstract: Stress-coping strategies are identified by researchers as conditions used suitable to a situation when adolescents have a change in their environment or a stressor that they cannot control. The purpose of this manuscript is to explore the impact of stress-coping strategies on perceived levels of intrinsic motivation. According to the research, stress results from an imbalance between the requirements of the environment and one's ability to cope with it (Aldwin, 2007). The inquiry was conducted in a high school of convenience where the researcher had access to the students available to participate in quantitative research design. Research has shown that adolescents often benefit when they can combine one or more coping strategies to address the stressor. Since strategies have benefits and costs associated with them, it is necessary to identify the long lasting stressors adolescents face in order to find a response related to or based on the context of the stressor. The descriptive analysis of the pre-survey and post-survey, implementation of strategies was analyzed to determine the impact stress-coping strategies have on perceived stress levels of intrinsic motivation. A Chi-Square Goodness of Fit was used to indicate the distribution of responses along with the percentage of agreement between respondents on the whole item. The pre-survey and post-survey design was performed to determine a correlation between perceived levels of and motivation. The data from the quantitative design was reviewed to determine a relationship using a Pearson correlation and t-test. Results, strengths of the study and limitations are discussed.

Keywords: Stress/coping, adolescents, motivation, stress-coping strategies

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Introduction

The purpose of this research was to investigate the impact stress has on students'
perceived levels of intrinsic motivation. However, the focus for this manuscript is to report
selected findings from the variable operationally defined as intrinsic motivation. Stress results
from an imbalance between the requirements of the environment and one's ability to cope with it
(Aldwin, 2007). According to Jaser et al. (2005) external stress has been linked to such negative
outcomes as anxiety and depression. Consequently, educating pupils about the effects of stress
gives students a positive way of coping (Robinson & Cook, 1995). According to Jaser et al.
(2005), stress is an organism and declared the following:

> In the environmental model, stress is defined as external to an organism,
>
> including threats of immediate harm or aversive environmental conditions.
>
> The stress of this type is typically measured using stress inventories, which
>
> are checklists of events believed to be taxing to an individual. External
>
> stress has been linked to such negative outcomes as anxiety and depression
>
> (p. 273).

The researchers utilized a pre-survey instrument analysis and post-survey instrument
analysis in a high school setting to explore the problem in context. The background to the
problem of stress and the role it can play results from an imbalance between the requirements of
the environment and one's ability to cope with it (Aldwin, 2007). Selected research has
suggested that adolescents often benefit when they can combine one or more coping strategies to

address the stressor. Since strategies have benefits and costs associated with them, it is necessary to identify the long-lasting stressors adolescents face in order to find a response related to or based on the context of the stressor. There are many strategies that can help students deal with stress. Students have a tremendous amount of stress related to their school environment that can impede or affect their academic performance (Howard & Medway, 2004). The pressures include passing tests in school, peer pressure, pressures to succeed and make good grades, and to have meaningful friendships. As a result, school is one of the greatest causes of stress in a teenager's life.

Significance of the Research

It is perceived by the researchers for this manuscript that perceptions of high school students on stressors from a valid and reliable instrument can provide a benchmark for a treatment of the phenomena in a high stake testing environment. Moreover, the future of American education in a high-stakes testing culture may need to examine stressors as factors and variables in the preparation of the future workforce in a global economy. Increased competition globally for American students to perform to secure places of economic security in a shrinking world could possibly benefit from measurements of internal perceptions and external results on student performance, particularly on high stakes test.

Literature Review

The researchers sought to identify selected correlating literature to the primary topical focus of the manuscript. The literature related to adolescent students' academic performance is seemingly emerging through the fields of education and psychology on the variables and factors related to stressors on student motivation.

Overview of Stressors

There are numerous strategies that can help adolescents cope with stress (Lockwood, Marshall, & Sadler, 2005). Students have a tremendous amount of stress related to their school environment that can impede or affect their academic performance. The pressures include passing tests in school, peer pressure, and pressures to succeed, make good grades, and to have meaningful friendships. School is one of the greatest causes of stress in a teenager's life (Hudson, 2013). Schoolwork becomes too difficult and affects the relationships these adolescents have with their parents, principals, and teachers. The selected research posits that stress increases adolescents' tendency to lose interest in self and turn to negative behaviors such as becoming pregnant, abusing drugs and alcohol, and having social problems with their peers. Some stressors are out of students' control such as human disasters, chronic family illness, poverty, or even neighborhood violence. However, these stressors still intensify the symptoms causing adolescents to exhibit feelings of sadness and fear. For example, an extensive examination led researchers to study this strategy, which was conceived to be a healthy approach for youth to help achieve goals, learn to plan, and seek support (Hobfoll, 1998). The researcher reported that the situation changed by using instrumental actions even though the outcomes were not always successful; it was the attempt to deal with the situation that counted even if it could be detrimental to the student's situation (Zeidner & Endler, 1996). The literature suggested that practicing responses, asking questions, and using negotiation skills by actively planning helped suppress extensive stressors in these adolescents (Monat, Lazarus, & Reevy, 2007).

Tenenbaum, Varjas, Meyers, and Parris (2011) studied adolescents' ability to cope and use strategies effectively. This study determined that problem-focused coping replicated emotion-focused coping so consistently that several behaviors overlapped, such as seeking social

support, distancing, and internalizing the behavior as reported by adolescents who participated in this study (Tenenbaum et al., 2011). Research of adolescents' lifestyles in relation to their academic performances leaned towards a strong sense of completion (Lazarus & Folkman, 1984). Students were documented in setting values and beliefs based on the rewards they obtained related to their ambition and achievements (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) further reported that students tried to balance their egos, attitudes, and their abilities to bring reality and their inner strivings together. However, Jorgensen and Dusek (1990) said that students had to be well-adjusted to find the effort to reduce stress and help them resolve their problems by engaging in strategies that impacted their social and academic environment. According to findings of high school students in China, test anxiety can be very difficult for students, and Xiao (2013) research explored coping strategies for students in a Chinese high school to manage their test anxiety. The study examined academic stress, test anxiety, coping strategies, perceived social support and test performance in 450 high school students in China. Also, the study used hierarchical multiple regressions that support academic stress may be positively related to students' test anxiety and negatively related to their academic test performance. The study showed that stronger relationships between test anxiety and test performance as well as academic stress and test anxiety when students reported higher levels of social and parental support. This study supports the needs of research to explore test anxiety, its impact on performance as well has how perceived social support can influence motivation for school.

Additionally, selected research suggested a positive correlation exists for the use of active coping behavior as a strategy to improve student academic achievement during examinations (Doron, et al., 2009). The study examined the use of problem-focused strategies that students

used in an academic setting. The multiple regression analyzes revealed the beliefs of the

students' abilities and their perceptions of using coping strategies to control their own

academics. Students who volunteered to participate in this study confirmed that coping

behaviors vary as a function of the student's beliefs about their perceptions to control the

environment even in early college.

Test Anxiety

Test anxiety is not perceived to begin at the middle or high school level. Brown (2013)

seemingly suggests students may not be immune to the stress of test anxiety. Brown (2013)

examined the increasing need for teachers to provide interventions for children in elementary

school and their levels of stress. After taking a baseline of levels of stress, students were taught

relaxation techniques and then tested again for changes in their levels of stress. Pretest and

posttest data suggested a significant difference in students reported levels of anxiety. Teaching

relaxation techniques at an early age gives students the skills early on to adapt to stressors and

learn to manage test anxiety. Custodero (2013) focused on test anxiety, in particular, on students

with learning disabilities. Researchers used a trait, state, and test anxiety scores from 145 college

students with and without learning disabilities. Questionnaires were given, and an ANOVA was

used to compare the groups. The findings seemingly suggested that anxiety was statistically

significant with regards to effects on college students with learning disabilities in terms of age,

years in school, gender, the perception of grades, and self-reported anxiety ratings.

Lynch (2012) reports, through selected research from archival data of 151,901 applicant

scores, from college applicants to North Carolina State University between 2003 and 2008, SAT

scores predetermined that the students' ethnicity and gender, need for financial aid, and high

school location were statistically significant in their relationship to repeated attempts on the

SAT. The methodology enabled the use of paired samples *t*-test which supported a statistically reliable difference between the highest combination of a student's math and verbal score, known as Score Choice, and the combination of a student's highest scores from each section of the SAT. The findings seemingly indicated that Score Choice is related to ethnicity and gender, financial aid, as well as the high school location. There seemed to be differences in whether students' scores increased with each additional attempt of the SAT based on ethnic background, gender and a need for financial aid.

Method

The researchers developed the methodological design through the use of a quantitative research approach based upon findings from participants drawn from a case study analysis of the phenomena of stressors impacting students' success in the high school setting. In particular, the data were collected on selected variables from a local high school of 10th graders. For the purpose of this research proposal, the researchers identified and operationalized the variable of intrinsic motivation to conduct the analysis. For this research, students who were voluntary participants took a pre-survey and a post-survey related to their stressors as levels of intrinsic motivation. The instrument identified for the research was from a published survey that was accessible for educational research (Lockwood, Jordan, & Kunda, 2002). Items 1-14 in the survey results are related to motivation levels. Lockwood et al. (2002) revealed that motivation was enhanced when students were encouraged with strategies that matched their regular levels of concern. The scale assessed the amount of motivation and collapsed across all items to create a single index of motivation. A pre-survey was given to students to obtain their motivation score. For the purpose of this manuscript, a score of 56 indicated high intrinsic motivation and a score of 0 indicated low intrinsic motivation. A Chi-Squared Goodness of Fit was used to

indicate the distribution of multiple response items on the Likert scale. These items were displayed in contingency tables to provide the narrative explanations of the statistical data findings.

Setting and Procedures

The composition of the students for the quantitative case study analysis consisted of the following school-based demography 37% African American, 45% White, 15% Hispanic and 3% other including, but not limited to, Asian, American Indian and Multiple Ethnicity. The surveys were given to approximately 200 tenth graders at a school of convenience. The instrument used in this study was an online survey for students to complete at one sitting, representing the pre-survey and then again at the end of the study representing the post-survey. The instrument of measure to capture the perceptions of the student participants included the following items: how well do you succeed in staying friends with other students?; How well do you succeed in satisfying your parents with your schoolwork?; How well can you study when there are other interesting things to do?; How well do you plan to put more time in your school work?; and How well do you plan to procrastinate less? A Chi-Squared Goodness of Fit was used to indicate the distribution of multiple response items on the Likert scale. The use of the Chi Square Goodness of Fit allowed the researchers to describe how well a set of observations indicate discrepancy between the observed values and the values expected under a statistical model (Maydeu-Olivares & García-Forero, 2010). After the implementation of the pre-survey, students were given three coping strategies by the school based therapist to implement when they became agitated or stressed, prior to taking the post survey.

Results

The researchers captured the perceptions of the participants on the Motivation Scale (Lockwood et al., 2002) through pre- and post- survey analyzes. The high school students who participated in the pre-survey (n=40) selected response items for motivation along the lower level of the continuum, representing mainly the "almost never" and "sometimes" categories, as outlined in Table 1 for pre-survey responses. Additionally, Table 1 provides the frequencies for items that were used in the data collection procedure for the pre-survey analysis (i.e. Table 1 has the items from the motivational scale listed as Q1 – Q14). The results for Q1, which related to spending more time on school work participants, had a combined 55% frequency for the category "almost never" and "sometimes." For Q2, related to studying harder on tests and exams, participants had a combined 65% frequency for the category "almost never" and "sometimes." For Q3, related to spending less time partying, participants had a combined 70% frequency for the category "almost never" and "sometimes." For Q4, related to putting extra effort into term papers, participants had a combined 65.86% frequency for the category "almost never" and "sometimes." For Q5, related to keeping up with reading assignments, participants had a combined 73.17% frequency for the category "almost never" and "sometimes." For Q6, related to procrastinating less, participants had a combined 82.5% frequency for the category "almost never" and "sometimes." For Q7, related to studying for exams before the end, participants had a combined 70.73% frequency for the category "almost never" and "sometimes." For Q8, related to spending more time in the library, participants had a combined 69.23% frequency for the category "almost never" and "sometimes." For Q9, related to stop engaging in social activities, participants had a combined 80.49% frequency for the category "almost never" and "sometimes." For Q10, related to avoiding wasting time, participants had a combined 60% frequency for the

category "almost never" and "sometimes." For Q11, related to planning to be more organized, participants had a combined 77.5% frequency for the category "almost never" and "sometimes." For Q12, related to avoiding missing work deadlines participants had a combined 68.29% frequency for the category "almost never" and "sometimes." For Q13, related to being less casual about school work, participants had a combined 77.5% frequency for the category "almost never" and "sometimes." For Q14, related to focusing more on studies, participants had a combined 66.67% frequency for the category "almost never" and "sometimes."

Table 1

Frequencies of responses in pre-survey of motivation

	Never	Almost Never	Sometimes	Fairly Often	Very Often	Percent of Positives
Q1 More Time In School Work	3	10	12	10	5	
	7.50%	25.00%	30.00%	25.00%	12.50%	37.50%
Q2 Study Harder Test & Exams	1	14	12	11	2	
	2.50%	35.00%	30.00%	27.50%	5.00%	32.00%
Q3 Spend Less Time Partying	5	10	18	5	2	
	12.50%	25.00%	45.00%	12.50%	5.00%	17.50%
Q4 Extra Effort into Term Paper	4	13	14	6	4	
	9.76%	31.71%	34.15%	14.63%	9.76%	24.39%
Q5 Keep Up with Reading Assignments	2	17	13	6	3	
	4.88%	41.46%	31.71%	14.63%	7.32%	21.95%
Q6 Procrastinate Less	3	16	17	2	2	
	7.50%	40.00%	42.50%	5.00%	5.00%	10.00%
Q7 Start Studying for Exams before End	2	16	13	7	3	
	4.88%	39.02%	31.71%	17.07%	7.32%	24.39%
Q8 Spend More time in Library	9	12	15	0	3	
	23.08%	30.77%	38.46%		7.69%	7.69%
Q9 Stop Engaging in Social Activities	3	10	23	3	2	

	7.32%	24.39%	56.10%	7.32%	4.88%	12.20%
Q10 Avoid Wasting Time	5	13	11	5	6	
	12.50%	32.50%	27.50%	12.50%	15.00%	27.50%
Q11 Plan to be More Organized	2	17	14	2	5	
	5.00%	42.50%	35.00%	5.00%	12.50%	17.50%
Q12 Avoid Missing Work Deadlines	3	10	18	5	5	
	7.32%	24.39%	43.90%	12.20%	12.20%	24.40%
Q13 Be less Casual	4	9	22	3	2	
about School Work	10.00%	22.50%	55.00%	7.50%	5.00%	12.50%
Q14 Focus more of Studies	3	14	12	6	4	
	7.69%	35.90%	30.77%	15.38%	10.26%	25.64%

The researchers captured the perceptions of the participants on the Motivation Scale (Lockwood et al., 2002) through pre- and post- survey analyzes. The high school students who participated in the post-survey (n=40) selected response items for motivation along the lower level of the continuum, representing mainly the "almost never" and "sometimes" categories, as outlined in Table 2 for post-survey responses. Additionally, Table 2 provides the frequencies for items that were used in the data collection procedure for the post-survey analysis (i.e. Table 2 has the items from the motivational scale listed as Q1 – Q14). The results for Q1, which related to spending more time on school work participants, had a combined 37.5% frequency for the category "almost never" and "sometimes." For Q2, related to studying harder on tests and exams, participants had a combined 51.22% frequency for the category "almost never" and "sometimes." For Q3, related to spending less time partying, participants had a combined 52.5% frequency for the category "almost never" and "sometimes." For Q4, related to putting extra effort into term papers, participants had a combined 52.5% frequency for the category "almost never" and "sometimes." For Q5, related to keeping up with reading assignments, participants had a combined 51.36% frequency for the category "almost never" and "sometimes." For Q6,

related to procrastinating less, participants had a combined 50% frequency for the category "almost never" and "sometimes." For Q7, related to studying for exams before the end, participants had a combined 48.78% frequency for the category "almost never" and "sometimes." For Q8, related to spending more time in the library, participants had a combined 58.54% frequency for the category "almost never" and "sometimes." For Q9, related to stop engaging in social activities, participants had a combined 53.84% frequency for the category "almost never" and "sometimes." For Q10, related to avoiding wasting time, participants had a combined 56.1% frequency for the category "almost never" and "sometimes." For Q11, related to planning to be more organized, participants had a combined 58.54% frequency for the category "almost never" and "sometimes." For Q12, related to avoiding missing work deadlines participants had a combined 48.72% frequency for the category "almost never" and "sometimes." For Q13, related to being less casual about school work, participants had a combined 45% frequency for the category "almost never" and "sometimes." For Q14, related to focusing more on studies, participants had a combined 50% frequency for the category "almost never" and "sometimes."

Table 2

Frequencies of responses in Post-Survey of Motivation

	Never	Almost	Sometimes	Fairly Often	Very Often	Percent of Positive
Q1 More Time In School Work	0	3	12	16	9	
	0%	7.50%	30.00%	40.00%	22.50%	62.50%
Q2 Study Harder Test & Exams	1	3	18	13	6	
	2.44%	7.32%	43.90%	31.71%	14.63%	46.34%
Q3 Spend Less Time Partying	4	4	17	13	2	
	10.00%	10.00%	42.50%	32.50%	5.00%	37.50%
Q4 Extra Effort into Term Papers	0	2	19	14	5	

	0%	5.00%	47.50%	35.00%	12.50%	47.50%
Q5 Keep Up with Reading Assignments	1	2	17	13	4	
	2.70%	5.41%	45.95%	35.14%	10.81%	45.95%
Q6 Procrastinate Less	1	2	18	14	5	
	2.50%	5.00%	45.00%	35.00%	12.50%	47.50%
Q7 Start Studying for Exams before End	1	1	19	16	4	
	2.44%	2.44%	46.34%	39.02%	9.76%	48.78%
Q8 Spend More time in Library	2	5	19	12	3	
	4.88%	12.20%	46.34%	29.27%	7.32%	36.59%
Q9 Stop Engaging in Social Activities	3	3	18	14	1	
	7.69%	7.69%	46.15%	35.90%	2.56%	38.46%
Q10 Avoid Wasting Time	2	3	20	12	4	
	4.88%	7.32%	48.78%	29.27%	9.76%	39.02%
Q11 Plan to be More Organized	1	3	21	12	4	
	2.44%	7.32%	51.22%	29.27%	9.76%	39.03%
Q12 Avoid Missing Work Deadlines	0	2	17	17	3	
	0%	5.13%	43.59%	43.59%	7.69%	51.28%
Q13 Be Less Casual about School Work	1	3	15	15	6	
	2.50%	7.50%	37.50%	37.50%	15.00%	52.50%
Q14 Focus more of Studies	2	1	19	14	4	
	5.00%	2.50%	47.50%	35.00%	10.00%	45.00%

The selected research findings demonstratively provide evidence that the treatment decreased the percentage of "almost never" and "sometimes" categories for each item related to the Motivation Scale. The differences found suggest that the treatment for stressors as perceived by the participants resulted in the following: Q1 the difference from pre-survey to post-survey was 17.5; Q2 the difference from pre-survey to post-survey was 13.78; Q3 the difference from pre-survey to post-survey was 17.5; Q4 the difference from pre-survey to post-survey was 13.36; Q5 the difference from pre-survey to post-survey was 21.81; Q6 the difference from pre-survey

to post-survey was 32.5; Q7 the difference from pre-survey to post-survey was 21.95; Q8 the difference from pre-survey to post-survey was 10.69; Q9 the difference from pre-survey to post-survey was 26.65; Q10 the difference from pre-survey to post-survey was 3.9; Q11 the difference from pre-survey to post-survey was 18.96; Q12 the difference from pre-survey to post-survey was 19.57; Q13 the difference from pre-survey to post-survey was 32.5; Q14 the difference from pre-survey to post-survey was 16.65.

The largest differences between pre-survey and post-survey were for Q6, "Procrastinate Less" and Q13, "Be Less Casual about School Work." These differences from the researchers' analysis of the findings may be attributable to cultural differences (Lockwood et al., 2005) and stimuli instigated by the increased awareness of strategies for stressors. Ideally heightened awareness for adolescents of factors that impact their response to stress should manifest a marked commitment to their developmental growth in attacking the phenomena of test anxiety. Nevertheless, the analysis of the findings can only report increases and decreases from pre-survey and post-survey results. On items that may suggest intrinsic motivation, the authors identified selected findings of high school student responses on the frequency tables the highest positive results. The items were Q1 (More Time in School Work), Q6 (Procrastinate Less) and Q13 (Be less Casual about school work) see table 2. Although intrinsic motivation was not explicitly measured through the instrument, procrastinating less is operationalized as a factor that supports intrinsic motivation. It is suggested that intrinsic motivation may be the unexplained factor that is contributing to the students' perceptions in the post-treatment survey results for stressors cited in the research and, for Q1 (more time in school work), an increase in time on school work suggests an increase in intrinsic motivation to perform better.

Summary and Conclusion

All of the variables and factors that can be tested will not explicitly explain intrinsic or other motivation factors or coping mechanisms to deal with stressors in this research; however, the treatment offered did not explain the relationship between stress and types of motivation of adolescents that can be impacted by multiple factors (Larson, 2000). From the findings reported in table 2 among selected increases between pre-survey and post-survey results, the authors suggest the reduction in stress-related variables are from items Q1(25% increase), Q6(37.50% increase), Q13(40% increase) and Q14(19.36% increase).

The reduction of stressors among the high school participants for selected items leads the authors to suggest that the connection between the reduction in stressors and intrinsic or extrinsic motivation may exist. Mainly, the relationship in selected literature such as Lockwood, Marshall and Sadler (2002) on cultural factors should be considered. Although the researchers did not explicitly seek to analysis cultural differences in motivation and the connection to stressors and motivational factors, it is recommended that future research should seek to apply the instrumentation identified for this study to cross-cultural demographic groups.

The researchers have identified through the findings that communities of caretakers who are responsible for the successful transition of high school students to the world of education at the postsecondary level should consider the following propositions to buffer the stress that students endure throughout their educational journeys.

The considerations include parent screening on de-escalation of stressors, parental understanding of symptoms associated with stressors, placing realistic expectations on children and identifying ways to cope with stressors in the schools environment are at the top of the list.

Faith-based institutions should consider or escalate their outreach services in collaboration with higher education teachers and service-oriented professionals who are providing social, emotional, and cognitive resources for students. Higher education institutions should embrace the notion that preparation for college should include an intervention model which should involve the variables outlined in this research for traditional and nontraditional college students.   Also, IDEA regulations and policy advocates should develop pointed methodological designs that lend to longitudinal studies for Children with Disabilities (SWDs) and stressors. This process should include treatments that are designed to explore the variables and interventions associated with test related stressors and other challenges to successful completion of academic challenges in the teaching and learning environment, where high stakes testing is defined as the primary source of accountability of student success.

Finally, the research findings from student stressors identified at the high school level cited for this research should lead to a review of intervention models on stressors during the early childhood development years. In particular, since the No Child Left Behind Act (NCLB), the requirements for high stake testing performances from grades three to five should be utilized in a focused research study. Consequently, it is recommended from the research findings for this study using the Motivation Scale (Lockwood, et al., 2002) as a model in future studies for third graders and their parents may inform the community of stakeholder that stressors should be recognized in the early grades. Moreover, students with learning disabilities are also required to take high stakes testing in our school environments. As a result, this could make it even more difficult for students to finish high school and move towards postsecondary degrees and certifications leading to workforce readiness in a global economy. The composite recognition of the pre-survey and post-survey differentials found through the analysis in this study could lead to

a postsecondary replication of the study at the community college level and the traditional four-year institution with first year- first time college students.

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