Assessing a Summer Preparatory Program,
A Practical Approach to Theory-Based Program Evaluation

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Abstract

This paper focuses on evaluating the effectiveness of a support initiative designed for at-risk first-year students at a large, urban, public university: a Summer Preparatory Program (SPP) for conditionally admitted students. The program was designed to help students perform better in their math and writing courses; develop critical thinking skills; learn to interact effectively in group settings; feel an enhanced sense of belongingness, institutional commitment, and academic self-efficacy; and gain an understanding of general education learning outcomes. A theory-based evaluation (TBE) methodology was utilized. The overall results lend insight into the program effectiveness and provide guidelines for future program development and evaluation.
Literature Review

Academic Support Programs

American institutions of higher education have long incorporated early intervention and academic support programs as a component of undergraduate curriculum. These programs began informally at the institutional level in an effort to aid in the learning and development of students. Historically these programs were often provided by a specific academic department or unit such as English, Mathematics, Psychology, and Education (CAS, 2009). Throughout the 20th century early intervention and academic support programs grew in both their scope and the number of students served. By the 1970’s, “modern learning assistance centers and facilities housed such learning support programs as tutoring, supplemental instruction, learning and study strategies, reading improvement, writing centers, and mathematics labs” (CAS, 2009, p. 237).

The progress of professional organizations such as the College Reading and Learning Association (CRLA), National Association for Developmental Education (NADE) and Council for the Advancement of Standards (CAS) in higher education contributed greatly to the development of early intervention and academic support programs. These organizations also helped lead a paradigm shift in regards to student learning as Schmidtlein and Berdhal (2005) explain, “Historically, there appeared to be an implicit assumption that responsibility for learning outcomes should be placed primarily on students; however, over the past three or four decades, institutions increasingly have been viewed as having a major portion of this responsibility” (p. 81). It is now common place for early intervention and academic support programs to be integral components of an institution’s undergraduate curriculum. Today, it is expected that academic support programs contain clear goals and specific student learning outcomes. Schulock and Moore (2002) explain, “there is an emerging consensus that general education learning outcomes
include effective communication, critical thinking, and problem solving skills…But it is widely accepted that different institutions have different but equally legitimate learning objectives” (p. 12). This paper focuses on the comprehensive program assessment of an academic support program with clearly defined learning outcomes and the program was intentionally designed to help first-year students understand the importance of the universities general education learning outcomes referred to as the “Principles of Undergraduate Learning (PULs)” (Please see Appendix A).

Theory-Based Evaluation

Perhaps the first researcher to incorporate theory with program evaluation was Tyler (1949) who wrote Basic principles of curriculum and instruction. Tyler saw that evaluation based on theory was necessary to ascertain – not simply whether or not learning took place, but how. Tyler’s aim was to discover the mechanisms by which a curriculum succeeded or failed. According to Tyler (1949), “A theory of learning outlines the nature of the learning process, how it takes place, under what circumstances, and what sort of mechanisms operate it…” (p. 41). Tyler also proposed the idea, “since every teacher and curriculum-maker must operate on some kind of theory of learning it is useful to have this theory of learning formulated in concrete terms both to check it for its tenability and also to see its implications for the curriculum” (pp. 41–42). D’Agostino (2001) took this proposition one step further, suggesting that program evaluation correctly based on theory could actually help to test the theories themselves, “Instead of using evaluation to describe the theory, evaluation from a scientific perspective would transform into theory verification (p. 132). D’Agostino acknowledged that evaluation should have an active role in theory development and this may lead to interventions that are more effective.
The name that has now been commonly associated with this practice is Theory-Based Evaluation (TBE). Birckmayer and Weiss (2000) define TBE as, “An approach to evaluation that requires surfacing the assumptions on which the program is based in considerable detail” (p. 408). An important part of Theory-Based Evaluation is that each individual step of the evaluation is specifically analyzed. Brickmayer and Weiss provide the following example:

“The outcome question will be the following: Do students, in fact, do better in school? Any evaluation would ask that question and collect relevant data. What TBE does, in addition, is to track the steps along the route; it seeks to find out whether the theories on which the program is based are realized in action” (p. 408).

Through looking at each step of evaluation individually, a better picture can emerge as to specifically when in the evaluation process the theory broke down. This understanding suggests that programs can be best redesigned using specific knowledge relating to both data collection and evaluation procedures. TBE allows evaluators to know not simply that a program did not work, but why it did not work, and at what stages in the evaluation process the failure occurred.

As such, an effective program evaluation planning approach should begin with a clearly articulated program theory to help guide the selection of measures and to increase understanding among researchers and practitioners regarding what internal program operations need to be improved when selected outcome measures suggest that desired program “outputs” are not achieved. Ideally, this approach expands the evaluation focus to include a program theory explication which is an investigation into the underlying assumptions, history, and context, associated with a particular program.

Bickman (1987) argues it is often critical to use program theory in conducting program evaluation studies. He contends that that “the development of a strong program theory should be
the responsibility of program planners and not evaluators. We [evaluators] have taken up that
task because the advocates and developers have not done a satisfactory job in conceptualizing the
programs” (Bickman, 2000, p. 112). Conceptualizing and clearly defining students’ needs,
program processes, and intended outcomes can be helpful in enhancing understanding of the
program theory and planning subsequent evaluation activities. As such, we worked very closely
with the faculty, student peer mentors, and administrators to enhance understanding of the
students’ needs, how program processes were designed to achieve particular outcomes, and what
implicit and explicit theories were guiding the program. In light of this information, the program
evaluation was conducted following a theory based evaluation model.

*Sense of Belongingness*

One major theoretical framework guiding the SPP program was sense of belongingness. Arguably the most frequently referenced person in connection to the theory of sense of
belongingness is Donne (1975) who contended that no man is an island and posited that humans
have a need to be around others and also to help and be helped. Many famous early psychologists
thought that belongingness was a fundamental human need. Maslow’s hierarchy of needs
included love and belongingness needs in the middle of his hierarchy, just above basic needs but
below self-esteem or self-actualization. Baumeister and Leary (1995) defined the need for
belongingness as, “a pervasive drive to form and maintain at least a minimum quantity of lasting,
positive, and significant interpersonal relationships” (p. 497). Their review of the literature
suggested that belongingness was a drive that was fundamental to the human existence and
resulted in a deep need for quality interpersonal relationships with others.

Osterman (2000) recommended that belongingness was a component necessary to
establish a sense of community within a group. According to Osterman, “A community exists
when its members experience a sense of belonging…the members feel that the group is important to them and that they are important to the group” (p. 324). Evidence also supports the suggestion that more belongingness actually leads to more productive communities. Den Hartog, D., De Hoogh, A., & Keegan, A. (2007) examined the effects of belongingness on helping and compliance. They found that individuals with a high sense of belongingness were more likely to value the importance to the collective and its goals, comply with rules, and help other group members. Lee and Robbins (1995) were surprised at the limited number of studies evaluating belongingness not because of its possible positive effects but because of the negative effects associated with a low sense of belongingness. Students’ overall sense of belongingness was an important theoretical construct guiding the development, implementation, and evaluation of the SPP program.

**Institutional Commitment**

Organizational commitment is has been studied heavily among those in the workplace domain over the past 30 years. Mowday, R. T., Porter, L. W., & Steers, R. M. (1982) argued the implications of understanding better the processes related to organizational commitment. The reason for the explosion of interest in the organizational commitment construct was due in large part to its role as a possible antecedent to many variables of interest in the workplace. Researched variables have included turnover, productivity, and even the probability that workers engage in “extra-role” behaviors – such as helping others. (Mathieu & Zajac, 1990, p. 171)

Studies within the domain of higher education have led to similar outcomes. It is worth noting that organizational commitment is often referred to in the higher education literature as institutional commitment. Institutional commitment has been found as a key antecedent to student departure, the educational equivalent of voluntary turnover. Tinto’s theory of student
departure is one of the most researched topics in the higher education literature (Milem & Berger, 1997). Tinto’s model outlines three stages of student involvement that can lessen the probability of student departure: separation from one’s old community, transition to one’s new community, and finally incorporation of the norms and beliefs of that new environment. The third and final stage is theoretically similar to ideas of organizational commitment as brought up by Mowday et al (1982). In fact, empirical investigation into departure as reported in the meta-analysis by Milem and Berger (1997) found that institutional commitment was a “strong positive predictor of intent to re-enroll” (p.397).

**Self-Efficacy**

Bandura (1977) proposed one of the most recognized approaches to the self-perception of ability, self-efficacy theory. Self-efficacy at its most basic level is described as an individual’s judgments about their own abilities. One important distinction between self-efficacy and self-esteem is that self-efficacy is not tied to individuals’ global perceptions of themselves. Rather, one’s perceived self-efficacy is a belief about one’s ability in a certain domain. Another important distinction is that self-efficacy beliefs concern one’s ability – not the outcome of that ability. (West, Dennehy-Basile, & Norris, 1996). Therefore, self-efficacy is a measure of how one thinks they will perform and not of what that performance will achieve. For instance, a football player may have high self-efficacy for their ability to play football but be uncertain of whether that ability will result in winning of a given game. Additionally, self-efficacy beliefs are not long term, stable beliefs concerning ability. It has been shown that these beliefs can change very quickly when influenced by either negative or positive feedback (Bouffard-Bouchard, 1990; Jacobs, Prentice-Dunn, & Rogers, 1984; West, Bagwell and Dark-Freudeman, 2005).
In Bouffard-Bouchard’s (1990), study 64 Canadian students completed a verbal concept-formation task consisting of three problems. Self-efficacy for each problem was recorded by students indicating how certain they were of the correctness of each of their answers, using a ten point scale. Students were then given either positive or negative feedback regardless of their actual performance. In the negative feedback condition, students were told that they performed worse than their peer group. Conversely, students in the positive feedback group were told that they had performed better than their peers. Using the same recorded certainty measures students then attempted four more problems from the verbal concept formation task. Results showed that students who had received positive feedback felt more efficacious during the second battery of problems than the students who had received negative feedback. Their heightened self-efficacy led the students to set higher goals for themselves, use better strategies, and achieve higher performances than their peers with equal cognitive abilities but whose self-efficacy had been lowered due to negative feedback. According to Bouffard-Bouchard (1990) the results suggested that, “The perception of self-efficacy seems to be a viable construct for comprehending performance” (p. 353).

Cervone and Scott (1993) argue that perceptions play an important role in an individual’s performance in tasks, “Self-efficacy perceptions are one of a number of personal factors that…determine motivation, affect, and performance” (p. 357). Cervone and Scott specifically addressed the subject of motivation in saying, “Those who doubt their efficacy tend to slacken their efforts and give up” (p. 352). This lack of motivation could in turn lead to lowered performance. On the other hand, Cervone and Scott concluded that those with higher self-efficacy showed increased motivation, leading to improved performance. Their evidence shows
that, in many ways, individuals’ perceptions of their own self-efficacy become self-fulfilling prophecies, guiding them to either work harder or less hard toward their goals (performance).

Current Study

Participation in the Summer Preparatory Program (SPP) was required for the majority of first-time, full-time students who were conditionally admitted to the institution for the fall 2009 semester. A total of 180 first-time conditionally admitted students completed the summer 2009 SPP. The SPP program provided at-risk students the opportunity to make early connections with other students and the campus, and develop positive working relationships with a student mentor while increasing both their math and writing skills. Throughout the five week Summer Preparatory Program students had the opportunity to participate in the Special Projects Program. The Special Projects Program was designed to help students develop critical thinking skills, learn to interact effectively in group settings, and gain an understanding for the institution’s desired general educational outcomes – the Principles of Undergraduate Learning (PULs). The Summer Preparatory Program including the accompanied Special Projects Program was designed to help students feel welcome to the institution while also providing them with the resources and support necessary for collegiate success.

The purpose of the evaluation of the program was both summative and formative. The evaluation methods allowed for the effectiveness of the program to be evaluated (summative) while providing information for the purpose of improving teaching and learning (formative). Thus, the evaluation information allowed others to judge the value of the program component, and provided the opportunity for student feedback to be used in guiding future program planning. The mix-measures approach also allowed for the measurement of direct student learning outcomes as well as students’ attitudes, perceptions, and intended behaviors. A wide variety of
assessment measures were implemented including self-administered questionnaires, open-ended qualitative questions, collection and analysis of student work products, and actual grades.

Method

Sample

The sample population consisted of 180 first-time, conditionally admitted students who completed the 2009 Summer Preparatory Program. The sample students’ average fall 2009 semester course load was 13.16 credit hours. Students ranged from 18 to 21 years in age; with the average age of the sample being 18.83 years. The sample students’ average high school grade point average (GPA) was 2.71 and the average Scholastic Aptitude Test (SAT) score was 901.22. Approximately 48% of students in the sample population were first-generation college students. Females comprised 60% of the sample with White / Caucasian students representing 73% of the total sample. Approximately 18% of the sample participants were African American, 4% were Hispanic / Latino, 0.2% were American Indian or Alaskan Natives, and about 5% were included in other institutional race and ethnicity classifications.

A total of 62 of the sample students also participated in the writing component of the SPP program. These sample students’ average fall semester course load was 13.35 credit hours. Participants ranged from 18 to 20 years in age with an average age of 18.81 years. These same student participants had average high school GPA of 2.66 and with average SAT scores of 933.44. Approximately 45% of the students who completed the writing component of the SPP were first-generation college students. Females comprised 65% of this sub sample group with 66% of the students being identified as White / Caucasian. 26% of the students were African American, 5% were Hispanic / Latino, and approximately 5% were included in other classifications.
Measures

Academic Achievement

Data was extracted from students’ institutional records. The outcome variables of interest were students’ fall 2009 semester GPAs, and specific grades in English and Math courses. The fall GPA variable used in this study ranged from 0.00 to 4.00; with the mean fall GPA being 2.37 and a standard deviation of 0.90. The math GPA variable used in this study also ranged from 0.00 to 4.00; the mean fall math GPA was 2.07; and the standard deviation was 1.11. The English course GPA variable used in this study ranged from 0.00 to 4.00; the mean Fall English GPA was 3.04; and the standard deviation was .844. (Based on 46 of the 62 conditionally admitted students who participated in the writing component and had completed English grade data available).

Due to the fact all conditionally admitted students were required to participate in the SPP as a condition of their admission a comparison group was not available. Student participants predicted GPAs were compared to their actual earned GPAs – in order to estimate the effects of the program. Predicted GPAs were originally developed to assist in the admission decision process. The prediction formula was obtained by regressing actual grade point averages from previous cohorts of students on their combined SAT scores and high school grade point averages. The formula was then used to calculate predicted grade point averages for this sample of students. The result was a single measure representing the best liner combination of students’ academic qualifications for predicting first-year grades (Pike, 2008). The formula used to calculate predicted grade point average was:
(Predicted GPA = -1.244 + 0.001 \times SAT + 0.944 \times \text{High School GPA}). Using this formula the resulting predicted fall semester GPA yielded for this sample was 2.20 with a standard deviation of 0.18.

The Math Course Grade and English Course grade prediction formulas were obtained by regressing the actual fall semester Math or English course GPAs; based on the first-time 2009 cohort of all first-time students’ combined SAT scores and high school GPAs. The resulting formula was then used to calculate predicted grade point averages for this sample of students. The result was a single measure representing the best linear combination of students’ academic qualifications for predicting fall semester Math course grades or English course grades. The formulas used to calculate predicted grade point average were:

(Predicted Math GPA = -1.197 + 0.0001 \times SAT + 1.09 \times \text{High School GPA})

(Predicted English GPA = -0.163 + 0.0001 \times SAT + 0.900 \times \text{High School GPA})

The resulting Predicted Math GPA was 1.83 for this sample was and the standard deviation was .17. The resulting Predicted English GPA for this sample was 2.31 and the standard deviation was .17.

*Students’ Opinions About College Questionnaire (Pre & Post)*

The questionnaire was designed to measure students’ thoughts and opinions within five domains: 1) Sense of Belongingness; 2) Institutional Commitment; 3) Individual Academic Self-Efficacy; 4) Group Work Self-Efficacy; and 5) Intention to Graduate from the Institution. Students were asked to voluntarily respond to a pre and post questionnaire (Appendix B & C). Student perceptions were assessed both at the beginning and at the end of the SPP in an effort to measure students’ growth within the five specified domains. A pre-post research design with no control group was implemented. Again, there was not an appropriate comparison group available
due to the fact that all conditionally admitted students were mandated to participate in the SPP program. Out of 180 total students, 28 students did not complete both a pre and post questionnaire and/or did not submit appropriate identification information. These students were excluded from analysis resulting in a sample size of 156 students.

First, a principal components factor analysis was performed on the pre course questionnaire data to examine whether the assessment teams’ construct grouping of questionnaire items was reliable and valid. Social Psychological theory and published higher education journals were used to guide the questionnaire development. Factor analysis results served to confirm dimensional groupings (Table 1). Items that had low reliability were excluded from further evaluation beyond descriptive statistics (Table 2). Next, the resulting questionnaire items were then grouped by domain and an average score was created for the purpose of conducting paired samples t-tests (Table 3). This process allowed research team members to measure students’ overall growth in each domain. Results will be used to evaluate the program’s effectiveness in these areas as well as highlight potential areas for improvement.

Students’ Work Artifacts: Group Projects

Throughout the summer program student participants worked together in small groups to plan and develop a Special Group Project. The goal of the group projects was to allow students to demonstrate their understanding of a specific general education outcome (PUL), while fostering interpersonal skills and developing their abilities to effectively work in groups. Three days each week all the students were allotted specific time (1 hour) to work individually with their team members to develop a group project. Participants developed all facets of their projects together, in a group consisting of 4-6 students, from conception to completion. Student groups then showcased their projects to fellow students, peer-mentors, and faculty and staff at a
ceremony marking the completion of the program. This allowed for students to further gain a positive sense of completion of the SPP program and for faculty and staff to observe direct student learning outcomes. Many of the projects were in the form of Power Point and poster presentations. Students were encouraged to give a short (3-5 minute) informal group presentation of their project and to answer any questions that observing faculty and staff may have had.

After the completion of the program, a sample of 13 projects were randomly selected for evaluation. The sample included a total of seven Power Point and six poster style presentations. Two of us (authors) served as evaluators of the projects; scoring the projects separately using a rubric that examined three specific areas of learning (Appendix D). The rubric was developed on the basis of program goals and desired student learning outcomes. Scores were given on a Likert scale range with the (0) representing “No-Response”, (1) “Beginning”, (2) “Developing”, (3) “Average”, and (4) “Accomplished”. Table 4 reflects the collective scoring and results of both evaluators. Student groups were given very general directions and guidelines in creating their projects. Instructional team members simply directed student groups to create a project that would “creatively communicate their understanding of the PULs.” Student groups were not informed that their completed projects would be assessed in specific areas as outlined in the scoring rubric.

Due to the fact that direct examples of students’ projects (i.e., posters) are not included in the appendix of this report we find it advantageous to provide descriptions of these projects. This will allow for the spirit and creative breadth of student work to be better understood and appreciated. Student groups were instructed to develop a project highlighting their understanding of one of the six Principles of Undergraduate Learning (PULs). For the PUL Core Communication and Quantitative Skills one student group developed a Power Point with slides
depicting real work application. In this example, students used a picture of a hazard sign and a project team member to convey the process of understanding ideas and facts through interpretation and analysis. Another student group expressed their understanding of the PUL Critical Thinking by creating a crossword puzzle that challenged viewers to match core concepts of the principle with a related definition. One student group conveyed their understanding of the PUL Integration and Application of Knowledge by creating a poster depicting a hypothetical life cycle. The life cycle was creative in that it used popular characters from pop culture, such as a doctor from the T.V. series Grey’s Anatomy.

The degree of creativity of the student groups’ Special Projects continually impressed program reviewers and faculty. For example, students presented the ideas behind the PUL Intellectual, Depth, Breadth, and Adaptiveness by developing a poster depicting the choices that lead to collegiate success. These choices specified those surrounding class, socialization, and free time. Students used a millennial generation frame of reference by using wording such as “slack off”, “party”, “Sleep through class and copy someone’s notes.” In an effort to present their understanding of the PUL Understanding Society and Culture one group created a poster describing a “cake recipe” where all ingredients of the cake mixture represented a different demographic group. Students did an effective job conveying that all ingredients (i.e., demographic groups) should be included and respected within the institutional community and beyond. Students in this group added a quote to the top of their recipe to exemplify this point: “Don’t forget an ingredient otherwise the cake will not rise to its highest ability.” Another group used the famed sports figure Michael Vick to promote a discussion around the PUL Values and Ethics. Students described Michael Vick’s behavior and his involvement in a dog-fighting ring to be both unethical and unlawful. We were impressed that students had the courage to use a
modern day, sensitive example to illustrate their point and promote thoughtful and meaningful discussions.

*Writing Reflection Tasks (Pre and Post)*

Student participants completed a Writing Reflection Task both at the beginning and at the end of the program. The goal of these tasks was to directly measure participants’ understanding of the Principles of Undergraduate Learning (PULs). While this is similar to the group projects, SPP, the Writing Reflection Task(s) allowed for individual student learning outcomes to be assessed through evaluating students’ open-ended writing reflections. At the beginning of the summer program students were asked to voluntarily participate in a Writing Reflection Task (Appendix E). This task was administered in the classroom by trained faculty or a student peer mentor. Students were instructed to take 10 minutes to answer the question: “Why do you think the PULs are important to your educational experience?”. Students were allowed to use their own discretion in answering this question and were informed that their responses would remain confidential and not count towards a course grade. At the end of the program students were given the identical Writing Reflection Task, under the same directions and parameters.

Once the program was completed all student responses were gathered and were then arranged into individual student pre and post task pairs using given names and/or university identification numbers. While all 180 student participants were instructed to complete the writing assignment, 31 student responses did not have a matched paired response (either pre or post) and were therefore excluded from examination. A total of 149 individual student Writing Reflection Tasks were able to be paired with its pre/post counterpart. One rater first scored all individual students pre task writing assignments and subsequently scored all matched post task writing assignments. A rubric that examined three specific areas of learning was used to facilitate this
process (Appendix F). The rubric was developed on the basis of the program goals and desired student learning outcomes. Scores (Table 5) were given on a Likert scale range with (0) representing “No-Response”, (1) “Beginning”, (2) “Developing”, (3) “Average”, and (4) “Accomplished”.

Although inherently a subjective measure, several methods were utilized to maximize the reliability of the scores for the Writing Reflection Task. First, a standard scoring tool was used in the form of a rubric. Additionally, a second rater scored a sample of 30 paired pre and post task responses. The purpose of this process was to establish inter-rater reliability. The scores submitted by the second rater were for reliability purposes only and were not included in the main analysis. Pre and Post course scores were moderately reliable (α = .767 and α = .857, respectively). These high Alpha levels suggest high reliability across raters. A possible explanation for the higher post course reliabilities was that the pre course reflections were shorter and therefore required more interpretation to grade. The growth of students’ understanding of the PULs was able to be measured over the course or the SPP by conducting both a pre and post writing task assignment and then evaluating participants’ open-ended responses.

*Summer Special Projects Sessions Student Satisfaction Questionnaire*

Upon completion of the SPPSP students were asked to voluntarily participate in a post-program student satisfaction questionnaire (Appendix G). This questionnaire was intended to capture student participants’ attitudes and perceptions of the Special Projects Sessions. This assessment strategy allowed SPPSP faculty members to gain a better understanding of the effectiveness of the program and to use the results for improving the overall quality of teaching and learning. A total of 179 students chose to voluntary complete the anonymous questionnaire. The questionnaire was administered inside of a classroom at the end of the Special Projects
Sessions by a trained faculty or staff member. Participants were informed that their individual responses would remain anonymous and would not count towards a course grade.

Students responded to questionnaire items that were quantitative and qualitative in response type. Students were instructed to rate their satisfaction with 15 items using a Likert Scale with a range of (1) “Very Dissatisfied” to (5) “Very Satisfied” with the midpoint representing (3) “Neutral.” After the completion of the Summer Preparatory Program students questionnaires were collected and analyzed in aggregate. Table 6, lists the frequency of student responses in relation to the rated questionnaire item. The mean averages and standard deviations listed reflect students’ responses in the aggregate.

Four questionnaire items allowed students to reflect on their SPP experiences using their own words, through an open-ended response format. Student participants’ open-ended questionnaire responses were analyzed and arranged into topical theme categories. These categories allowed for individual student perceptions of the SPP Special Project sessions to be considered collectively. Topical theme categories were considered to be “emerged or notable” if 5% or more of students responded in a similar manner. It should be noted that in a number of instances a singular student comment addressed more than one topic or category. In these instances, student comments were considered in multiple areas of discussion and were included in multiple result categories (Table, 7-10). While this method of analysis essentially quantifies student comments, it does allow for the students’ key perceptions and feelings about the program to be identified. Many of the comments are concise statements and may not fully reflect the entirety of students’ opinions. The number of student responses varied depending on the question asked:

17.) In what ways did your attitude and feelings about the Summer Preparatory Special Projects sessions change over time? (n=178)
18.) Please describe what you found most valuable about the Special Projects sessions: (n=179)

19.) Please describe what you found least valuable about the Special Projects sessions: (n=166)

20.) What specific suggestions do you have for improving future sessions? Please describe: (n=159)

Results

Students’ Academic Achievement

In order to estimate the effects of the program on academic performance, students actual earned GPAs for the fall 2009 semester were compared to their predicted GPAs. A series of one sample t-tests were conducted to examine if students actual grade performance was better than predicted. Results indicated that Summer Preparatory students performed significantly better (M = 2.37, SD = .90) than predicted (M = 2.20, SD = .17) based on their levels of academic preparation (t 179 = 2.34, p < .05). Students who completed the Summer Preparatory Program performed significantly better in their fall Math course (M = 2.07, SD = 1.11) than was predicted (M = 1.83, SD = .17) based on their levels of academic preparation (t 143 = 2.43, p < .05). Results also indicated that Summer Preparatory students performed significantly better in their fall English course (M = 3.04, SD = .84) than predicted (M = 2.31, SD = .17) based on their levels of academic preparation, (t 46 = 5.86, p < .001).

Students’ Opinions About College Questionnaire (Pre & Post)

The results of the paired samples t tests (Table 3) provide mixed support for students’ growth in each domain. In three of the five domains, significant results were obtained. The highest growth was observed in the Sense of Belongingness domain with a moderate effect size (d = .379). The second domain where the students exhibited significant growth was Individual Academic Self-Efficacy with a lower effect size (d = .15). Unfortunately, for the domain of
Group Work Self-Efficacy, students’ perceptions dropped significantly with a similar effect size 
(d = .15). It should be noted however, that the scores for this domain were relatively high in both 
the pre and post questionnaires. The average student response on the post test was 5.03, which 
was above three of the other four domains. Pre and post test scores relating to the domains of 
Commitment to the university and the Intention to Graduate from the university were not 
significantly different.

Group Projects

Student participants’ group projects generally received very high scores, displaying an 
“Average” to “Accomplished” level of understanding of a specific Principle of Undergraduate 
Learning (PUL). This is understandable because the projects reflected student learning at the 
end of the 5 week summer program. Groups received the highest ratings in the evaluated areas of 
Critical Thinking, Uses examples to apply the PULs to academic and/or real life scenarios” (M = 
3.23) and “Creativity” (M = 3.23). Groups received the lowest rating in the scored area of 
“Understands the meaning and content associated with 
the PULs” (M = 3.00).

These results are congruent with those found in the evaluation of students’ completed pre 
and post Writing Reflection Tasks, an assessment strategy that also measured direct student 
learning of the PULs. It appears that students were able to demonstrate critical thinking and the
ability to apply these principles to real life scenarios at more developed level than they were able to understand the meaning and content associated with the specific PULs.

Insert Table 4 about here

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**Writing Reflection Tasks (Pre and Post)**

Shown in Table 5 are the results of multiple paired sample t tests. Results suggest that the program had significant positive effects on students’ understanding in all three of the scored components at the 99% confidence level. The component “Critical Thinking, uses examples to apply the PUL to academic and/or real life scenarios” received the most gains, with a scored mean difference of .38; from $M = 1.60$ prior to the course to $M = 1.99$ after the course. The effect size was $d = .289$. The component, “Understands the meaning and content associated with the PULs” also showed significant growth in the means of .28 from 2.04 to 2.30 with an effect size of $d = .25$. Looking at the pre test and post test average means, it seemed students shifted from average scores that displayed a “beginning” understanding to scores indicating at least a “developing” understanding.

Insert Table 5 about here

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**Summer Special Projects Sessions Student Satisfaction Questionnaire**

Through completing the post-satisfaction questionnaire students were able to share their attitudes and perceptions regarding the program. Table 6 displays that students on average generally responded to the questionnaire items with a moderate to high satisfaction level rating – between (3) “Neutral” and (4) “Desirable”. Student participants rated the areas of, “opportunities to form friendships with other students” ($M = 4.35$) and “interactions with other students” ($M =
4.07) as being the most positive. Conversely, student questionnaire participants rated the areas of, “meaningful class discussions” (M = 3.62) and “overall, how satisfied were you with the special projects sessions” (M = 3.52) as being the least positive. When questionnaire participants were directly asked, “Would you recommend the special project sessions to other students?” 57% of students responded “Yes” while 43% of students indicated “No.”

The examination of participants’ open-ended responses allowed us to gain additional insight into students’ perceptions of the program. Tables 7 - 10 display aggregate responses in conjunction with examples of actual student comments. Through coding and analysis several student attitudes and perceptions regarding the program sessions were revealed. A total of 31% of student respondents indicated that their attitudes and feelings about the program changed to become more enjoyable over time. Conversely, 15% of survey participants responded that the program sessions became less enjoyable over time. A total of 38% of students responded that meeting new people and forming friendships was the most valuable aspect of the program while 22% of students indicated that participation in completing group projects was the least valuable aspect. Students responded with a highly stratified list of suggestions for improving future sessions: 18% of students conveyed that they desired less of a time commitment / restraints, 15% of students suggested providing greater project support as a way of improving sessions, and 11% of students wanted to participate in more group activities. Participants also suggested that more variety needed to be incorporated into the program (11%) and that more instruction and direction (9%) should be provided.

---

Insert Table 6 about here
---

Insert Table 7 about here
Discussion

The overall results lend insight into the program effectiveness and provide information to guide future program development. Results suggest that at-risk students who participated in the early intervention performed significantly better than expected in their fall semester math and writing courses. They also performed significantly better in terms of their overall fall semester grade performance, suggesting that the program equipped the students with transferable skills. We also measured student learning over time. Our investigation revealed that students developed in the following areas: critical thinking, academic self-efficacy, developing early connections with students and the campus, and understanding and communicating the general education learning outcomes. Results also suggest areas of the program that could be improved. For example, students did not develop as desired in the area of group work self-efficacy and understanding the meaning and content associated with the general education learning outcomes: the PULs. It is possible that it is more important for students to be able to apply and understand the importance of general learning outcomes in guiding their selection of courses and learning experiences than merely memorizing the definitions and terms associated with the learning outcomes.

The writing reflection assessment strategy provided a direct measure of students’ improvement in critical thinking and how they apply the PUL concepts to academic and/or real
life scenarios. Results suggest that the program had significant positive effects on students’ understanding of the PULs. Students showed gains in all three rubric components used to assess the writing reflection tasks and exhibited a substantial positive improvement at a 99% confidence level of significance.

The assessment of the group projects also assisted in understanding the degree to which students improved in their abilities to understand and conceptualize the PULs. The analyzed student work artifacts received moderately high scores, with students’ displaying an “Average” to “Accomplished” level of understanding of each specific general education learning outcome featured in their project. Students also reported the importance of making early connections with other students and the campus. When asked on the Satisfaction Questionnaire what was the most valuable aspect of the program, “meeting new people and forming friendships” was the most frequently reported response (38% of students). Forming new friendships was a component of our measure of Sense of Belongingness. Results suggest that students’ perceptions of Sense of Belongingness improved over the course of the program (d = .379). Results from both the student work artifacts: Group Projects and the Writing Reflections provided support for the finding that students generally seemed able to use critical thinking and apply the PULs to real life scenarios. We suggest that instructional teams share rubrics with students in advance and provide clearer instructions. With this in mind, students have clearer expectations and may show greater improvements in intended student learning outcomes.

Students did not show growth as expected in the domain of group work self-efficacy. The group work self-efficacy domain dropped significantly between pre and post (d = .15). It should be noted however, that the scores for this domain were relatively high in both the pre and post
questionnaires. The average student response on the post test was 5.03, which was above three of the other four domains.

Results suggest that students seem to react positively to early interventions that facilitate positive connections, interactions, and equip them with skills necessary to effectively adjust to college. Additionally, early interventions that include opportunities for student interactions and academic mastery in the form of math problem solving, writing may help students feel a sense of belongingness and academic self-efficacy beliefs. Early interventions that include collaborative group work around general education learning outcomes may help students understand the purpose and importance general education outcomes. Our findings also suggest that summer programs may help students become better prepared for college and perform better academically during their first-semester. Programs that are tailored to meet the diverse needs of students are optimal. Examining students’ work products may help enhance understanding of learning outcomes and their unique academic needs. The mixed-method, theory-based approach allowed for the assessment of students’ attitudes, perceptions, actual grade performance, and student work. The theory-based approach enhanced understanding of what components of the summer program seemed to have the most substantial effects on students’ positive academic and social experiences, learning outcomes, and academic achievement.
References


D'Agostino, J. (2001). Increasing the role of educational psychology theory in program


Table 1  
*Sense of Belongingness Survey (Pre and Post)*

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-Course</th>
<th></th>
<th>Post-Course</th>
<th></th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>1. I feel that I can share personal concerns with other students</td>
<td>3.78</td>
<td>1.15</td>
<td></td>
<td>4.28</td>
<td>1.26</td>
</tr>
<tr>
<td>2. I am able to develop close friendships with other students</td>
<td>4.73</td>
<td>1.05</td>
<td></td>
<td>4.87</td>
<td>1.12</td>
</tr>
<tr>
<td>3. I am able to make connections with a diverse group of people</td>
<td>4.89</td>
<td>0.96</td>
<td></td>
<td>5.02</td>
<td>0.94</td>
</tr>
<tr>
<td>4. I feel so distant from the other students (^a)</td>
<td>2.05</td>
<td>1.06</td>
<td></td>
<td>2.02</td>
<td>1.21</td>
</tr>
<tr>
<td>5. I have no sense of togetherness with my peers (^a)</td>
<td>1.99</td>
<td>1.12</td>
<td></td>
<td>2.08</td>
<td>1.22</td>
</tr>
<tr>
<td>6. I can relate to my fellow classmates</td>
<td>4.56</td>
<td>1.01</td>
<td></td>
<td>4.69</td>
<td>1.04</td>
</tr>
<tr>
<td>7. I have some close friendships with [THE INSTITUTION] students</td>
<td>3.78</td>
<td>1.62</td>
<td></td>
<td>4.67</td>
<td>1.31</td>
</tr>
<tr>
<td>8. I am comfortable working in groups</td>
<td>4.72</td>
<td>1.18</td>
<td></td>
<td>4.90</td>
<td>1.05</td>
</tr>
<tr>
<td>9. I don't feel I can successfully participate with anyone or any group (^a)</td>
<td>1.70</td>
<td>1.06</td>
<td></td>
<td>1.81</td>
<td>1.20</td>
</tr>
<tr>
<td>10. I am confident that I can work effectively in groups</td>
<td>5.14</td>
<td>0.94</td>
<td></td>
<td>5.09</td>
<td>0.93</td>
</tr>
<tr>
<td>11. I am certain that I can accomplish group projects</td>
<td>5.20</td>
<td>0.96</td>
<td></td>
<td>5.11</td>
<td>0.96</td>
</tr>
<tr>
<td>12. I am not sure if I can get along with other students when working on group projects (^a)</td>
<td>1.90</td>
<td>1.09</td>
<td></td>
<td>2.03</td>
<td>1.28</td>
</tr>
<tr>
<td>13. I am confident that I will excel in college</td>
<td>5.29</td>
<td>0.80</td>
<td></td>
<td>5.41</td>
<td>0.71</td>
</tr>
<tr>
<td>14. I can meet the demands of college</td>
<td>5.21</td>
<td>0.76</td>
<td></td>
<td>5.30</td>
<td>0.75</td>
</tr>
<tr>
<td>15. I feel that I fit right in at [THE INSTITUTION]</td>
<td>4.88</td>
<td>0.92</td>
<td></td>
<td>4.99</td>
<td>0.97</td>
</tr>
<tr>
<td>16. It is important for me to graduate from [THE INSTITUTION]</td>
<td>4.52</td>
<td>1.21</td>
<td></td>
<td>4.57</td>
<td>1.32</td>
</tr>
<tr>
<td>17. I am certain I made the right choice in my attempt to attend [THE INSTITUTION]</td>
<td>5.07</td>
<td>0.93</td>
<td></td>
<td>5.01</td>
<td>0.93</td>
</tr>
<tr>
<td>18. I intend to transfer to another institution at some point (^a)</td>
<td>2.65</td>
<td>1.48</td>
<td></td>
<td>2.97</td>
<td>1.47</td>
</tr>
<tr>
<td>19. I talk up this college to my friends as a great place to go to school</td>
<td>4.50</td>
<td>1.08</td>
<td></td>
<td>4.52</td>
<td>1.18</td>
</tr>
<tr>
<td>20. I am proud to tell others I will be going to school here</td>
<td>4.94</td>
<td>0.98</td>
<td></td>
<td>4.95</td>
<td>0.92</td>
</tr>
<tr>
<td>21. I could just as well be attending a different college as long as the courses were similar (^a)</td>
<td>3.50</td>
<td>1.30</td>
<td></td>
<td>3.63</td>
<td>1.38</td>
</tr>
<tr>
<td>22. I am extremely glad that I chose [THE INSTITUTION] over other colleges</td>
<td>4.77</td>
<td>1.03</td>
<td></td>
<td>4.70</td>
<td>1.10</td>
</tr>
<tr>
<td>23. I intend to complete my degree at [THE INSTITUTION]</td>
<td>4.88</td>
<td>1.15</td>
<td></td>
<td>4.89</td>
<td>1.13</td>
</tr>
</tbody>
</table>
“These questions were reverse coded for all analysis but are presented here in raw form for descriptive purposes. Please note that lower scores on these questions indicate a more positive response.
Table 2  
*Primary Components, Factor Analysis for Sense of Belongingness Survey*

<table>
<thead>
<tr>
<th>Sense of Belongingness</th>
<th>α = .76</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I can share personal concerns with other students</td>
<td>0.71</td>
</tr>
<tr>
<td>2. I am able to develop close friendships with other students</td>
<td>0.72</td>
</tr>
<tr>
<td>3. I am able to make connections with a diverse group of people</td>
<td>0.59</td>
</tr>
<tr>
<td>4. I feel so distant from the other students (^a)</td>
<td>0.43</td>
</tr>
<tr>
<td>6. I can relate to my fellow classmates</td>
<td>0.63</td>
</tr>
<tr>
<td>7. I have some close friendships with [THE INSTITUTION] students</td>
<td>0.55</td>
</tr>
<tr>
<td>8. I am comfortable working in groups</td>
<td>0.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Work Self-Efficacy</th>
<th>α = .78</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. I have no sense of togetherness with my peers (^a)</td>
<td>0.66</td>
</tr>
<tr>
<td>9. I don't feel I can successfully participate with anyone or any group (^a)</td>
<td>0.81</td>
</tr>
<tr>
<td>10. I am confident that I can work effectively in groups</td>
<td>0.47</td>
</tr>
<tr>
<td>11. I am certain that I can accomplish group projects</td>
<td>0.44</td>
</tr>
<tr>
<td>12. I am not sure if I can get along with other students when working on group projects (^a)</td>
<td>0.72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual Academic Self-Efficacy</th>
<th>α = .82</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. I am confident that I will excel in college</td>
<td>0.83</td>
</tr>
<tr>
<td>14. I can meet the demands of college</td>
<td>0.84</td>
</tr>
<tr>
<td>15. I feel that I fit right in at [THE INSTITUTION]</td>
<td>0.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Institutional Commitment (to [THE INSTITUTION])</th>
<th>α = .74</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. I am certain I made the right choice in my attempt to attend [THE INSTITUTION]</td>
<td>0.56</td>
</tr>
<tr>
<td>19. I talk up this college to my friends as a great place to go to school</td>
<td>0.72</td>
</tr>
<tr>
<td>20. I am proud to tell others I will be going to school here</td>
<td>0.77</td>
</tr>
<tr>
<td>21. I could just as well be attending a different college as long as the courses were similar (^a)</td>
<td>0.44</td>
</tr>
<tr>
<td>22. I am extremely glad that I chose [THE INSTITUTION] over other colleges</td>
<td>0.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intention to Complete Degree at [THE INSTITUTION] (Intent not to transfer)</th>
<th>α = .76</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. It is important for me to graduate from [THE INSTITUTION] (e.g., rather than from another college)</td>
<td>0.63</td>
</tr>
<tr>
<td>18. I intend to transfer to another institution at some point (^a)</td>
<td>0.81</td>
</tr>
<tr>
<td>23. I intend to complete my degree at [THE INSTITUTION]</td>
<td>0.86</td>
</tr>
</tbody>
</table>

\(^a\)These questions were reverse coded for all analysis but are presented here in raw form for descriptive purposes. Please note that lower scores on these questions indicate a more positive response.
<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre-Course</th>
<th>Post-Course</th>
<th>Sign.</th>
<th>Effect Size</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belongingness</td>
<td>4.46</td>
<td>4.77</td>
<td>&lt;.001</td>
<td>0.379</td>
<td>0.457</td>
</tr>
<tr>
<td>Group Work Self-Efficacy</td>
<td>5.16</td>
<td>5.03</td>
<td>0.094</td>
<td>0.152</td>
<td>0.398</td>
</tr>
<tr>
<td>Individual Academic Self-Efficacy</td>
<td>5.14</td>
<td>5.24</td>
<td>0.075</td>
<td>0.147</td>
<td>0.504</td>
</tr>
<tr>
<td>Institutional Commitment (to [THE INSTITUTION])</td>
<td>4.55</td>
<td>4.51</td>
<td>0.494</td>
<td>0.059</td>
<td>0.587</td>
</tr>
<tr>
<td>Intention to Complete Degree at [THE INSTITUTION]</td>
<td>4.57</td>
<td>4.48</td>
<td>0.145</td>
<td>0.118</td>
<td>0.744</td>
</tr>
</tbody>
</table>
Table 4
*Summer Preparatory Program: Post- Task Group Special Projects*

<table>
<thead>
<tr>
<th>Scored Component</th>
<th>N</th>
<th>0'</th>
<th>1's</th>
<th>2's</th>
<th>3's</th>
<th>4's</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understands the meaning and content associated with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the PULs.</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3.00</td>
<td>0.82</td>
</tr>
<tr>
<td>Critical Thinking, Uses examples to apply the PUL to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>academic and/or real life scenarios</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3.23</td>
<td>0.73</td>
</tr>
<tr>
<td>Creativity, Subjective Judgment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judgment</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3.23</td>
<td>0.73</td>
</tr>
</tbody>
</table>

*Note:* Evaluators (2) score ratings were combined to determine mean average and standard deviations. Results reflect only the examination of the physical, tangible Special Projects; and does not account for the verbal student presentations that accompanied these projects.
<table>
<thead>
<tr>
<th>Scored Component</th>
<th>Pre Test Frequencies</th>
<th>Post Test Frequencies</th>
<th>Aggregate Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 1 2 3 4 SD Mean</td>
<td>0 1 2 3 4 SD Mean</td>
<td>Mean Differential Sign. Effect Size</td>
</tr>
<tr>
<td>Understands the meaning and content associated with the PULs.</td>
<td>1% 30% 40% 24% 5% 0.9</td>
<td>0% 20% 36% 37% 7% 0.9</td>
<td>2.30 0.261 0.000 0.265</td>
</tr>
<tr>
<td>Critical Thinking, Uses examples to apply the PUL to academic and/or real life scenarios.</td>
<td>22% 18% 39% 16% 4% 1.1</td>
<td>13% 13% 40% 305 4% 1.1</td>
<td>1.99 0.382 0.000 0.289</td>
</tr>
</tbody>
</table>

*Note:* Percents Represent Total Individual Student Scores (Rounded to Nearest Whole)

*Note:* Valid N = 149
### Table 6

**[THE INSTITUTION] Summer Special Projects Sessions Student Satisfaction Questionnaire**

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Very Dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Classroom activities that helped me learn</td>
<td>0.60%</td>
<td>7.80%</td>
<td>29.10%</td>
<td>49.70%</td>
<td>12.80%</td>
<td>179</td>
<td>3.66</td>
<td>0.8</td>
</tr>
<tr>
<td>2. Meaningful class discussions</td>
<td>1.10%</td>
<td>6.70%</td>
<td>36.90%</td>
<td>39.70%</td>
<td>15.60%</td>
<td>179</td>
<td>3.62</td>
<td>0.9</td>
</tr>
<tr>
<td>3. Meaningful in-class exercises</td>
<td>1.70%</td>
<td>8.40%</td>
<td>31.30%</td>
<td>42.50%</td>
<td>16.20%</td>
<td>179</td>
<td>3.63</td>
<td>0.9</td>
</tr>
<tr>
<td>4. Projects that contributed to my learning</td>
<td>2.30%</td>
<td>8.50%</td>
<td>32.20%</td>
<td>38.40%</td>
<td>18.60%</td>
<td>177</td>
<td>3.63</td>
<td>1</td>
</tr>
<tr>
<td>5. Group activities that contributed to my learning</td>
<td>2.80%</td>
<td>9.60%</td>
<td>22.50%</td>
<td>46.60%</td>
<td>18.50%</td>
<td>178</td>
<td>3.69</td>
<td>1</td>
</tr>
<tr>
<td>6. Effectiveness of project group work</td>
<td>2.20%</td>
<td>6.20%</td>
<td>23.60%</td>
<td>48.90%</td>
<td>19.10%</td>
<td>178</td>
<td>3.76</td>
<td>0.9</td>
</tr>
<tr>
<td>7. Instruction on the meaning of the Principles of Undergraduate Learning (PULs)</td>
<td>3.40%</td>
<td>5.60%</td>
<td>22.60%</td>
<td>48.60%</td>
<td>19.80%</td>
<td>177</td>
<td>3.76</td>
<td>1</td>
</tr>
<tr>
<td>8. Instruction on how to integrate the PULs into my future role as an [THE INSTITUTION] student</td>
<td>2.80%</td>
<td>6.70%</td>
<td>21.30%</td>
<td>48.90%</td>
<td>20.20%</td>
<td>178</td>
<td>3.77</td>
<td>0.9</td>
</tr>
<tr>
<td>9. Opportunities to learn from other students</td>
<td>2.20%</td>
<td>3.40%</td>
<td>23.50%</td>
<td>49.70%</td>
<td>21.20%</td>
<td>179</td>
<td>3.84</td>
<td>0.9</td>
</tr>
<tr>
<td>10. Opportunities to form friendships with other students</td>
<td>0.00%</td>
<td>1.10%</td>
<td>9.50%</td>
<td>42.50%</td>
<td>46.90%</td>
<td>179</td>
<td>4.35</td>
<td>0.7</td>
</tr>
</tbody>
</table>
### Table 6 (Continued)

[THE INSTITUTION]  *Summer Special Projects Sessions Student Satisfaction Questionnaire*

<table>
<thead>
<tr>
<th></th>
<th>Very Dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11. Interactions with other students</strong></td>
<td>3</td>
<td>1.70%</td>
<td>2</td>
<td>1.10%</td>
<td>11</td>
<td>6.10%</td>
<td>95</td>
<td>53.10%</td>
</tr>
<tr>
<td><strong>12. Interactions with student mentors</strong></td>
<td>1</td>
<td>0.60%</td>
<td>6</td>
<td>3.40%</td>
<td>32</td>
<td>18.10%</td>
<td>90</td>
<td>50.80%</td>
</tr>
<tr>
<td><strong>13. Development of supportive relationships with [THE INSTITUTION] student mentors</strong></td>
<td>3</td>
<td>1.70%</td>
<td>9</td>
<td>5.00%</td>
<td>48</td>
<td>26.80%</td>
<td>82</td>
<td>45.80%</td>
</tr>
<tr>
<td><strong>14. Overall feelings of a sense of community at [THE INSTITUTION]</strong></td>
<td>0</td>
<td>0.00%</td>
<td>5</td>
<td>2.80%</td>
<td>27</td>
<td>15.20%</td>
<td>96</td>
<td>53.90%</td>
</tr>
<tr>
<td><strong>15. Overall, how satisfied were you with the Special Projects sessions?</strong></td>
<td>7</td>
<td>3.90%</td>
<td>26</td>
<td>14.60%</td>
<td>40</td>
<td>22.50%</td>
<td>74</td>
<td>41.60%</td>
</tr>
</tbody>
</table>
Table 6 (Continued)

**[THE INSTITUTION] Summer Special Projects Sessions Student Satisfaction Questionnaire**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Would you recommend the Special Projects sessions to other students?</td>
<td>101</td>
<td>56.40%</td>
<td>78</td>
<td>43.60%</td>
<td>179</td>
</tr>
</tbody>
</table>
Table 7  
Ways in Which Students Attitudes and Feelings About the Summer Preparatory Special Projects Changed Over Time (N=178)

<table>
<thead>
<tr>
<th>Change</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
</table>
| Became More Enjoyable         | 52  | 31%  | “I didn't really like it at first, but I do now.”  
                                 |     |      | “I started looking forward to certain parts.”  
                                 |     |      | “At first, I was mad I was put in it but now I'm glad I am.”  
                                 |     |      | “Towards the end I looked at it as a good opportunity.” |
| Became Less Enjoyable         | 26  | 15%  | “I went from liking it to not liking it.”  
                                 |     |      | “At first it was okay, but over time I lost interest.”  
                                 |     |      | “It started out with me at a high hope and ended in why am I in this class?”  
                                 |     |      | “They went from it being a new experience to one not worth it.” |
| Developed Friendships         | 17  | 10%  | “As I developed relationships it became more fun.”  
                                 |     |      | “At first I was not wanting to attend at all, but having made friends changed my mind.”  
                                 |     |      | “It helped me to get to know the camps better and make friends and meet people I can talk to in the Fall.”  
                                 |     |      | “I was glad I was going to class to see my friends.” |
| No Change Reported            | 17  | 10%  | “My attitude and feelings didn't change much.”  
                                 |     |      | “My attitude and feelings stayed about the same over the course.”  
                                 |     |      | “My feelings did not change over time.” |
| Gained Understanding for Program / Project Purpose | 14  | 8%   | “At first I didn't understand it but as it went on I figured it out.”  
                                 |     |      | “It changed over time because I learned a lot of things during this 5 weeks.”  
                                 |     |      | “I realized I was actually learning math again.”  
                                 |     |      | “At first I didn't fully understand them, now I do really well.” |
| No Change Reported (Negative) | 11  | 6%   | “My feelings never changed. I thought it was a waste of time.”  
                                 |     |      | “It did not change much. I still feel like [THE INSTITUTION] was insulting my intelligence.” |
| Became Repetitive             | 11  | 6%   | “Thought it was the same thing over and over every time.”  
                                 |     |      | “I became frustrated everything was extremely repetitive.” |

Note: Percentages rounded to the nearest whole.

Note: The remaining responses were so varied that no major themes emerged.

*No Change Reported (Negative): Indicates responses in which a student conveys a negative attitude about the SPP Special Project Sessions while reporting no change.
Table 8  
Most Valued Aspects of the Special Projects Sessions

<table>
<thead>
<tr>
<th>Most Valued Aspect</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting New People and Forming Friendships</td>
<td>68</td>
<td>38%</td>
<td>“The friendships I formed with other students.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Connecting well with classmates.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“It was good way to meet people.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Meeting people before school officially started.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I enjoyed working with other students in the class to form new friendships.”</td>
</tr>
<tr>
<td>Gaining a Greater Understanding for the PUL’s</td>
<td>50</td>
<td>30%</td>
<td>“Learning the PUL’s.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Understanding the PUL's from different viewpoints.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I understood what the PUL's meant afterwards.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Going over the PUL's and discussing them.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Learning the specifics about the PUL's.”</td>
</tr>
<tr>
<td>Participation in Group Activities</td>
<td>32</td>
<td>18%</td>
<td>“The group-work because we applied what we learned.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Communication as a group.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I liked all of the games/activities that exemplified the PUL’s.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Games we played helped to break the ice.”</td>
</tr>
<tr>
<td>Gaining a Greater Understanding for [THE INSTITUTION]</td>
<td>19</td>
<td>11%</td>
<td>“The instructor helped me understand [THE INSTITUTION] life and the importance of the PUL’s.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“The time spent discussing campus questions.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Seeing the campus and learning college life.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Exploring campus.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Learning how to use the lab.”</td>
</tr>
<tr>
<td>Participation in Completing Special Projects</td>
<td>10</td>
<td>6%</td>
<td>“I liked the PUL projects. They helped me to understand.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“The projects because it caused more in depth discussion.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I found the projects to be most meaningful.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Values and ethics project.”</td>
</tr>
</tbody>
</table>

*Note:* Percentages rounded to the nearest whole. (N =179)  
*Note:* The remaining responses were so varied that no major themes emerged.
Table 9  
**Least valued aspect of the Special Project Sessions**

<table>
<thead>
<tr>
<th>Least Valued Aspect</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
</table>
| Participation in Completing Special Projects | 36  | 22% | “The actual projects themselves.”  
“I felt like making projects was not valuable.”  
“The unnecessary projects and questionnaire s.”  
“The PUL projects.”  
“Sometimes the project felt pointless.”  
“The Special Project session.” |
| Participation in Group Activities | 33  | 20% | “Working in a group, I was pretty dissatisfied with my group. No one took anything seriously they just joked around.”  
“Playing pointless games in the morning.”  
“Some of the early group activities such as the "ice breakers."  
“The Icebreakers. A few at the beginning was cool. We didn't need them later on.” |
| Nothing (positive)* | 25  | 15% | “Nothing everything done was valuable.”  
“All were valuable.”  
“I thought that everything was valuable.”  
“All activities were at least somewhat valuable.”  
“It was pretty valuable to me honestly.” |
| Time Commitment / Concern | 16  | 10% | “It was ok. I just think it takes up too much summer time!”  
“Was unnecessary to meet 3 times a week.”  
“Just the time length. It never took us an hour.”  
“I just didn't like having the class so early in the morning.”  
“The least valuable would have to be getting up so early.” |
| Learning about the PUL’s | 14  | 8%  | “Having to learn all the PUL's.”  
“The application of PUL’s to everything.”  
“PUL’s discussions had a very "oh-well-moving on" feel to them.”  
“Knowing some of the PUL’s.” |

*Note: Percentages rounded to the nearest whole.  
Note: The remaining responses were so varied that no major themes emerged.  
*Nothing (positive): Indicates responses where a student conveys a positive feeling about the SPP Special Project Sessions and/or that they felt that everything was valuable.
Table 10  
_Suggestions for Improving Future Sessions_  

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
</table>
| Less Time Commitment / Restraints | 28 | 18%| “I don't like how long the program is. I also don't like early morning, I think I could have done better if it was a little later.”  
                             |    |    | “Make breaks and classes shorter.”                                                                 |
                             |    |    | “Making the class like 30-45 min, not an hour and getting better ideas for introducing PUL'S.”          |
                             |    |    | “To start class at a slightly later time.”                                                           |
| More Project Support / More Time to Complete Project | 24 | 15%| “Have more time for planning on projects.”                                                            |
                             |    |    | “Being more clear on what is wanted when making a project for the PUL’s.”                            |
                             |    |    | “Describe the special project expectations more in-depth.”                                            |
                             |    |    | “The students should be given more time to do the group projects.”                                   |
| Nothing                        | 22 | 14%| “Don't have any suggestions.”                                                                       |
                             |    |    | “N/A.”                                                                                              |
| More Group Activities          | 17 | 11%| “More PUL activities.”                                                                               |
                             |    |    | “More activities to explore campus and apply PULs doing that.”                                       |
                             |    |    | “More mentor/student interaction and discussion time.”                                                |
                             |    |    | “I think maybe expanded on the activities so they can learn more about the PUL's.”                   |
| More Variety Within Program    | 17 | 11%| “Give more room for personal interpretation and creativity, instead of strict guidelines.”              |
                             |    |    | “Don't be so strict about the program. Let students be creative with projects and have fun.”          |
                             |    |    | “Make sure to have the groups think outside the classroom. Don't let them do the same things all the time.” |

*Note:* Percentages rounded to the nearest whole. (N=159)  
*Note:* The remaining responses were so varied that no major themes emerged
Table 10
(Continued)

<table>
<thead>
<tr>
<th>Suggestion</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Instruction and Direction</td>
<td>14</td>
<td>9%</td>
<td>“Be more specific and give more examples for each PUL.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Make sure that the class understands before you move on.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Give more instruction.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“More in depth analysis about each PUL.”</td>
</tr>
<tr>
<td>Greater Mentor Support</td>
<td>12</td>
<td>8%</td>
<td>“Train mentors better.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Don't do it or make sure all mentors are people friendly.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Explain each activity more thoroughly to mentors so at least they know what we're doing.”</td>
</tr>
<tr>
<td>Nothing (positive)</td>
<td>10</td>
<td>6%</td>
<td>“Wouldn't change anything, I think I was a nice experience.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“None it was all good with me”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I think everything went well and it doesn't need to be improved.”</td>
</tr>
</tbody>
</table>

*Note:* Percentages rounded to the nearest whole. (N=159)

*Note:* The remaining responses were so varied that no major themes emerged.

“Nothing (positive): Indicates responses where a student conveys a positive attitude about the SPP while stating that nothing concerning the program should be changed.
Appendix A

Principles of Undergraduate Learning

The Principles of Undergraduate Learning are the essential ingredients of the undergraduate educational experience. These principles form a conceptual framework for all students’ general education but necessarily permeate the curriculum in the major field of study as well. More specific expectations for graduates are determined by the faculty in a student’s major field of study. Together, these expectations speak to what graduates of will know and what they will be able to do upon completion of their degree.

Core Communication and Quantitative Skills
The ability of students to express and interpret information, perform quantitative analysis, and use information resources and technology – the foundational skills necessary for all students to succeed.

Outcomes: Core communication and quantitative skills are demonstrated by the student’s ability to
- express ideas and facts to others effectively in a variety of written formats, particularly written, oral and visual formats;
- comprehend, interpret, and analyze ideas and facts;
- communicate effectively in a range of settings;
- identify and propose solutions for problems using quantitative tools and reasoning;
- make effective use of information resources and technology.

Critical Thinking
The ability of students to engage in a process of disciplined thinking that informs beliefs and actions. A student who demonstrates critical thinking applies the process of disciplined thinking by remaining open-minded, reconsidering previous beliefs and actions, and adjusting his or her thinking, beliefs and actions based on new information.

Outcomes: The process of critical thinking begins with the ability of students to remember and understand, but it is truly realized when the student demonstrates the ability to
- apply,
- analyze,
- evaluate, and
- create knowledge, procedures, processes, or products to discern bias, challenge assumptions, identify consequences, arrive at reasoned conclusions, generate and explore new questions, solve challenging and complex problems, and make informed decisions.

Integration and Application of Knowledge
The ability of students to use information and concepts from studies in multiple disciplines in their intellectual, professional, and community lives.

Outcomes: Integration and application of knowledge are demonstrated by the student’s ability to
• Meet professional standards and competencies;
• further the goals of society; and
• work across traditional course and disciplinary boundaries.

Intellectual Depth, Breadth, and Adaptiveness
The ability of students to examine and organize disciplinary ways of knowing and to apply them to specific issues and problems.

Outcomes: Intellectual depth, breadth, and adaptiveness are demonstrated by the student’s ability to
• show substantial knowledge and understanding of at least one field of study;
• compare and contrast approaches to knowledge in different disciplines;
• modify one’s approach to an issue or problem based on the contexts and requirements of particular situations.

Understanding Society and Culture
The ability of students to recognize their own cultural traditions and to understand and appreciate the diversity of the human experience.

Outcomes: Understanding society and culture is demonstrated by the student’s ability to
• compare and contrast the range of diversity and universality in human history, societies, and ways of life;
• analyze and understand the interconnectedness of global and local communities; and
• operate with civility in a complex world.

Values and Ethics
The ability of students to sound decisions with respect to individual conduct, citizenship, and aesthetics.

Outcomes: A sense of values and ethics is demonstrated by the student’s ability to
• make informed and principled choices and to foresee consequences of these choices;
• explore, understand, and cultivate an appreciation for beauty and art;
• understand ethical principles within diverse cultural, social, environmental and personal settings.

Implementation of the Principles of Undergraduate Learning
The faculty in each school is responsible for implementation of the Principles of Undergraduate Learning (PULs) in its programs, curricula and courses. Students will typically be introduced to the PULs in First-Year Experience courses and Learning Communities, continue to develop PUL-related knowledge and skills in coursework, with demonstration of baccalaureate-level competencies expected in the capstone course/s or culminating experience/s students complete in the school.
Appendix B

Pre-TASK: Students' Opinions About College

The purpose of this questionnaire is to assess your perceptions of IUPUI and your feelings about being a potential student here. Your participation in this survey is completely voluntary. Your opinions are important! Results of this survey will be used to improve the Special Project’s portion of the Summer Preparatory Program and enhance our knowledge of what students’ needs are. Responses are completely confidential. In other words, your responses will be used for research purposes only and will not be used to make any decisions about individual students.

Your individual responses will NOT be shared with your special projects’ mentors at any time!

Please provide us with your university identification number by filling in here:  

University ID

DIRECTIONS: The following statements reflect various ways in which you may describe your experience on this entire college campus.

Fill in only one response per item. Please read each statement carefully then select one of the alternatives. Rate the degree to which you agree or disagree with each statement using the following scale:

1 = Strongly Disagree and 6 = Strongly Agree.

There is no right or wrong answer.

Do not spend too much time with any one statement.

CORRECT: ■ INCORRECT: ☒ ☒ ☒

1. I feel that I can share personal concerns with other students.

2. I am able to develop close friendships with other students.

3. I am able to make connections with a diverse group of people.

4. I feel so distant from the other students.

5. I have no sense of togetherness with my peers.

6. I can relate to my fellow classmates.

7. I have some close friendships with IUPUI students.

8. I am comfortable working in groups.

9. I don’t feel I can successfully participate with anyone or any group.

10. I am confident that I can work effectively in groups.

11. I am certain that I can accomplish group projects.

12. I am not sure if I can get along with other students when working on group projects.

13. I am confident that I will excel in college.

14. I can meet the demands of college.

15. I feel that I am right in at IUPUI.

16. It is important for me to graduate from IUPUI (e.g., rather than from another college).

17. I am certain I made the right choice in my attempt to attend IUPUI.

18. I intend to transfer to another institution at some point.

19. I talk up this college to my friends as a great place to go to school.

20. I am proud to tell others I will be going to school here.

21. I could just as well be attending a different college as long as the courses were similar.

22. I am extremely glad that I chose IUPUI over other colleges.

23. I intend to complete my degree at IUPUI.

Please continue on the other side
We are asking the following questions for research purposes to understand students' perceptions better.

Has either your mother or your father completed a four-year college (bachelor's) degree?
- Yes
- No
- Not sure

Your current age:
- 18-19
- 20-21
- 22-24
- 25 or older

Your gender:
- Female
- Male

Your race/ethnicity:
- African American
- Asian American
- Native American
- Multiracial American
- Latino/Hispanic American
- White American
- International Student
- Other

What was your overall high school grade point average?
- (A- to A) 3.5 and above
- (B+ to B) 3.0-3.4
- (B to B-) 2.5-2.9
- (C+ to C) 2.0-2.4
- (C to C-) 1.5-1.9
- (D+ to D) 1.0-1.4
- (D to D-) 0.9 or lower

If known, what was your ACT and/or SAT score?

<table>
<thead>
<tr>
<th>ACT Composite</th>
<th>SAT Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>
Appendix C

Post-Task: Students’ Opinions About College

The purpose of this questionnaire is to assess your perceptions of IUPUI and your feelings about being a potential student here. Your participation in this survey is completely voluntary. Your opinions are important! Results of this survey will be used to improve academic programs for new students and enhance our knowledge of what students’ needs are. Responses are completely confidential. In other words, your responses will be used for research purposes only and will not be used to make any decisions about individual students.

Your individual responses will NOT be shared with your special projects’ mentors at any time!

Please provide us with your university identification number by filling in here:

University ID

DIRECTIONS: The following statements reflect various ways in which you may describe your experience on this entire college campus. Fill in only one response per item. Please read each statement carefully then select one of the alternatives. Rate the degree to which you agree or disagree with each statement using the following scale: (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement.

1. I feel that I can share personal concerns with other students.
2. I am able to develop close friendships with other students.
3. I am able to make connections with a diverse group of people.
4. I feel so distant from the other students.
5. I have no sense of togetherness with my peers.
6. I can relate to my fellow classmates.
7. I have some close friendships with IUPUI students.
8. I am comfortable working in groups.
9. I don’t feel I can successfully participate with anyone or any group.
10. I am confident that I can work effectively in groups.
11. I am certain that I can accomplish group projects.
12. I am not sure if I can get along with other students when working on group projects.
13. I am confident that I will excel in college.
14. I can meet the demands of college.
15. I feel that I fit right in at IUPUI.
16. It is important for me to graduate from IUPUI (e.g., rather than from another college).
17. I am certain I made the right choice in my attempt to attend IUPUI.
18. I intend to transfer to another institution at some point.
19. I talk up this college to my friends as a great place to go to school.
20. I am proud to tell others I will be going to school here.
21. I could just as well be attending a different college as long as the courses were similar.
22. I am extremely glad that I chose IUPUI over other colleges.
23. I intend to complete my degree at IUPUI.

Please continue on the other side.
We are asking the following questions for research purposes to understand students' perceptions better.

Has either your mother or your father completed a four-year college (bachelor's) degree?
- Yes
- No
- Not sure

Your current age:
- 18-19
- 20-21
- 22-24
- 25 or older

Your gender:
- Female
- Male

Your race/ethnicity:
- African American
- Asian American
- Native American
- Multiracial American
- Latino/Hispanic American
- White American
- International Student
- Other

What was your overall high school grade point average?
- (A- to A) 3.5 and above
- (B to B+) 3.0-3.4
- (B- to B) 2.5-2.9
- (C to C+) 2.0-2.4
- (C- to C) 1.5-1.9
- (D to D+) 1.0-1.4
- (D- to D) 0.9 or lower

If known, what was your ACT and/or SAT scores:

<table>
<thead>
<tr>
<th>ACT Composite</th>
<th>SAT Composite</th>
</tr>
</thead>
</table>
## Appendix D

### Summer Preparatory Program (SPP), Special Projects Rubric

<table>
<thead>
<tr>
<th><strong>PUL = Principals of Undergraduate Learning</strong></th>
<th>4.) Accomplished</th>
<th>3.) Average</th>
<th>2.) Developing</th>
<th>1.) Beginning</th>
<th>0.) No – Response (Score)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Understands the meaning and content associated with the PULs.</em></td>
<td>A comprehensive understanding of the PULs are clearly presented. Demonstrates a thorough knowledge of the meaning and content associated with PULs.</td>
<td>Conveys an understanding of meaning and content associated with the PULs. Response is adequate in addressing PULs but is not precise or whole.</td>
<td>Displays a limited understanding of the PULs’ meaning and content and does not fully develop response. Inaccuracies are present.</td>
<td>Displays a novice level of understanding of the PULs. Response is not fully developed and several inaccuracies are present.</td>
<td></td>
</tr>
<tr>
<td><em>Critical Thinking, Uses examples to apply the PULs to academic and/or real life scenarios.</em></td>
<td>Conveys critical thinking thorough using examples to apply the PULs to academic and/or real life scenarios. Detailed examples and implications of connections are provided.</td>
<td>Displays and understanding that the PULs can be applied in multiple contexts. Connections to real life scenarios are provided but not fully explained.</td>
<td>Demonstrates a limited understanding that PULs can be applied to real life scenarios. Examples of application are not provided.</td>
<td>Conveys a lack of understanding of how PUL’s can be applied to real life scenarios. Examples of application are not provided.</td>
<td></td>
</tr>
<tr>
<td><em>Student uses creativity and in project creation.</em></td>
<td>Subjective Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***(PULs) = Principals of Undergraduate Learning.***

***Evaluators are encouraged to assign a zero to any response that doesn’t meet one of the four (4) levels of performance.***
Appendix E

Pre (Post) -Course Task: Students’ Understanding of [THE INSTITUTION] ’s Principles of Undergraduate Learning

Student Id:_________________________  Name________________________________

Instructions: The purpose of this task is to understand your perceptions of the [THE INSTITUTION] ’s Principles of Undergraduate Learning. The results of this task will be used for research purposes only and will not be used to make individual decisions about you as a student. Your responses will not be used for course grading at all! This task is completely voluntary. We are only asking for student id so we can link up responses later and have better understanding of students’ growth levels as a whole group. We appreciate your participation as results will be used to make improvements in the Special Projects sessions for future students!

[THE INSTITUTION] ’s Principles of Undergraduate Learning (PUL) are as follows

1. Core Communication and Quantitative Skills
2. Critical Thinking
3. Integration and Application of Knowledge
4. Intellectual Depth, Breadth, and Adaptiveness
5. Understanding Society and Culture
6. Values and Ethics

1. Why do you think the PULs are important to your educational experience?

Please take 10 minutes to write your response below:
## Appendix F

### Summer Preparatory Program (SPP), Writing Reflection Task Rubric (Pre & Post)

<table>
<thead>
<tr>
<th><strong>PUL =</strong> Principals of Undergraduate Learning</th>
<th>4.) Accomplished</th>
<th>3) Average</th>
<th>2.) Developing</th>
<th>1.) Beginning</th>
<th>0.) No – Response (Score)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Understands the meaning and content associated with the PULs.</strong></td>
<td>A comprehensive understanding of the PULs are clearly presented. Demonstrates a thorough knowledge of the meaning and content associated with PULs.</td>
<td>Conveys an understanding of meaning and content associated with the PULs. Response is adequate in addressing PULs but is not precise or whole.</td>
<td>Displays a limited understanding of the PULs’ meaning and content and does not fully develop response. Inaccuracies are present.</td>
<td>Displays a novice level of understanding of the PULs. Response is not fully developed and several inaccuracies are present.</td>
<td></td>
</tr>
<tr>
<td><strong>Critical Thinking, Uses examples to apply the PULs to academic and/or real life scenarios.</strong></td>
<td>Conveys critical thinking thorough using examples to apply the PULs to academic and/or real life scenarios. Detailed examples and implications of connections are provided.</td>
<td>Displays and understanding that the PULs can be applied in multiple contexts. Connections to real life scenarios are provided but not fully explained.</td>
<td>Demonstrates a limited understanding that PULs can be applied to real life scenarios. Examples of application are not provided.</td>
<td>Conveys a lack of understanding of how PUL’s can be applied to real life scenarios. Examples of application are not provided.</td>
<td></td>
</tr>
<tr>
<td><strong>Student uses creativity and in project creation.</strong></td>
<td>Subjective Score</td>
<td>Subjective Score</td>
<td>Subjective Score</td>
<td>Subjective Score</td>
<td>Subjective Score</td>
</tr>
</tbody>
</table>

***(PULs) =** Principals of Undergraduate Learning.

***Evaluators are encouraged to assign a zero to any response that doesn’t meet one of the four (4) levels of performance.