Spring 2019

Academic Confidence: A Quantitative Study of Living Learning Communities and Self-Efficacy

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Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Arts in Education

California State University, Monterey Bay
May 2019

Academic Confidence: A Quantitative Study of Living Learning Communities and Self-Efficacy

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Abstract

The California State University (CSU) system has a lower four-year graduation rate for freshmen students compared to the national average (i.e., 16.2% for the CSU and 39.8% nationally). It is crucial to provide services to students within the CSU system, particularly for those from underrepresented backgrounds to improve graduation rates and close the achievement gap. Research shows that academic confidence and self-efficacy play a key role in promoting student success. Living learning communities (LLCs) generate academic confidence through a sense of social belonging, but students must also believe in their own ability to succeed. The purpose of this quantitative, quasi-experimental pretest/posttest study was to investigate the effects of an online mindset intervention implemented to encourage current LLC students to achieve a greater sense of self-efficacy, and ultimately help them achieve academic success. Participants (n=33) were purposefully selected from a large first-year LLC with a diverse student body. Self-efficacy was measured via pretest and posttest using the Self-Efficacy Formative Questionnaire. Results indicated no statistical difference upon completion of the intervention, however, the mean scores of both the treatment and control groups experienced reductions from the pretest to the posttest. Further research should expand on the mindset intervention to include analysis of student grade point averages and utilize a more engrained approach to conduct the intervention.

Keywords: self-efficacy, living learning communities, academic confidence, social belonging, growth mindset

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Literature Review

In 2009, the American Graduation Initiative was introduced nationally with intentions of improving graduation rates of college-level students (Brower & Inkelas, 2010). By enabling more students to receive their degree, Americans would be better prepared to ensure the global success of the United States. Universities complied, and several new initiatives were developed to improve the graduation rates of students across the country. According to the National Center for Education Statistics (2015), the graduation rate for the 2008 cohort of first-time students graduating within four years from universities across the United States was 39.8%, compared to the California State University (CSU) system where only 16.2% of first-time students in the 2008 cohort graduated within four years (The California State University, 2015).

Within the CSU, a system-wide Graduation Initiative was introduced in 2010. The key objectives of the initiative included increasing the four-year graduation rate for first-time freshmen to 40%, while eliminating equity and achievement gaps for historically underserved populations (i.e., students who have not been afforded the same educational opportunities as their peers, creating a significant disadvantage; The California State University, 2016; The California State University, 2018b). The CSU Graduation Initiative identified eight areas of academic focus related to improving graduation rates, including academic engagement, advising, curriculum pathways, degree requirements, faculty development, leadership, research and evaluation, and support services (The California State University, 2013). The latest iteration of the CSU system-wide plan to boost graduation rates, referred to as the Graduation Initiative 2025, was launched in 2015 with the goal of increasing graduation rates among its 475,000 students spread across the 23 CSU campuses. The CSU described this plan as a focused effort to meet future workforce

demands in California by adding 100,000 more baccalaureate degree-educated citizens to the economy over the next 10 years, bringing the total number of expected graduates from the CSU system to over one million by 2025 (The California State University, 2018a).

As of October 2018, the four-year graduation rate for first-time freshmen in the CSU rose to 25.4%, with a two-percentage point reduction of the achievement gap between underrepresented students and their peers. The CSU accomplished this by investing in increased faculty and advising, adding 4,300 more course sections across the campuses, and allocating resources to academic support programs (The California State University, 2018c). In an email distributed by the CSU Chancellor to CSU employees regarding the Graduation Initiative, a few campuses were recognized for the creation of academic support programs for freshmen cohorts, which were designed to ensure students were on the right path during their first year on campus (The California State University, 2013). These cohorts, known as Living Learning Communities (LLCs), allow students with similar interests or backgrounds to live together in designated areas of campus housing and participate in learning as a collective group, creating a sense of belonging (Campus Website, 2016). LLCs are one of many student success strategies implemented to give students a sense of connection and belonging to their campuses. LLCs provide supports necessary to ease students' transition from high school to a four-year university (Kezar, 2015). By adopting a cohort model, LLCs allow students to transition as a group, with similar backgrounds and interests (Campus Website, 2016).

Living Learning Communities

LLCs have been shown to provide many benefits to students, including increased academic success, statistically higher grade point average (GPA), involvement in study groups, statistically higher probability of graduating on time, development of relationships with peers and faculty who share similar interests, and overall higher satisfaction with the campus

experience (Allen & Association for Institutional Research, 2011; Campus Website, 2016; Johnson & Romanoff, 1999; Schroeder, Minor, & Tarkow, 1999; Tinto, 1998a; Tinto, 1998b). When college campuses institute LLCs, the communities are developed with a wide range of student needs and experiences in mind. For example, there can be several LLCs available to first-year minority students, including the African Heritage LLC, LGBTQA+ LLC, and the campus' Educational Opportunity Program (EOP) LLC for historically underrepresented students (Campus Website, 2016). The first-year LLCs are especially important, as advising for first-generation college students is crucial to student success and creating a sense of belonging (Kezar, 2015). First-generation, underrepresented students are not only new to the college experience but are often simultaneously overcoming disadvantages such as lower academic preparation in high school, difficulty transitioning culturally and socially, and lower family income and support (Nepal, Johnson, Jacobs, & Weichold, 2018; The California State University, 2013). To promote continued learning for first-generation, underrepresented students, it is necessary to provide support services to increase academic confidence.

Services provided to underrepresented students play an important part in reducing the achievement gap. Allen (2011) conducted a study comparing students participating in a LLC for underprepared freshmen with non-LLC students and found that students maintained higher levels of academic confidence when they participated in LLCs. Additionally, Allen's (2011) study indicated that academic confidence led to higher GPAs in college courses. Other studies also reported higher GPAs as a result of participation in a LLC (Johnson & Romanoff, 1999; Scroeder et al., 1999). For example, Johnson and Romanoff (1999) conducted a study with students participating in the pilot year of a LLC program. Results showed students who participated in the LLC felt more confident in their academic coursework due to increased

writing, critical thinking, teamwork, and service-learning skills. In addition, the study found students who participated in the LLC earned more credits and were more engaged on campus (Johnson & Romanoff, 1999). These studies demonstrate that students are more successful when they are actively engaged on campus. Tinto (1998a) emphasized the importance of student engagement, and the shared learning experience that occurs within learning communities helps bridge the academic-social gap present in student life. Furthermore, Tinto's (1998b) research showed that supportive peer groups were a valued part of the LLC experience, with students identifying peer support as an important factor in managing the challenges faced during the term. Students also felt greater academic engagement as a result of the shared experience of the LLC based on developed relationships. In turn, this led to increased student involvement both in and out of the classroom (Tinto, 1998b). Similarly, Schroeder and colleagues (1999) found first-time freshmen students in a LLC felt higher levels of academic integration and commitment to the university compared to non-LLC students. The study also revealed students who participated in the LLC reported higher levels of involvement on campus (Scroeder et al., 1999).

Participation in a LLC encourages a sense of belonging within freshmen students (Allen & Association for Institutional Research, 2011; Johnson & Romanoff, 1999; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b). Unfortunately, for some students, a lack of sense of social belonging upon entering a university campus can lead to low academic confidence. Students, particularly those from underrepresented backgrounds, may also feel they are not intelligent enough to be successful at a university (Hochanadel & Finamore, 2015). For this reason, simply generating a sense of belonging on campus is not enough. Kirp (2016) acknowledged a lack of belonging combined with the fear of failure that many freshmen experience when they begin

their college career. These fears can limit students' potential and must be overcome to reach academic success.

Efficacy, Mindset, and Belonging

Students' fear of not belonging may lead to self-doubt as to whether they will succeed in college. If a student does not perform well on an exam or is not called on by the instructor, it creates doubt within the student, negatively reinforcing the thought that the student does not belong (Kirp, 2016). This fear is considered stronger in students who come from first-generation or underrepresented backgrounds (Kirp, 2016). In contrast, students who realize that early struggles in college are common and do not represent an inability to succeed are more likely to achieve greater academic success compared to their peers who see early failure as indicative of their future experiences. While students in a LLC may acquire a greater sense of belonging, individual success is still dependent on one's belief in their own ability to succeed, accomplish a task, or achieve a goal, referred to as *self-efficacy* (Bandura, 1982; Gaumer Erickson, Soukup, Noonan, & McGurn, 2018). Students with greater levels of self-efficacy have been shown to have higher levels of academic achievement compared to their prior performance and measured level of ability (Dweck, Walton, & Cohen, 2011). Self-efficacy can be sustained from understanding the challenges faced as a college freshman are common and can be improved upon (Dweck et al., 2011; Yeager et al., 2016). Self-efficacy is lower in first-generation students compared to non-first-generation peers (Nepal et al., 2018). Students from underrepresented backgrounds are most susceptible to feelings of inadequacy and would most benefit from higher self-efficacy through development of a growth mindset (i.e., the concept that intelligence can be increased with effort and continued learning; Dweck et al., 2011; Nepal et al., 2018; Yeager et al., 2016).

Students with lower self-efficacy perceive themselves as incapable of success and avoid challenges, making it crucial to overcome a fixed mindset (Nepal et al., 2018). In Yeager and colleagues' (2016) study, freshmen students from disadvantaged backgrounds participated in an online 40-minute workshop focused on overcoming the idea that intelligence is fixed and cannot be improved on (i.e., fixed mindset). The intervention reinforced the idea that intelligence can be learned through hard work and dedication, which leads to higher rates of achievement (i.e., a growth mindset; Yeager et al., 2016). The intervention also featured stories from upperclassmen's accounts of their first year at college; demonstrating others' hardships and sense of not belonging; as well as how they were able to succeed despite setbacks (Yeager et al., 2016). As a result, Yeager and colleagues (2016) found that the achievement gap between students from disadvantaged and non-disadvantaged backgrounds across the three campuses improved by 31% to 40%. By generating a sense of social belonging and demonstrating how to overcome hardships, the study found that the one-time interventions resulted in freshmen students becoming more likely to earn higher GPAs, live and participate on campus, and seek out academic assistance (Yeager et al., 2016). The importance of social belonging is paramount in the college setting as it is linked to numerous outcomes.

Dweck and colleagues (2011) indicated that a sense of social belonging is linked to long-term student motivation and academic success. Specifically, students who have better relationships with peers and teachers experience a greater sense of belonging on campus. This creates a cascading effect and results in higher motivation, more engagement in classes, and better grades (Cohen & Walton, 2011). Students who participate in a LLC are shown to have a greater sense of belonging, which creates opportunities for academic perseverance and excellence (Allen & Association for Institutional Research, 2011; Johnson & Romanoff, 1999;

Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b). Students with higher self-efficacy have been shown to have higher levels of academic achievement due to their own belief in their ability to succeed and accomplish a goal, which results in higher probabilities for graduating within four years (Dweck et al., 2011; Yeager et al., 2016).

Research shows that academic confidence and self-efficacy are key factors behind student success (Allen & Association for Institutional Research, 2011; Cohen & Walton, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Nepal et al., 2018; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b; Yeager et al., 2016). LLCs generate academic confidence through a sense of social belonging, but students must also believe in their own ability to succeed (Allen & Association for Institutional Research, 2011; Cohen & Walton, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Nepal et al., 2018; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b; Yeager et al., 2016). Due to the lower four-year graduation rates within the CSU system compared to the national average (i.e., 16.2% for the CSU and 39.8% nationally; The California State University, 2015; National Center for Education Statistics, 2015), it is crucial to improve services to students within the CSU system, specifically for those from underrepresented backgrounds to close the achievement gap. While LLCs develop social belonging in students, it is necessary to also generate a greater sense of self-efficacy to effectively assist students from underrepresented backgrounds in overcoming their own fixed mindset to achieve academic confidence.

Method

Purpose

The purpose of this study was to implement an online mindset intervention with participants in a LLC, similar to Yeager and colleagues' (2016) intervention, to encourage

students to change how they think about themselves and achieve a greater sense of self-efficacy. The goal of this study was to utilize a LLC with a higher concentration of first-time freshmen and underrepresented students on the basis that these students would have already achieved a greater sense of belonging on campus. Then an intervention with a focus on self-efficacy would be implemented with the LLC students. A greater sense of self-efficacy would allow students in the LLC to individually feel more capable of overcoming obstacles to reach their goals, both in current academic pursuits and in the future.

Research Question

Does participation in a Living Learning Community (LLC) coupled with a mindset intervention increase self-efficacy in first-year students?

Hypothesis

Based on research of LLCs and self-efficacy, it was hypothesized that students who participated in both a LLC and a mindset intervention would demonstrate higher levels of self-efficacy compared to students who did not participate in a LLC and intervention (Allen & Association for Institutional Research, 2011; Cohen & Walton, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Nepal et al., 2018; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b; Yeager et al., 2016).

Research Design

This study utilized a quantitative, quasi-experimental, two-group, pretest-posttest research design. The sample groups came from LLCs focusing on first-generation, underrepresented college students at a four-year university within the larger framework of the CSU system. There was one control group and one treatment group. The control group consisted of half of the student volunteers participating in a first-year LLC. This group did not receive any

additional intervention. The treatment group consisted of the second half of the student volunteers participating in a first-year LLC; these students received an intervention over the course of four weeks. Both the control and treatment groups completed a pretest survey at the start of the study and a posttest survey at the completion of the intervention.

Independent variable. The independent variable in this study was a four-week mindset intervention administered by the researcher. As part of the intervention, students viewed videos online pertaining to growth mindset and self-efficacy. These videos were a collection of items found to demonstrate the key components of self-efficacy: belief in one's ability to grow and belief in one's ability to achieve a goal (Gaumer Erickson et al., 2018). Some videos incorporated the growth mindset: the concept that intelligence can be increased with effort (Dweck et al., 2011). Videos were selected from YouTube (i.e., publicly available for viewing) by the researcher based on origin, content, length, and perceived interest (i.e., material that would be motivating to the participants in the treatment group). The researcher also selected videos based on using content featuring reputable individuals (e.g., Carol Dweck), and viewed all content to ensure it was easy to comprehend and featured many positive reviews and ratings. Most importantly, each video selected was found to tie in to the key elements of teaching self-efficacy: incorporating positive feedback focused on progress, used modeling skills, encouraged students to compare themselves to their own progress instead of their peers, and generally supported self-efficacy by sharing information on the physiology of the brain, provided examples of individuals who developed skills despite setbacks and struggles, and encouraged mentoring (Research Collaboration, 2019). Secondary videos were selected based on recognition of famous individuals or characters to reinforce the messages of the primary videos.

Dependent variable. The dependent variable in this study was self-efficacy, defined by Bandura (1982) as the belief in one's ability to succeed in specific situations or accomplish a task. The students' self-efficacy was measured by the Self-Efficacy Formative Questionnaire developed by Gaumer Erickson and colleagues (2018). The Self-Efficacy Formative Questionnaire was administered as a pretest and posttest by the researcher to the control and treatment groups.

Setting & Participants

This study took place at a four-year university within the larger framework of the CSU system. Of the student population, approximately 41% of students identified as Mexican-American, 26% White, 12% of an unidentified race, 6% other Latino, 6% two or more races, 4% African-American, 3% Asian, 2% Filipino, with less than 1% identifying as either American-Indian or Pacific-Islander. Approximately 33% of students identified as first-generation college students, while approximately 13% of students were completing their freshman year (Institutional Research and Analysis, 2018).

Participants in this study consisted of students who were part of a LLC designed for first-year, first-generation college students. The specific LLC was purposefully selected due to higher concentrations of students from underrepresented backgrounds, as these groups were targeted by the CSU Graduation Initiative to reduce achievement gaps. Of the approximately 160 students participating in the selected LLC program, the researcher asked for volunteers to participate in the four-week intervention study and received a total of 33 participants. The volunteers were randomly divided in half among the control and treatment groups.

Treatment group. The treatment group consisted of 16 student volunteers from a LLC for first-generation college students. Of the 20 original volunteers, four had to be removed

because they did not respond to multiple requests to complete activities. The treatment group included 12 female students (75%) and four male students (25%). Six students (37.5%) were first-generation college students, while ten were not (62.5%). Within the group, approximately 31% identified as White, 25% Hispanic/Latino/a, 12.5% Asian, 12.5% African-American, and almost 19% did not identify their ethnicity (Campus Institutional Assessment & Research, 2019).

Control group. The control group consisted of 17 volunteers from the LLC for first-generation college students. The control group included 13 female students (76.5%) and four male students (23.5%). The group consisted of 11 first-generation students (64.7%) and six non-first-generation. Approximately 29.4% of students identified as Hispanic/Latino/a, 11.8% White, 5.9% Asian, 5.9% African-American, 5.9% American-Indian, while 41.2% did not identify their ethnicity (Campus Institutional Assessment & Research, 2019).

Measures

The pretest and posttest survey questions were compiled from Gaumer Erickson and colleagues' (2018) Self-Efficacy Formative Questionnaire (see Appendix A). The questionnaire is designed to measure each students' belief in their ability to grow with effort and the belief in their ability to meet specific goals: the two main components of self-efficacy. Students responded to the questionnaire by self-rating 13 items on a Likert-type scale. Of the 13 items, there are two subscales: the first 8 items are related to a belief in personal ability and the remaining 5 items are related to a belief that ability grows with effort (Gaumer Erickson et al., 2018). The scale ranges from 1 (not very like me) to 5 (very like me). Students responded to the survey online and via hard-copy with the researcher, with a completion time of less than 5 minutes.

Validity. The Self-Efficacy Formative Questionnaire was developed in 2015 by Gaumer Erickson and colleagues as part of the Research Collaboration organization. Therefore, the measure has content and construct validity. The questionnaire was developed after an extensive review of research related to self-efficacy, which resulted in the identification of the two main components of self-efficacy: belief in the ability to grow with effort and belief in the ability to meet specific goals (Gaumer Erickson et al., 2018). The measure was developed for primary use with students K-12, however, was used for this study to ensure understanding by all study participants (e.g. there was a possibility that students from underrepresented backgrounds may include those who understand English as a second language).

Reliability. The questionnaire was tested for reliability over a two-year period with middle and high school students (grades 6-12). Cronbach's alpha for the entire survey was found to be high with $\alpha = .89$. The first subscale of 8 items for belief in personal ability had a high reliability of $\alpha = .841$ and the second subscale of 5 items for belief in the ability to grow with effort had a high reliability of $\alpha = .81$ (Gaumer Erickson et al., 2018). Because the questionnaire was available online, all student responses were charted directly on the survey website. The researcher separately analyzed the results and compared them to the results provided by the survey website.

Intervention

The intervention consisted of a compilation of motivational videos related to self-efficacy (Bandura, 1982). The researcher collected video content from a publicly available online source (i.e., YouTube) by searching for educational videos created or endorsed by known speakers or research organizations. There was a total of eight videos: two were distributed each week over the course of four weeks. Each week included a main video of approximately ten minutes

featuring nationally recognized motivational speakers (e.g., Jim Cathcart) or field experts (e.g., Carol Dweck, Ph.D. in Psychology; Alison Ledgerwood, Ph.D. in Social Psychology; David Sitt, Psy. D. in Clinical Psychology). Additionally, a brief secondary video was included to reiterate the concept from an alternate approach to recapture participant's attention. These videos included clips from popular movies (e.g., Monsters University, The Pursuit of Happyness) and motivational videos focused on famous individuals throughout history who failed before achieving success or sports stars encouraging students to continue pushing to reach greatness.

One example features a video presentation given by Carol Dweck in which she demonstrated how students can achieve a higher sense of self-efficacy through the growth mindset (i.e., intelligence can be increased with effort; Dweck et al., 2011), which in turn, led students to experience greater levels of academic achievement (Dweck, 2014). The intent of the video content was to improve student beliefs in their own self-efficacy. Additionally, students received a reflection prompt to coincide with each week's topic (e.g., during the third week, students viewed content focused on overcoming negative thoughts and pushing themselves to learn, followed by the prompt: what is something you have been successful at this semester and what steps did you take to be successful?) The videos were distributed to the treatment group over the course of four weeks through a Google Team Drive with restricted access. Through a Google Team Drive, the researcher was able to track the responses of the treatment group to ensure that each participant viewed the content. The amount of time spent viewing materials and reflecting on the prompts was kept to 10 to 20 minutes based on feedback from the campus LLC program coordinator to ensure students would not be inconvenienced by participating in the study.

Procedures

Prior to beginning the study, the researcher submitted a protocol requesting approval to complete human subjects research at the specific CSU campus (i.e., the campus' Institutional Review Board (IRB) process). As part of the campus IRB protocol, a consent form (see Appendix B) was created to collect consent from volunteers via Student ID and email address. This data was secured on a password protected, encrypted file.

During the spring semester, the researcher collaborated with the campus LLC program coordinator to distribute an invitation to participate in the study to all members of the chosen LLC for first-year students primarily from underrepresented backgrounds. Recruitment of volunteers was conducted over a week-long period using flyers and email invitations distributed by the LLC program coordinator to ensure anonymity of the members of the LLC until students completed the consent form to participate. Additionally, the LLC program coordinator scheduled two sessions for the researcher to visit students in the campus housing residence where the specific LLC was housed to recruit students face-to-face. A third session was later added to recruit additional volunteers. The researcher collected the consent form from all volunteers in person during the face-to-face sessions. The consent form advised potential participants of the purpose, participation required, potential risks, and contact information of the researcher and designated IRB official. The identifiable data of an email address was collected for purposes of granting access to the Google Team Drive, and the Student ID was collected for purposes of collecting demographic data from the campus' information system and to match pretest and posttest surveys.

Once the volunteer sample was identified, the researcher distributed the Self-Efficacy Formative Questionnaire pretest survey electronically to all students from the first two

recruitment sessions (i.e., treatment and control groups; Gaumer Erickson et al., 2018). At the third recruitment session, the researcher collected the pretest survey in person and manually input the responses online. Each student used their Student ID number to allow the researcher to match pretest and posttest responses to determine the effectiveness of the intervention. Once the pretest was completed, the control group did not receive any additional information from the researcher, while the treatment group received the video intervention materials focusing on improving each student's sense of self-efficacy.

The researcher set up an electronic site using Google Team Drive to release the intervention material weekly over the course of four weeks. Each week, the researcher notified the treatment group to review the material in the Team Drive, consisting of video content approximately 10 to 20 minutes in length and brief reflection prompts to ensure students viewed the material. The researcher sent reminders as needed to ensure all participants in the treatment group viewed the material. At the end of the fourth week, the posttest survey was distributed to all students in the control and treatment groups.

Fidelity. To ensure the fidelity of this study, the researcher only allowed access to the intervention materials for the treatment group. All materials were virtual, therefore additional access for the control group was not granted. The researcher advised all participants in the treatment group to refrain from sharing or discussing the intervention materials with anyone else. None of the participants were informed of the purpose of the study. A secondary observer (i.e., the Master of Education program advisor) was utilized to monitor online access to the intervention. Using the Fidelity Checklist (see Appendix C), the secondary observer monitored 20% of the intervention. After the first week, the researcher and observer determined it would be best to monitor the Google Team Drive on Mondays following the completion of the previous

week's activities to ensure all members of the treatment group participated. The researcher and secondary observer both analyzed the results from the survey and compared it to the online data collection tool generated from the Self-Efficacy Formative Questionnaire (Gaumer Erickson et al., 2018) to ensure there was agreement about the results.

Ethical Considerations

The intervention was not potentially harmful to any participants, physically or emotionally. All intervention activities were administered online and took less than half an hour to complete each week as directed by the LLC program coordinator to avoid inconvenience to students. Participants accessed the material at any time and/or place of their choosing each week. All participant data and responses were kept confidential by ensuring that the participant's identities were not released in the study by utilizing password protected, encrypted files to protect data. The researcher used the measures outlined in this study and did so without deviation. If it was found that the intervention significantly made an impact on the treatment group, the researcher would recommend that the intervention be implemented on a greater scale, either with additional LLCs or campus-wide.

Validity threats. Several steps were taken to reduce validity threats of the study. Researcher bias was overcome by allowing the participants to volunteer for the study. The researcher was not part of the selection process aside from identifying the specific LLC group for the study. Additionally, the student volunteers were randomly divided in half between the control and treatment groups, as students who were willing to volunteer for the study may have already had a higher sense of self-efficacy compared to students who did not volunteer. The intervention was administered online with access only shared with the treatment group. The control group was unable to view the materials in the Team Drive, which ensured they did not receive the

intervention as administered. The researcher monitored the Team Drive multiple times each week to ensure that all participants in the treatment group viewed the video content and to verify that no alternate individuals had been given access. Due to the online nature of the intervention materials, the researcher advised students at the start of the intervention and each week thereafter to avoid outside discussion or sharing of video materials. If it was found that some participants had not viewed the content, the researcher would reach out and remind students that they committed 10 to 20 minutes each week to participate in the study and that it was intended to help them.

The treatment group was comprised of volunteers who agreed to access the intervention material weekly for the duration of the study. Additionally, the treatment group was advised not to share any details of the intervention materials with anyone else each week throughout the study. The researcher shared the intervention materials with the LLC program coordinator so that the materials could be distributed to all members of the LLC if desired at the completion of the study. This ensured that any members of the control group who were inadvertently made aware of the study could still access the material upon completion of the intervention.

Data Analyses

All data was entered into the Statistical Package for the Social Sciences® (SPSS®) for Windows, version 24.0.0 (SPSS, 2016). No names or identifying information were included in the data analysis. Before analysis was conducted, all data was cleaned to ensure no outliers were present (Dimitrov, 2012). After cleaning the data, Independent samples t-tests (control and treatment groups) and dependent samples t-tests (pretest and posttest) were conducted to determine the significant difference in self-efficacy between the two mean scores on the Self-Efficacy Formative Questionnaire (Gaumer Erickson et al., 2018). Further, before interpreting

the analytical output, Levene's Homogeneity of Variance was examined to see if the assumption of equivalence had been violated (Levene, 1960). If Levene's Homogeneity of Variance was not violated (i.e., the variances were equal across groups), data was interpreted for the assumption of equivalence; however, if the variances were not equal across groups, the corrected output would be used for interpretation.

Results

Two independent samples t-test were conducted on the whole sample (n = 33 of total participants) for both the pre and post assessment scores. Results for the pretest were: Levene's Homogeneity of Variance was not violated ($p > .05$), meaning the variance between groups was not statistically different and no correction was needed and the t-test showed non-significant differences between the mean scores on the pretests between the two groups $t\,(31) = -.902$, $p > .05$. This means there was no significant difference between the means of the control and the treatment groups on the pretest and the groups could be compared (see Table 1). Results for the posttest were: Levene's Homogeneity of Variance was not violated ($p > .05$), meaning the variance between groups was not statistically different and no correction was needed and the t-test showed non-significant differences between the mean scores on the posttests between the two groups $t\,(31) = -2.029$, $p > .05$. This means there was no significant difference between the means on the posttest for both the treatment and control groups. Thus, even though the mean scores differentiated from the pretest, the intervention was only marginally impactful to students in the treatment group (see Table 1).

Table 1

Results of Independent Samples T-Tests

	Mean	SD
Pretest		
Treatment	4.13	.76
Control	4.33	.45
Posttest		
Treatment	3.70	.65
Control	4.15	.61

Note. SD = Standard Deviation.

After determining the differences between pre and post assessment scores between groups, two paired t-tests were run for both groups (i.e., treatment and control) to determine if participants mean scores from pretest to posttest were significantly different within each group (see Table 2). Results for each group were as follows: treatment group, $t\,(15) = 1.977$, $p > .05$; control group, $t\,(16) = 1.050$, $p > .05$. Therefore, neither group saw a statistically significant difference in mean scores from pretest to posttest. The mean score for the treatment group decreased by .43, while the mean score for the control group decreased by .18 points, indicating that although neither group experienced a significant difference, more stability was found in the control group (see Table 2).

Table 2

Results of Paired T-Tests

	Mean	SD
Treatment Group		
Pre	4.13	.76
Post	3.70	.65
Control Group		
Pre	4.33	.45
Post	4.15	.61

Note. SD = Standard Deviation.

Discussion

The California State University (CSU) system has a lower four-year graduation rate for freshmen students compared to the national average (i.e., 16.2% for the CSU and 39.8% nationally; The California State University, 2015; National Center for Education Statistics, 2015). There is a crucial need to improve services to students within the CSU system, specifically for those from underrepresented backgrounds to improve graduation rates and close the achievement gap. Academic confidence and self-efficacy play a key role in promoting student success (Allen & Association for Institutional Research, 2011; Cohen & Walton, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Nepal et al., 2018; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b; Yeager et al., 2016). Additionally, living learning communities (LLCs) help students generate social belonging necessary to create a sense of self-efficacy, overcome a fixed mindset, and achieve academic confidence (Allen & Association for Institutional Research, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Schroeder et al., 1999; Tinto, 1998a; Tinto, 1998b).

The purpose of this study was to determine if a mindset intervention combined with participation in a LLC for first-year students would increase students' self-efficacy. The study provided data on 16 students in a treatment group who participated in a four-week online mindset intervention and 17 students in a control group who did not receive an intervention. Both groups completed the Self-Efficacy Formative Questionnaire as a pretest and posttest (Gaumer Erickson et al., 2018).

Results from the pretest and posttest were analyzed using independent samples t-tests and paired samples t-tests. Although these approaches were predicted to lead to an increase in student self-efficacy, the data did not support the hypothesis. Upon statistical analysis of the pretest and

posttest survey results, no significant difference was found between the control and treatment groups. However, both groups experienced a marginal reduction of the mean scores (i.e., the control group decreased by .18 and the treatment group decreased by .43). Though not a statistical difference, this reflects a slight decrease in students' self-efficacy. The decrease in self-efficacy was a curious and unexpected finding since it contradicted research demonstrating a change in mindset would lead to higher student self-efficacy (Dweck et al., 2011; Yeager et al., 2016).

One potential explanation for this may be due to the timing within the term: as the end of the semester approached, students may have experienced feelings of doubt or stress which influenced their response to the intervention. Another possibility may be that the Self-Efficacy Formative Questionnaire was not an adequate measure for first-year LLC students. For example, one question asked if students thought they would succeed in whatever college major they chose. As first-year students, many may have been questioning their choice of major, leading to feelings of insecurity and an inability to connect to the topic. Additionally, the pretest revealed that students participating in the LLC already scored above average for self-efficacy (i.e., mean score above median score of 3.0). It is possible that the LLC may have assisted students in developing a growth mindset prior to completion of the intervention, leading to the results presented in this study. Despite the lack of statistical significance, several students from the treatment group expressed positive feelings toward the intervention. Feedback from students indicated many appreciated the information, with one student writing:

> Thank you so much for this opportunity…it honestly made me feel better, today was a day where I was truly feeling overwhelmed and discouraged. I would like to continue with more of this…I think I would benefit greatly from learning more about this area and

how to apply it in my own life… (Student Participant, personal communication, April 11, 2019).

Limitations and Future Directions

This study had several limitations, with sample size, time, and logistics being the greatest hurdles. Due to programmatic requirements, the intervention was implemented over a relatively short duration. Furthermore, there were logistical challenges with obtaining approval from the campus IRB, which created a delay to the recruitment of participants. This resulted in a shortened one-week recruitment period instead of two weeks, as originally suggested by the LLC program coordinator, which potentially limited the sample size for this study.

Communication challenges resulted in a delay in obtaining electronic pretest data. The researcher had to send many reminders to volunteers to complete the survey and four students had to be removed from the treatment group because they did not respond or complete activities after multiple contact attempts during the first week. Given that part of the intervention period coincided with the campus spring break, students were not available to take part in the study during this week, which created a break in the video content and reduced the available time to administer the intervention. After spring break, the researcher had to add a third recruitment session to generate more volunteers to participate due to the loss of participants after initial recruitment. During this session, the researcher included a hard-copy version of the survey with the consent form to ensure immediate participation. Due to the small sample size and relatively short duration of the intervention, future researchers should use caution in applying these findings to other settings.

Diffusion was another concern; students were constantly reminded not to discuss any part of the study with anyone else, however, the researcher could not guarantee this did not occur. It

also proved to be quite challenging to encourage students to follow through and complete both the surveys and the intervention materials. Constant contact from the researcher was required. Future studies may benefit from sampling populations where there is more control over administering the intervention with a person more engrained with the student population. It may also be helpful to organize a group session where videos were viewed, and participation was somehow made mandatory for selected students.

Due to submission deadlines for the researcher's program, there was extremely limited time for the implementation portion of the study. This limited the ability of the researcher to obtain student GPAs, as this information is not available until the end of the term. Future studies should allow time to collect this data in addition to the intervention described here, as previous research showed that students who participated in LLCs and had higher self-efficacy also demonstrated higher GPAs (Allen & Association for Institutional Research, 2011; Cohen & Walton, 2011; Dweck et al., 2011; Johnson & Romanoff, 1999; Scroeder et al., 1999; Yeager et al., 2016). The small sample size of this study was very limiting, as there was no room for any participants to drop out of the study beyond the second week. Future researchers should allow for enough time to complete IRB protocols and recruitment of volunteers, which should allow for a greater sample size to represent the larger population. Additionally, the researcher did not obtain ethnicity and first-generation status from the campus until the third week of the intervention. Future studies should allow enough time to obtain this information prior to beginning the intervention to allow for more purposeful, equitable distribution of first-generation and non-first-generation students between the control and treatment groups.

Based on data analysis indicating no statistical difference occurred after the intervention, there is a remaining question regarding student GPAs. The researcher would have liked to gather

this data as part of the analysis; however, programmatic deadlines prevented this possibility. While not statistically significant, there was a marginal reduction of self-efficacy in students. The researcher would have liked to compare the pre and post survey results with the final term GPA to determine if students in the treatment group achieved higher GPAs compared to the control group. To move scholarship in this topic forward, future researchers should continue to study self-efficacy and the growth mindset as a method for improving academic success.

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Appendix A

Self-Efficacy Formative Questionnaire

Self-Efficacy Formative Questionnaire

Please **CHECK ONE** response that best describes you. Be honest, since the information will be used to help you in school and also help you become more prepared for college and careers. There are no right or wrong answers!

Student ID_____ **Date** _____

	Not very like me → Very like me				
	1	2	3	4	5
1. I can learn what is being taught in class this year.	☐	☐	☐	☐	☐
2. I can figure out anything if I try hard enough.	☐	☐	☐	☐	☐
3. If I practiced every day, I could develop just about any skill.	☐	☐	☐	☐	☐
4. Once I've decided to accomplish something that's important to me, I keep trying to accomplish it, even if it is harder than I thought.	☐	☐	☐	☐	☐
5. I am confident that I will achieve the goals that I set for myself.	☐	☐	☐	☐	☐
6. When I'm struggling to accomplish something difficult, I focus on my progress instead of feeling discouraged.	☐	☐	☐	☐	☐
7. I will succeed in whatever career path I choose.	☐	☐	☐	☐	☐
8. I will succeed in whatever college major I choose.	☐	☐	☐	☐	☐
9. I believe hard work pays off.	☐	☐	☐	☐	☐
10. My ability grows with effort.	☐	☐	☐	☐	☐
11. I believe that the brain can be developed like a muscle.	☐	☐	☐	☐	☐
12. I think that no matter who you are, you can significantly change your level of talent.	☐	☐	☐	☐	☐
13. I can change my basic level of ability considerably.	☐	☐	☐	☐	☐

Appendix B

Adult Consent for Self-Improvement Workshop

100 Campus Center
Seaside, CA 93955-8001

Adult Consent for Self-Improvement Workshop

	Please consider participating in a research study conducted by Jessica Bawdon, researcher/student in the Masters of Education program and Kerrie Chitwood, PhD, assistant professor in the College of Education at California State University, Monterey Bay (CSUMB).
	The purpose of this research is: to reach out to students who are already collectively learning by participating in Living Learning Programs for first-year freshmen by implementing an additional self-improvement workshop. Students should see improvements in their self-confidence by the end of the workshop, which should be reflected in other areas of their lives.
	We will need approximately 10-20 minutes of your time each week for four weeks to participate in this research.
	Approximately 50 subjects like you will participate in this study.
	If you decide to participate in this research, you will be asked to complete a survey prior to the workshop, watch videos and respond to a brief prompt online distributed to you in a Google Team Drive by the researcher, and complete a follow up survey after the four weeks are over. Each item should take no longer than 20 minutes to complete.
	This project does not involve experimental procedures.
	As in daily life, you might experience minor harms or discomforts from this research such as: emotional or psychological changes.
	There are also potential benefits to participating such as: self-improvement, increased confidence, motivation, and self-determination.
	Confidentiality of your identifying records will be secured during research using campus-approved encryption methods, access will be limited to only named researchers on the approved protocol, and your identifiable data will be destroyed after the research is over in the following way: Discontinuation and removal of all electronic sites and destruction of all materials/files that contain identifiable data.
	After this research is concluded: 1. All data will be de-identified so that all participant information will be confidential. 2. The de-identified data may be used for publication, but will not be used for future research.
	Should you have any questions about the research, contact Kerrie Chitwood, kchitwood@csumb.edu, 831-582-3574.

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Seaside, CA 93955-8001

Should you have any questions about research subjects' rights, or if you need to report a research-related injury, contact the CPHS at cphs@csumb.edu, (831) 582-5130, or the Chair of the CPHS, Dr. Chip Lenno, at (831) 582-4700.

Your participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of those benefits to which you are otherwise entitled.

Sincerely,

Kerrie Chitwood, PhD and Jessica Bawdon

Subject's Consent to Receive Email
I understand that I will be contacted by email as part of this study. I am aware that my Student ID and/or email address may be considered "identifiable information" and acknowledge this statement by providing the requested information below.

Student ID _____ Email _____

Appendix C

Fidelity Checklist

Secondary observer to check for the following:

- Distribution of video content to treatment group
- Review activity from students on Google Team Drive for participation
- Compare to secondary tracking spreadsheet to ensure participation of all treatment group members

Observations	Group	Initial
Week 1 Wednesday 3/27/19	Treatment	
Week 2 Monday 4/1/19	Treatment	
Week 3 Monday 4/8/19	Treatment	
Week 4 Monday 4/15/19	Treatment	