To: Developmental and Readiness Education (DARE) Taskforce

From: Ola Sabawi, Research Analyst

Date: 5/2/2017

Subject: Basic Skills Initiative (BSI)'s iPad Survey Analysis- Winter 2017

During fall 2015, DARE Taskforce provided iPads to basic skills faculty to incorporate technology-enhanced pedagogy in the classroom. The effects of this technology on enhancing basic skills courses have been measured through the distribution of surveys to students from participating courses at the beginning and end of each quarter.

This report analyses the data collected from participating basic skills courses during the winter quarter of 2017. The data was collected from four courses: ESL 272, EWRT 200, and two READ 211 courses. The survey response count for all surveys was as follows:

- Pre-survey: 73 students (test group); 43 students (control group); 4 instructors
- Post-survey: 34 students (test group); 41 students (control group); 2 instructors

Key Findings

Demographic information (test group vs. control group)

Age at term: The majority of all participants (82%) were 18 to 24 years old. Students who were 25 years or older were 18% of all participating students.

Gender: Among the test group, 53% of participants were female and 47% were male. From the control group, 51% were female and 49% were male.

Ethnicity: The majority of students from the test and control groups identified as Asian or Latino/a students. Among the test group, 54% of participants identified as Asian, 19% identified as Latino/a, and 27% identified with other ethnicities. Among the control group, 49% identified as Asian, 33% identified as Latino/a, and 18% identified with other ethnicities.

Enrollment status: 89% of test group participants and 84% of control group participants were continuing students. Other enrollment types were at rates less than 10%.

Course load: Among the test group, 75% were full-time students and 25% were part-time students. Among the control group, 79% were full-time students and 21% were part-time students.

Students' Survey Analysis (test group vs. control group)

Access to technology:

In general, questions pertaining to the time and location in which participants normally used their electronic devices showed many similarities between the test and control groups in the digital devices they used and the times spent using them.

- Test group:
  - The most highly used device was the mobile or smartphone, with more than 62% of participants reporting that they spend 4 hours or more per day using this device.
  - The least used device was the desktop computer, with more than 50% of participants reporting that they spend 0 hour on this device per day.
  - The most popular location where participants actively use digital devices is at home, with rates between 68% and 21% depending on the device used.
- Control group:
  - The most frequently used device was also the smartphone, with rates of more than 68% of participants reporting that they spend 4 hours or more per day using this device.
  - The least used device was the tablet, with 72% of pre-survey participants reporting that they spend 0 hour on this device per day.
  - This group also cited their home as the location in which digital devices were most frequently used. Rates were reported between 63% and 26% depending on the device used.

Experience with technology tools:

Participants in all groups reported using email more than any other technology tool to complete their course assignments. Participants also frequently cited using online textbooks or eTextbooks, collaborative applications, and cloud-based storage tools with previous course assignments.

- Test group:
  - Pre-survey respondents reported having more experience with email (22%), online textbooks or eTextbooks (15%), and collaborative applications (14%).
  - Post-survey respondents reported being more experienced with the use of email (21%), online textbooks or eTextbooks (15%), and cloud-based storage (15%).
- Control group:
  - Pre-survey respondents reported having more experience with email (24%), online textbooks or eTextbooks (17%), and collaborative applications (15%).
  - Post-survey respondents reported being more experienced with the use of email (23%), cloud-based storage (15%), and online textbooks or eTextbooks (15%).

Perception of technology tools in the classroom:

Both the test and control groups responded to a set of statements with different levels of agreeability at the end of the quarter than at the start. However, the control group saw more positive percentage point gaps than the test group. The differences between pre and post-survey responses are presented as percentage point gaps for the statements below:

- *I am more focused in my courses when technology tools are used in the classroom*
  - Test group (+5%), control group (+5%).
- *I learn better when courses use technology tools and not rely solely on lectures*
  - Test group (-5%), control group (+6%).
- *Technology tools make it easier for me to complete my assignments*
  - Test group (+5%), control group (+10%).
- *I think I will have a difficult time using technology tools in the classroom*
  - Test group (+8%), control group (-2%).
- *I enjoy my courses more when technology tools are used in the classroom*
  - Test group (-11%), control group (-2%).

Course outcome:

The total success rate[1] for participants in the test group (77%) was slightly higher than participants in the control group (71%). The withdraw rates among participants in the test group (4%) were lower than the control group (9%). The difference between the expected final grade and the actual grade obtained was similar among both groups.

- Test group:
  - Participants achieved a 77% success rate, 19% non-success rate, and 4% withdraw rate.
  - 65% of participants obtained a pass, 18% obtained a no pass, and 6% obtained a B.
- Control group:
  - Participants achieved a 71% success rate, 20% non-success rate, and 9% withdraw rate.
  - 59% of participants obtained a pass, 20% obtained a no pass, and 7% obtained a B.

Engagement with technology tools (Test group only)

iPad training and use:

- 65% of post-survey participants indicated they received training on how to use iPads/digital apps, and 44% were either satisfied or very satisfied with the amount of time dedicated to training.
- 38% of respondents indicated that they actively used the iPad during 26% to 50% of each class meeting, 35% used the iPad during 0% to 25% of class meetings, 24% used the iPad

[1] Success in this analysis is defined by obtaining a final course grade of A, B, C, or Pass.

during 51% to 75% of class meetings, and 3% used the iPad during 76% to 100% of class meetings. 59% of respondents were either satisfied or very satisfied with the amount of time the iPad was used in class.

Digital applications use and helpfulness:

Most post-survey respondents reported not using the digital applications on the iPad, with most apps getting a rating of "not at all" used and "I did not use this app". It is relevant to consider here that one of the two classes that submitted the post-survey responses only used the iPads to log on to the course website and did not use the digital apps during class. The most frequently used applications were:

- Google Drive: 71% of respondents with access to this app reported using it "quite a bit" or "a great deal", and 53% reported that this app was "very helpful" to their course success.
- Notability: 41% of participants with access to this app reported using it "quite a bit" or "a great deal", and 38% reported that this app was "helpful" or "very helpful" to their course success.
- Dropbox: 24% of respondents with access to this app reported using it "very little" or "somewhat", while 15% reported using it "quite a bit" or "a great deal". 18% of this app's users indicated that it was "helpful" or "very helpful".

iPad and application experience:

The percentages of agreeability to the following statements are based on "agree" and "strongly agree" responses:

- 74% of respondents believed that the iPad and digital apps made it convenient to complete the coursework.
- 65% reported that the iPad and digital apps made the course content more interesting.
- 62% reported they were glad that the instructor incorporated the iPad and digital apps into the class.
- 62% indicated they would like to use an iPad and/or digital apps for future courses.
- 62% reported that the iPad and digital apps helped them engage with the course content.
- 56% indicated that the iPad and digital apps used in this class will be useful for other classes.

Faculty's Survey Analysis (pre vs. post)

Perception of Technology Tools in the Classroom:

Instructors were asked to indicate their level of agreement with the following statements in the pre and post surveys. The differences between pre and post survey responses were measured based on "agree" or "strongly agree" responses. These are the statements that elicited a change in the level of agreeability between pre and post survey responses:

- *I think my students will have a difficult time using technology tools in the classroom* (-25%)

- *I think technology tools will make it easier for me to assign assignments* (-25%)
- *I think technology tools will make it easier for me to grade assignments* (+25%)

Frequently Used Apps:

When asked how often the digital apps were used in an average week, 50% of faculty reported using Notability "somewhat", 50% reported using Dropbox "quite a bit", and 50% reported using Flipboard "a great deal". Respondents indicated that they did not use the other apps that were listed.

Helpfulness of Apps to Course Success:

Faculty responses indicated that Notability and Google Drive were "helpful", and Dropbox and Flipboard were "very helpful" to students' course success.

Faculty's Perception about their Students' iPad Experience:

Both instructors who responded to the post-survey (100%) indicated that they either "agree" or "strongly agree" with the following statements:

- *The iPad and digital apps made the course content more interesting for my students.*
- *The iPad and digital apps made it convenient for my students to complete their coursework.*
- *The iPad and digital apps made the class more challenging for my students.*
- *My students were more focused in this class when the iPad and digital apps were used.*
- *My students enjoyed using the iPad and digital apps in this class.*
- *The iPad and digital apps helped my students engage with their classmates.*
- *The iPad and digital apps helped my students engage with the course content.*

Faculty's iPad Experience:

Both instructors (100%) agreed or strongly agreed that: using the iPad and digital apps made the class more interesting for them, made the class more challenging for them, made it easier to respond to students questions/comments, they see value in using iPad/apps, they enjoy using iPad/apps in class, technology used will be useful for other classes, they are glad they incorporated tech in the classroom, and they would like to use iPad/apps in future courses.

Comparison with Other Non-Technology Classes:

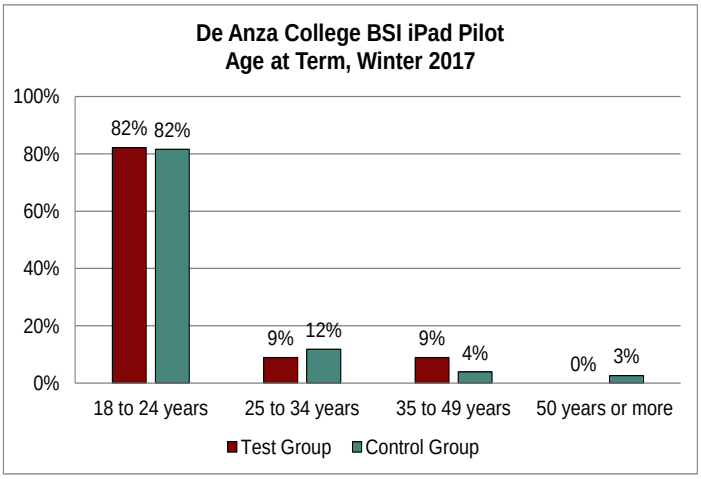
Both instructors (100%) agree that they had a better experience in their class with the iPads than their non-iPad class.

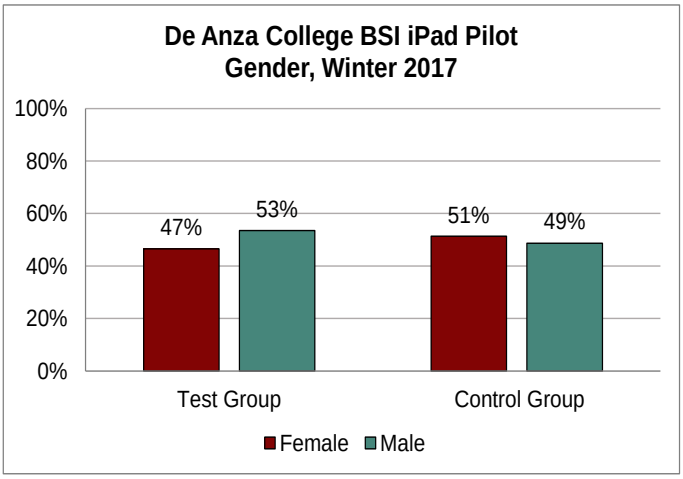
Student Demographic and Enrollment Profiles: Test Group vs. Control Group

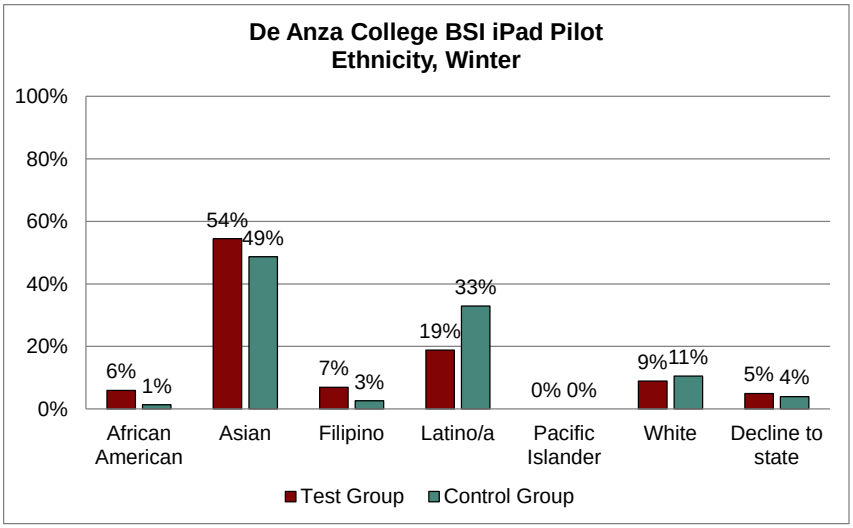
Note: This analysis includes information on all students from the participating basic skills courses, regardless of whether or not they submitted a survey response.

Age at Term, Gender & Ethnicity:

- Most students in the test group (82%) and control group (82%) were 18 to 24 years old.
- Among the test group, 53% of participants were female and 47% were male. From the control group, 51% were female and 49% were male.
- Among the test group, 54% of participants identified as Asian, 19% identified as Latino/a. Among the control group, 49% identified as Asian, 33% identified as Latino/a. Other ethnicities were cited at rates less than 12%.





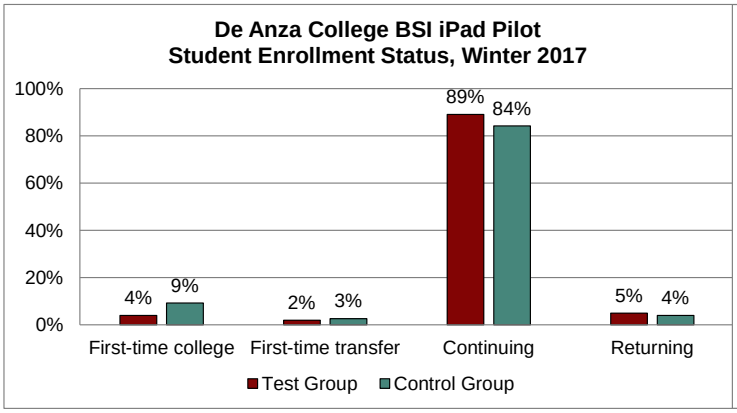


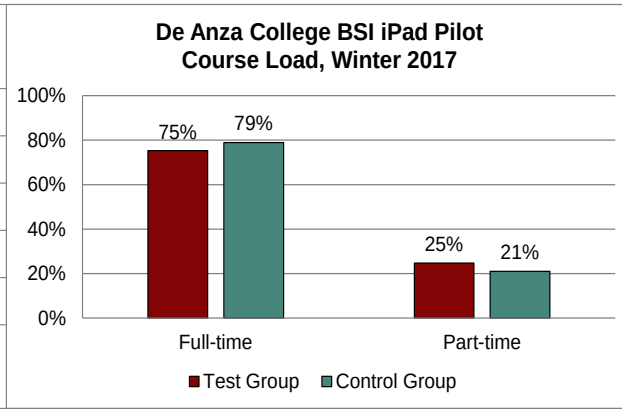
Student Enrollment Status & Course Load:

Most students in both the test and control group were continuing students:

- Test group: 89% continuing students, 5% returning students, 4% first-time college students, and 2% first-time transfer students.
- Control group: 84% continuing students, 9% first-time college students, 4% returning students, and 2% first-time transfer students.

The majority of students in both test and control groups were full-time students, with a slightly higher rate of full-time students in the control group (79%) than the test group (21%).



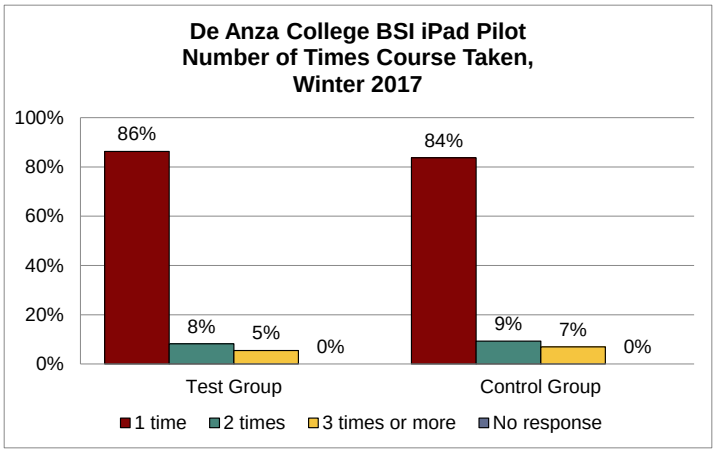


Students' Survey Analysis

Note: The analysis in this section is based only on pre and post survey responses.

Number of Times Course Was Taken: (pre-survey)

- Test group: 86% of respondents have taken the course one time, 8% have taken it two times, and 5% have taken it three times or more.
- Control group: 84% of respondents have taken the course one time, 9% have taken it two times, and 7% have taken it three times or more.

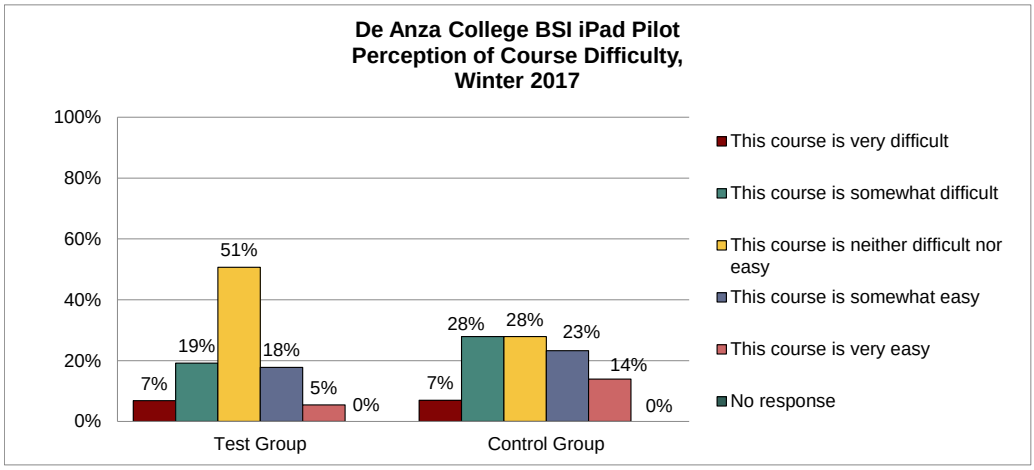


Perception of Course Difficulty: (pre-survey)

Participants were asked what their perception was about the difficulty of the course prior to enrolling.

- Test group: the majority of respondents (51%) felt the course would be neither difficult nor easy, 19% felt it would be somewhat difficult, 18% felt it would be somewhat easy, 7% felt it would be very difficult, and 5% felt it would be very easy.

- Control group: the responses in this group were more spread out with no clear majority. 28% felt the course would be neither difficult nor easy, 28% felt it would be somewhat difficult, 23% felt it would be somewhat easy, 14% felt it would be very easy, and 7% felt it would be very difficult.



Digital Device Access – Hours Used: (pre vs. post)

Students were asked to indicate the amount of time they spend each day using the following digital devices: desktop computer, laptop, tablet and mobile/smartphone. The following findings were similar between the pre- and post-surveys.

	ESL 272		EWRT 200		READ 211		**Pre Survey**				EWRT 200		READ 211		**Post Survey**				**Difference**	
	Test	Control	Test	Control	Test	Control	Test	Percent	Control	Percent	Test	Control	Test	Control	Test	Percent	Control	Percent	(Post % - Pre%)	
Desktop Computer																			Test	Control
0 hour	8	8	6	5	27	16	**41**	**56%**	**29**	**67%**	10	11	7	12	**17**	**50%**	**23**	**56%**	-6%	-11%
1 to 3 hours	3	4	2	2	18	5	23	32%	11	26%	4	5	7	6	11	32%	11	27%	1%	1%
4 to 6 hours	1	0	1	0	5	1	7	10%	1	2%	1	1	3	1	4	12%	2	5%	2%	3%
7 to 9 hours	1	0	0	0	1	2	2	3%	2	5%	0	0	0	0	0	0%	0	0%	-3%	-5%
10 hours or more	0	0	0	0	0	0	0	0%	0	0%	0	0	0	0	0	0%	0	0%	0%	0%
No Response	0	0	0	0	0	0	0	0%	0	0%	2	2	0	3	2	6%	5	12%	6%	12%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Laptop																				
0 hour	1	1	2	1	5	4	8	11%	6	14%	1	0	2	2	3	9%	2	5%	-2%	-9%
1 to 3 hours	6	4	1	4	23	11	**30**	**41%**	**19**	**44%**	9	11	6	13	**15**	**44%**	**24**	**59%**	3%	14%
4 to 6 hours	2	5	5	1	11	6	18	25%	12	28%	4	6	3	5	7	21%	11	27%	-4%	-1%
7 to 9 hours	3	0	0	0	5	0	8	11%	0	0%	0	1	3	0	3	9%	1	2%	-2%	2%
10 hours or more	1	1	0	0	3	1	4	5%	2	5%	0	0	2	0	2	6%	0	0%	0%	-5%
No Response	0	1	1	1	4	2	5	7%	4	9%	3	1	1	2	4	12%	3	7%	5%	-2%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Tablet																				
0 hour	7	6	2	4	25	21	**34**	**47%**	**31**	**72%**	1	9	10	9	11	32%	**18**	**44%**	-14%	-28%
1 to 3 hours	5	3	2	2	19	0	26	36%	5	12%	10	4	4	9	**14**	**41%**	13	32%	6%	20%
4 to 6 hours	1	2	4	1	4	0	9	12%	3	7%	3	2	1	1	4	12%	3	7%	-1%	0%
7 to 9 hours	0	0	0	0	0	0	0	0%	0	0%	0	0	0	0	0	0%	0	0%	0%	0%
10 hours or more	0	0	0	0	1	0	1	1%	0	0%	0	0	1	0	1	3%	0	0%	2%	0%
No Response	0	1	1	0	2	3	3	4%	4	9%	3	4	1	3	4	12%	7	17%	8%	8%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Mobile or Smartphone																				
0 hour	1	0	1	0	0	0	2	3%	0	0%	0	1	0	1	0	0%	2	5%	-3%	5%
1 to 3 hours	3	3	2	2	20	5	**25**	**34%**	10	23%	5	2	6	7	**11**	**32%**	9	22%	-2%	-1%
4 to 6 hours	3	5	0	3	9	8	12	16%	**16**	**37%**	4	10	6	7	10	29%	**17**	**41%**	13%	4%
7 to 9 hours	1	2	4	2	10	4	15	21%	8	19%	6	5	0	4	6	18%	9	22%	-3%	3%
10 hours or more	5	1	1	0	12	6	18	25%	7	16%	2	1	5	1	7	21%	2	5%	-4%	-11%
No Response	0	1	1	0	0	1	1	1%	2	5%	0	0	0	2	0	0%	2	5%	-1%	0%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%

Digital Device Access – Location Used: (pre vs. post)

Students were asked to indicate the location where they use the following digital devices each day: desktop computer, laptop, tablet and mobile/smartphone. These findings were also similar between the pre and post-surveys.

	ESL 272		EWRT 200		READ 211		**Pre Survey**				EWRT 200		READ 211		**Post Survey**				**Difference**	
	Test	Control	Test	Control	Test	Control	Test	Percent	Control	Percent	Test	Control	Test	Control	Test	Percent	Control	Percent	(Post % - Pre%)	
Desktop Computer																			Test	Control
At home	4	4	2	1	24	8	**30**	**41%**	**13**	**30%**	4	4	3	9	7	21%	**13**	**32%**	-21%	1%
At school	2	2	1	2	8	9	11	15%	**13**	**30%**	2	4	3	3	5	15%	7	17%	0%	-13%
At work	1	0	1	1	0	0	2	3%	1	2%	1	0	1	1	2	6%	1	2%	3%	0%
At a public place	0	1	0	1	3	2	3	4%	4	9%	3	2	2	1	5	15%	3	7%	11%	-2%
I do not use this device	6	4	5	2	16	5	27	37%	11	26%	6	6	7	5	**13**	**38%**	11	27%	1%	1%
No Response	0	1	0	0	0	0	0	0%	1	2%	1	3	1	3	2	6%	6	15%	6%	12%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Laptop																				
At home	11	9	6	5	33	13	**50**	**68%**	**27**	**63%**	8	8	12	14	**20**	**59%**	**22**	**54%**	-10%	-9%
At school	0	1	0	1	11	8	11	15%	10	23%	2	5	2	4	4	12%	9	22%	-3%	-1%
At work	1	1	1	0	1	0	3	4%	1	2%	1	0	0	0	1	3%	0	0%	-1%	-2%
At a public place	0	0	0	0	2	0	2	3%	0	0%	3	1	1	0	4	12%	1	2%	9%	2%
I do not use this device	1	1	1	1	2	2	4	5%	4	9%	2	2	1	2	3	9%	4	10%	3%	0%
No Response	0	0	1	0	2	1	3	4%	1	2%	1	3	1	2	2	6%	5	12%	2%	10%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Tablet																				
At home	6	4	0	2	18	5	24	33%	11	26%	4	5	6	7	**10**	**29%**	12	29%	-3%	4%
At school	0	1	5	0	11	2	16	22%	3	7%	6	3	2	6	8	24%	9	22%	2%	15%
At work	0	0	1	0	1	0	2	3%	0	0%	1	0	0	1	1	3%	1	2%	0%	2%
At a public place	1	1	1	0	1	0	3	4%	1	2%	3	0	0	1	3	9%	1	2%	5%	0%
I do not use this device	6	5	1	4	19	13	**26**	**36%**	**22**	**51%**	1	9	8	5	9	26%	**14**	**34%**	-9%	-17%
No Response	0	1	1	1	1	4	2	3%	6	14%	2	2	1	2	3	9%	4	10%	6%	-4%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%
Mobile or Smartphone																				
At home	6	6	3	2	28	16	**37**	**51%**	**24**	**56%**	6	10	7	10	**13**	**38%**	**20**	**49%**	-12%	-7%
At school	2	3	1	1	8	2	11	15%	6	14%	6	3	2	1	8	24%	4	10%	8%	-4%
At work	2	0	1	2	0	1	3	4%	3	7%	0	1	1	1	1	3%	2	5%	-1%	-2%
At a public place	3	3	3	1	15	5	21	29%	9	21%	4	4	6	7	10	29%	11	27%	1%	6%
I do not use this device	0	0	0	0	0	0	0	0%	0	0%	0	0	0	1	0	0%	1	2%	0%	2%
No Response	0	0	1	1	0	0	1	1%	1	2%	1	1	1	2	2	6%	3	7%	5%	5%
Total	13	12	9	7	51	24	73	100%	43	100%	17	19	17	22	34	100%	41	100%	0%	0%

Internet Access at Home:

- Pre-survey: 99% of test group respondents and 98% of control group respondents reported having internet access at home.
- Post-survey: 97% of test group respondents and 95% of control group respondents reported having internet access at home.

Previous Experience Using Technology Tools in Class: (pre vs. post)

Students were asked to indicate all the technology tools they have previously used to complete their assignments. The top three responses include: email, eTextbooks, cloud-based storage (e.g. Dropbox, Google Drive, iCloud), and collaborative applications (e.g. Google Docs, Google Sheets, etc.). Project management tools are used the least by students. These findings are consistent for both test and control groups and results varied little from pre- and post-surveys.

	Pre-Survey	
	Test Group	Percent
Email	67	22%
Online textbooks or eTextbooks	45	15%
Collaborative applications	43	14%
Cloud-based storage	42	14%
Blogs, chats, forums or message boards	39	13%
Calendar	32	11%
Notetaking or drafting ideas	22	7%
Project management tools	8	3%
Other	3	1%
No response	2	1%
Total	303	100%

	Pre-Survey	
	Control Group	Percent
Email	37	24%
Online textbooks or eTextbooks	26	17%
Collaborative applications	24	15%
Cloud-based storage	22	14%
Calendar	15	10%
Blogs, chats, forums or message boards	13	8%
Notetaking or drafting ideas	12	8%
Project management tools	5	3%
Other	1	1%
No response	1	1%
Total	156	100%

	Post-Survey	
	Test Group	Percent
Email	30	21%
Online textbooks or eTextbooks	22	15%
Cloud-based storage	21	15%
Notetaking or drafting ideas	20	14%
Collaborative applications	18	13%
Blogs, chats, forums or message boards	15	10%
Calendar	11	8%
Project management tools	3	2%
Other	3	2%
No response	0	0%
Total	143	100%

	Post-Survey	
	Control Group	Percent
Email	33	23%
Cloud-based storage	21	15%
Online textbooks or eTextbooks	21	15%
Calendar	17	12%
Collaborative applications	15	11%
Blogs, chats, forums or message boards	14	10%
Notetaking or drafting ideas	12	9%
Project management tools	4	3%
Other	4	3%
No response	0	0%
Total	141	100%

- Open-ended responses:
  Other tech tools used were Khan Academy, iPads, Power Point, Word, and MS Office.

Students' iPad Experience (test group)

Note: The analyses in this section are aggregate data of the three test groups.

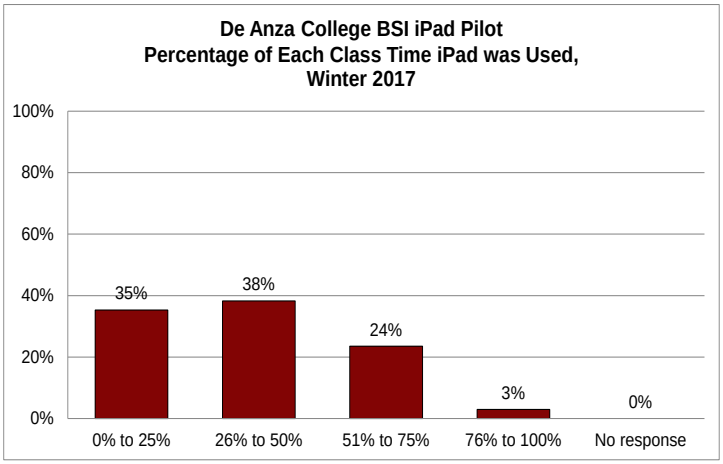
iPad Training and Satisfaction Level:

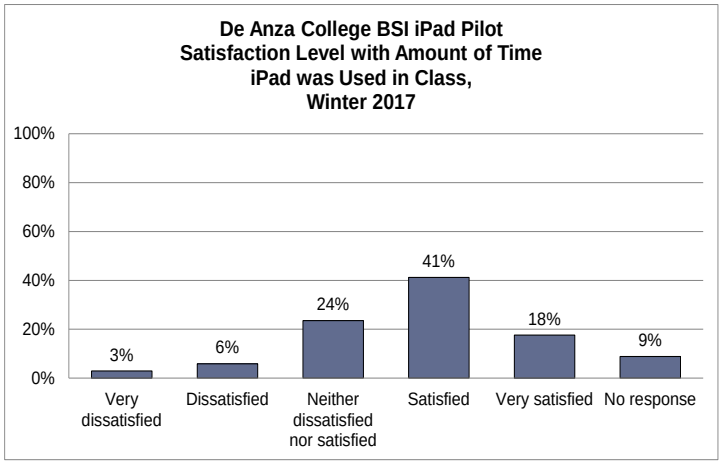
Nearly 65% of test group respondents reported they received training on how to use the iPad and/or digital apps from their instructor. A majority of the test group were either satisfied (32%), neither dissatisfied nor satisfied (21%), or very satisfied (12%) with the amount of time they received for training.

Percent of Class Time Actively Used iPad and Satisfaction Level:

Test group respondents were asked to indicate how much time they actively used the iPad during each class meeting, and how dissatisfied or satisfied they were the amount time the iPad was used.

- 38% of respondents reported using the iPad 26% to 50% of their class time, 35% reported using it up to 25% of class time, 24% reported using it 51% to 75% of class time, and 3% reported using it 76% to 100% of class time.
- The majority of respondents (59%) reported they were "satisfied" or "very satisfied" (majority of which were satisfied) with the amount of time the iPads was used in their class; another 24% were neither dissatisfied nor satisfied (i.e. neutral)





Survey provided the following guidelines for iPad usage in the classroom:
0% to 25% = up to 15 min. for a 1-hour class; 30 min. for a 2-hour class; 60 min. for a 4-hour class
26% to 50% = up to 30 min. for a 1-hour class; 60 min. for a 2-hour class; 120 min. for a 4-hour class
51% to 75% = up to 45 min. for a 1-hour class; 90 min. for a 2-hour class; 180 min. for a 4-hour class
76% to 100% = up to 60 min. for a 1-hour class; 120 min. for a 2-hour class; 240 min. for a 4-hour class

Frequency & Helpfulness of Apps to Course Success:

- Google Drive: 71% of respondents with access to this app reported using it "quite a bit" or "a great deal", and 53% reported that this app was "very helpful" to their course success.
- Notability: 41% of participants with access to this app reported using it "quite a bit" or "a great deal", and 38% reported that this app was "helpful" or "very helpful" to their course success.

- Dropbox: 24% of respondents with access to this app reported using it "very little" or "somewhat", while 15% reported using it "quite a bit" or "a great deal". 18% of this app's users indicated that it was "helpful" or "very helpful".

Test group respondents were asked to indicate how often they used each app per week:

EWRT 200 Apps	Notability		Dropbox		MLA Citation Generator		Thesis Generator		Google Calendar	
	Test	Percent	Test	Percent	Test	Percent	Test	Percent	Test	Percent
Not at all	2	12%	9	53%	13	76%	12	71%	7	41%
Very little	1	6%	3	18%	1	6%	1	6%	1	6%
Somewhat	1	6%	2	12%	1	6%	3	18%	4	24%
Quite a bit	4	24%	2	12%	1	6%	0	0%	3	18%
A great deal	9	53%	1	6%	1	6%	0	0%	1	6%
No Response	0	0%	0	0%	0	0%	1	6%	1	6%
Total	17	100%	17	100%	17	100%	17	100%	17	100%

READ 211 Apps	Notability		Dropbox		Google Drive	
	Test	Percent	Test	Percent	Test	Percent
Not at all	12	71%	11	65%	2	12%
Very little	2	12%	1	6%	0	0%
Somewhat	1	6%	2	12%	3	18%
Quite a bit	1	6%	1	6%	2	12%
A great deal	0	0%	1	6%	10	59%
No Response	1	6%	1	6%	0	0%
Total	17	100%	17	100%	17	100%

Test group respondents were asked to indicate how helpful each app was to their course success:

EWRT 200 Apps	Notability		Dropbox		MLA Citation Generator		Thesis Generator		Google Calendar	
	Test	Percent	Test	Percent	Test	Percent	Test	Percent	Test	Percent
Not at all helpful	0	0%	2	12%	4	24%	3	18%	1	6%
A little helpful	0	0%	1	6%	0	0%	0	0%	1	6%
Somewhat helpful	3	18%	1	6%	2	12%	3	18%	3	18%
Helpful	2	12%	1	6%	0	0%	0	0%	2	12%
Very helpful	11	65%	5	29%	2	12%	1	6%	3	18%
I did not use this app	1	6%	7	41%	9	53%	10	59%	7	41%
No Response	0	0%	0	0%	0	0%	0	0%	0	0%
Total	17	100%	17	100%	17	100%	17	100%	17	100%

READ 211 Apps	Notability		Dropbox		Google Drive	
	Test	Percent	Test	Percent	Test	Percent
Not at all helpful	6	35%	5	29%	1	6%
A little helpful	1	6%	2	12%	0	0%
Somewhat helpful	2	12%	2	12%	1	6%
Helpful	0	0%	0	0%	1	6%
Very helpful	0	0%	0	0%	9	53%
I did not use this app	7	41%	7	41%	4	24%
No Response	1	6%	1	6%	1	6%
Total	17	100%	17	100%	17	100%

Statements About iPad Experience:

Students were asked to reflect and respond to a few statements regarding their iPad and digital apps experience. They were asked to indicate their level of disagreement or agreement with each statement. The table below reflects the most highly rated "agree" or "strongly agree" responses.

iPad and App Experience	Agree or "Strongly Agree" Responses	
	Post-Survey	
	Test Group	Percent
The iPad and digital apps made it convenient to complete the coursework	25	74%
The iPad and digital apps made the course content more interesting	22	65%
I am glad my instructor incorporated the iPad and digital apps into this class	21	62%
I would like to use an iPad and/or digital apps for future courses	21	62%
The iPad and digital apps helped me engage with the course content	21	62%
The iPad and digital apps I used in this class will be useful for other classes	19	56%
I see value in using the iPad and digital apps in this class	19	56%
I learned better in this class when the iPad and digital apps were used	18	53%
The iPad and digital apps increased my motivation to learn the material in this class	18	53%
I enjoyed using the iPad and digital apps in this class	16	47%
The iPad and digital apps helped me engage with my classmates	16	47%

N= 34

Students' Course Engagement (test vs. control)

Perception of Technology Tools in the Classroom:

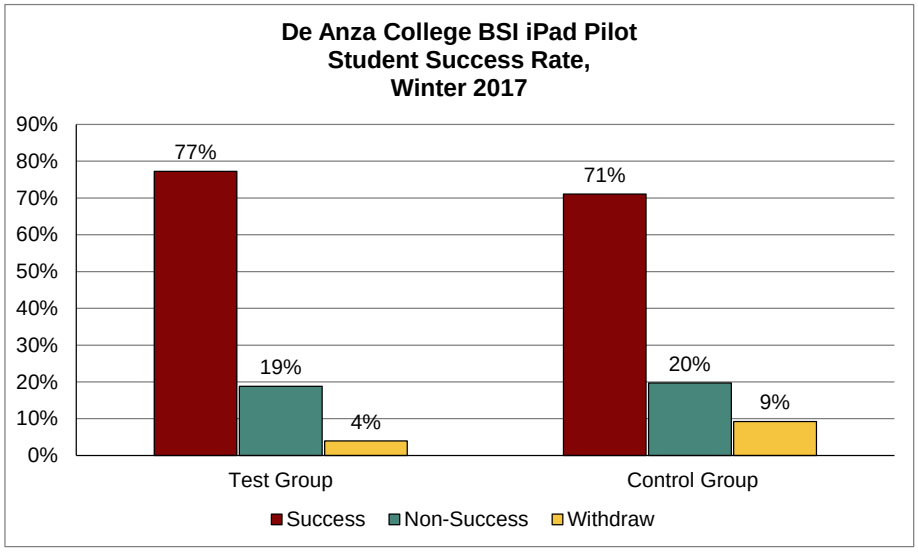
Test and control groups were given statements regarding technology tools in the classroom and asked to indicate their level of disagreement or agreement with each statement. The same statements were asked in the pre- and post-surveys to assess any change in attitude.

Perception of Technology Tools	"Agree" or "Strongly Agree" Responses									
	Test Group					**Control Group**				
	Pre		Post		**Difference**	Pre		Post		**Difference**
	Students	Percent	Students	Percent	**(Post % - Pre%)**	Students	Percent	Students	Percent	**(Post % - Pre%)**
I am more focused in my courses when technology tools are used in the classroom	31	42%	16	47%	**+5%**	21	49%	22	54%	**+5%**
I learn better when courses use technology tools and not rely solely on lectures	38	52%	16	47%	**-5%**	15	35%	17	41%	**+6%**
Technology tools make it easier for me to complete my course assignments	48	66%	24	71%	**+5%**	24	56%	27	66%	**+10%**
I think I will have a difficult time using technology tools in the classroom	7	10%	6	18%	**+8%**	8	19%	7	17%	**-2%**
I enjoy my courses more when technology tools are used in the classroom	38	52%	14	41%	**-11%**	24	56%	22	54%	**-2%**

*Technology tools was defined in the survey as any digital device or digital apps.

Student Success Rate:

- The majority of test and control groups were successful (received a grade of A, B, C, or Pass) in their basic skills course, with slightly more students passing their course in the test group (77%) than in the control group (71%).
- The percentage of students who did not pass their basic skills course was comparable in the test group (19%) as it was in the control group (20%).
- More students withdraw from their course in the control group (9%) than in the test group (4%).



Faculty's Survey Analysis

Note: The analysis in this section is based on pre and post survey responses.

Faculty's Access to & Experience with Technology Tools: Pre vs. Post

Digital Device Used the Most Per Day: (pre survey)

Instructors reported most frequently using their laptops with 75% indicating using this device from 4 to 6 hours per day.

	Total	
	Faculty	Percent
Desktop Computer		
0 hour	3	75%
1 to 3 hours	1	25%
4 to 6 hours	0	0%
7 to 9 hours	0	0%
10 hours or more	0	0%
No Response	0	0%
Total	4	100%
Laptop		
0 hour	0	0%
1 to 3 hours	1	25%
4 to 6 hours	3	75%
7 to 9 hours	0	0%
10 hours or more	0	0%
No Response	0	0%
Total	4	100%
Tablet		
0 hour	2	50%
1 to 3 hours	1	25%
4 to 6 hours	0	0%
7 to 9 hours	0	0%
10 hours or more	0	0%
No Response	1	25%
Total	4	100%
Mobile or Smartphone		
0 hour	0	0%
1 to 3 hours	2	50%
4 to 6 hours	0	0%
7 to 9 hours	1	25%
10 hours or more	0	0%
No Response	1	25%
Total	4	100%

*Device usage time post-survey data was insufficient and available upon request.

Location Where Digital Devices were Used: (pre survey)

Laptops and mobile/smartphones were used primarily at home. Instructors who reported using desktop computers or tablet devices indicated they were being primarily used at school or work.

	Total	
	Faculty	**Percent**
Desktop Computer		
At home	0	**0%**
At school	1	**25%**
At work	1	**25%**
At a public Place	0	**0%**
I do not use this device	2	**50%**
No Response	0	**0%**
Total	4	**100%**
Laptop		
At home	3	**75%**
At school	1	**25%**
At work	0	**0%**
At a public Place	0	**0%**
I do not use this device	0	**0%**
No Response	0	**0%**
Total	4	**100%**
Tablet		
At home	0	**0%**
At school	1	**25%**
At work	1	**25%**
At a public Place	0	**0%**
I do not use this device	1	**25%**
No Response	1	**25%**
Total	4	**100%**
Mobile or Smartphone		
At home	3	**75%**
At school	0	**0%**
At work	0	**0%**
At a public Place	0	**0%**
I do not use this device	0	**0%**
No Response	1	**25%**
Total	4	**100%**

*Device usage location post-survey data was insufficient and available upon request.

Access to the Internet at Home:

All instructors reported they have internet access at home.

Previous Experience Using Technology Tools in Class: (pre vs. post)

Instructors reported they primarily use email and cloud-based storage in their previous courses. No instructor has ever used eTextbooks or project management tools in previous courses.

	Pre		Post	
	Faculty	**Percent**	Faculty	**Percent**
Blogs, chats, forums, or message boards	2	**13%**	0	0%
Calendar	0	**0%**	0	0%
Cloud-based storage	4	**25%**	1	14%
Collaborative applications	3	**19%**	1	14%
Email	4	**25%**	2	29%
Notetaking or drafting ideas	2	**13%**	1	14%
Online textbooks or eTextbooks	0	**0%**	0	0%
Project management tools	0	**0%**	0	0%
Other	1	**6%**	2	29%
Total	16	**100%**	7	100%

Faculty's iPad Experience

Percent of Class Time Actively Used iPad and Satisfaction Level: (pre vs. post)

In the pre-survey, instructors were asked to indicate how much time they planned to actively use the iPad and digital apps in each of their class meeting. The same question was later asked in the pre-survey.

- Pre-survey: The majority of instructors (50%) planned to use the iPad up to 25% of each class meeting.
- Post-survey: 100% of instructors reported they actively used the iPad up to 25% of each class meeting.

	Pre (Plan to use)		Post (Actively used)	
	Faculty	**Percent**	Faculty	**Percent**
0% to 25% of class time	2	**50%**	2	**100%**
26% to 50% of class time	1	**25%**	0	**0%**
51% to 75% of class time	1	**25%**	0	**0%**
76% to 100% of class time	0	**0%**	0	**0%**
Total	4	**100%**	2	**100%**

Among the two faculty responders to the post-survey, one instructor reported being satisfied with the amount of time the iPad was used. The other instructor reported neither dissatisfaction nor satisfaction.

Frequency & Helpfulness of Apps to Students' Course Success: (post survey)

Among all the apps that were used, instructors reported that Dropbox and Flipboard were the most frequently used apps in an average week. The apps that were actively used were reported to be helpful or very helpful to students' course success.

App Usage in Average Week	Not at all		Very little		Somewhat		Quite a bit		A great deal	
	Faculty	Percent	Faculty	Percent	Faculty	Percent	Faculty	Percent	Faculty	Percent
Notability	1	50%	0	0	1	50%	0	0	0	0
Dropbox	1	50%	0	0	0	0	1	50%	0	0
Google Drive	1	50%	0	0	0	0	0	0	0	0
Flipboard	0	0	0	0	0	0	0	0	1	50%
Quizlet	1	50%	0	0	0	0	0	0	0	0

App Helpfulness	Helpful		Very helpful		I did not use this app	
	Faculty	Percent	Faculty	Percent	Faculty	Percent
Notability	1	50%	0	0	1	50%
Dropbox	0	0	1	50%	1	50%
Google Drive	1	50%	0	0	0	0
Flipboard	0	0	1	50%	0	0
Quizlet	0	0	0	0	1	50%

*No apps were rated as 'Not at all helpful", "A little helpful", or "Somewhat helpful".

Faculty's Perception about Students' iPad Experience:

Instructors were asked to reflect upon *their students'* iPad experience and respond to a few statements regarding their iPad and digital apps experience. They were asked to indicate their level of disagreement or agreement with each statement.

The statements shown below reflect "agree" or "strongly agree" responses.

	"Agree" or "Strongly Agree" Responses	
	Faculty	**Percent**
The iPad and digital apps made the course content more interesting for my students	2	**100%**
The iPad and digital apps made it convenient for my students to complete their coursework	2	**100%**
The iPad and digital apps made the class more challenging for my students	2	**100%**
My students were more focused in this class when the iPad and digital apps were used	2	**100%**
My students learned better in this class when the iPad and digital apps were used	1	**50%**
The iPad and digital apps increased my students' motivation to learn the material in this class	1	**50%**
My students preferred that I lectured more rather than used the iPad and digital apps	0	**0%**
My students see value in using the iPad and digital apps in this class	1	**50%**
My students enjoyed using the iPad and digital apps in this class	2	**100%**
My students are glad I incorporated the iPad and digital apps into this class	1	**50%**
The iPad and digital apps helped my students engage with their classmates	2	**100%**
The iPad and digital apps helped my students engage with me	1	**50%**
The iPad and digital apps helped my students engage with the course content	2	**100%**

N=2 instructors

Instructors' iPad Experience

Instructors were then asked to reflect on their own iPad experience and to indicate their level of disagreement or agreement with a few statements statement.

	"Agree" or "Strongly Agree" Responses	
	Faculty	**Percent**
The iPad and digital apps made teaching more interesting for me	2	**100%**
The iPad and digital apps made it easier for me to assign assignments	1	**50%**
The iPad and digital apps made it easier for me to grade assignments	1	**50%**
The iPad and digital apps made it easier for me to respond to my students questions/comments	2	**100%**
The iPad and digital apps made the class more challenging for me	2	**100%**
I see value in using the iPad and digital apps in this class	2	**100%**
I enjoyed using the iPad and digital apps in this class	2	**100%**
The iPad and digital apps I used in this class will be useful for my other classes	2	**100%**
I am glad I incorporated the iPad and digital apps into this class	2	**100%**
I would like to use the iPad and/or digital apps for my future courses	2	**100%**
The iPad and digital apps helped me engage with my students	1	**50%**

N=2 instructors

Comparing Technology Enhanced Course with Other Courses:

Instructors were asked to rate their experience incorporating iPads and digital apps in this course versus their other courses where this technology was not used. Both instructors agreed that they had a better experience in the class with iPads than non-iPad classes.

	Faculty	Percent
I had a better experience in my class with the iPads than my non-iPad class	2	**100%**
My experience was the same in my iPad class as it was in my non-iPad class—it was neither better nor poorer	0	**0%**
I had a poorer experience in my class with iPads than my non-iPad class	0	**0%**
Total	2	**100%**

Instructors were encouraged to explain/elaborate their answer with an open-ended response. Additional comments on how iPads enhanced learning experiences included:

- Use of an app to award participation points.
- Easier to conduct in-class research and project to the screen.
- Enhancing student collaboration.
- Eliminates the need to meet in a computer classroom.
- Students enjoyed using the iPads in class.