

**Summer Bridge Program
2012 Quantitative Report**

Daniel Trujillo, M.S.
djtrujil@iupui.edu

Michele J. Hansen, Ph.D.
mjhansen@iupui.edu

University College, Office of Research, Planning, & Evaluation
Indiana University Purdue University, Indianapolis (IUPUI)

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Executive Summary

The purpose of this investigation was 1) to examine the growth of the Summer Bridge program by student sex and ethnicity over a period of 4 years and 2) to enhance understanding of student participants' experiences and self-reported learning gains. Summer Bridge is designed for incoming students and held in August before fall classes begin. Throughout the two-week program students establish early networks of success with faculty, advisors, student mentors, and librarians. Summer Bridge students also "receive early support in math, writing, and communication studies (bridge.uc.iupui.edu).” Taken together, these program goals are designed to facilitate a successful student transition to IUPUI.

Summer Bridge has experienced steady growth over the past four years (2009-2012). 539 first-time, full-time students participated in 2012 compared to 455 in 2011. Overall, the program has grown to serve 38.5% more students since 2009. As Summer Bridge continues to grow more underrepresented (non-white) students are participating. For example, in 2012 (40%) of program participants were minority students compared to 36% in 2011, 32% in 2010, and 25% in 2009.

At the completion of Summer Bridge most student participants voluntarily completed a questionnaire. Individual questions were grouped together and formed into nine (9) reliable constructs (below). Several strategies were then used to understand students' experiences. For example, a multiple regression analysis examined how program (construct) areas helped provide students with a greater sense of satisfaction. Additionally, an ANOVA with post-hoc procedures was used to determine how questionnaire responses changed over time (2009-2012).

Classroom Instructional Strategies & Team Support
Critical Thinking & Communication Skills
(Academic Skills)
Study & Time Management Skills
Understanding College Resources

Goal Commitment & Understanding Self
Diversity & Cultural Awareness
Interactions with Diverse Peers
Developing Connections & Sense of Belongingness
Academic Self-Efficacy

Overall, students were highly satisfied with their Summer Bridge experiences. In 2012 students responded positively that the program provided "the resources and information to help them succeed in college" (4.56 on 5.0 scale: 4=Agree / 5=Strongly Agree). Most students reported that they would recommend Summer Bridge to another first-year student (99%). Furthermore, evidence from a multiple regression analysis suggested that four (4) construct areas were related to students' program satisfaction (pg. #10). These included understanding college resources ($B=.236$; $p\leq.01$), diversity & cultural awareness ($B=.141$; $p\leq.01$), classroom strategies & team support ($B=.163$; $p\leq.05$), & developing connections & sense of belonging ($B=.138$; $p\leq.05$). This information gives stakeholders specific areas in which they can focus improvement.

It is also meaningful that student questionnaire responses changed over time. An ANOVA with post-hoc procedure revealed that on average answers given in 2012 were significantly higher than those in 2009 (pg. #11). The largest areas of growth were in diversity & cultural awareness ($r=.139$; $p\leq.01$) and interactions with diverse peers ($r=.191$; $p\leq.01$). Taken together, findings show that Summer Bridge has experienced positive programmatic change. Questionnaire data coupled with growth seen in minority student participation shows notable development as occurred in advancing diversity.

Assessment of Summer Bridge is an on-going process. It may be helpful to share this information with instructional teams as appropriate. Electronic copies: research.uc.iupui.edu

2012 Summer Bridge Program Assessment Report

Introduction

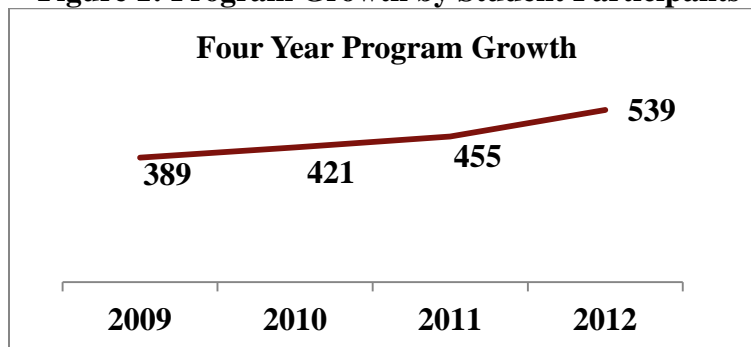
The Summer Bridge program is designed for incoming freshman and held in August before fall classes begin. Participants are divided into groups of approximately 20-25 students based on their major or career interest. Throughout the two-week program students establish early networks of success with faculty, advisors, student mentors, and librarians. Summer Bridge students also “make friends in a personal and relaxed setting, navigate campus, use technology, and preview fall classes”. Additionally, “students receive early support in math, writing, and communication studies” (bridge.uc.iupui.edu.)” Taken together, these program goals are designed to facilitate a successful student transition to IUPUI.

While 2012 is the main focus of examination, previous program years (2009-2011) are also considered. Notable findings and possible implications are presented in narrative form with accompanying tables and graphs. It is our hope that this method of presentation will lead to a further understanding of Summer Bridge by identifying areas of achievement and those that may benefit from improvement. Electronic copies of this and other assessment reports can be found online at <http://research.uc.iupui.edu/>.

Program Participants (2009 -2012)

The Summer Bridge program has experienced steady growth over the past four years (2009-2012). As seen in Figure 1, a total of (n = 539) first-time, full-time IUPUI students participated in Summer Bridge in 2012 compared to 455 in 2011. This marks a one year increase in participation of 18.5%. Overall, the program has grown to serve 38.5% more students since 2009.

Figure 1: Program Growth by Student Participants



Note: representative of only First-time Full-time (FTFT) student participants.

Student Demographic Characteristics

It is also important to consider the demographic characteristics of students who participated in Summer Bridge. Shown in Table 1 and Figures 2-4 is a breakdown of Summer Bridge participants by gender and ethnicity across the past four years (2009-2012). It is notable that in 2012 a higher percentage of Female students (61%) participated in the program than Male students (39%). Additionally, in 2012 a higher percentage of non-White / Minority (40%) students participated in Summer Bridge compared to previous years. In 2012 (n = 70)

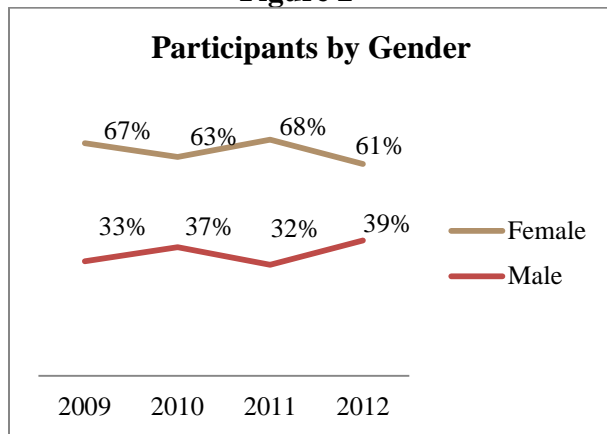
International students were served by the program; accounting for 13% of all participants. The percentage of Black/African American (12%) and Hispanic/Latino (a) (7%) participants decreased slightly in 2012 compared to previous years.

Table 1: Student Demographic Characteristics

Summer Bridge Program	2009		2010		2011		2012	
	N	%	N	%	N	%	N	%
Total Student Participants	389	100%	421	100%	455	100%	539	100%
Gender								
<i>Female</i>	262	67%	265	63%	310	68%	331	61%
<i>Male</i>	127	33%	156	37%	145	32%	208	39%
Ethnicity								
<i>White</i>	286	74%	285	68%	286	63%	323	60%
<i>Minority (Non-White)</i>	95	25%	133	32%	165	36%	215	40%
<i>Black / African American</i>	61	16%	80	19%	76	16%	64	12%
<i>Hispanic / Latino(a)</i>	16	4%	23	6%	48	11%	38	7%
<i>Asian</i>	11	3%	10	2%	11	2%	15	3%
<i>American Indian / Alaska Native</i>	1	0.3%	0	1%	1	1%	0	0
<i>International</i>	5	1%	3	1%	2	0.4%	70	13%
<i>Other / *Two or More</i>	1	0.3%	17	4%	27	6%	28	5%
<i>Refused to Answer</i>	5	1%	0	0%	0	0%	0	0
<i>Missing</i>	3	0.3%	3	1%	4	1%	1	0

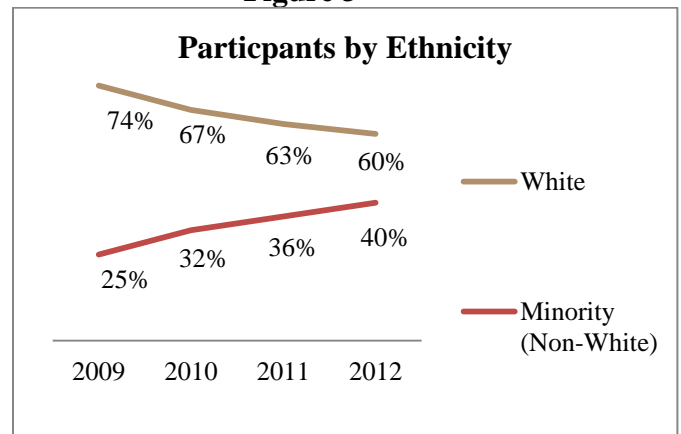
Note: representative of only First-time Full-time (FTFT) student participants. Percentages (%) rounded to nearest whole.

Figure 2



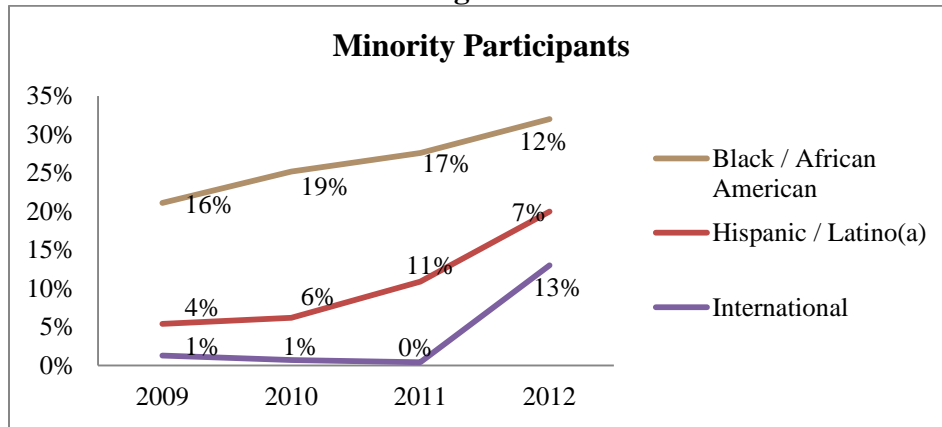
Note: First-time Full-time (FTFT) student participants only.

Figure 3



Note: First-time Full-time (FTFT) student participants only.

Figure 4



Note: representative of First-time Full-time (FTFT) student participants. Percentages (%) rounded to nearest whole.

Method

Construct Areas

At the completion of Summer Bridge most student participants voluntarily completed an end-of-program questionnaire. The questionnaire was designed to gather information on student learning and development. Individual questions were grouped together based on previous research and theory, and formed into nine (9) reliable constructs (Appendix, A):

Classroom Instructional Strategies & Team Support
 Critical Thinking & Communication Skills
 Study & Time Management Skills
 Understanding College Resources
 Goal Commitment & Understanding Self

Diversity & Cultural Awareness
 Interactions with Diverse Peers
 Developing Connections & Sense of Belongingness
 Academic Self-efficacy

Examination of Student Responses

Several strategies were used to understand students’ Summer Bridge learning experiences. First, perceptions of overall program satisfaction across the past four years were considered (2009-2012). Next an examination of participants’ highest ranked construct (learning) areas were considered. A multiple regression analysis was used to examine how specific program areas helped provide students with a greater sense of satisfaction (Appendix B). Additionally, an analysis of variance (ANOVA) with post-hoc procedures was used to determine how student questionnaire responses have changed over time (Appendix C).

Assumptions & Limitations

While specific procedures have their own inherent limitations, there are a few general restrictions of this study worth noting. It is important to consider that student responses to the questionnaire were *anonymous*. This made it impossible to connect student answers to identifiable data such as demographic, GPA, or retention information. Students tended to respond to questions on the positive side of the likert distribution (0=*N/A*; 1=*Strongly Disagree*; 2=*Disagree*; 3=*Neutral*; 4=*Agree*; 5=*Strongly Agree*). In an effort to account for skewness, outliers, and “ceiling effects” (n = 11) questionnaires were removed from the study. Finally, although this study identified several significant and notable correlations we cannot determine causation.

Results

Program Satisfaction

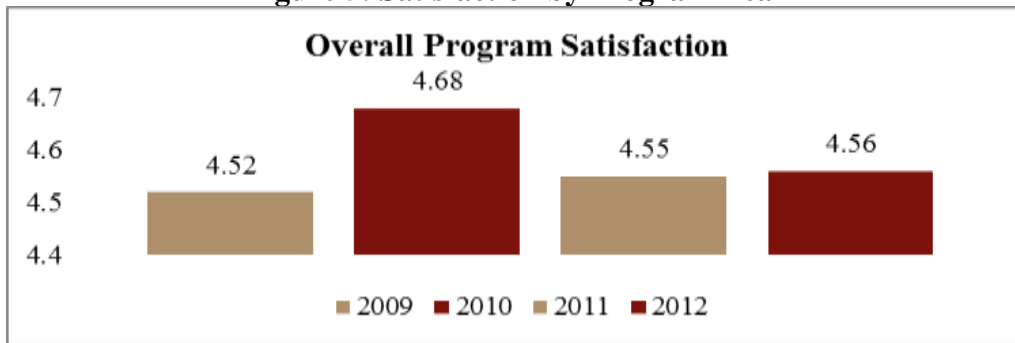
It is clear that overall students are highly satisfied with their Summer Bridge experiences. As shown below, students reported that they were satisfied that the program provided them with the resources and information to help them succeed in college. For example in 2012, students rated this question with an average response of 4.56 on a 5.0 likert scale (4=Agree; 5=Strongly Agree). Additionally, most students (99%) indicated that they would recommend Summer Bridge to another first-year student.

Table 2: Overall Program Satisfaction

Overall, how satisfied were you that the Summer Academy provided you with the resources and information to help you succeed in college?	Response Means			
	2009	2010	2011	2012
	4.52	4.68	4.55	4.56
Would you recommend the Summer Academy to other first-year students?	Percent Yes			
	2009	2010	2011	2012
	99%	98%	99%	99%

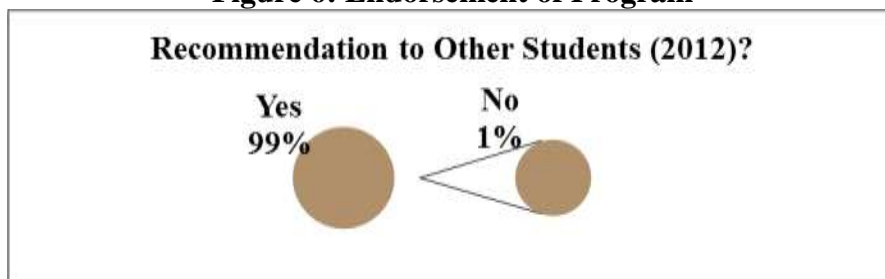
Note: responses provided on a likert scale: 0=N/A; 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree. Percentages (%) rounded to the nearest whole.

Figure 5: Satisfaction by Program Year



Note: responses on a likert scale: 0=N/A; 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree.

Figure 6: Endorsement of Program



Note: Percentages (%) rounded to the nearest whole.

2012 Student Perceptions of Construct Areas

2012 students provided a plethora of information about their Summer Bridge learning experiences. Figure 7 and Table 3 highlight that this feedback was positive and focused on nine (9) distinct construct areas. 2012 students gave the highest average responses to questions regarding developing peer connections & sense of belongingness (M =4.41) and diversity & cultural awareness (M=4.41). These areas are followed closely by classroom instructional strategies & team support (M=4.37) and understanding college resources (M=4.37). The top and lowest 10 question responses by mean for 2012 are provided on the next page (Tables 4 & 5).

Figure 7: Summer Bridge Construct Areas



Table 3: 2012 Construct Areas Sorted by Mean Average

Construct Areas	N	Std. Dev	Alpha Reliability	Mean
1.) Developing Peer Connections & Sense of Belonging	453	.60	$\alpha=.85$	4.41
2.) Diversity & Cultural Awareness	453	.68	$\alpha=.86$	4.41
3.) Classroom Instructional Strategies & Team Support	453	.60	$\alpha=.93$	4.37
4.) Understanding College Resources	453	.51	$\alpha=.86$	4.37
5.) Goal Commitment & Understanding Self	453	.58	$\alpha=.88$	4.37
6.) Academic Self-Efficacy	453	.69	$\alpha=.86$	4.31
7.) Study & Time Management Skills	453	.64	$\alpha=.88$	4.18
8.) Interactions with Diverse Peers	453	.82	$\alpha=.86$	4.17
9.) Critical Thinking & Communication Skills	453	.66	$\alpha=.91$	4.07

Note: Reliability Coefficient – Cronbach’s alpha (α) is a measure of internal consistency of how closely related a set of items are as a group. A “high” (α) is often used (along with substantive arguments and possibly other statistical measures) as evidence that the items measure an underlying (or latent) construct. Cronbach’s alpha is not a statistical test – it is a coefficient of reliability (or consistency). A good rule is that above .70- means that the internal consistency is high and that the items are related.

Table 4: Top 10 Questions Sorted by Mean Average (2012)

Question (Participating in Summer Bridge improved my understanding / ability to...)	N	Std. Dev.	Mean
1.) Met new people	542	.55	4.70
2.) Use IUPUI technology such as OnCourse	547	.54	4.68
3.) Find my way around campus	549	.57	4.63
4.) Beneficial Interactions with a student peer mentor	540	.67	4.52
5.) Campus resources available to help me (e.g., Writing Center, Math Assistance Center, Career Center)	544	.65	4.50
6.) Adjust to college life	547	.67	4.49
7.) Appreciate social & cultural diversity	548	.75	4.67
8.) Instructional team members that were committed to promoting an environment that respects & celebrates diversity	539	.74	4.45
9.) Instructional team members that were committed to helping me achieve my educational goals	539	.74	4.45
10.) Feel connected to IUPUI	540	.71	4.44

Note: responses on a likert scale: 0=N/A; 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree.

Table 5: Lowest 10 Questions Sorted by Mean Average (2012)

Question (Participating in Summer Bridge improved my understanding / ability to...)	N	Std. Dev.	Mean
1.) Do well in math courses	546	.98	3.90
2.) Prepare for tests and exams	545	.90	3.96
3.) Do research projects effectively	539	.89	3.98
4.) Find what I need at the library	545	.98	4.00
5.) Manage and cope with stress	548	.89	4.07
6.) Evaluate the quality of information	548	.84	4.08
7.) Had serious conversations with students of a different race or ethnicity	539	.98	4.09
8.) Think critically about what I read	544	.83	4.10
9.) IUPUI's Principles of Undergraduate Learning (PULs)	543	.87	4.10
10.) Communicate my thoughts in speaking	548	.88	4.10

Note: responses on a likert scale: 0=N/A; 1=Strongly Disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly Agree.

2012 Student Predictors of Program Satisfaction

Overall, students indicated that they were highly satisfied with their 2012 Summer Bridge experiences. Results of a Multiple Linear Regression procedure (Appendix B) show that four (4) construct areas provided students with a greater sense of satisfaction: classroom instructional strategies & team support; understanding college resources; diversity & cultural awareness, and developing connections & sense of belongingness. In other words, the extent to which Summer Bridge provided an understanding of college resources the greater students' satisfaction ($B=.236$; $p \leq .01$). Similar results are shown in Figure 8 and Table 6 and provide administrators with possible focus areas for future growth and development.

Figure 8: Construct Areas Significantly Predicting Program Satisfaction (2012)

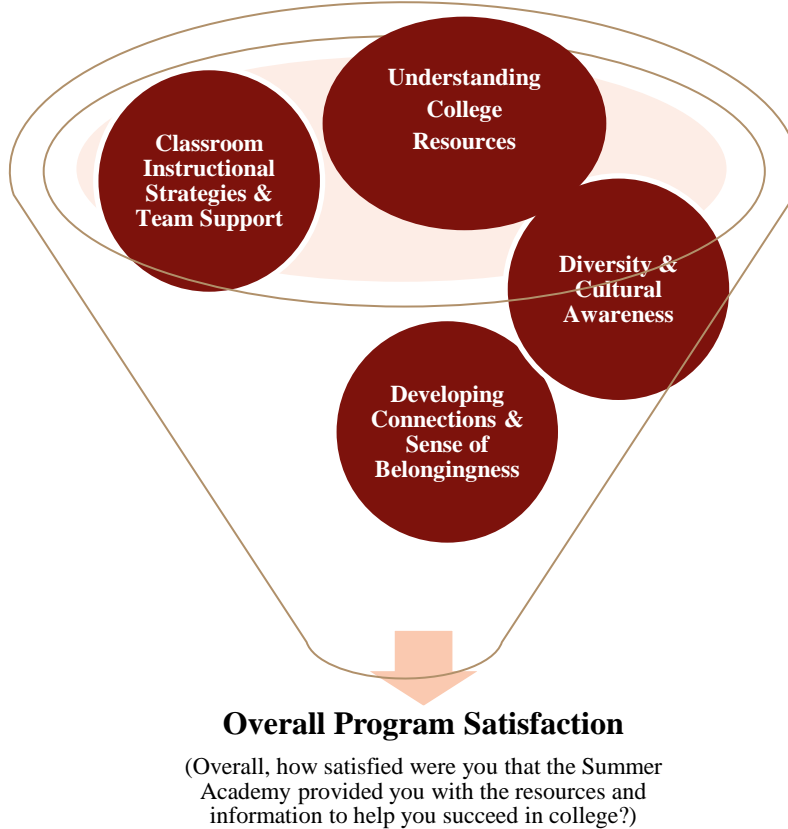


Table 6: Construct Areas Significantly Predicting Program Satisfaction (2012)

Multiple Regression Summary Table	Unstandardized Coefficient's		t	Sig
	B	Std. Error		
Understanding College Resources	.236**	.078	3.030	.003
Diversity & Cultural Awareness	.141**	.051	2.789	.006
Classroom Instructional Strategies & Team Support	.163*	.066	2.469	.014
Developing Connections and Sense of Belongingness	.138*	.059	2.346	.019

Notes: dependent variable: "Overall how satisfied were you that the Summer Academy provided you with the resources and information to help you succeed in college?" ** $p \leq .01$; * $p \leq .05$

Change in Student Responses Across Program Years (2009-2012)

It is notable that student questionnaire responses changed over time. An ANOVA with post-hoc procedure revealed that on average answers given in 2012 were significantly different from those in 2009 (Appendix C). Students gave higher responses to construct areas in 2012. The two largest effect sizes (r) are reflected in the areas designed to account for students Summer Bridge diversity experiences: diversity and cultural awareness ($r=.139$; $p \leq .01$) and interactions with diverse peers ($r=.191$; $p \leq .01$) (Table 7). There were no statistically significant differences in 2012 responses when compared to other program years (2010 or 2011). In many respects this is understandable because program change is often an iterative and longitudinal process.

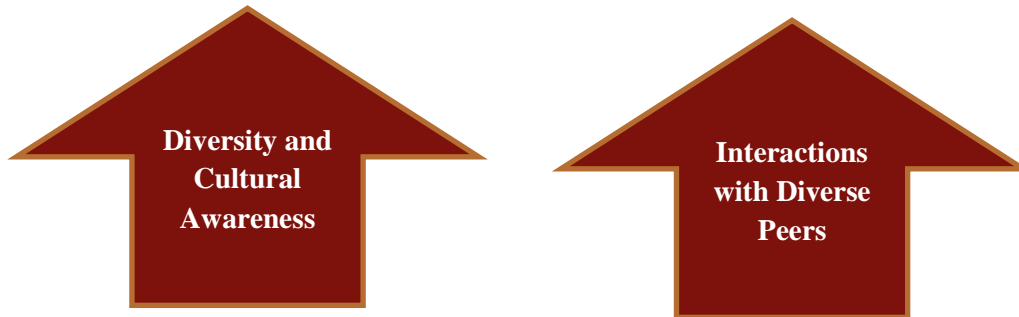


Table 7: Change in Student Responses Across Program Years, 2009 – 2012

Construct Area	2009			2012			Mean Difference	Effect Size (r)
	N	Std Dev	Mean	N	Std Dev	Mean		
Classroom Instructional Strategies & Team Support	389	.56	4.1967	532	.60	4.3742	+.178**	.107
Critical Thinking & Communication Skills	378	.57	3.9468	520	.66	4.0731	+.126*	.099
Study & Time Management Skills	388	.55	4.1035	537	.64	4.1772	+.074	Not Significant
Understanding College Resources	385	.44	4.3035	534	.50	4.3925	+.089*	.091
Goal Setting & Understanding Self	382	.58	4.1955	534	.62	4.3184	+.123*	.099
Diversity & Cultural Awareness	393	.65	4.2163	538	.68	4.4064	+.190**	.139
Developing Connections & Sense of Belonging	392	.56	4.3219	531	.60	4.083	+.086	Not Significant
Interactions w' Diverse Peers	386	.86	3.8368	535	.82	4.1670	+.330**	.191
Academic Self-Efficacy	394	.62	4.1739	542	.69	4.3173	+.143**	.106

Note: an ANOVA with post-hoc procedure (Bonferroni's / Dunn's Test) was used in making multiple comparisons. Detailed results found in Appendix C. ** $p \leq .01$; * $p \leq .05$

Summary of Results & Possible Implications

Results of this assessment report reveal several possible implications for future practice. First, Summer Bridge has seen substantial program growth over the past four years (2009-2012). This development includes notable increases in student participation over the past one (18.5%) and four years (38.5%). As Summer Bridge continues to grow more minority (non-white) students are being served by the program. For example, in 2012 (40%) of Summer Bridge participants were minority students compared to 36% in 2011, 32% in 2010, and 25% in 2009. Additionally, in 2012 (70) international students participated in Summer Bridge. This demographic group had previously not participated in the program at high levels. Additional programming and collaborative networks will likely need to be established in order to best serve these new students. Minority student participation in Summer Bridge is one of the programs greatest strengths. As Summer Bridge continues to grow administrators and instructional teams should continue to encourage and support the enrollment of diverse students.

Overall, it is clear that students are highly satisfied with their Summer Bridge experiences. For example, in 2012 students responded positively that the program provided “the resources and information to help them succeed in college” (4.56 on 5.0 scale / 4=Agree; 5=Strongly Agree). Additionally, most students (99%) indicated that they would recommend Summer Bridge to another first-year student. Evidence from a multiple regression analysis pinpointed that four (4) construct areas were directly related to students’ program satisfaction: classroom instructional strategies & team support; understanding college resources; diversity & cultural awareness, and developing connections & sense of belongingness. In other words, the extent to which Summer Bridge provides an understanding of college resources the greater students’ overall satisfaction ($B=.236$; $p\leq.01$). This information is meaningful in that it provides instructional team members with specific areas in which they can focus improvement efforts.

Finally, it is also important to consider that students’ questionnaire responses changed over time. An ANOVA with post-hoc procedure revealed that on average answers given in 2012 were significantly higher than those provided in 2009. The two largest areas of growth were in diversity & cultural awareness ($r=.139$; $p\leq.01$) and interactions with diverse peers ($r=.191$; $p\leq.01$). Taken together, findings show that Summer Bridge has experienced positive programmatic change. Questionnaire data coupled with the growth in minority student participation shows notable development has occurred in advancing diversity.

Conclusion

Assessment of the Summer Bridge program is an on-going process. This process is designed to identify both areas of achievement and those in need of improvement. It may be helpful to share this information with instructional teams as appropriate. Ideally, through gaining a greater understanding of Summer Bridge we will be able to further understand effective teaching and learning. Electronic copies of this and other assessment reports can be found online at: <http://research.uc.iupui.edu/>

Appendix A:
(Exploratory) Principal Components Factor Analysis

Construct Areas / Questions (Participating in Summer Bridge improved my understanding / ability to)	N	Std Dev.	Mean
Classroom Instructional Strategies & Team Support $\alpha=.93$ 10 Question Items			
Meaningful class discussions	532	.72	4.43
Meaningful activities	532	.76	4.42
Meaningful assignments	532	.88	4.21
Beneficial interactions with a student peer mentor	532	.67	4.52
Beneficial interactions with an academic advisor	532	.79	4.35
Beneficial interactions with a faculty member	532	.76	4.39
Beneficial interactions with a librarian	532	.94	4.14
Activities or classroom discussions that incorporated diversity	532	.76	4.36
Instructional team members that were committed to promoting an environment that respects and celebrates diversity	532	.70	4.45
Instructional team members that were committed to helping me achieve my educational goals	532	.74	4.45
Critical Thinking & Communication Skills (Academic Skills) $\alpha=.91$ 10 Question Items			
Think critically about what I read	520	.83	4.11
See multiple sides of issues	520	.86	4.13
Evaluate the quality of information	520	.83	4.08
Critically examine ideas and issues	520	.82	4.15
Communicate my thoughts in writing	520	.86	4.12
Communicate my thoughts in speaking	520	.88	4.11
Give oral presentations	520	.90	4.12
Do research projects effectively	520	.89	3.99
Do well in math courses	520	.98	3.92
Find what I need at the library	520	.96	4.01
Study and Time Management Skills $\alpha=.88$ 6 Question Items			
Set priorities so I can accomplish what is most important to me	537	.71	4.34
Manage my time to meet my responsibilities	537	.74	4.27
Establish an effective study schedule	537	.83	4.11
Prepare for tests and exams	537	.90	3.97
Use class discussions to help my learning	537	.75	4.30
Manage and cope with stress	537	.88	4.08
Understanding College Resources $\alpha=.86$ 8 Question Items			
Locate the appropriate campus resources when I need help	533	.64	4.40
Use IUPUI technology such as OnCourse	533	.54	4.69
Campus resources available to help me (e.g., Writing Center, Math Assistance Center, Learning Center, Career Center).	533	.64	4.51
The IUPUI Code of Student Conduct	533	.82	4.24
Adjust to college life	533	.67	4.49
Faculty expectations of students	533	.68	4.41
IUPUI's Principles of Undergraduate Learning (PULs)	533	.85	4.12
Student Organizations on campus	533	.89	4.14

Continued

Appendix A: Continued

Construct Areas / Questions (Participating in Summer Bridge improved my understanding / ability to)	N	Std Dev.	Mean
Goal Setting & Understanding Self α=.88 6 Question Items			
Decide on a major or future career	534	.87	4.23
Succeed academically	534	.69	4.42
My learning style(s)	534	.86	4.16
Why I am attending college	534	.76	4.40
My career aspirations	534	.79	4.28
The importance of having realistic expectations of college	534	.72	4.42
Diversity and Cultural Awareness α=.86 3 Question Items			
Appreciate social and cultural diversity	538	.74	4.48
Live and work in a diverse and complex society	538	.75	4.41
Developed an appreciation of social and cultural diversity	538	.82	4.33
Developing Connections & Sense of Belongingness α=.84 5 Question Items			
Established close friendships	531	.81	4.43
Met new people	531	.52	4.71
Established a meaningful relationship with a faculty member	531	.84	4.27
Established a meaningful relationship with an academic advisor	531	.87	4.18
Feel connected to IUPUI	531	.70	4.45
Interactions with Diverse Peers α=.86 3 Question Items			
Had serious conversations with students who were very different from me in terms of their religious beliefs, political opinions, or personal values	535	.99	4.12
Exchanged ideas with students whose views were different than my own	535	.83	4.30
Had serious conversations with students of a different race or ethnicity	535	.98	4.09
Academic Self Efficacy α=.86 2 Question Items			
Feel able to meet the demands and expectations of college	542	.73	4.32
Feel confident that I can handle the challenges of college	542	.74	4.32

Notes: Principal Component Factor Analysis (Varimax Rotation). Bartlett’s Test of Sphericity; sig. =.000
 Reliability Coefficient – Cronbach’s alpha (α) is a measure of internal consistency of how closely related a set of items are as a group. A “high” (α) is often used (along with substantive arguments and possibly other statistical measures) as evidence that the items measure an underlying (or latent) construct. Cronbach’s alpha is not a statistical test – it is a coefficient of reliability (or consistency). A good rule is that above .70- means that the internal consistency is high and that the items are related.

Appendix B: Detailed Multiple Regression Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.532	.283	.268	.46642	1.970

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.098	9	4.233	19.458	.000
Residual	96.591	444	.218		
Total	134.689	453			

Coefficients

Model Dependent Variable: Overall, how satisfied were you the Summer Academy provided you with the resources and information to help you succeed in college?	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.013	.214		9.425	.000		
Classroom Instructional Strategies & Team Support	.163	.066	.168	2.469	.014*	.350	2.855
Critical Thinking & Communication Skills	-.085	.067	-.097	-1.262	.208	.276	3.626
Study & Time Management Skills	.065	.067	.072	.967	.334	.288	3.476
Understanding College Resources	.236	.078	.207	3.030	.003**	.345	2.897
Goal Setting & Understanding Self	.032	.066	.034	.485	.628	.338	2.961
Diversity & Cultural Awareness	.141	.051	.167	2.789	.006**	.452	2.213
Developing Connections & Sense of Belongingness	.138	.059	.148	2.346	.019*	.408	2.450
Interactions with Diverse Peers	-.061	.033	-.091	-1.868	.062	.675	1.480
Academic Self-Efficacy	-.032	.046	-.038	-.683	.495	.521	1.921

Notes: Dependent Variable: Overall, how satisfied were you that the Summer Academy provided you with the resources and information to help you succeed in college? ** p ≤ .01; *p ≤ .05

Appendix C: Detailed ANOVA Results

Test of Homogeneity of Variances	Levene Statistic	df1	df2	Sig.
Classroom Instructional Strategies & Team Support	1.761	3	1773	.153
Critical Thinking & Communication Skills	4.668	3	1730	.003
Study & Time Management Skills	7.032	3	1784	.000
Understanding College Resources	8.227	3	1776	.000
Goal Setting & Understanding Self	1.473	3	1768	.220
Diversity & Cultural Awareness	.797	3	1788	.496
Developing Connections & Sense of Belongingness	5.776	3	1786	.001
Interactions with Diverse Peers	3.464	3	1770	.016
Academic Self-Efficacy	4.504	3	1802	.004

Brown-Forsythe Tests of Equality of Means	Statistic ^a	df1	df2	Sig.
Classroom Instructional Strategies & Team Support	9.736	3	1749.87	.000
Critical Thinking & Communication Skills	5.603	3	1724.22	.001
Study & Time Management Skills	1.857	3	1777.60	.135
Understanding College Resources	7.869	3	1753.90	.000
Goal Setting & Understanding Self	5.552	3	1741.90	.001
Diversity & Cultural Awareness	8.470	3	1760.90	.000
Developing Connections & Sense of Belongingness	4.753	3	1747.84	.003
Interactions with Diverse Peers	14.208	3	1697.65	.000
Academic Self-Efficacy	5.199	3	1787.977	.001

a. Asymptotically F distributed.

Multiple Comparisons

(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Classroom Instructional Strategies & Team Support						
2009	2011	-.15015*	.03936	.001	-.2541	-.0462
	2012	-.17759*	.03769	.000	-.2771	-.0780
	2009	.18540*	.03980	.000	.0803	.2905
2010	2011	.03525	.03863	1.000	-.0668	.1373
	2012	.00781	.03693	1.000	-.0897	.1053
	2009	.15015*	.03936	.001	.0462	.2541
2011	2010	-.03525	.03863	1.000	-.1373	.0668
	2012	-.02744	.03645	1.000	-.1237	.0688
	2009	.17759*	.03769	.000	.0780	.2771
2012	2010	-.00781	.03693	1.000	-.1053	.0897
	2011	.02744	.03645	1.000	-.0688	.1237
Critical Thinking & Communication Skills						
2009	2011	-.15530*	.04245	.002	-.2674	-.0432
	2012	-.12625*	.04056	.011	-.2334	-.0191
	2009	.13910*	.04274	.007	.0262	.2520
2010	2011	-.01620	.04151	1.000	-.1258	.0934
	2012	.01285	.03958	1.000	-.0917	.1174
	2009	.15530*	.04245	.002	.0432	.2674
2011	2010	.01620	.04151	1.000	-.0934	.1258
	2012	.02905	.03926	1.000	-.0747	.1327
	2009	.12625*	.04056	.011	.0191	.2334
2012	2010	-.01285	.03958	1.000	-.1174	.0917
	2011	-.02905	.03926	1.000	-.1327	.0747
Study & Time Management Skills						
2009	2011	-.08262	.04024	.241	-.1889	.0237
	2012	-.07370	.03860	.338	-.1757	.0283
	2009	.07590	.04084	.380	-.0320	.1838
2010	2011	-.00672	.03946	1.000	-.1109	.0975
	2012	.00221	.03779	1.000	-.0976	.1020
	2009	.08262	.04024	.241	-.0237	.1889
2011	2010	.00672	.03946	1.000	-.0975	.1109
	2012	.00892	.03714	1.000	-.0892	.1070
	2009	.07370	.03860	.338	-.0283	.1757
2012	2010	-.00221	.03779	1.000	-.1020	.0976
	2011	-.00892	.03714	1.000	-.1070	.0892

Understanding College Resources						
2009	2011	-.09119*	.03174	.025	-.1750	-.0074
	2012	-.08893*	.03045	.021	-.1694	-.0085
	2009	.15410*	.03217	.000	.0691	.2391
2010	2011	.06291	.03106	.258	-.0191	.1449
	2012	.06517	.02975	.172	-.0134	.1437
	2009	.09119*	.03174	.025	.0074	.1750
2011	2010	-.06291	.03106	.258	-.1449	.0191
	2012	.00226	.02927	1.000	-.0751	.0796
	2009	.08893*	.03045	.021	.0085	.1694
2012	2010	-.06517	.02975	.172	-.1437	.0134
	2011	-.00226	.02927	1.000	-.0796	.0751
	Goal Setting & Understanding Self					
2009	2011	-.06720	.04092	.605	-.1753	.0409
	2012	-.12289*	.03924	.011	-.2265	-.0193
	2009	.15474*	.04152	.001	.0451	.2644
2010	2011	.08754	.04004	.174	-.0182	.1933
	2012	.03185	.03832	1.000	-.0694	.1330
	2009	.06720	.04092	.605	-.0409	.1753
2011	2010	-.08754	.04004	.174	-.1933	.0182
	2012	-.05569	.03767	.837	-.1552	.0438
	2009	.12289*	.03924	.011	.0193	.2265
2012	2010	-.03185	.03832	1.000	-.1330	.0694
	2011	.05569	.03767	.837	-.0438	.1552
	Diversity & Cultural Awareness					
2009	2011	-.15450*	.04501	.004	-.2734	-.0356
	2012	-.19016*	.04315	.000	-.3041	-.0762
	2009	.20038*	.04574	.000	.0796	.3212
2010	2011	.04588	.04435	1.000	-.0712	.1630
	2012	.01022	.04245	1.000	-.1019	.1224
	2009	.15450*	.04501	.004	.0356	.2734
2011	2010	-.04588	.04435	1.000	-.1630	.0712
	2012	-.03566	.04167	1.000	-.1457	.0744
	2009	.19016*	.04315	.000	.0762	.3041
2012	2010	-.01022	.04245	1.000	-.1224	.1019
	2011	.03566	.04167	1.000	-.0744	.1457
	Continued					

Developing Connections & Sense of Belongingness						
2009	2011	-.01963	.03870	1.000	-.1219	.0826
	2012	-.08635	.03721	.122	-.1846	.0119
	2009	.12688*	.03920	.007	.0234	.2304
2010	2011	.10724*	.03797	.029	.0070	.2075
	2012	.04053	.03644	1.000	-.0557	.1368
	2009	.01963	.03870	1.000	-.0826	.1219
2011	2010	-.10724*	.03797	.029	-.2075	-.0070
	2012	-.06671	.03591	.380	-.1616	.0281
	2009	.08635	.03721	.122	-.0119	.1846
2012	2010	-.04053	.03644	1.000	-.1368	.0557
	2011	.06671	.03591	.380	-.0281	.1616
	Interactions with Diverse Peers					
2009	2011	-.23093*	.05683	.000	-.3810	-.0808
	2012	-.33019*	.05450	.000	-.4741	-.1862
	2009	.30955*	.05788	.000	.1567	.4624
2010	2011	.07862	.05593	.960	-.0691	.2263
	2012	-.02064	.05357	1.000	-.1621	.1209
	2009	.23093*	.05683	.000	.0808	.3810
2011	2010	-.07862	.05593	.960	-.2263	.0691
	2012	-.09926	.05243	.351	-.2377	.0392
	2009	.33019*	.05450	.000	.1862	.4741
2012	2010	.02064	.05357	1.000	-.1209	.1621
	2011	.09926	.05243	.351	-.0392	.2377
	2010	-.16264*	.04570	.006	-.2905	-.0348
Academic Self-Efficacy						
2009	2011	-.11409	.04505	.069	-.2331	.0049
	2012	-.14349*	.04319	.005	-.2576	-.0294
	2009	.16264*	.04570	.002	.0419	.2833
2010	2011	.04855	.04425	1.000	-.0683	.1654
	2012	.01915	.04235	1.000	-.0927	.1310
	2009	.11409	.04505	.069	-.0049	.2331
2011	2010	-.04855	.04425	1.000	-.1654	.0683
	2012	-.02940	.04165	1.000	-.1394	.0806
	2009	.14349*	.04319	.005	.0294	.2576
2012	2010	-.01915	.04235	1.000	-.1310	.0927
	2011	.02940	.04165	1.000	-.0806	.1394

*The mean difference is significant at the .05 level.