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The Effect of Induced Happiness Levels on Academic Performance

A Thesis

Presented to the Department of Psychology

College of Liberal Arts and Sciences

and

The Honors Program

of

Butler University

In Partial Fulfillment

of the Requirements for Departmental Honors

Laura Marie Spice

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Abstract

Past research has shown that people who have high levels of happiness show greater job performance and productivity than those who are less happy (Lyubomirsky, King, & Diener, et al., 2005) and that happiness can be improved in both non-depressed and depressed people (Sin & Lyubomirsky, 2009; Seligman, Steel, Park, & Peterson., 2005). However, little research has been done on the application of positivity interventions in the classroom context. In 4 academic classrooms, positivity and control interventions were applied. I then measured well-being, engagement, and classroom performance. I found that the positivity intervention resulted in higher engagement and classroom performance for advanced students, but not for introductory students.

The Effect of Induced Happiness Levels on Academic Performance

Positive Psychology

Introduction. Positive Psychology is a fairly young specialization in psychology. The movement began in the 1990's when psychologists began thinking critically about psychology's tendency to focus primarily on the illnesses and problems of the human mind, rather than what makes humans thrive and succeed. Positive psychologists desired to focus more on studying the qualities of those who "optimally function" in life, rather than those with disorders (Linley, Joseph, Harrington, & Wood, 2006). However, positive psychology does not wish to deem the other specializations in psychology as "negative"; rather, the approach simply examines the human mind from a different perspective. Positive psychologists investigate what the catalysts for positive emotion are (e.g., does volunteering or shopping raise one's happiness level?). Also, as previously mentioned, positive psychology looks at what kind of behavior positive emotion evokes (e.g., better job performance). Essentially, positive psychology strives to understand what qualities lead to positive emotion, and how to utilize such qualities for attaining the optimal life (Linley et al., 2006). The field of positive psychology has yielded numerous findings that have been demonstrated to enhance one's well-being. This in and of itself is a wonderful thing. Perhaps, however, another consequence from enhancing subjective well-being is heightened performance in work and in performance related domains (Lyubomirsky, King, & Diener, 2005). Thus there is significant practical value in exploring the relationship between happiness and success in academic and organizational contexts.

Research leads us to know that positive emotions are certainly advantageous, as they can "broaden and build" one's experience in life. The "broaden and build" theory

(Fredrickson & Joiner, 2002) states that positive emotions are adaptively important in that they will broaden one's skills and resources in life. For example, being friendly to a stranger might lead to a friendship that provides new resources and joy. Curiosity and intrigue with a new part of town can lead to new navigational skills. These opportunities broaden our potential to build new skills, therefore sending us on what Fredrickson calls "upward spirals". The term upward spirals simply means that "positive emotions—through their effects on broadening thinking—predict future increases in broadening emotions" (Fredrickson & Joiner, 2002, pg. 172). This theory supports the notion that those who seek and experience positive emotions are more successful and have advantages over those who lack positive thinking.

Positive Psychology Interventions. Naturally, interventions have been devised in order to utilize these findings from the broaden and build theory. For example, research shows that when participants wrote down three things that made them happy each day for a week, their subjective well-being was increased for up to six months (Seligman, Steel, Park, & Peterson, 2005). Happiness (or subjective well-being) interventions have also proven to be effective in altering success in the classroom (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009). These interventions utilize tactics such as writing thank you letters, or merely listing the things that went well that day—simple tasks that are rarely conceptualized as relevant to breeding success. These interventions may change our conceptualization of factors that improve performance by shifting focus away from exclusively academic interventions, and opening up opportunities for educators to enhance academic performance using psychological interventions.

Challenges Facing the U.S. Education System

Many have argued that there are multiple problems holding America back from educational reform. First, there is the notion that individual differences between students serve as a decisive factor of success: some students are made for academia and some are not. America is synonymous with competition, and education tends to take an exclusive approach rather than an inclusive one (Oakes, Quartz, Ryan, & Lipton, 2000). Telling students that they are not made for school, or they are significantly different from other students, will inhibit the education system's progression. Oakes et al. (2000) state that it is easy to see our education as "wedded" to Anglo-American priority because it ultimately tends to Caucasians the best. Further, she argues that majority of schools diminish disadvantaged students to make them appear too needy, and needy children are not best suited for academia. Lastly, schools need to go beyond the procedural approach of superficial parent involvement and utilize a vision of "participatory democracy" (Oakes et al., 2000; p. 575). The main message—schools need to be reformed in a fashion that is inclusive and genuine. Positive psychology's ideology and theory serves as a remedy to many of the flaws that Oakes points out. America's education system needs to strive to appreciate and utilize human differences and instill that same attitude within its students.

Positive Psychology Solutions

Oakes et al.'s analysis of US education describes the type of problems that positive psychology intends to fix. Positive psychology focuses on the signature strengths of people, appreciating and maximizing personal differences. The American education system strives to have a "prototypical student", whereas positive psychology strives to utilize the differences in each student, acknowledging a multidimensional student body.

Positive psychology builds resilience in its students, teaching students to grapple with the disappointment often associated with our competitive culture. Thinking positively can further confidence in signature strengths (i.e. positive qualities, such as creativity or kindness, that are signature to each student), and improve social relations between classmates. Positive psychology in education forces students to look at the positive rather than negative, something that the education system today severely lacks. Positive psychology may be one answer for the problems preventing effective education reform from getting off the ground. Namely, researchers have proposed and studied three different models of education reform that are based on the positive psychology perspective: Positive Behavioral Support, Swarthmore College, and Geelong Grammar School.

Curriculums Utilizing Positive Psychology-Positive Behavioral Support. Positive Behavioral Support is a mechanism that utilizes positive psychology's theoretical stance through emphasizing positive thought and positive reinforcement. For years now school therapists have been using Positive Behavioral Support (PBS) on those children with behavioral problems. The initial goal of PBS was to "help an individual change his/her lifestyle…to render problem behavior irrelevant, inefficient, and ineffective by helping an individual achieve goals in a socially acceptable manner to reduce problem behavior" (Carr, Dunlap, Horner, Koegel, Turnbull, & Sailor, 2002). However, what used to be given to an isolated group of "problem behavior" students is now being utilized as a school-wide tool in many schools throughout the nation and internationally. School-Wide Positive Behavior Support (SWPBS) is viewed not as a tool to fix problem behavior, but as a school-wide program to prevent potentially aversive behaviors from forming in

students. SWPBS strives to improve a positive social environment, which prevents students from engaging in negative behavior (Surgai & Horner, 2002). SWPBS discourages disciplinary actions such as detention, surveillance cameras and security guards because there is actually little empirical data suggesting that these disciplinary actions create students of better character. It takes the ideology that "punishment and exclusion are ineffective when used without a proactive support system" (Surgai & Horner, 2002, p. 26). Instead, SWPBS uses a prevention based strategy that attempts to "break-up the contingencies that maintain antisocial behavior networks, increase rates and opportunities for academic success, establish and sustain positive school and classroom climates, and give priority to an agenda of primary prevention" (Surgai & Horner, 2002, p. 26).

Positive psychology's theory resonates within positive behavioral support. PBS is not directly based off of positive psychology's interventions of happiness, but it focuses on the preventative ideology that is seen in positive psychology. There does not have to be a "problem behavior" for PBS, just as in positive psychology there does not have to be a mental illness to use positive psychology. Further, it works to establish a positive atmosphere by ridding the schools of punishment based learning, and rewarding students for better behavior. PBS is a great way to begin implementing positive psychology ideology. However, PBS utilizes happiness and positivity as one entity, whereas positive psychology views happiness as a multifaceted thing and distinguishes the different qualities of happiness (character strengths, resilience, efficacy, flow, and gratitude). So in what ways are these specific componets of happiness implemented into schools if not through SWPBS? Are there academic interventions or curriculums that utilize positive

psychology's findings that the concept of "holistic happiness" can break into more effective smaller characteristics? The ground breaking research of Martin Seligman and his colleagues suggests that yes; we can utilize these characteristics—such as resiliency or character strengths—effectively within the academic arena.

Curriculums Utilizing Positive Psychology- Swarthmore College. Martin Seligman, often renowned as the father of positive psychology, reports numerous new academic curriculums that pull directly from the research he and his colleagues have published (Seligman et al., 2009). These proposed curriculums have been empirically tested in scientific form and work to utilize happiness as a complex emotion. Unlike SWPBS these new curriculums are not being used widely in schools across the country, as they are still being testeded in chosen schools. One curriculum which is directly based on positive psychology's empirical findings was developed by a psychology lab at Swarthmore College. The lab constructed a high school curriculum that used positive psychology in a high school in the Wallingford-Swarthmore school district. They deemed the project the "Positive Psychology Programme". They assigned the experimental condition of 25 positive psychology classes 80 minutes in length to 160 students, in which they learned positive psychology basics. They focused these 25 classes on helping students find their signature strengths, increasing positive emotion through gratitude and attention to positive events in life, and lastly focus on the experiences that increase meaning in their lives. They utilized an intervention called "three good things", where the students wrote down three good things that happened in the day and what caused these three good things to happen. Also, they required the students to write a letter of gratitude to someone they never properly thanked (Seligman et al., 2009; Seligman et al., 2005).

So far, there have been 3 cohorts studied from the beginning of their 9th grade year till the end of their 12th grade year (Gillham, 2010).

Results from the first two cohorts are still in progress but the results of the program continue to support the broaden and build theory. Students exposed to positive psychology experienced increased enjoyment and engagement at school. Also, their strengths related to learning and engagements were improved as reported by teachers, who were blind to who received the treatment. Social skills such as empathy, cooperation, assertiveness and self-control were improved (Seligman et al., 2009).

However, depression and anxiety did not improve, so Seligman suggested that the Swarthmore integrate another portion of the positive psychology research to their program. This is where the Penn Resiliency Program (PRP), a program developed by Karen Reivich, came into play for Swarthmore. Seligman suggests that the integration of PRP to Swarthmore would provide the best overall situation for students, as PRP covers areas that the Positive Psychology Programme lacks. The Penn Resiliency Program focuses on increasing optimism and decreasing day to day stressors through teaching flexibility about problems that are encountered. Also, the students were taught assertiveness, brainstorming, decision making, relaxation and coping and problem solving skills (Gillham, Reivich, Freres, Chaplin, Shatté, & Samuels, 2007). There have been 17 studies over the past 20 years, researching 8 to 15 year olds from diverse communities. The PRP has reported prevention of depression and anxiety, reduction of anxiety, and reduction of behavioral problems in its students—all findings generalizable across race (Seligman et al., 2009). If done properly, the integration of these two programs—PRP and the Positive Psychology Programme—would have great effects on

both academic performance and decreasing anxiety and depression. An integrated program would help to emphasize to students the importance of prosperity along with the importance of well-being.

Curriculums Utilizing Positive Psychology- Geelong Grammar School. What is perhaps the most intriguing of the proposed curriculums is a third major study done by Seligman and his colleagues at the Geelong Grammar School in Melbourne, Australia. With the help of positive psychologists, Geelong has been developing a school-wide curriculum infused with positive psychology's empirically supported interventions. This is the ultimate test to measure the benefits of positive psychology within an entire school. Courses have been developed to enhance students' knowledge of positive psychology interventions. These courses focus on enhancing resilience, gratitude, strengths, meaning, flow, positive relationships, and positive emotion. These qualities represent what positive psychology, at its core, is about. Students were asked to find their signature strengths and to utilize them in daily life. This helped establish better student/teacher relationships in that the teachers knew what strengths to focus on with each student. Once signature strengths were established, the students began gratitude letters a blessings journal, and recording nightly "what went well" (WWW). Another program focuses in on resilience training in order to cope with adversities that many students face in their high school years (Seligman et al., 2009).

Moving past blatant positive psychology courses, many of the teachers have begun to imbed positive psychology within their coursework. This is where the versatility of positive psychology is displayed. For example, in English courses teachers implemented signature strengths and resiliency training, as they assigned students to find

character strengths in their assigned readings. Teachers helped students to learn more about resiliency in observing books that depict characters that are faced with setbacks and are forced to channel their inner resiliency. Teachers assigned speeches with positive themes, such as give a speech of "a time you did something of value for others." Philosophy teachers asked students to research the past of ethics and pleasure. Geography teachers examined the different cultures and what geographical aspects could affect well-being. Music and art teachers used resiliency and savoring to instill confidence when a project goes wrong and enjoyment when a project goes well. Athletic coaches used focus training, savoring, and resiliency training. Courses started their day by asking students what they wrote in the WWW journals the night before (Seligman et al., 2009). The program has found these implementations to be beneficial to the students' subjective well-being levels.

Current Research

In my honors thesis, my goal was to take what I learned from existing positive psychology research and apply it to a college level academic setting. I wanted to study the effectiveness of an intervention that is more strongly rooted in positive psychology literature than SWPBS but less intensive than Swarthmore or Geelong. Realistically, schools are unlikely to immerse an entire curriculum with positive psychology like the ones at Swarthmore and Geelong do. However, shorter-term interventions may still be effective in schools.

Research Question. The goal of my study was to determine whether a simple positivity intervention in a classroom setting would improve students' performance. The study investigates whether subjective well being, engagement and performance in the

classroom are affected by experimental happiness intervention, and whether any such effects vary between beginning and more advanced college students. More specifically, students in the introductory course and the advanced course reported their baseline subjective well being. Then, they were assigned a positive psychology-based manipulation (three good things; Seligman, 2005) to complete each class day for a portion of the semester. At the end of the semester, students again completed a measure of subjective well being, and reported their engagement in the course. The course instructor provided performance data. First, I predicted that the "three good things" intervention would increase subjective well being and performance overall. I based this prediction on the body of research that supports the correlation between high levels of subjective well-being and performance. Secondly, I predicted that introductory students would show more change than the advanced students. I based this prediction on past research that younger students are more impressionable than older ones (Sadler-Smith, 1996).

Method

Participants

Participants were 40 students at the freshman/sophomore level and 44 students at the junior/senior level (total N = 85). There were 19 men and 65 women ages ranging from 17-23. There were 74 white participants and 11 were members of minority groups. Participants were asked to report their average grades at the institution prior to this class; 5 reported C level grades, 61 reported B level grades, and 18 reported A level grades. Participants were offered extra credit to their course grade for their participation in the study.

Design

Participants in the introductory level classes were randomly assigned their condition (control vs. positivity intervention) by the section of the course in which they were enrolled. The two sections of the introductory class were taught by the same professor. Likewise, participants in the advanced classes were randomly assigned their condition by section, with the same professor teaching each section. Because the study was a longitudinal daily study, random assignment was done by class rather than by each individual in order to control for demand characteristics.

Procedure

The study began half way through the academic semester when the experimenter visited the class to explain the study and administer the initial materials. The experimenter explained that participants would be asked to write a journal entry each class day and complete three questionnaires. The experimenter also explained that participants' data would be linked to classroom performance data, and explained the procedure for maintaining anonymity throughout the study. The participants then completed a consent form.

Participants were then given a subjective well-being (SWB) measurement (see Appendix A) to complete at the beginning of the study. The SWB measurement had four questions (e.g., *Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?*). Participants answered each question on a 1 (*not at all*) to 7 (*a great deal*) scale (Lyubomirsky, Subjective Happiness Scale). All four items were combined into a single scale (Cronbach's alpha = .88 at pretest and .83 at posttest).

The participants in the positivity condition were then given pre-made journals which were dated with the days they would be completing entries. Participants in the experimental condition were instructed to "write 3 good things that have happened in the past few days." Participants in the control condition were asked to write about "past memories prior to middle school." These instructions were identical to those used by Seligman et al. 2005. Participants completed the three good things or the past memories journals each class day for the remainder of the semester.

After the journals were finished on the last class day, the participants completed the same subjective-well being measurement as before and a modified version of the National Survey of Student Engagement (NSSE) in order to measure engagement (see Appendix B). The modified version was shorter and only used items that were classroom specific. The modified NSSE had 16 items which described behaviors that reflect engagement in the course (e.g., *Discussed ideas from your readings with others outside of class).* Participants responded with the frequency that they displayed the listed behavior on a 1 (never) to 4 (very often) scale. All sixteen items were combined into a single scale (Cronbach's alpha=.80).

Finally, academic performance was measured by professors' reports of each students' course grade. In each class, the professor administered two exams before the intervention and two exams after the intervention. Professors provided percentage scores for each exam and for overall class performance.

Results

Initial Analysis Strategy

To initially analyze the results, I submitted each of the dependent measures to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANOVA.

Subjective Well-Being

I submitted self-reported subjective well being at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANOVA. The analyses revealed a main effect of the intervention, F (1,80) = 4.04. $p <$ .05 that was qualified by an interaction between academic level and intervention, F (1,80) = 5.39. $p < .05$. The main effect demonstrates that, contrary to predictions, participants in the control condition reported higher subjective well being (M = 5.51) than participants in the 3 good things condition (M = 5.11). As shown in Figure 1, the interaction demonstrates that this effect was more pronounced in the advanced class (M = 5.80 for the control condition vs. 4.95 for the 3 good things condition) than in the introductory class (Ms = 5.21 and 5.28, respectively).

Engagement

I submitted self-reported engagement at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANOVA. The analyses revealed a marginally significant main effect of the class level, F (1,78) = 3.38. p = .07 that was qualified by a marginally significant interaction between academic level and intervention, F (1,78) = 3.64. p = .06. The marginally significant main effect demonstrates that participants in the advanced class reported higher engagement (M =

2.31) than participants in the introductory class (*M* = 2.15). As shown in Figure 2, the interaction demonstrates that in the introductory class the participants reported more engagement in the control condition (*M*=2.26) than in the 3 good things condition (*M*=2.03). Whereas, in the advanced classes, participants reported more engagement in the 3 good things condition (*M*=2.37) than in the control condition (*M*=2.26).

Academic Performance

I submitted overall course performance at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANOVA. The analyses revealed neither any main effects of the independent variables nor any interaction between them, all *F*s *ns*.

Primary Analysis Strategy

To determine whether baseline SWB and typical academic performance affected the results, I submitted each of the dependent measures to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA, with initial SWB and general school performance as covariates.

Subjective Well-Being

I submitted self-reported SWB at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA. The analyses revealed a marginally significant main effect of the academic level, F (1,78) = 3.20. p =.08 that was qualified by an interaction between academic level and intervention, F (1,78) = 8.50. $p < .05$. The main effect demonstrates that participants in the advanced class reported higher SWB (*M*=5.40) than participants in the introductory level (*M*=5.22). A shown by Figure 3, the interaction demonstrates in the introductory class, participants

reported higher SWB in the 3 good things condition (*M*=5.31) than in the control condition (*M*=5.13). However, in the advanced class, participants reported higher SWB in the control condition (*M*=5.62) than in the positivity condition (*M*=5.20).

Engagement

I submitted engagement at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA. The analyses revealed a marginally significant main effect of the academic level, F (1,76) = 3.68. p = .06 that was qualified by an interaction between academic level and intervention, F (1,76) = 4.53. p < .05. The marginally significant main effect demonstrates that participants in the advanced class reported higher engagement (M = 2.32) than participants introductory class (M =2.14). As shown in Figure 4, the interaction demonstrates that in the introductory class, participants in the control condition reported higher engagement (*M*=2.26) than participants in the 3 good things condition (M=2.03). However, in the advanced class the participants in the 3 good things condition reported higher engagement (*M*=2.40) than participants in the control condition (*M*=2.24).

Academic Performance

I submitted overall course performance at the end of the semester to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA. The analyses revealed a main effect of the intervention, F (1,75) = 4.40. p < .05 that was qualified by an interaction between academic level and intervention, F (1,75) = 4.00. p < .05. The main effect demonstrates that, contrary to predictions, participants in the control condition earned a higher final grade (M = 86.6%) than participants in the 3

good things condition (*M* =83.22%). As shown by Figure 5, the interaction demonstrates that in the introductory class, participants in the control condition earned higher course grade (*M*=87.6%) than participants in the 3 good things condition (*M*=81.1%). In the advanced class, there were minimal differences in final course grade by condition (*M*s = 85.6% and 85.4%, respectively).

Additional Analyses

As a more specific measure of the hypothesis that the intervention would improve performance, I submitted exam 3 (the exam *after* the intervention occurred) performance to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA with exam 2 (the exam *before* the intervention was introduced) as the covariate. This analysis revealed only a marginally significant interaction between the independent variables, F (1,83) = 3.66. p = .059. As shown by Figure 6, the interaction demonstrates that in the advanced class, participants in the 3 good things condition earned higher test grades (*M*= 83.2%) than participants in the control condition (*M*= 79.6%). However, in the introductory class, participants in the control condition earned higher test grades (*M*=84.1%) than participants in the 3 good things condition (*M*=80.1%).

In addition, I repeated this exact analysis to see if the pattern held on exam 4. I submitted exam 4 (the last exam of the semester) performance to a 2 (academic level: introductory vs. advanced) X 2 (intervention: 3 good things vs. control) ANCOVA with exam 2 (the exam *before* the intervention was introduced) as the covariate. Again, the analysis revealed only an interaction between the independent variables, F (1,83) = 9.78. $p < .01$. As shown by Figure 7, the interaction demonstrates that in the advanced level

class, participants in the 3 good things condition earned higher test grades (*M*= 82.6%) than participants in the control condition (*M*=79.1%). However, in the lower level class, participants in the control condition earned higher test grades (*M*=83.9%) than participants in the positivity condition (*M*=75.9%).

Discussion

The goal of the current study was to investigate the effect of an easily implemented positive psychology intervention on participant engagement and academic performance. The study began half way through the semester, so that grades prior to the intervention could be used as covariates. A subjective well-being pre-test was taken before the study began. Positivity and control conditions were randomly assigned by class to 2 introductory and 2 advanced classes. Participants completed the intervention for the second half of the semester, and completed the subjective well-being post-test and a classroom engagement survey at the end of the study. Grades were reported to the researcher by the instructor. It was hypothesized that participants in the positivity condition would show increased SWB, increased engagement and better academic performance than participants in the control condition.

The data analysis revealed data both concordant and discordant with my hypothesis. In agreement with the hypothesis, I found that the participants in the upper level class positivity condition reported feeling more engaged and earned significantly higher grades after the intervention than participants in the control condition. In the introductory class, I found an increase in SWB from the pre to the post test for participants in the positivity condition.

However, in opposition to my hypothesis, the participants in the introductory class control condition rated themselves as more engaged and earned significantly higher grades than participants in the positivity condition. Also, in the advanced class, participants in the positivity condition reported lower SWB than those in the control condition.

Interpretation of Findings

Results reveal an interesting discrepancy in the way introductory and advanced students responded to the manipulation. At the end of the study, introductory students in the positivity condition yielded higher SWB but reported lower engagement and had lower performance; advanced students in the positivity condition reported lower SWB but reported higher engagement and had higher performance than those in the control condition. What can account for this?

SWB seems not to be a factor in predicting engagement and performance. In fact, it wasn't correlated with either other variable (which were correlated with each other when prior grades were partialed out). One possible explanation could be that advanced students had higher SWB at the beginning of the study, making it difficult to detect increases in SWB; whereas introductory students had lower SWB at the beginning of the study, allowing more opportunity for enhancement. Thus, focusing on 3 good things may have aided the well being of students whose well-being was already marginal, but not increased for students who already had higher levels of SWB.

Having said that, the manipulation seemed to lead to engagement and performance enhancement for only advanced students. Advanced students have already established a social network on campus, their majors, and an interest in their coursework.

It is possible that participants in the advanced class who were in the 3 good things condition wrote about their successes in college, which further enhanced engagement and performance. Whereas, it is possible that participants in the introductory class who were in the 3 good things condition did not write about college successes, (because they are not established college students, and likely have less successes to write about). I am currently conducting a content analysis of this data to see if there is any validity to this claim. While this is one potential explanation for the discrepant effects of the manipulation on SWB, engagement, and performance, it does not explain why the results for SWB were inconsistent with the results for engagement and performance.

There were interesting trends in subjective well-being ratings. Over all, the participants in the control condition had significantly higher SWB ratings than participants in the positivity condition. This is important to investigate, as we would assume the change in SWB would mediate engagement and performance. However, the interventions could have potentially altered criteria I did not measure. For example, the intervention may have altered determinism, hope, or passion. The intervention was meant to enhance positive emotion, however I did not measure additional facets of positive emotion: I only measured subjective well-being as an entity. Perhaps, if I had measured more specific constructs I would have seen what exactly the intervention altered that caused the differences in performance and engagement.

Theoretical Implications

Positive psychology research consistently finds the trend that high subjective well-being correlates with high performance. It also finds that SWB is malleable through simple methods and interventions. Past research has also found that these interventions

improve performance. However, the current study suggests that the same intervention may have different effects on people in different stages in life. This idea is consistent with Seligman et al.'s (2005) findings that people who actively sought out SWB interventions benefitted from them. Further, these interventions may not directly improve SWB, but somehow manage to improve engagement and performance. The notion that SWB is the causal link to high performance may not be as straightforward as past researchers would lead us to believe; there may be additional factors that mediate the effect of positivity manipulations on performance. In my research, the positivity intervention enhanced *something* that ultimately resulted in higher performance, however it was not SWB. Further, the positivity manipulation used in this study actually decreased academic performance for the lower level students even though they reported higher SWB after the positivity manipulation. Additionally, the past research in positive psychology has found the intervention "3 good things" to consistently enhance SWB, whereas my study found it to only work on lower level students. These results suggest that classroom teachers cannot simply assume that a SWB intervention would enhance engagement and performance without taking into account the status of the students. Introductory students are in an adjustment period and advanced students have developed their community already. To integrate positive psychology into the classroom there may be specific interventions that are particularly effective (or ineffective) for certain types of students.

Limitations

The study had a relatively small sample size with only 89 participants, at a small private university. There were few minorities, and more women than men. The results are

not entirely generalizable to schools that have different demographics. Further, control and positivity conditions were randomly assigned by class, not by individual. We assigned by class to avoid any demand characteristics and complication with data collection, however it would have been better to randomly assign individual students to conditions.

Future Directions

In future research I would like to investigate a wide span of mediating factors that could lead to performance. I predicted that the positivity manipulation would increase SWB, which would then increase engagement and performance. However, SWB did not seem to be a predictor of either engagement or performance. Therefore, future researchers should use more inclusive and multifaceted pre-post tests to attempt to capture what factors the interventions changed. Additionally, I would like to see how far reaching the effect of positivity interventions is. For example, did the intervention affect any other of realms of achievement such as performance in other classes, clubs, and societies? Was GPA affected? There are many ways the intervention could have altered performance, and the grades in one class are only a small measurement of overall achievement. Lastly, how long do the effects of the intervention last, and would continuing the intervention strengthen the performance effect? Effects from the interventions could last far longer than the semester. Also, continuing the intervention may strengthen the effect and cause more pronounced performance and mediating effects.

Conclusion

In conclusion, the results of my thesis project suggest that an easily implemented positivity manipulation can result in increased engagement and higher academic

performance, at least for some students. More research will be needed to uncover the mediating factors that contribute to this promising finding that positivity interventions can foster academic success in college students.

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Figure 1: The Effect of Academic Level and Intervention on Subjective Well-Being Ratings (Initial Analysis)

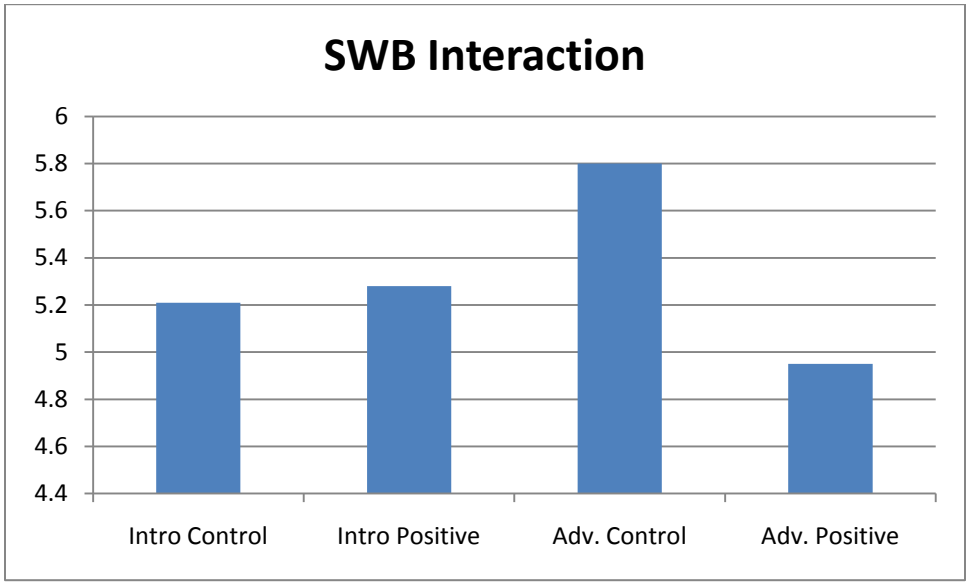


Figure 2: The Effect of Academic Level and Intervention on Engagement Ratings (Initial Analysis)

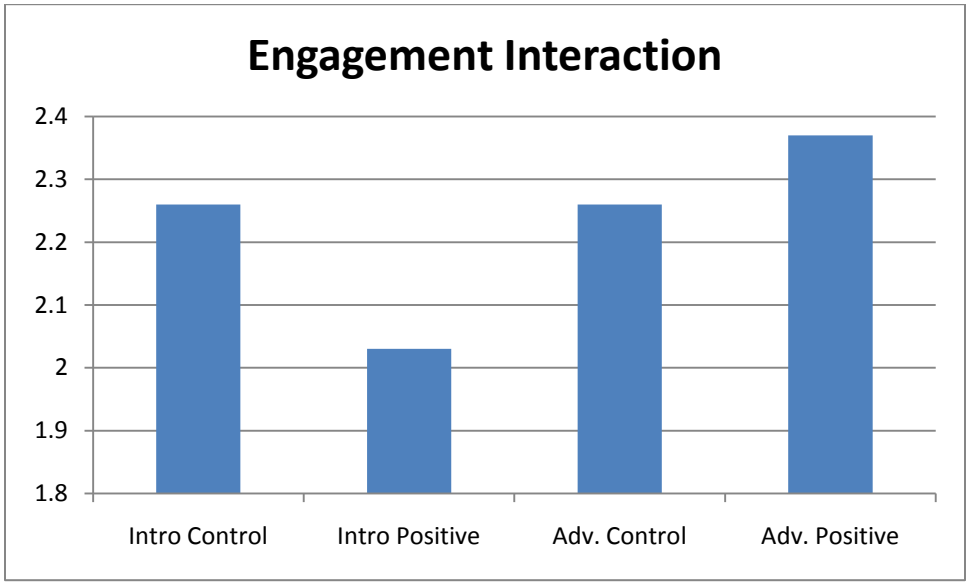


Figure 3: The Effect of Academic Level and Intervention on Subjective Well-Being (Primary Analysis)

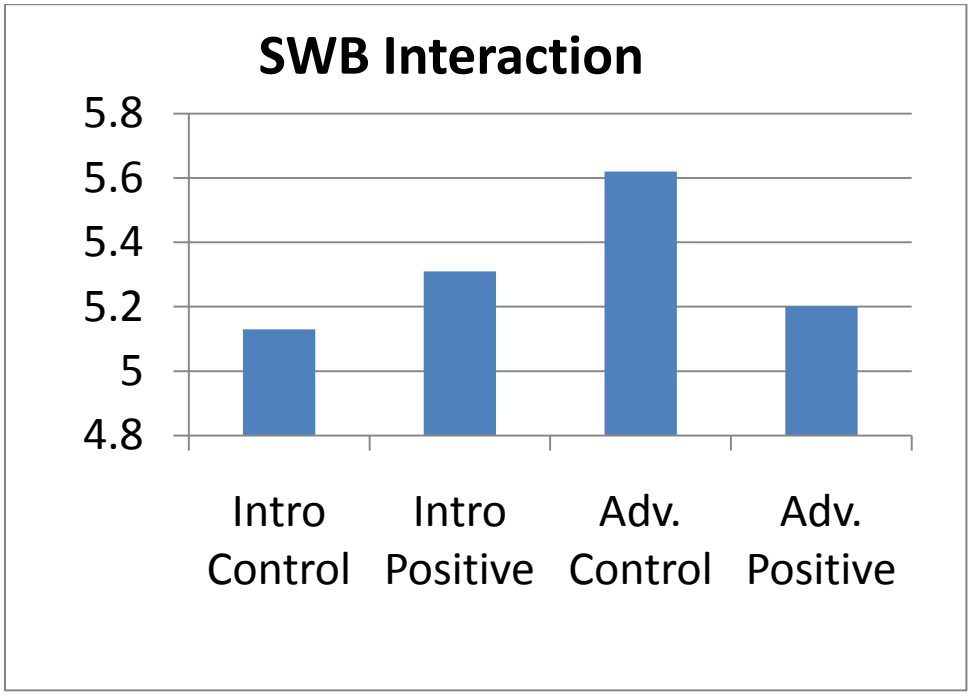


Figure 4: The Effect of Academic Level and Intervention on Engagement (Primary Analysis)

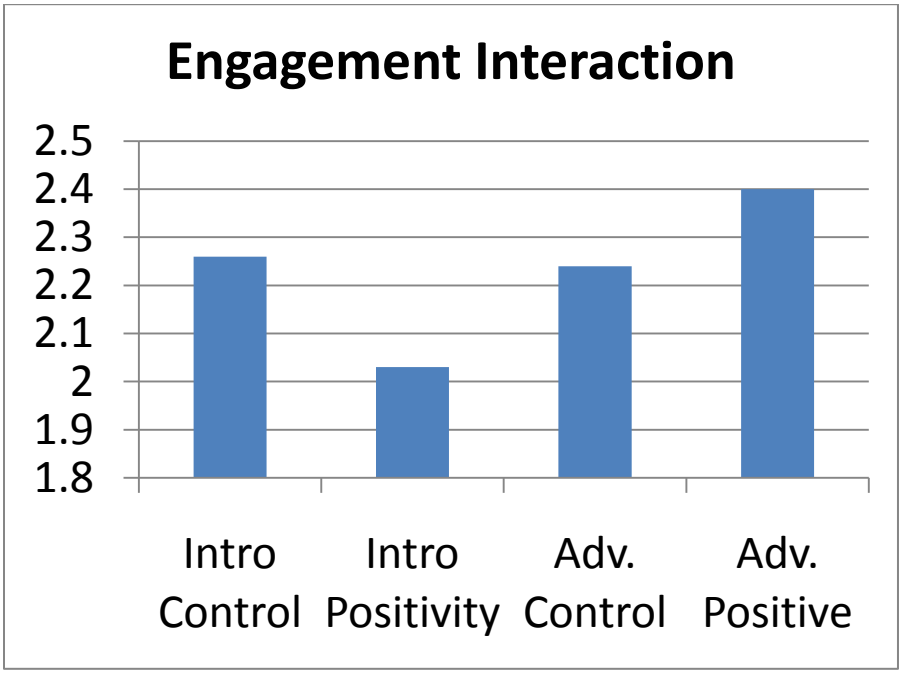


Figure 5: The Effect of Academic Level and Intervention on Academic Performance (Primary Analysis)

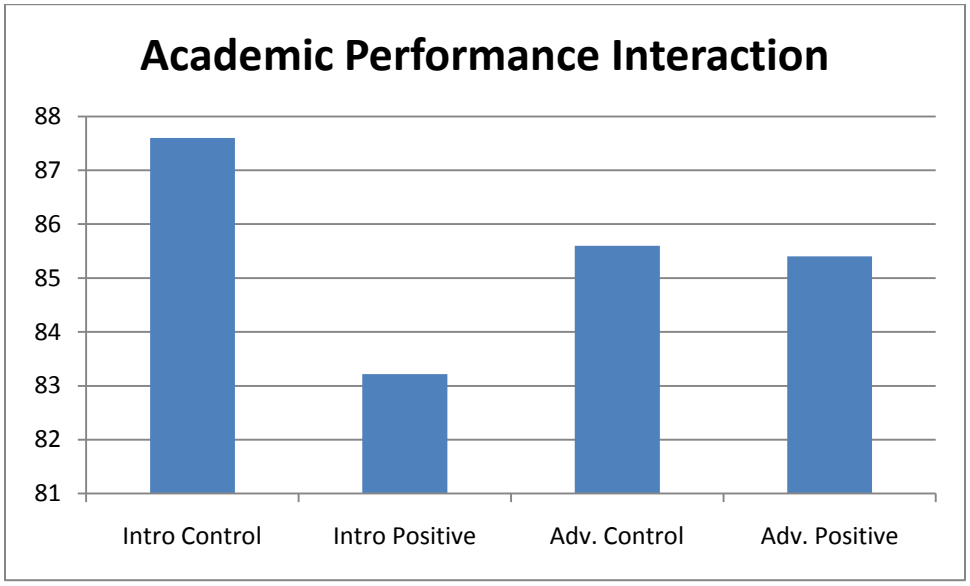


Figure 6: The Effect of Academic Level and Intervention on Test 3, Co-varying for Test 2 (Additional Analysis)

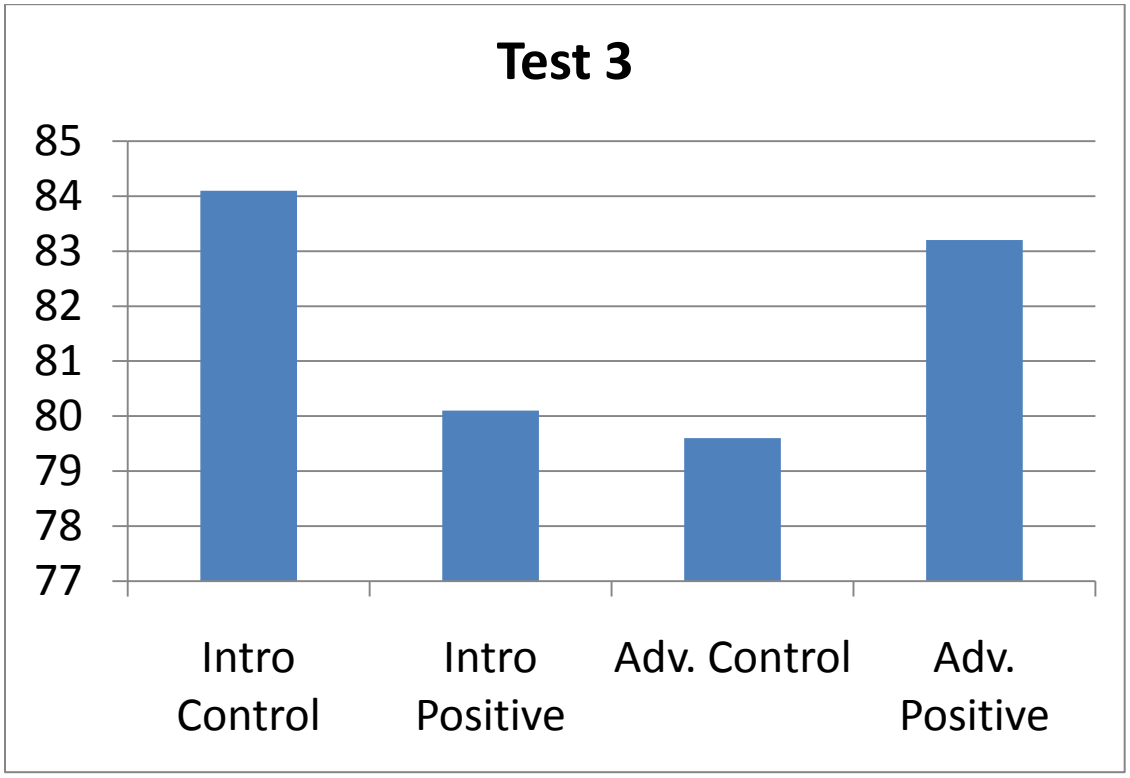
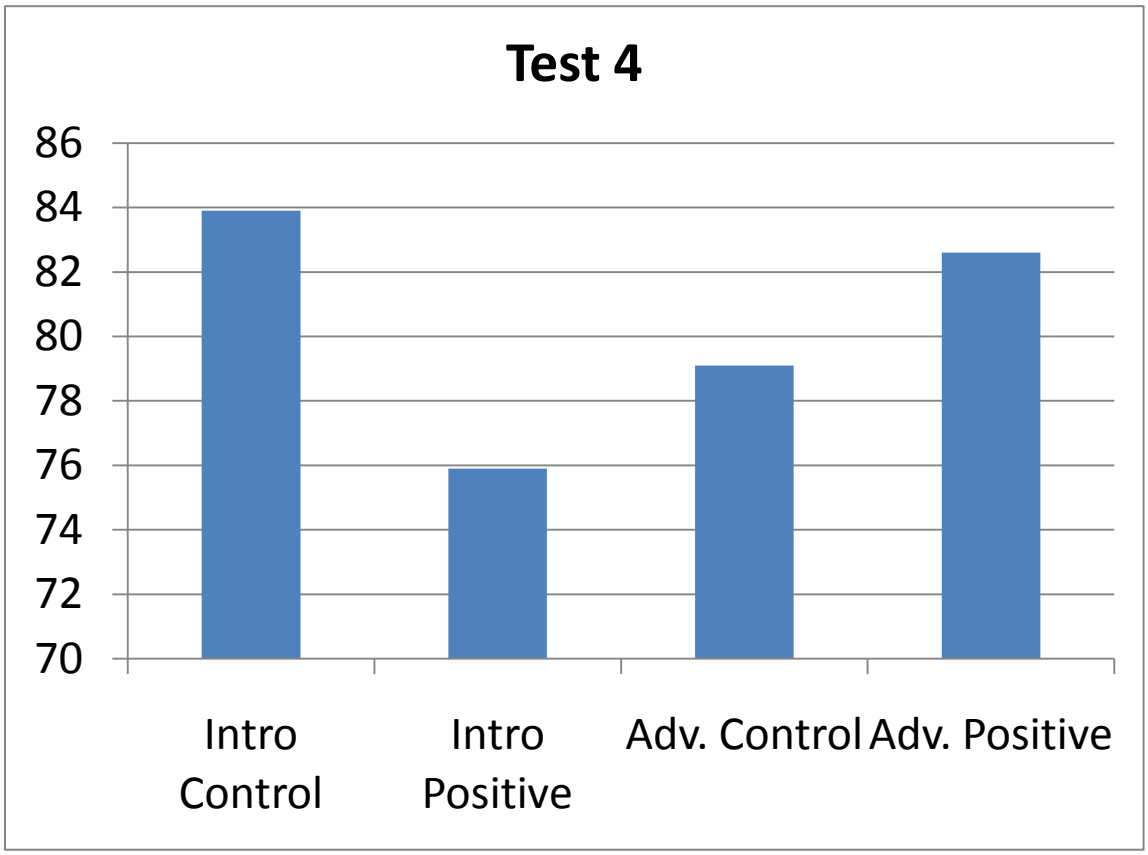


Figure 7: The Effect of Academic Level and Intervention on Test 4, Co-varying for Test 2 (Additional Analysis)



Appendix A—SWB Measurement

Directions: For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1----------2----------3----------4----------5----------6----------7

Not a very happy happy person **A very person**

2. Compared to most of my peers, I consider myself

1----------2----------3----------4----------5----------6----------7

less happy **more happy**

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1----------2----------3----------4----------5----------6----------7

Not at all **A great deal**

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1----------2----------3----------4----------5----------6----------7

Not at all **A great deal**

Appendix B—Engagement Measurement

Directions: In your experience in this course, about how often have you done each of the follow? Circle the number that applies.

		Never	**Sometimes**	**Often**	**Very Often**
a.	Asked questions in class or contributed to class discussion	1	2	3	4
b.	Made a class presentation	1	2	3	4
c.	Prepared 2 or more drafts of a paper or assignment before turning it in	1	2	3	4
d.	Worked on a paper or project that Required integrating ideas or Information from various sources	1	2	3	4
e.	Included diverse perspectives (different races, religions, genders) In class discussions of writing Assignments	1	2	3	4
f.	Come to class without completing readings or assignments	1	2	3	4
g.	Worked with other students on projects during class	1	2	3	4
h.	Worked with classmates outside of class to prepare for class	1	2	3	4
i.	Put together ideas or concepts from different courses when completing assignments or during discussion	1	2	3	4
j.	Used an electronic medium (listserv, chatroom, IM, etc.) to discuss or complete assignments	1	2	3	4
k.	Used e-mail to communicate with the instructor	1	2	3	4
l.	Discussed grades or assignments with the instructor	1	2	3	4

m. Discussed ideas from your readings with instructors outside of class	1	2	3	4
n. Worked harder than you thought you could to meet the instructor's standards	1	2	3	4
o. Discussed ideas from your readings with others outside of class (students, family, co-workers, etc.)	1	2	3	4