Evaluating the Success of the Xenegrade System at the University of Belize, Belmopan Campus

Julissa Jackson
University of Belize
Belmopan
2018117846@ubstudents.edu.bz

Marleni Rodriguez
University of Belize
Belmopan
2009118302@ubstudents.edu.bz

Krystel Lotiff
University of Belize
Belmopan
2009118478@ubstudents.edu.bz

Abstract

The purpose of this research is to evaluate the success of the Xenegrade System at the University of Belize at the Belmopan Campus. To attain this, this paper will consider the six critical dimensions of the DeLone and McLean Information System (IS) Success Model which are: Information Quality, System Quality, System Use, User Satisfaction, and Perceived Net Benefits. The relationship betwe en the six critical dimensions of the DeLone and McLean IS Success model in connection with the success of the Xenegrade System at the University of Belize at the Belmopan Campus was studied, analyzed, and explained.

Belize is a small country compared to other developed countries that has adopted to incorporate information system in managing confidential information. In this case, investigation concerning the information system success is restrained in a country like Belize. Data was being gathered by sending out a hundred (100) questionnaire via emails and WhatsApp to students enrolled at the University of Belize, Belmopan Campus. However, only eighty (80) responded, 80 questionnaires was used to proceed with the project. The DeLone and McLean six critical dimensions of IS success models were incorporated while converging the questionnaires. The results demonstrates a positive connection of grade four (3.5) out five (5) throughout the papers final result.

Keywords: Xenegrade, System, Evaluate, Success

Introduction and Research Objectives

Similar to any university, the University of Belize uses a website that can assist management in obtaining students' information, improve the efficiency of their service, and their overall productivity. This research paper was done to observe how effective the Xenegrade System is at the University of Belize at the Belmopan Campus. The Xenegrade System, is a student registration system that allows students to register for courses online and are able to receive emails automatically after registering for any courses. Invoices and account balance can also be accessed through the Xenegrade System.

This system is prepared for non-accredited educational organizations, which would be training organizations programs, workforce development programs, colleges, universities, etc. This goes to any institution that is offering training or educating in the post-secondary market. There are many information system that meet the needs of consumers. Researches may want to evaluate those consumers, and just meet their customer needs. Accordingly, this research is going to be original since this project will rely more on the consumer's acknowledgement and not the researchers' feedback. Having the undergraduate's acknowledgement will convey a more precise result when it comes to the success of the Xenegrade System. Undergraduates may not be fully aware of the importance and the purpose of using the Xenegrade System. Hence, this research will allow researchers to gain data, which will be new documentations for future management information system research that will serve as a guide to meet undergraduates' needs.

Goal of Research: To evaluate the success of the Xenegrade System utilized by students at the University of Belize, Belmopan Campus

Objectives of Research:
1. To determine if undergraduates at the Belmopan campus find the Xenegrade system effective.
2. To determine if the Xenegrade system is adequate and permits undergraduates to complete a task at their best interest.
3. Provide solutions and direction to improve the Xenegrade system to meet the needs of undergraduates and the university.

Literature Review

The DeLone and McLean Model is an excellent evaluation tool to determine the Success of the Xenegrade System hosted by the University of Belize. According to (Delone & Mclean, 2003), the model measures the effectiveness and value of the organization's information system. It evaluates how the information is being used and determines if it is beneficial to the organization based on the responses gathered from various questions which are divided into categories. Background information of the participant is collected at the beginning of the model which is essential when

summarizing the demographics of participants. The quality of information provided by the information system is measured by determining how user friendly and interactive the system is. The device used to access the information system is also evaluated to determine if it is adequate and reliable. The support service quality of the system evaluates how often the system is updated and how reliable the team is in responding when a problem arises in regards to the system. The satisfaction of the user is also assessed; the reliability of the system is determined to see how dependent the users are on the system and the information being processed. Lastly, the benefits of the system is determined by addressing the advantages of using the system. By breaking down the evaluation into categories the DeLone and McLean Model can identify in which area(s) the system is slacking which provides management with sufficient information to make decisions to improve the system.

Xenegrade is a fundamental management system that performs as an online operator. Xenegrade provides an accessible and reasonable registration system to organizations of all sizes. Xenegrade is mainly designed for educational organizations such as colleges, universities, training organizations, workforce development programs and employer based training, (CIO Review, 2019).

The main focus of Xenegrade is to improve and automate educational registration systems along with providing fast response and easy access to students. The system's objective is to increase its revenue while decreasing deletion from end users. With the Registration Module students can view and purchase available courses during the registration period and manage their account by being able to access invoices, account balances, progress report and dropping and adding of courses. "It also provides implementation and installation, data conversions and import, third party software integration, application training, customization design and development and consulting services" (CIO Review, 2019).

The University of Belize implemented Xenegrade in 2010. Through this system, students can view and access the same information from any of the campuses whether it be in Belmopan, Belize City, Central Farm or Punta Gorda, (CIO Review, 2019; Westby, Zaldana, Reyes, & Dixon, 2017).

Before adopting Xenegrade, The University of Belize had a manual system. Students had to travel to UB and wait in line to meet with their advisors during the registration period. The same applied for receiving progress reports. In the past, grades were issued at the Records Office on a specific date and students had to wait to receive their progress report. This was eliminated with the introduction of Xenegrade. Now students can easily access and utilize information as a result of the services provided through Xenegrade Registration System (CIO Review, 2019)

With the student population increasing every year the University of Belize must be able to keep improving the system in order for management to be efficient and effective when presenting courses available during registration period and have proper alerts when the class is already full or if the student does not have the required prerequisite for that class (Westby, Zaldana, Reyes, & Dixon, 2017).

The evaluation of the Xenegrade System using the DeLone and McLean Model will provide management with information as to how they can improve the system, whether it be to make the system more user friendly, if it is to improve the technology used to access the system or if it is to simply make students more aware of how important the system is.

Methodology of the Study

This study was conducted in order to evaluate the success of Xenegrade System at The University of Belize, Belmopan Campus. The focus of the assessment was on the effectiveness, reliability and user friendliness of Xenegrade system. In order to gather the necessary data, we utilized a quantitative approach using the survey method. 100 students were randomly selected as participants.

Quantitative method is compatible with the study because it allows the research to be conducted in a very specific and set terms. Besides, quantitative research distinctively specifies both the independent and the dependent variables under investigation (Cooper and Schindler, 1997). It also follows resolutely the original set of research goals, arriving at more objective conclusions, testing hypothesis, determine the issues of causality and eliminates or minimizes subjectivity of judgment.

The survey consisted of nine sections which included 5 to 6 multiple-choice questions for each of them. The aim was to conduct the survey with 100 students of The University of Belize, however, only 80 survey results were completed and included in the analysis. We sent a link of the questionnaire via WhatsApp and email for students to participate in the survey anonymously. The questionnaire was structured in such a way that respondents were able to answer it easily. Thus, the set of questionnaire was structured using a format with a five-point response scale. By using a rating scale it requires the student to indicate his or her degree of agreement or disagreement to a statement.

The study utilized first hand data and secondary data. First hand data came from the chosen respondents who responded to the survey-questionnaires and secondary data came from published reports. Before analysis the gathered data was prepared. Data was gathered using google forms, then the results of the survey were tabulated and presented in diagrams/tables using excel.
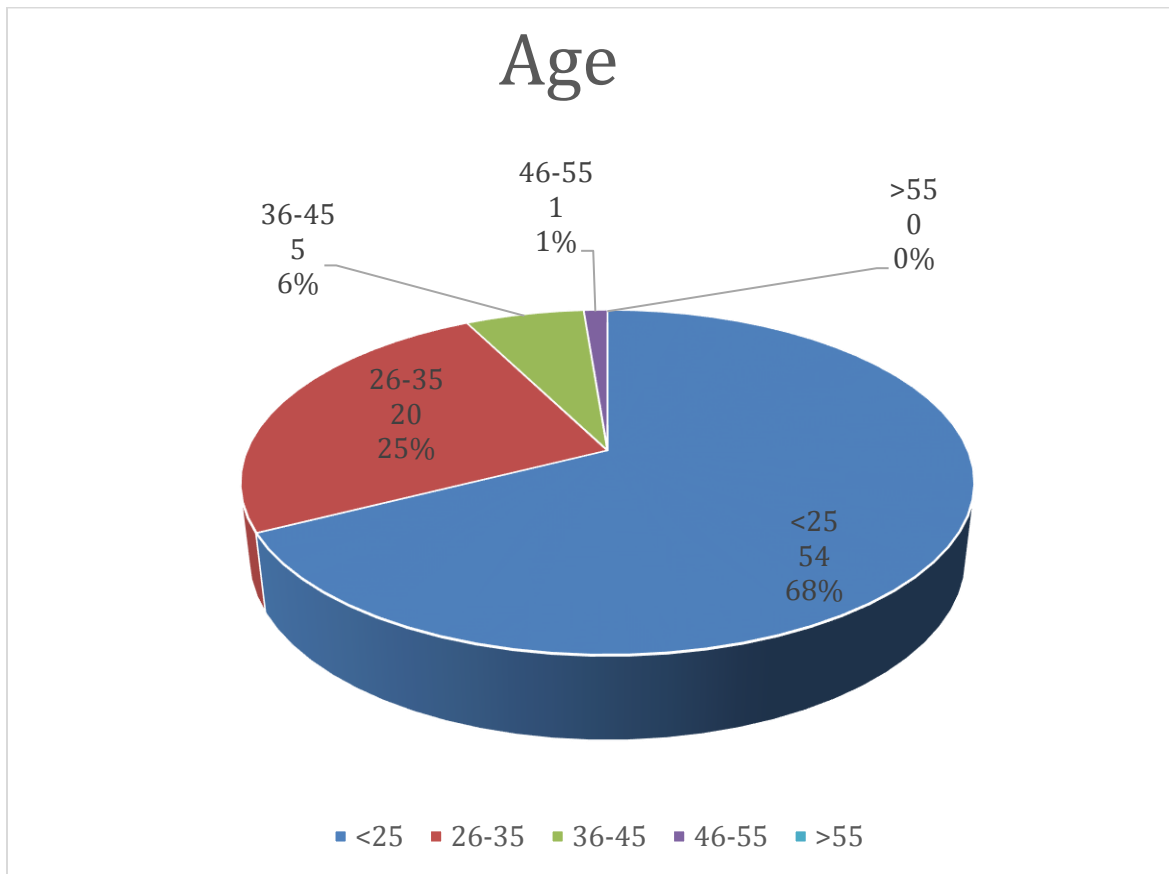
Data Analysis

*Graph 1: Showing gender of participants.*
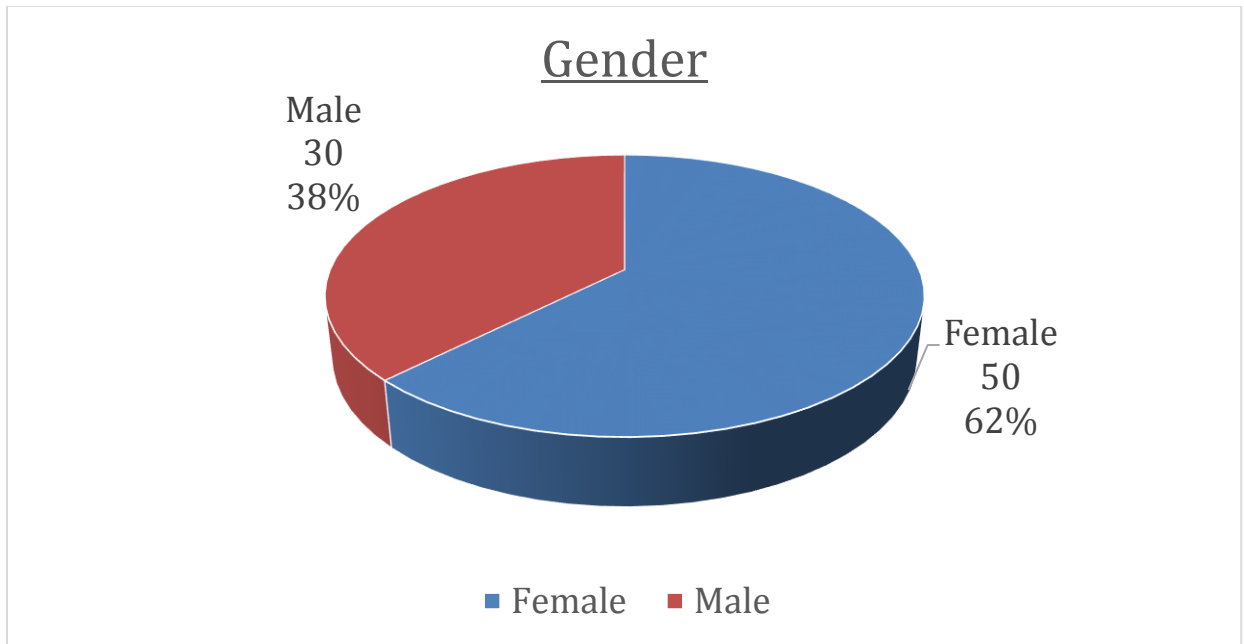
One hundred questionnaires were sent to current students of the University of Belize, Belmopan Campus via email and WhatsApp. Of the 100 questionnaires that were distributed, 80 students responded resulting to 38% to being male, and 62% being female.

Graph 2: Showing ages of participants.

Of the 80 participants, 54 of the students (68%) were <25 years old, 20 students (25%) were between the ages of 26-35, 5 students (6%) were between the ages of 36-45 and 1 student (1%) was between the ages of 45-55. There were no students over the age of 55.

*Graph 3: Showing the year that the participants are in.*
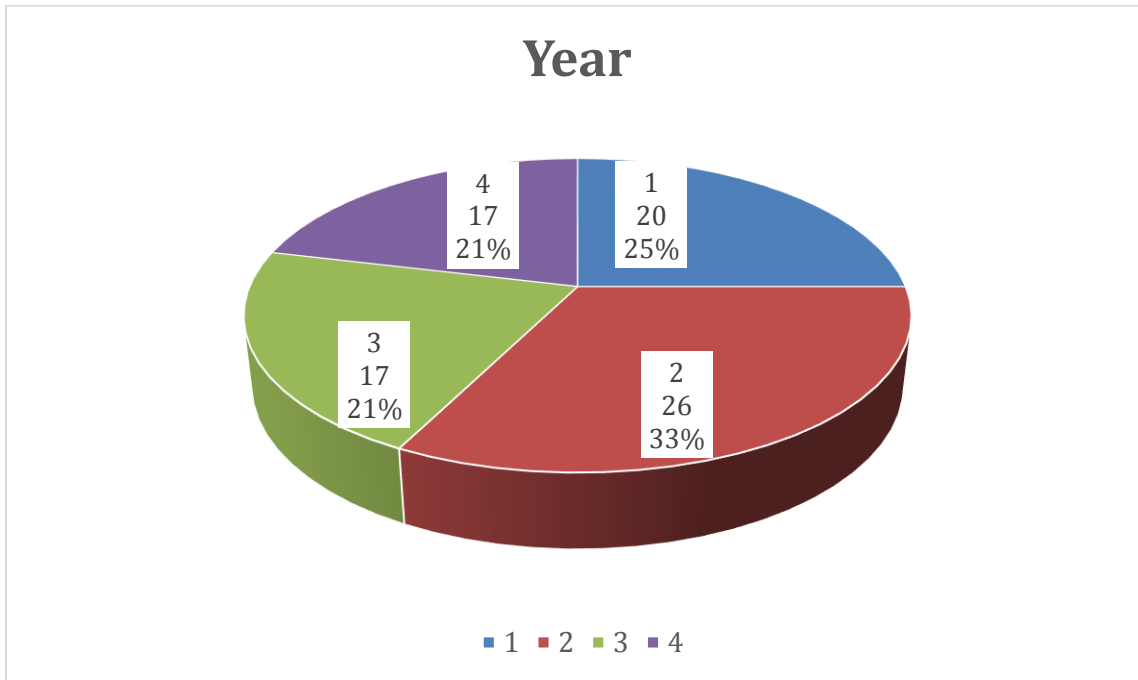
Year

Majority of the students were in their 2nd year, 26 students (33%), 20 students (25%) were in their 1st year, 17 students (21%) were in 3rd year and 17 students (21%) were in 4th year.

Graph 4: Showing the working experience of the participants.
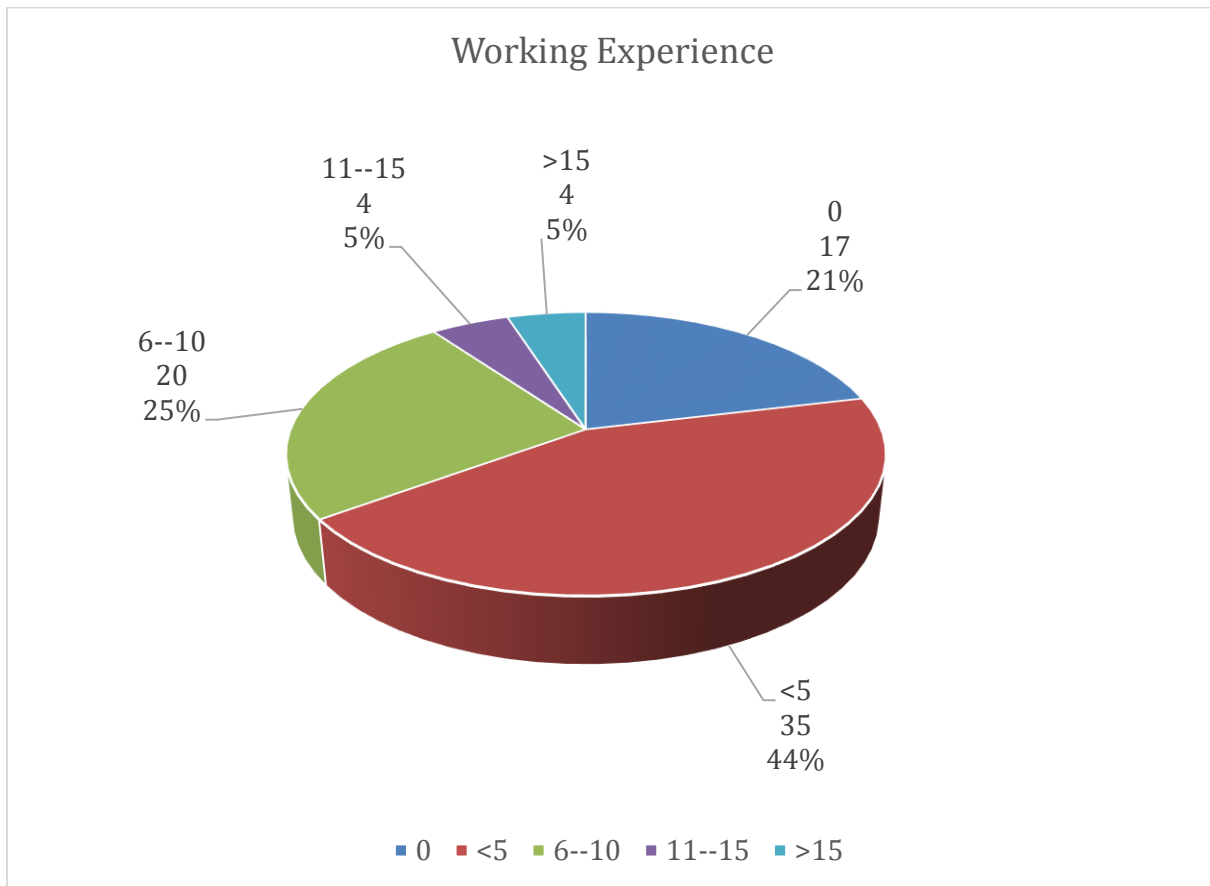
The working experience pie chart above, reflects that the students who participated are youths which is reflected in responses gathered from both their age (<25) and the year that they are in (2nd year). The majority of participants said that they have less than 5 years' experience (44%), 20 students (25%) had working experience of 6-10 years, 17 students (21%) had 0 experience, 4 students (5%) had 11-15 years' experience and, 4 students (5%) had <15 years' experience.
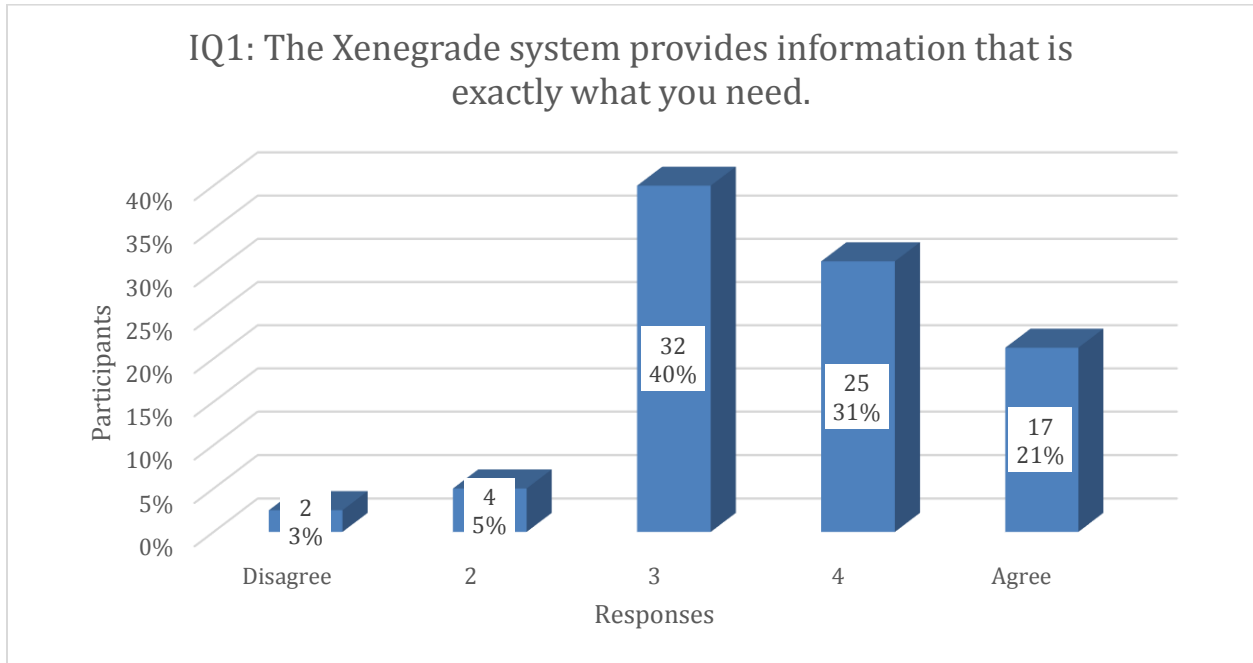
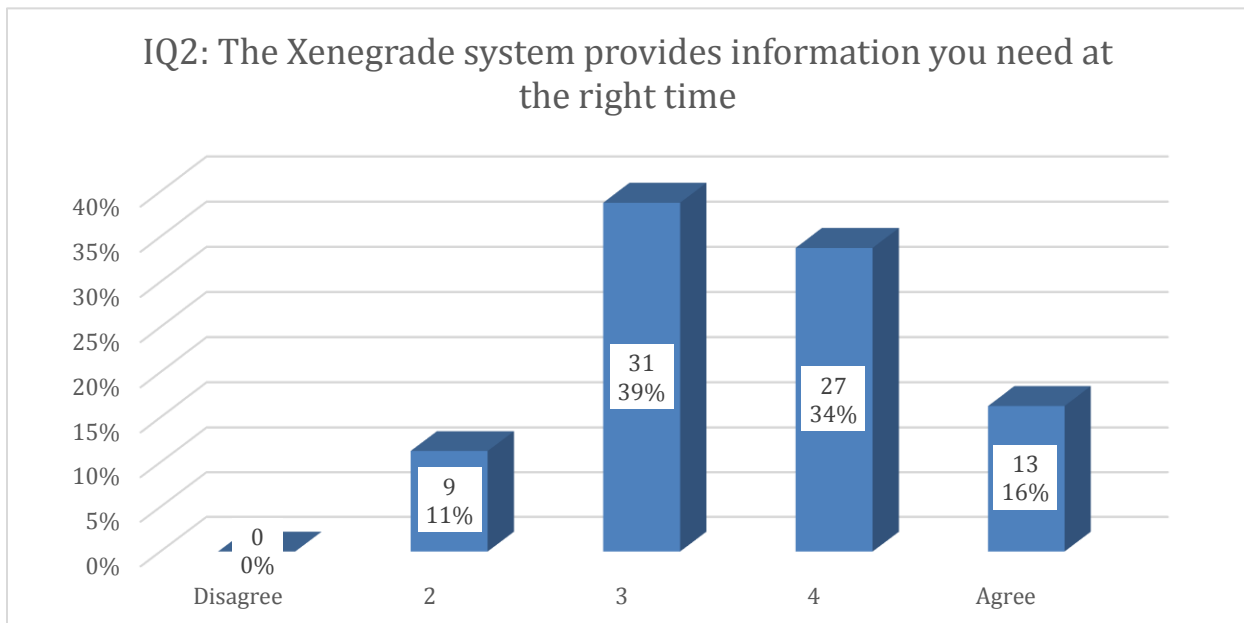*Graph 5: Showing the faculties of the participants.*
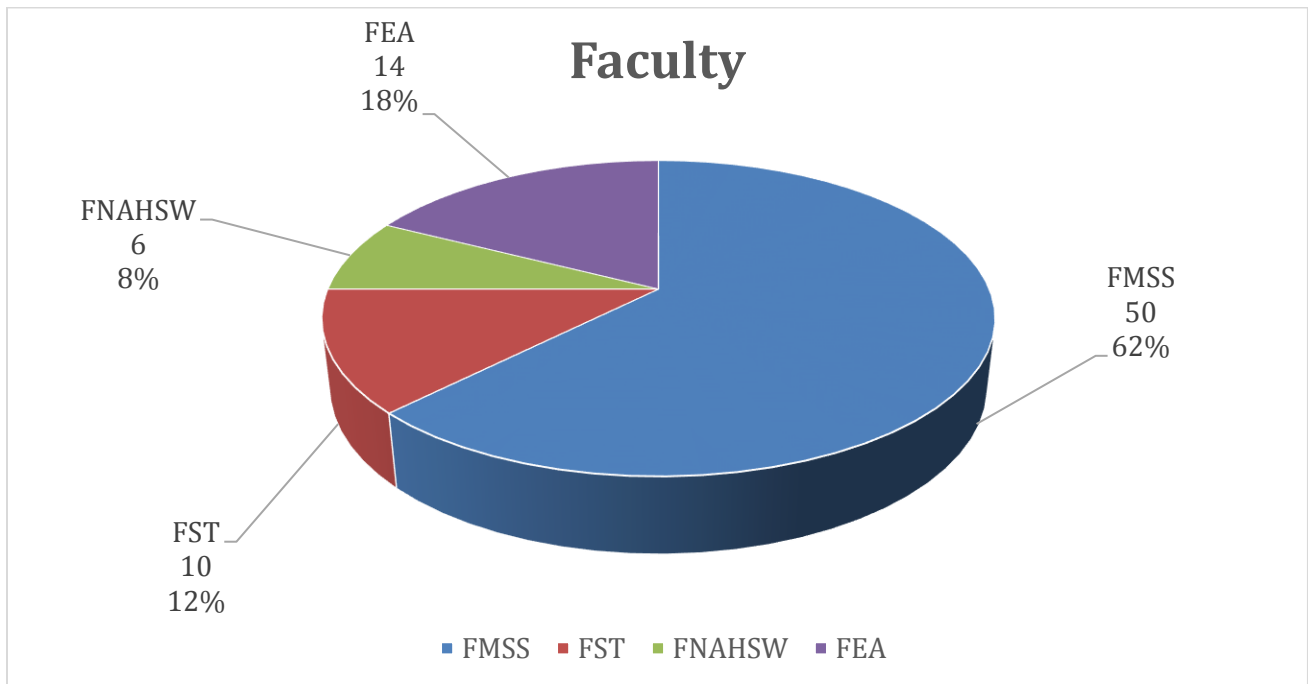
Majority of the students were from the Faculty of Management and Social Science (FMSS) 50 students (62%), 14 students (18%) were from Faculty of Education and Arts (FEA), 10 students (12%) were from Faculty of Science and Technology and 6 students (8%) were from the Faculty of Nursing, Allied Health and Social Work (FNAHSW).

Information Quality

According to (Urbach & Mueller, 2011), the Information Quality measures the output generated from the Information System. The data generated by the Xenegrade System is essential to managers for them to make important decisions and to determine the efficiency of day to operations.

IQ1: The Xenegrade system provides information that is exactly what you need.

| Responses	Participants
Disagree	2 — 3%
2	4 — 5%
3	32 — 40%
4	25 — 31%
Agree	17 — 21%

Forty percent, 40% of the students stated that they neither disagreed nor agreed that the Xenegrade System provided the information that they needed in IQ1, 31% of the students agreed and 21% of the student stated that they strong agreed that the system provides the information that they need.

IQ2: The Xenegrade system provides information you need at the right time

Responses	Participants
Disagree	0 — 0%
2	9 — 11%
3	31 — 39%
4	27 — 34%
Agree	13 — 16%

IQ2 reveals that 39% students responded that they were also neutral about the timing that Xenegrade provides information, 27% of the students stated that they agreed and 16% stated that they strongly agreed that Xenegrade provides information that they need at the right time.

IQ3: The Xenegrade system provides information that is relevant to your class.
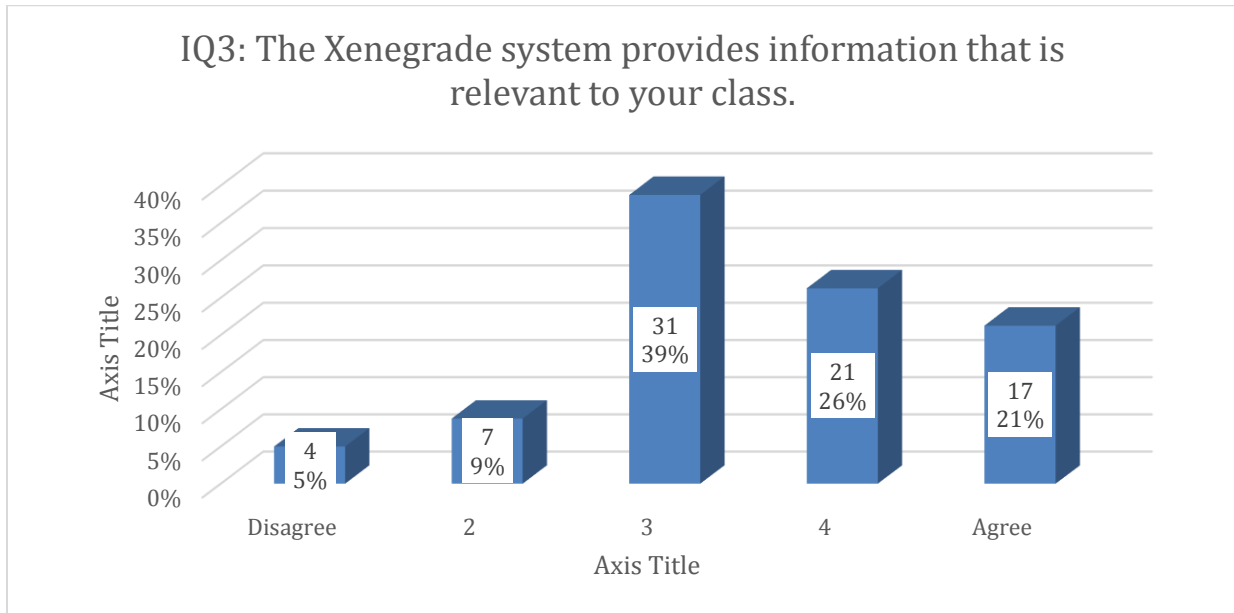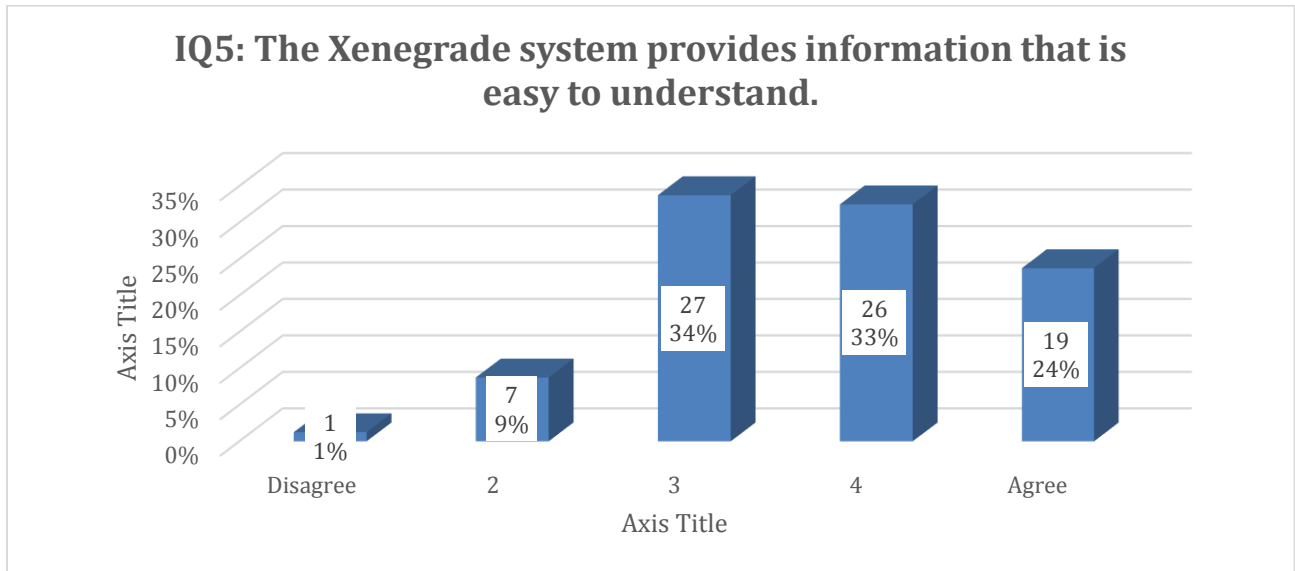

IQ3 reflects that 39% of the students responded to be neutral to the relevancy of the information provided by the Xenegrade System, 26% of the students stated that the information gathered was relevant to their class and 21% stated that the strongly agree that the information is relevant to their class.

## IQ4: The Xenegrade system provides sufficient information.
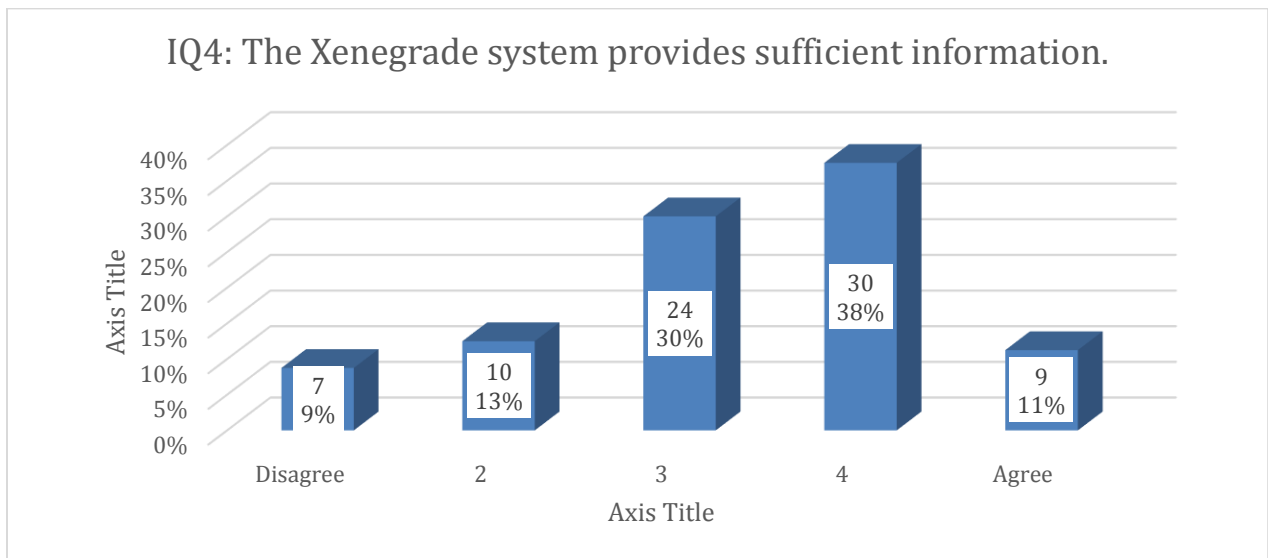
IQ4 reflects that 30% of the students responded that they are neutral when asked if the Xenegrade System provides sufficient information, 38% stated that they agreed that the system provides

sufficient information and 11% stated that they strongly agreed. 9% of the students stated that they strongly disagree that the system provides sufficient information.

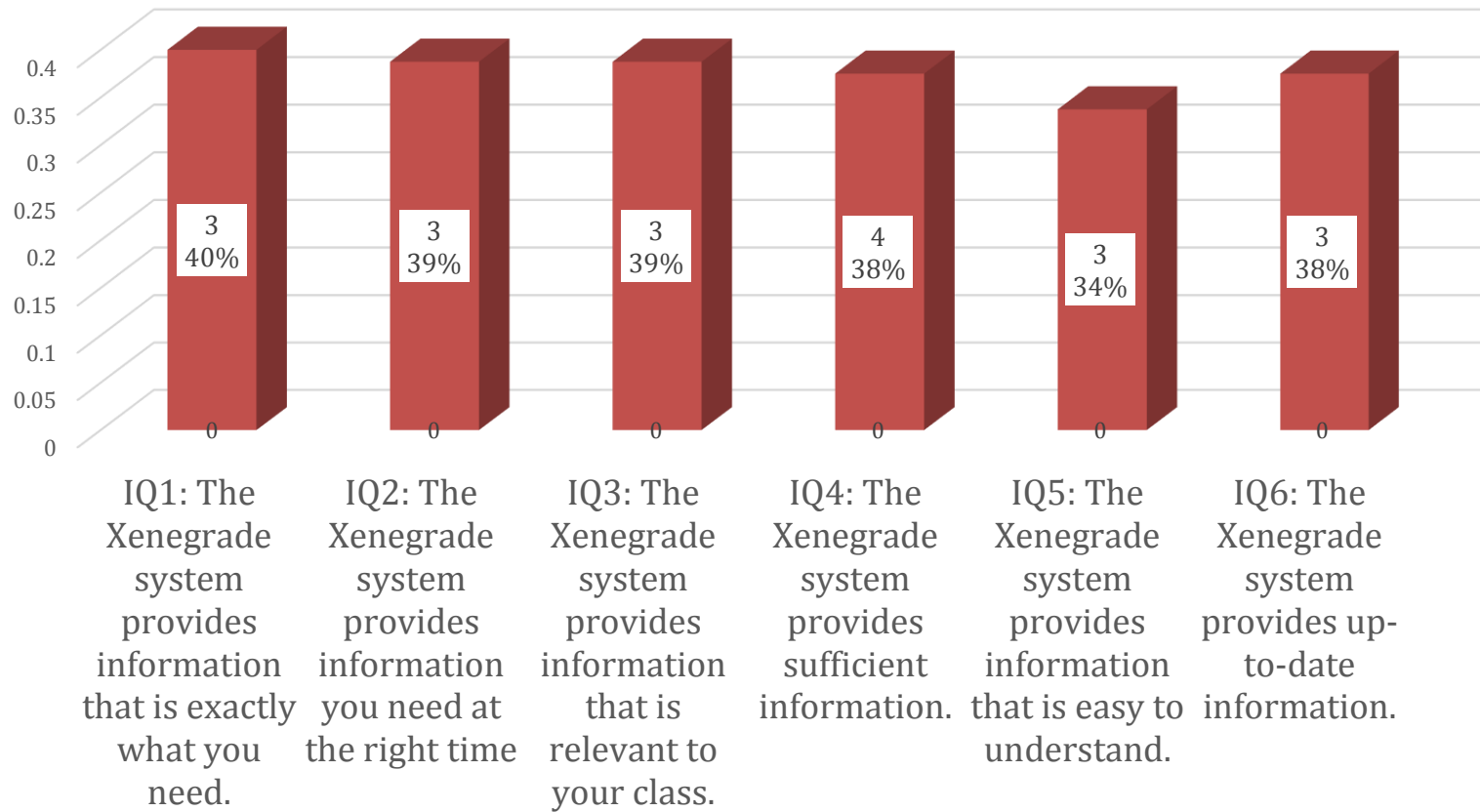**IQ5: The Xenegrade system provides information that is easy to understand.**

IQ5 above shows that 34% of the students were neutral when responding to how easy the information provided by the Xenegrade System was to understand, 33% stated that they agreed and 24% stated that they strongly agreed that the information provided is easy to understand.

IQ6: The Xenegrade system provides up-to-date information.
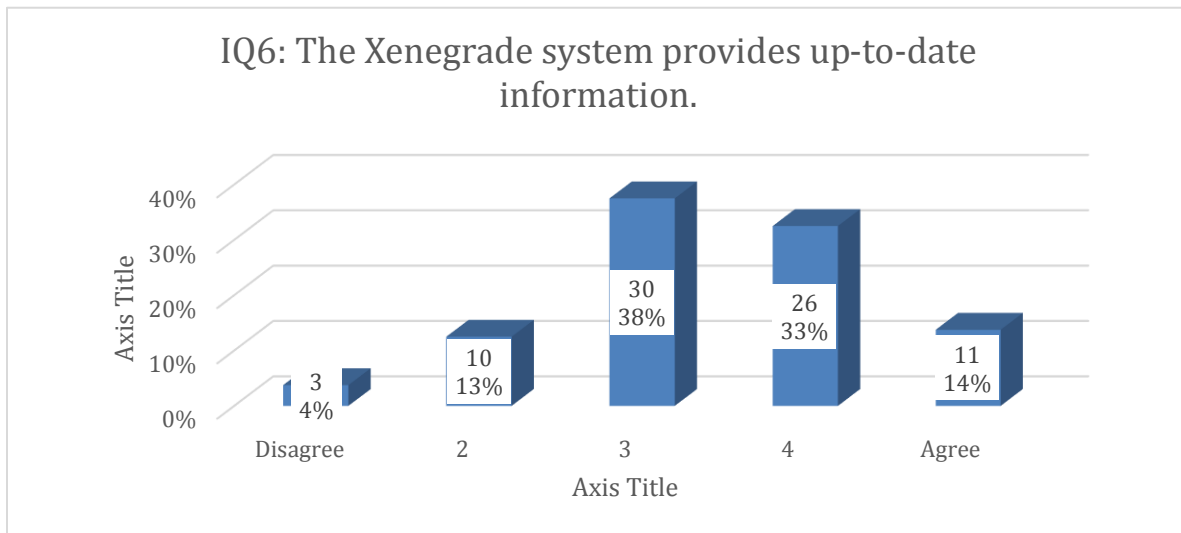
IQ6 reflects that 38% of the students stated that they were neutral when responding that the information provided was up-to-date, 33% stated that they agreed and 14% stated that they strongly agreed that the information provided by Xenegrade System was up-to-date.

Overall Efficiency of Information Quality

|	IQ1: The Xenegrade system provides information that is exactly what you need.	IQ2: The Xenegrade system provides information you need at the right time	IQ3: The Xenegrade system provides information that is relevant to your class.	IQ4: The Xenegrade system provides sufficient information.	IQ5: The Xenegrade system provides information that is easy to understand.	IQ6: The Xenegrade system provides up-to-date information.
	3 / 40%	3 / 39%	3 / 39%	4 / 38%	3 / 34%	3 / 38%

The overall efficiency of the quality of information generated by the Xenegrade System was determined by finding the average of the maximum grade from each question. The maximum for IQ1 was 40% which was grade (3); maximum for IQ2 was 39% (3); IQ3, 39% (3); IQ4, 38% (4); IQ5, 34% (3); IQ6, 38% (3). As shown above, the maximum for each response was 3, which is considered to be neutral, only IQ4 was grade 4. The overall efficiency of the quality of information generated by the Xenegrade System information is grade 3.2 out of 5. This shows that students are not well informed or knowledgeable about the information generated by the Xenegrade System.

System Quality

System Quality measures how accommodating the system is that users can easily adapt. The user-friendliness and interactive features between the users and the system is considered.

**SQ1: The Xenegrade system is easy to use.**
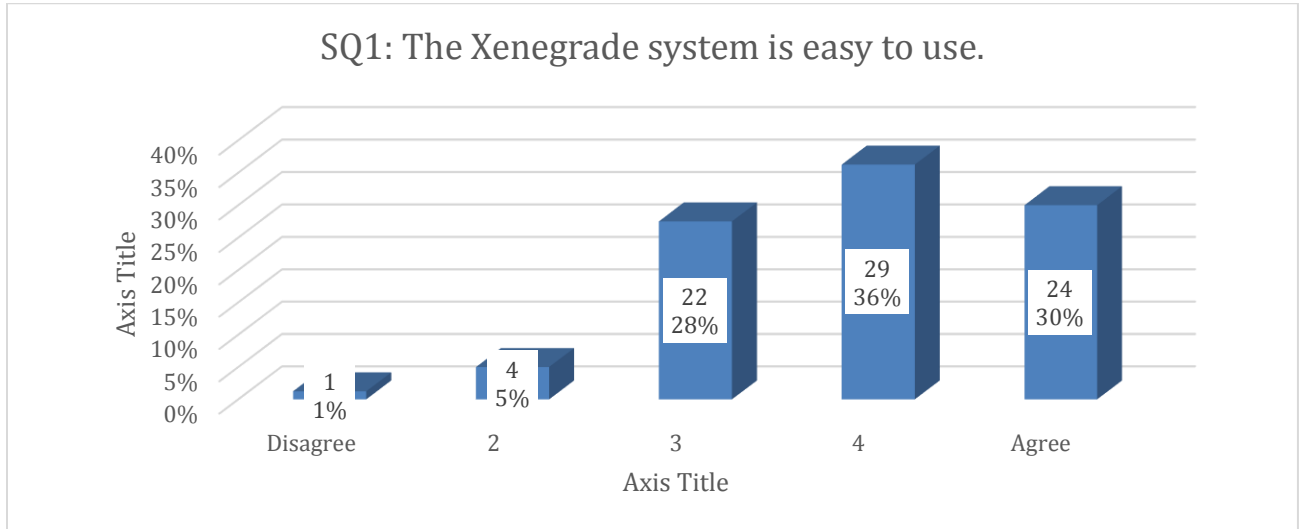
SQ1 shows that 36% of the respondents found the system easy to use, 28% of the students were neutral, and 30% stated that they strongly agreed that the system was easy to use. Only 1 student found the system difficult to use.

SQ2: The Xenegrade system is user-friendly.
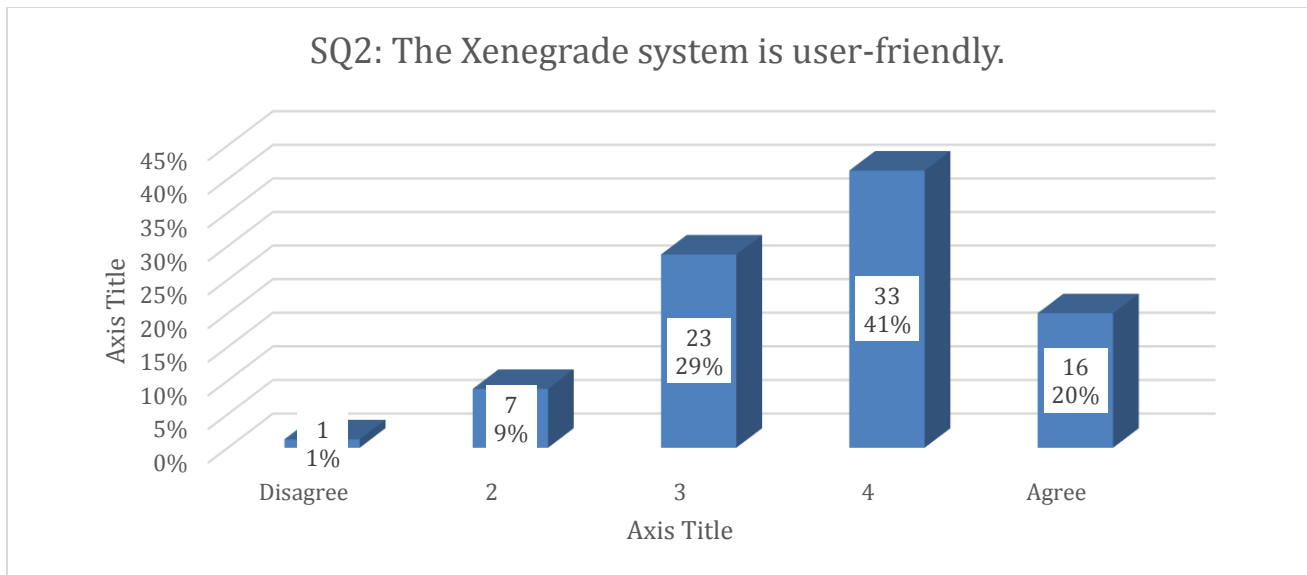
SQ2 measures if the system is user-friendly. Of the 80 students, 41% stated that they agreed that the system is user friendly and 20% stated that they strongly agreed. Only 1% of the students stated that the Xenegrade System is not user-friendly.

SQ3: The Xenegrade system provides interactive features between users and the system.
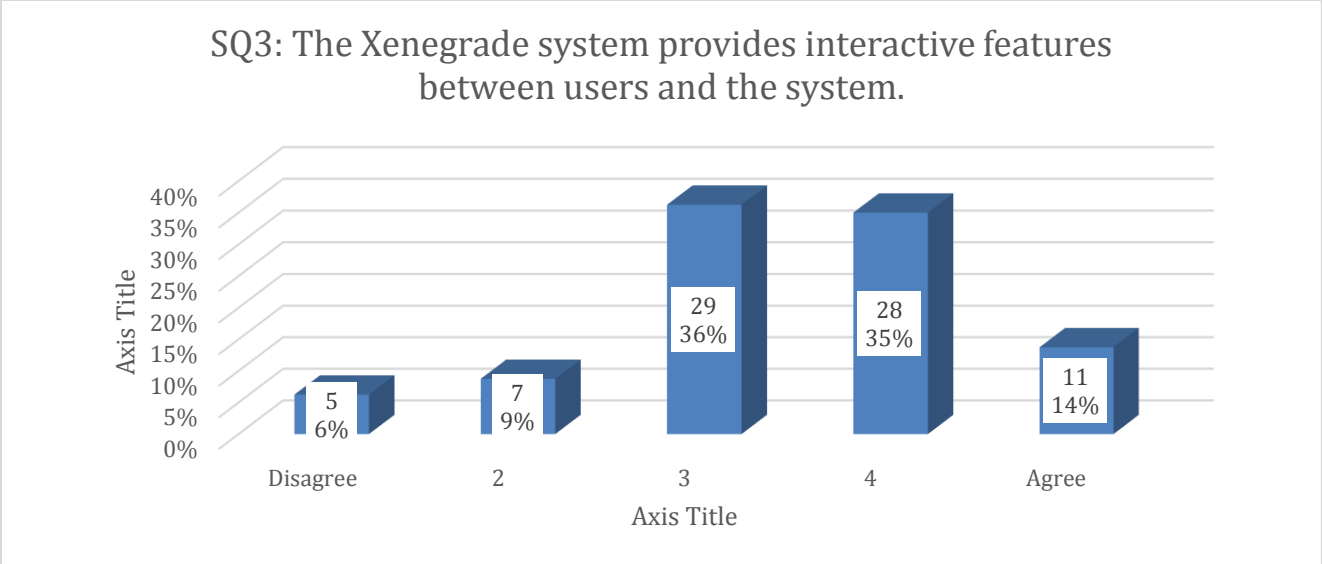
SQ3 states that majority of the students were neutral towards the interactive features between the users and the system. Thirty-six percent of the students were neutral and 35% of the students stated that they agreed that the system provides interactive features between the users and system and 14% stated that they strongly agreed that the system provides interactive features between users and the system.
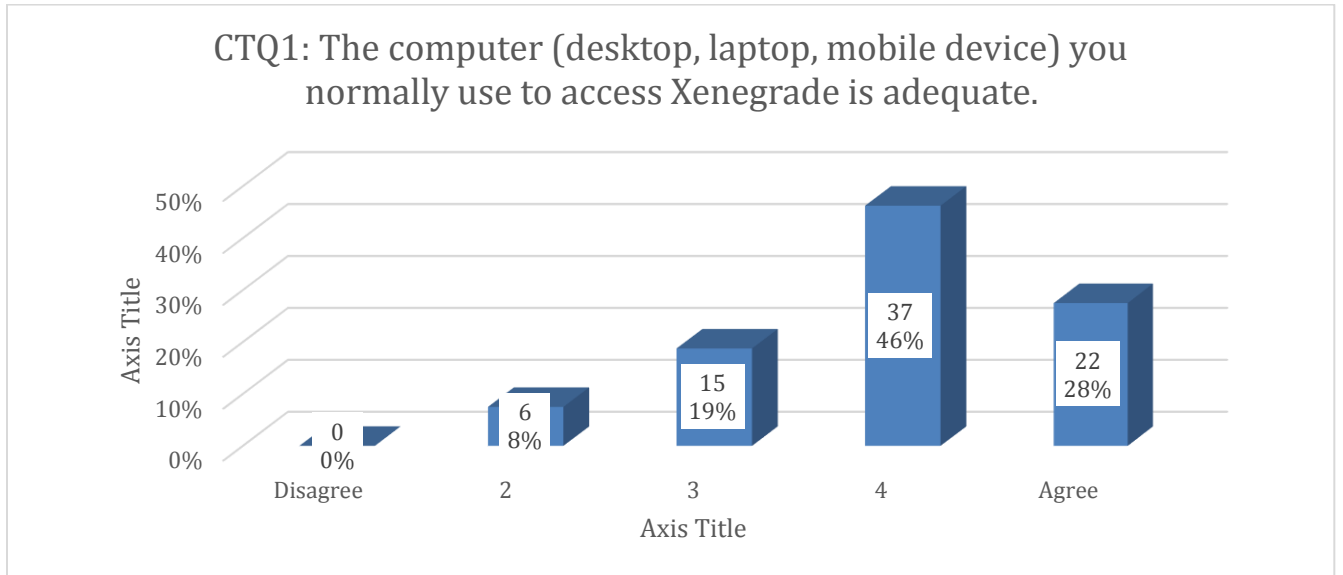
Overall Efficiency of System Quality
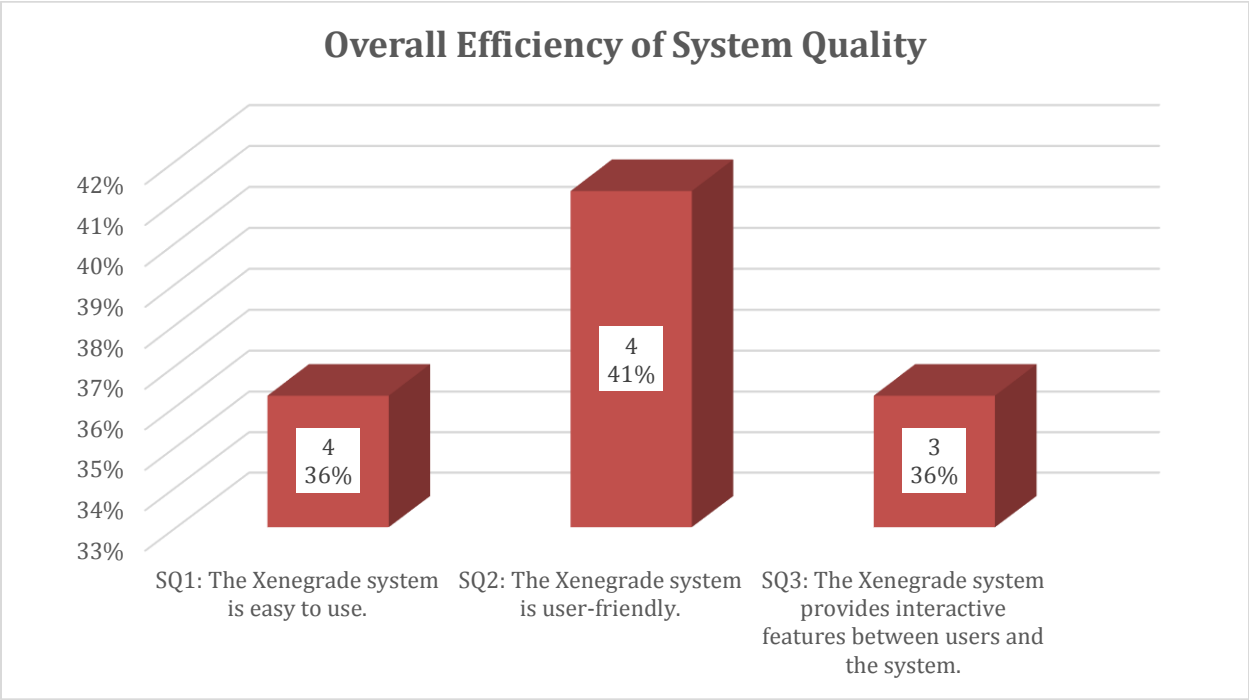
The overall efficiency of the System Quality was determined by calculating the average of each maximum grade from each question. The maximum grade for SQ1 was 36%, which was grade (4); SQ2, 41% (4) and SQ3, 36% (3). This shows that majority of the students agreed that the system

is easy to use, that the system is user friendly and that the system provides interactive features between the users and the system. The overall efficiency of the quality of the system is grade 3.7 out of 5.
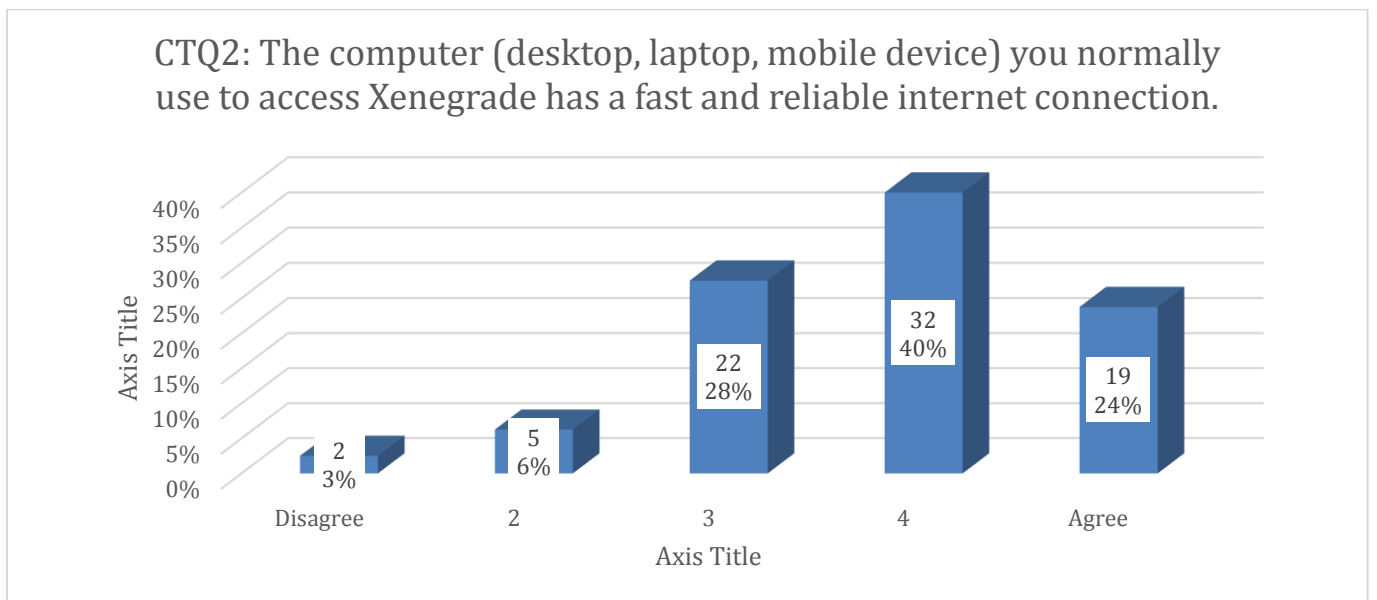
Complementary Technology Quality

Complementary Technology Quality measures the competence and reliability of devices used to access the system; for instance desktops, personal computers, cell phones, tablets etc. and the quality of internet connection to perform the task.

The University of Belize has several computer labs, computer classrooms and Wi-Fi hotspots on campus, which is accessible to students to access the Xenegrade System at the Belmopan Campus.

CTQ1: The computer (desktop, laptop, mobile device) you normally use to access Xenegrade is adequate.

CTQ1 shows that 46% of the students indicated that the devices used to access Xenegrade is reliable and 28% said they strongly agreed that the devices used is adequate to access the system.

CTQ2: The computer (desktop, laptop, mobile device) you normally use to access Xenegrade has a fast and reliable internet connection.

CTQ 2 states that the internet connection used to access the Xenegrade System is also reliable with 40% of the students stating that they agreed and 24% stated that they strongly agreed that the internet connection is reliable.

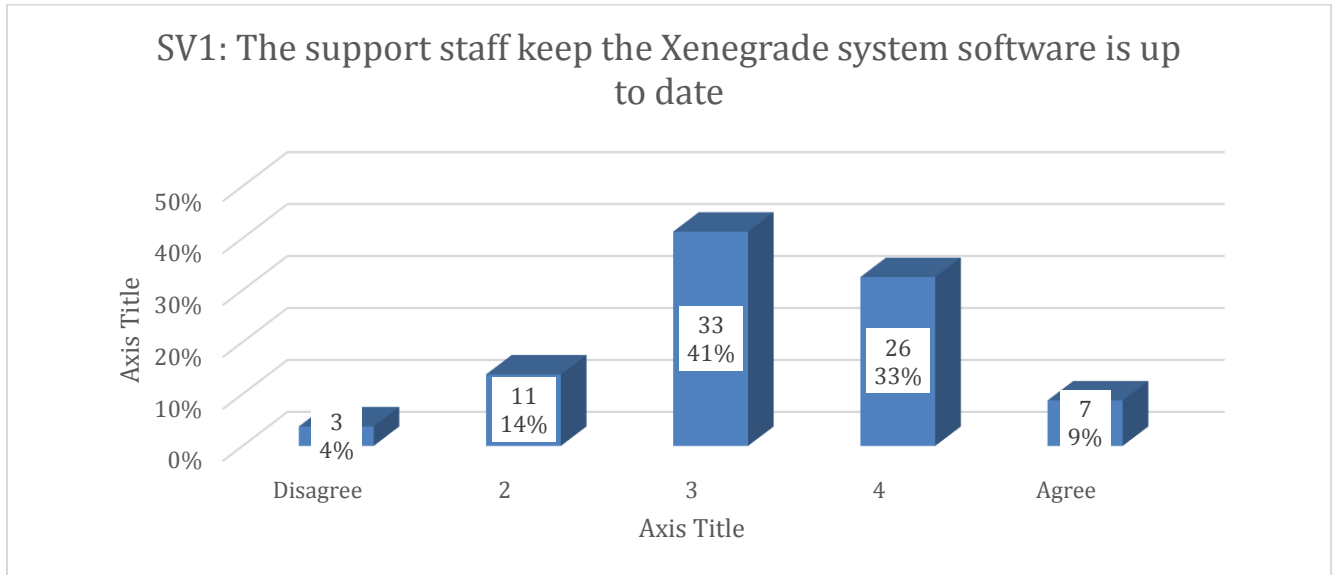## Overall Efficiency of Complementary Technology Quality
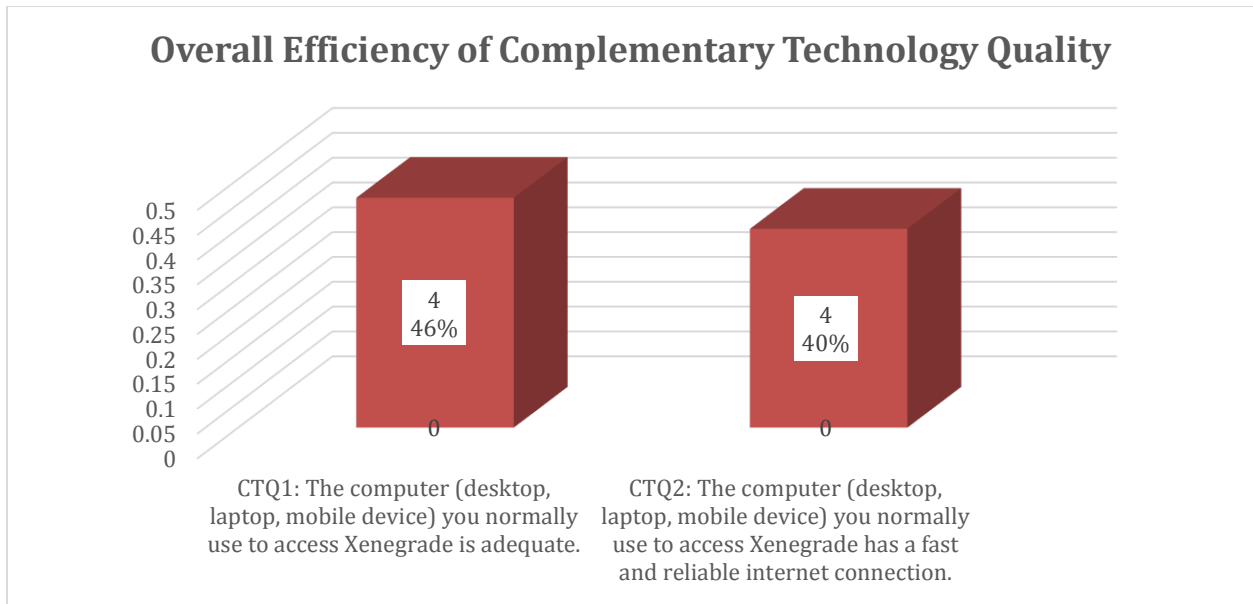
The overall quality of the complementary technology is 4 out of 5, which was determined by the calculating the average from each maximum grade from each question. The maximum for CTQ1 was 46%, grade (4) and maximum for CTQ2 was 40%, grade (4).

Service Quality

Service Quality measures the reinforcement of keeping the system updated, the efficiency of the staff, the timeliness and professionalism in which the support staff responds to concerns of the students.

The University of Belize, Belmopan Campus has an IT Department, which comprises of several personnel who are available to students during working hours. They are able to assist students with any query they may have concerning information technology.

SV1: The support staff keep the Xenegrade system software is up to date

Axis Title (y)	50%, 40%, 30%, 20%, 10%, 0%

Disagree: 3 / 4%
2: 11 / 14%
3: 33 / 41%
4: 26 / 33%
Agree: 7 / 9%

Axis Title

Majority of the students - 41% stated that they were neutral and 33% stated that they agreed that the system is up to date. From the responses gathered on SV1, it shows that students are not knowledgeable of the support staff keeping the system up to date.

SV2: When users have a problem the Xenegrade system support staff show a sincere interest in solving it.

Axis Title

- Disagree: 5, 6%
- 2: 14, 18%
- 3: 31, 39%
- 4: 22, 28%
- Agree: 8, 10%

Axis Title
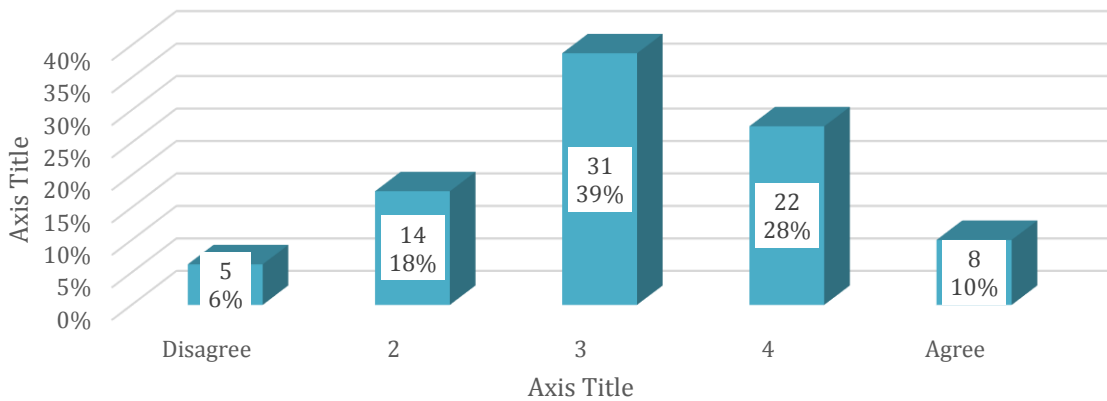
Students are impartial when responding to the effectiveness of the support staff. Most of the students -39% stated that they are neutral and not aware of the sincerity of how support staff is; 28% stated that they agree that the support staff is sincere when responding to users who are experiencing problems with the system.

SV3: The Xenegrade system support staff respond promptly when users have a problem.

Axis Title

- Disagree: 5, 6%
- 2: 12, 15%
- 3: 32, 40%
- 4: 24, 30%
- Agree: 7, 9%

Axis Title
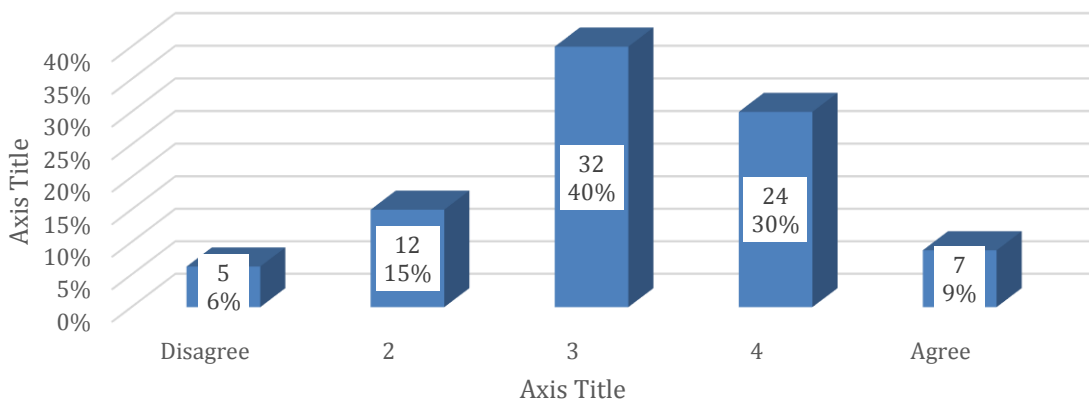
Majority of the students – 40% stated that they are not certain on the timelines of the support staff when responding to issues faced from using the system. Thirty percent of the students stated that they agreed that the support staff responds in an efficient manner and 5% strongly disagreed that the support staff responds promptly when a problem arises concerning the Xenegrade System.

SV4: The Xenegrade system support staff tell users exactly when services will be performed.
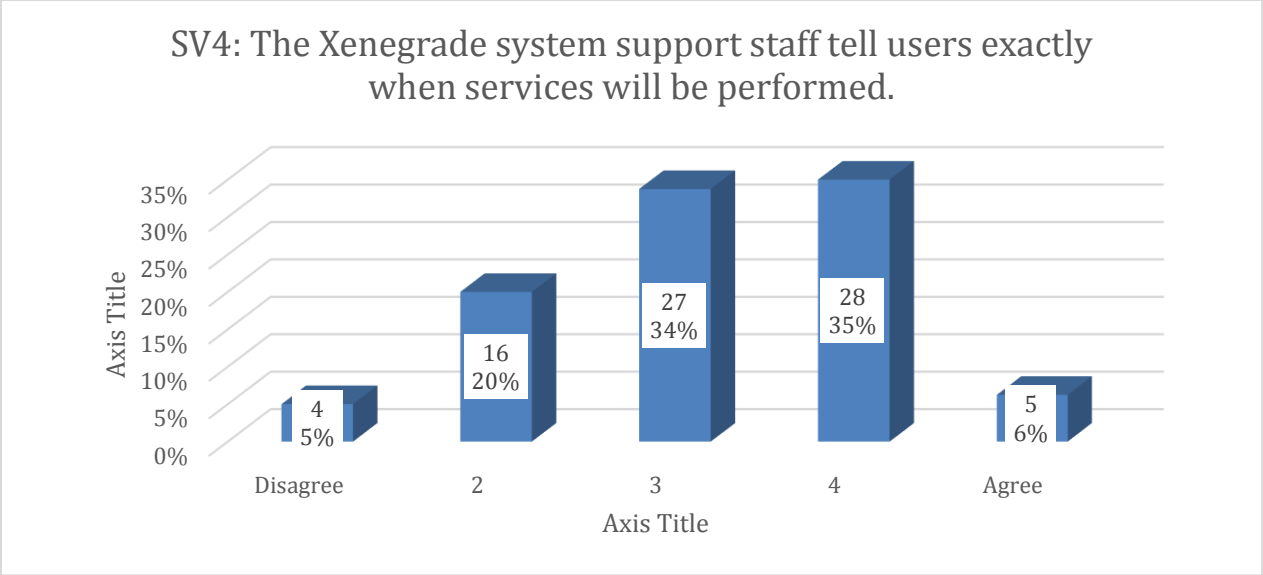
In regards to the time that the Xenegrade System is service, 34% stated that they are neutral and 35% stated that they agree that the support staff explains exactly when service is performed. Only 6% stated that they strongly agree.

Overall Efficiency of Service Quality
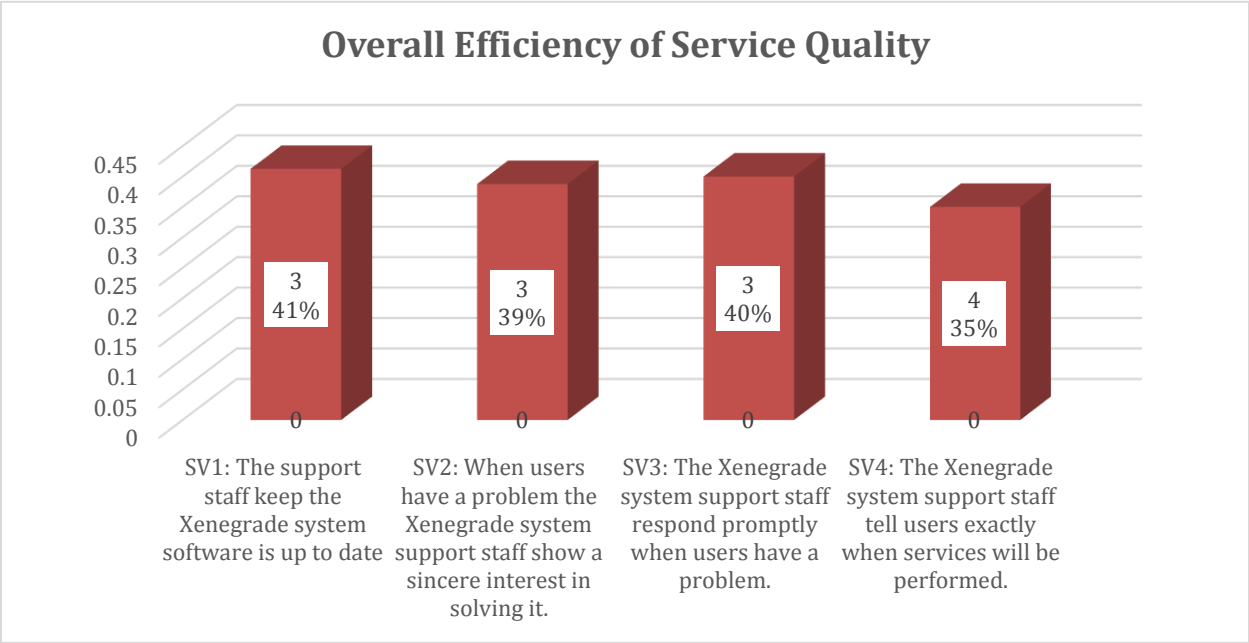
The overall efficiency of the service rendered by the support staff was determined by calculating the maximum grade from each response. For SV1 (41%), the grade received was 3; SV2 (39%), 3; SV3 (40%), 3 and SV4 (35%). The average of 3, 3, 3 and 4 is 3. Therefore, the overall efficiency of the quality of service rendered by the support staff is 3.3 out of 5. This shows that students are not aware of the services offered by the support staff.
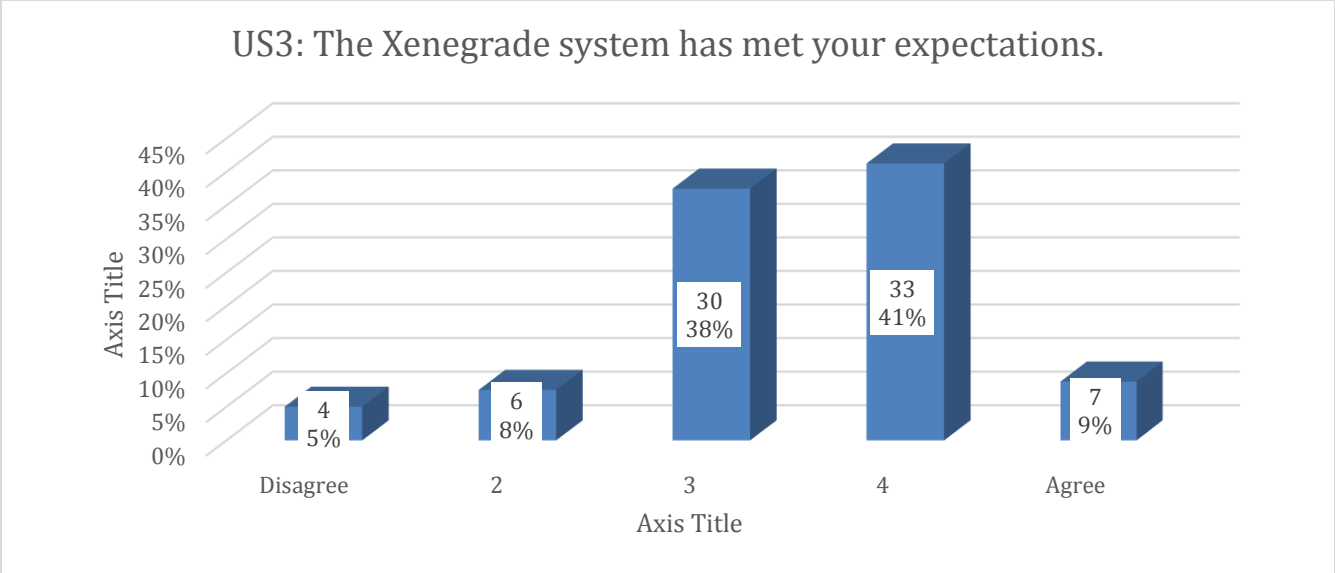
User satisfaction

User satisfaction measures the attitude of users towards the system. It considers the feelings that other users have towards using the system, how frequent they think other users access the system, if the system does what they expect and the overall satisfaction of the user.

US1: Most of the users have a positive attitude of Xenegrade.
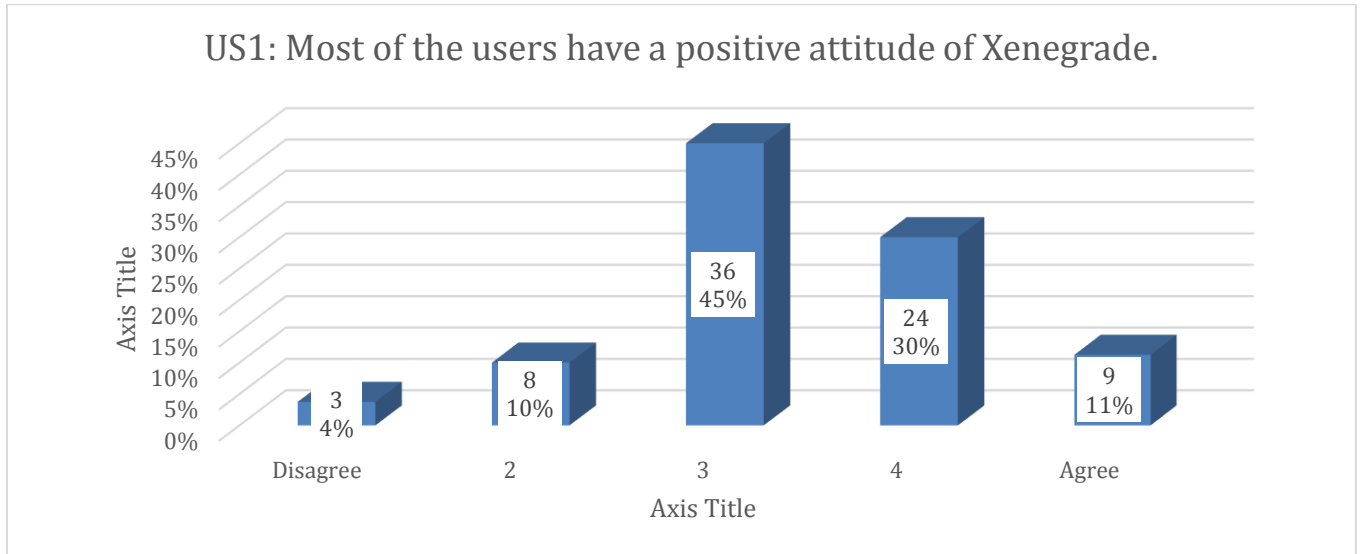
Forty five percent (45%) were neutral when asked if most of the uses have a positive attitude towards the Xenegrade System, 30% stated that they agree that users' attitude towards Xenegrade is positive and 11% stated that they strongly agree that users' attitude towards Xenegrade is positive.

US2: Do you think that the utility of the Xenegrade system is high?
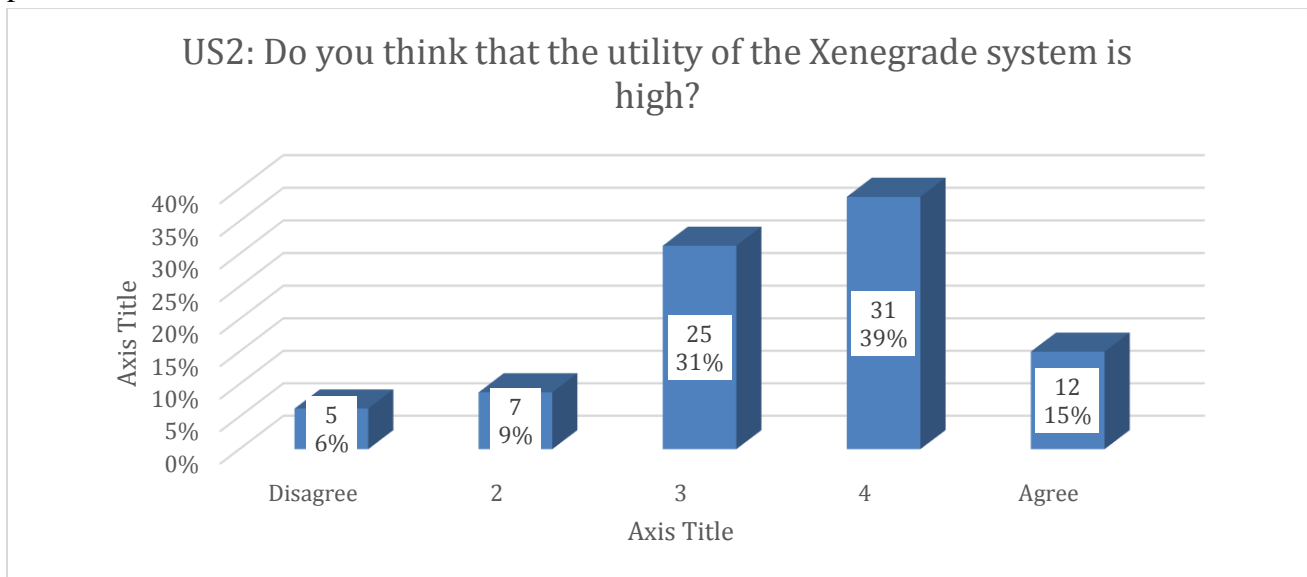
Concerning the knowledge of the level of utilization of the Xenegrade System, 31% of the students had no opinion. However, 39% stated that they agreed that the utilization of the Xenegrade system is high and 15% stated that they strongly agreed that the utilization of the Xenegrade system is high.

US3: The Xenegrade system has met your expectations.

Axis Title (y-axis): 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%

- Disagree: 4 / 5%
- 2: 6 / 8%
- 3: 30 / 38%
- 4: 33 / 41%
- Agree: 7 / 9%

Axis Title (x-axis)

Of the 80 students, 41% stated that they agreed that the Xenegrade System met their expectations, 9% strongly agreed and that 38% had no opinion.

US4: Are you satisfied with the Xenegrade system?

Axis Title (y-axis): 0%, 10%, 20%, 30%, 40%, 50%

- Disagree: 3 / 4%
- 2: 10 / 13%
- 3: 22 / 28%
- 4: 36 / 45%
- Agree: 9 / 11%

Axis Title (x-axis)
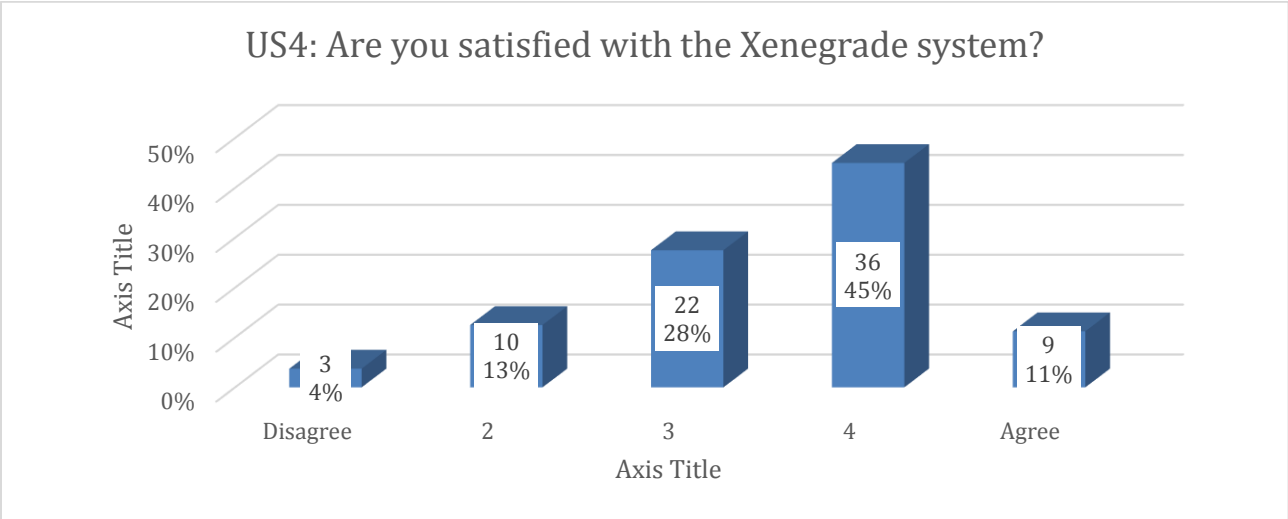
Majority of the students, 45% stated that they are satisfied with the services offered by the Xenegrade System. Eleven percent 11% stated that they strongly agreed and 28% neither agreed nor disagreed about whether they are satisfied with the Xenegrade System.

Overall Efficiency of User Satisfaction
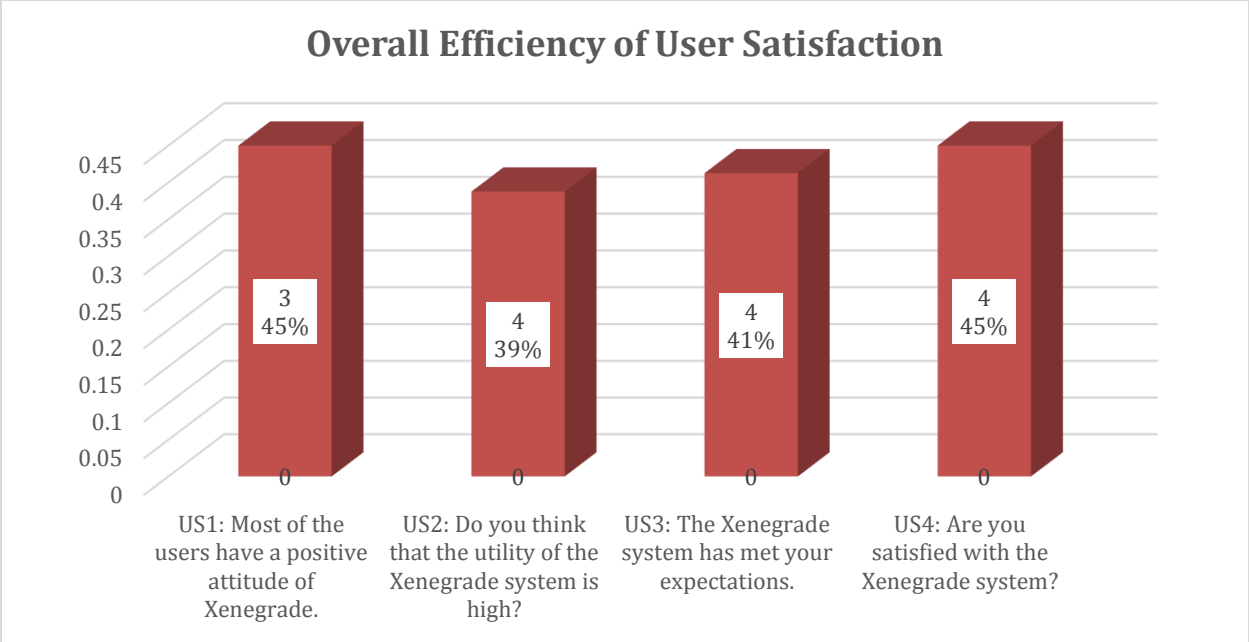
The overall efficiency of the user satisfaction was determined by calculating the average of all grades obtained from the maximum response from each question. For US1 the maximum percentage was (45%) which was grade 3; US2 (39%), grade 4; US3 (41%), grade 4 and US4 (45%), grade 4. The average calculated from grades obtained 3, 4, 4 and 4 is 4. The overall efficiency of the user satisfaction graded 3.8 out of 5.

Use

The Use of the Xenegrade System measure the users' personal use of the system, the frequency of accessing the system, how dependent they are on the system, if they can use the system without assistance and also if they possess the knowledge required to competently use the system.

U1: Your frequency use of the Xenegrade system is high.
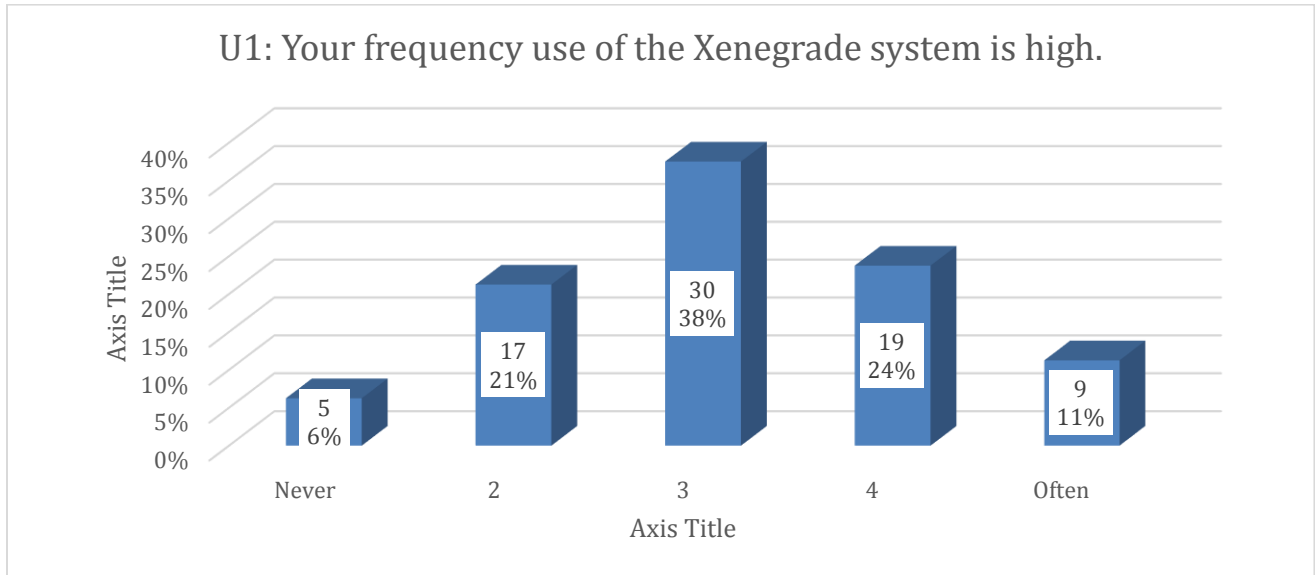
Of the 80 students, 38% stated that they have no opinion on whether they access the system frequently. Twenty four percent 24% stated that they access the Xenegrade System often and 11% stated that they access the system frequently.

U2: Do you depend upon the Xenegrade system?
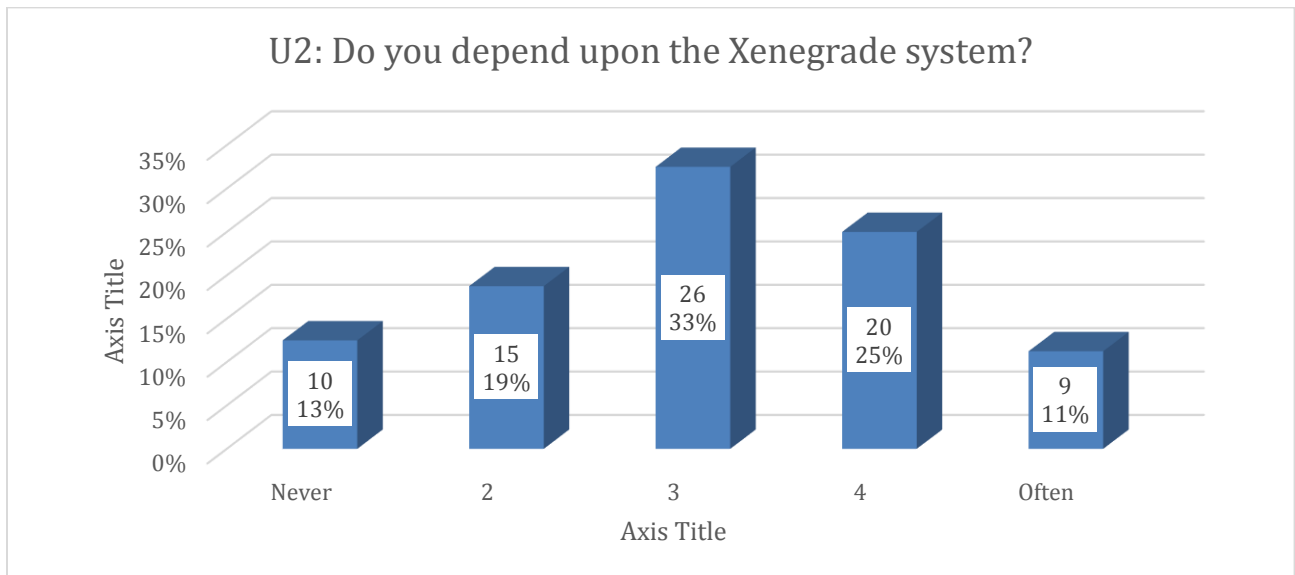
Thirty three percent 33% of the students had no opinion on whether they depend on the Xenegrade System or not. Twenty five percent 25% stated that they depend on the Xenegrade System and 11% stated that they strongly depend on the Xenegrade System.

U3: Were you able to complete a task using Xenegrade even when there was no one around to tell you what to do?

Axis Title

Never	8 10%		
2	9 11%		
3	18 23%		
4	31 39%		
Often	14 18%		

Axis Title
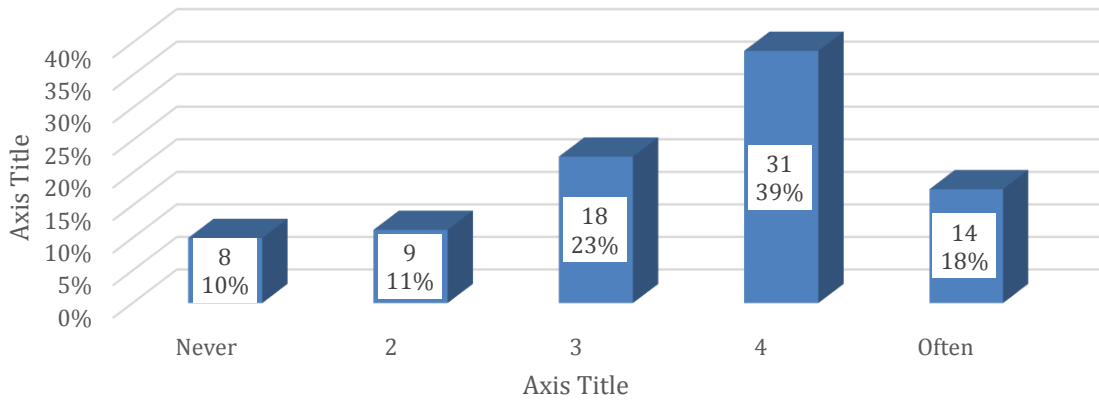
Majority of the students agreed that they were able to complete tasks when they accessed the system by themselves – 39%, 18% strongly agreed that they have no problem manipulating the system and 23% had no opinion.

U4: You have the knowledge necessary to use the Xenegrade system.

Axis Title

Disagree	4 5%		
2	7 9%		
3	21 26%		
4	27 34%		
Agree	21 26%		

Axis Title
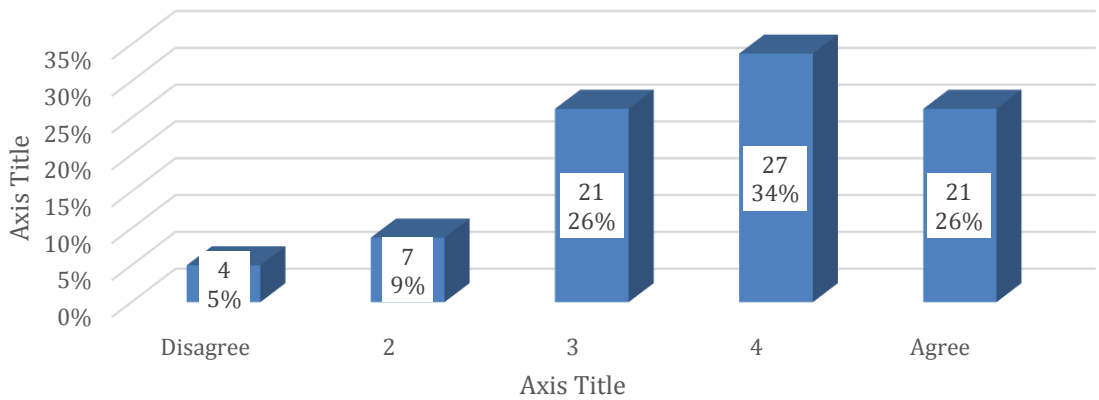
The knowledge necessary to use the Xenegrade system is of great importance. Users not having any of little knowledge about the Xenegrade System will have a complex time accessing the vital information. Thirty four percent 34% of the students agreed that they have the knowledge to use the Xenegrade System and 26% stated that the strongly agreed that they poses the knowledge to properly use the Xenegrade System.

Overall Efficiency of Use

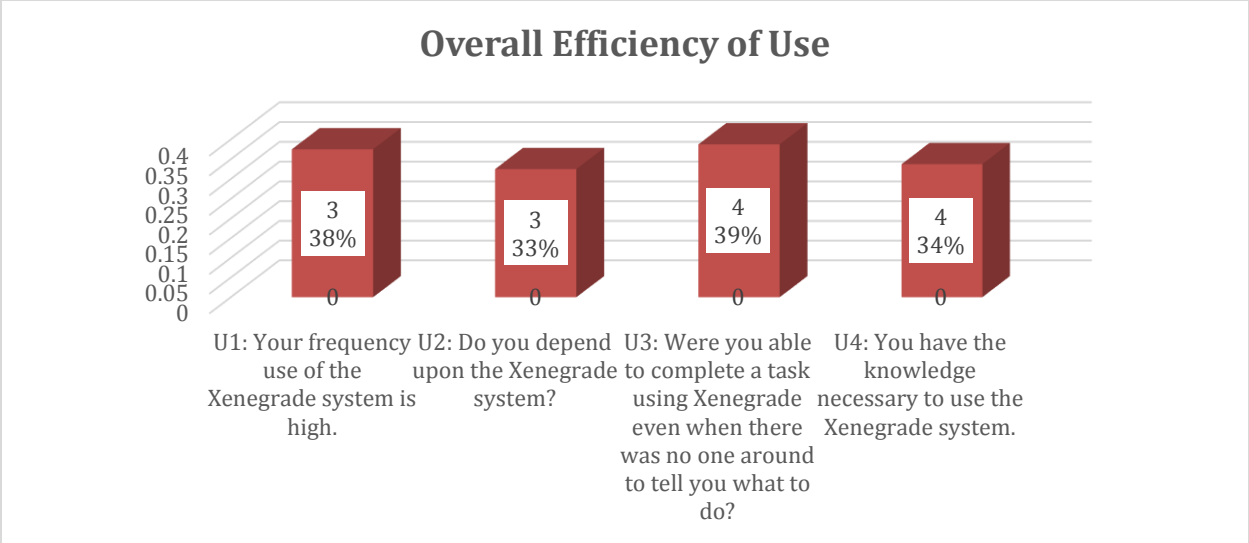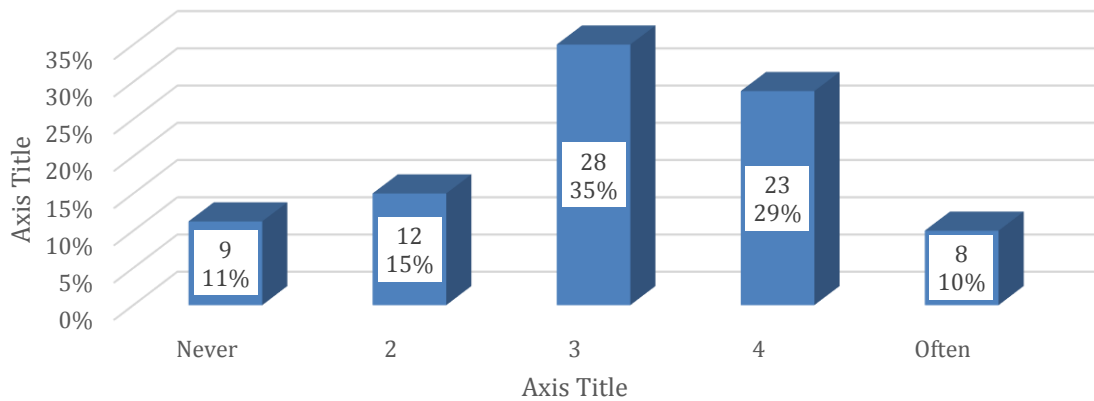|	U1: Your frequency use of the Xenegrade system is high.	U2: Do you depend upon the Xenegrade system?	U3: Were you able to complete a task using Xenegrade even when there was no one around to tell you what to do?	U4: You have the knowledge necessary to use the Xenegrade system.
Grade	3	3	4	4
Percent	38%	33%	39%	34%

The overall use of the system was determined by calculating the average of grades obtained from the maximum responses from each question. For U1 (38%), the grade was 3, U2 (33%) grade 3, U3 (39%), grade 4 and U4 (34%) grade 4. The average were calculated from grade 3, 3, 4, and 4 which was 3.5. The overall use of the system is 3.5 out of 5. This shows that students are not well knowledgeable about how frequent they access the system and if they depend on the system. However, when the students were asked if they can manipulate the system and if they have the knowledge required to access the system 39% and 34% responded respectively that they strongly agree.
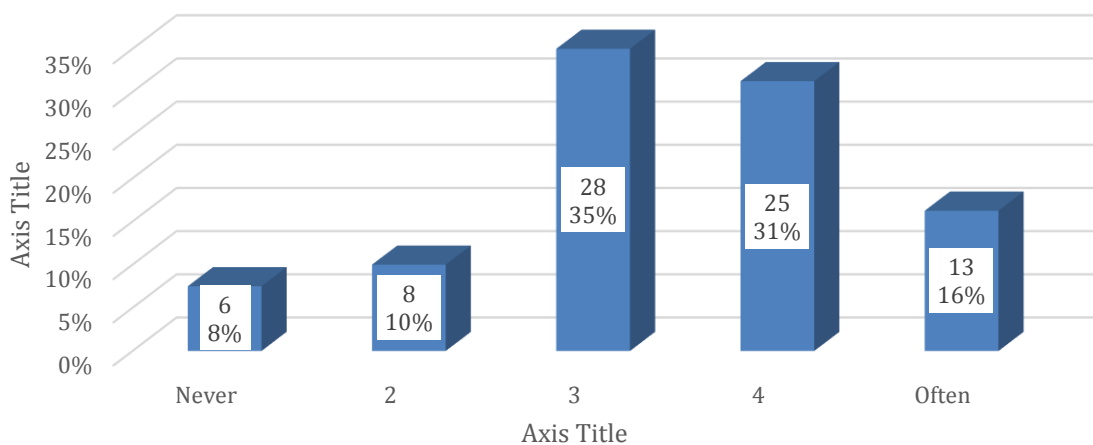
Perceived Net Benefits

Perceived Net Benefits measures the benefits of using the Xenegrade System. It considers if the system improves the academic performance of the users. It measures if the use of the system assists in reducing cost, if it contributes towards achieving goals and productivity and if it increases students' performance and assessment and teaching.

NB1: The Xenegrade system helps you improve your academic performance.

Axis Title (vertical)

- Never: 9, 11%
- 2: 12, 15%
- 3: 28, 35%
- 4: 23, 29%
- Often: 8, 10%

Axis Title (horizontal)

The Xenegrade System can assist students in improving academic performance by allowing them to choose their classes and class time and even lecturers of choice. It allows them to choose the days and time which would be most convenient to them. Majority of the students stated that they had no opinion on whether it improves their academic performance, 29% agreed that it does and 10% stated that they strongly agree that the Xenegrade system increases their academic performance.

NB2: The Xenegrade system helps students save costs.

Axis Title (vertical)

- Never: 6, 8%
- 2: 8, 10%
- 3: 28, 35%
- 4: 25, 31%
- Often: 13, 16%

Axis Title (horizontal)

The introduction of the Xenegrade System improved many services such as the registration process, the obtaining of account balance and the obtaining of progress reports by making these information available online. It is no longer required for students to travel to the University of Belize to meet with advisor to register, add or drop courses or to visit accounts office to get their account balance. The system allows them to access these services from any location that has

internet access. Still majority of the students stated that they have no opinion on whether the system reduces costs, 31% stated that they agree that that it does and 16% stated that they strongly agree that the system allows reduces cost.

NB3: The Xenegrade system helps you achieve your academic goals.
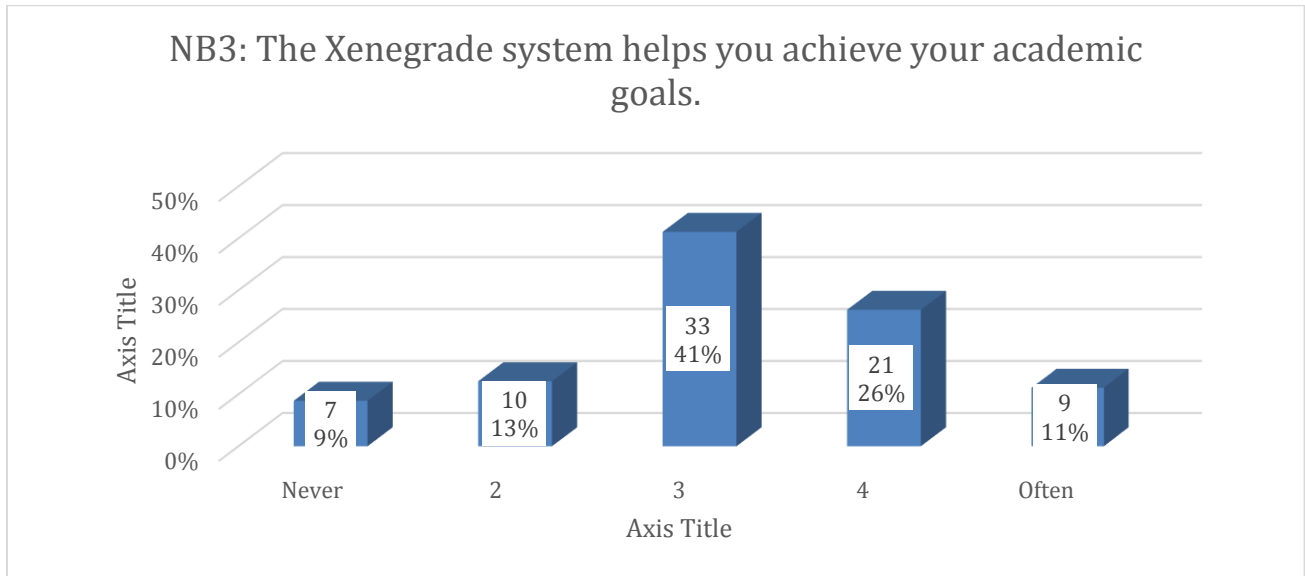
The Xenegrade System helps students achieve their academic goals by allowing them to see courses that are being offered which allows them to create a plan when registering. They can decide what courses to take and what subjects they can put off for another semester. Majority of the students were impartial as to whether the System assists them to achieve their goals– 41%. Twenty six percent 26% agreed that the system helps them achieve their goals and 11% stated that they strongly agree.

NB4: The Xenegrade system improves assessment and teaching.
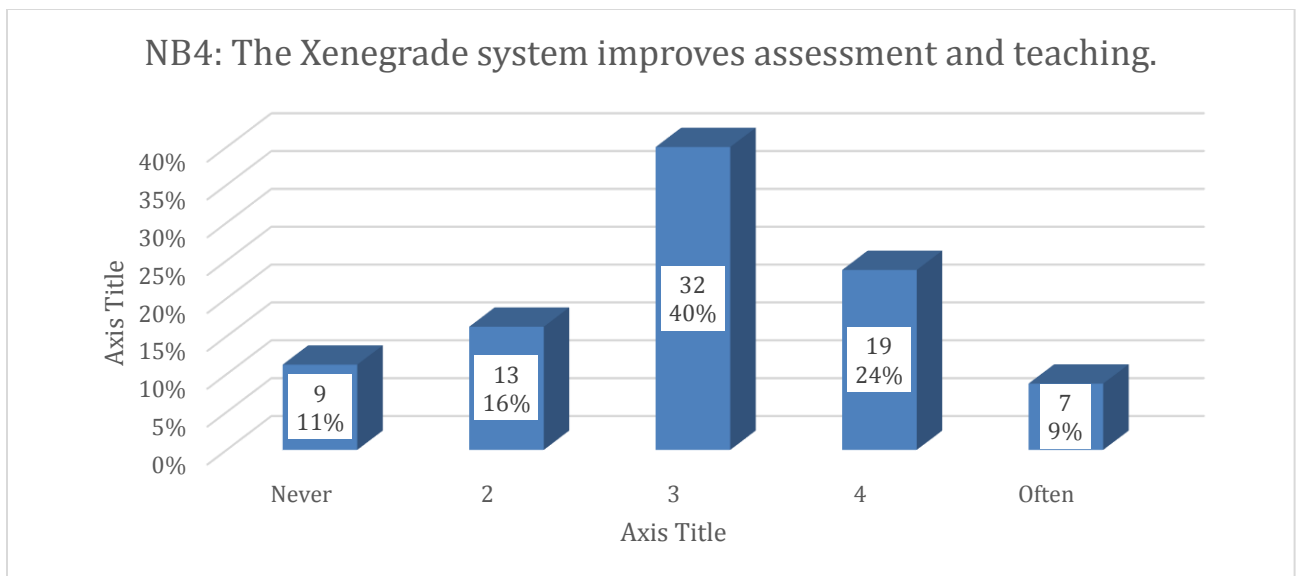
Of the 80 students, 40% had no opinion on whether the system improves assessment and teaching, 24% stated that yes it does and 9% stated that they strongly agree that the system improves assessment and teaching.

NB5: Using the Xenegrade system at school increases your academic productivity.
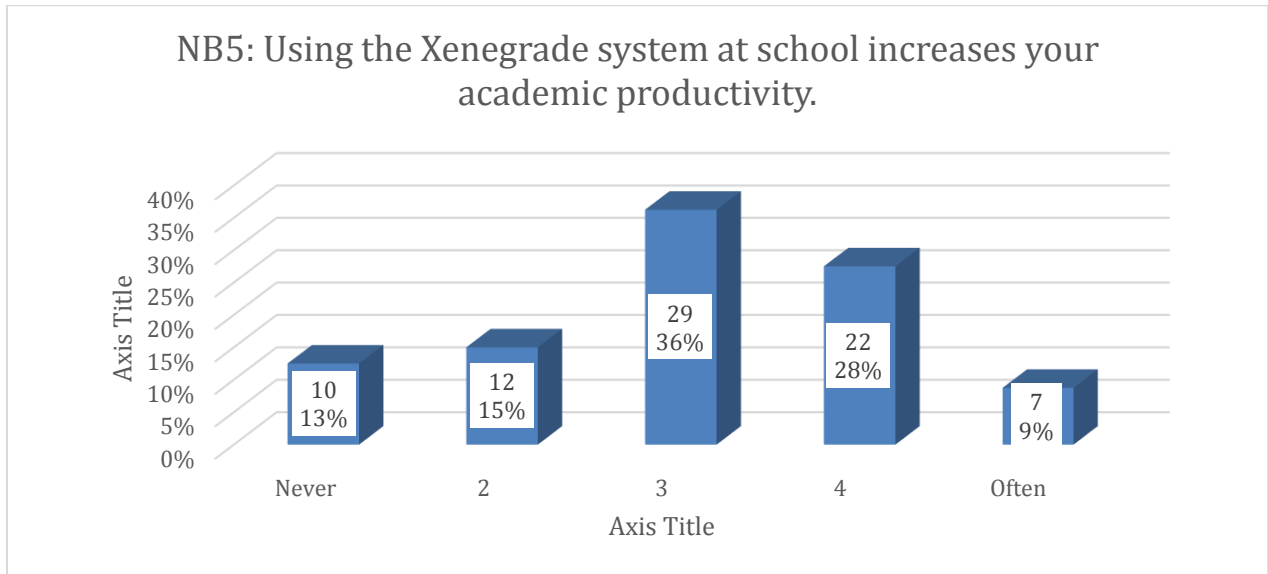
Of the 80 students, 36% of the students had no opinion on whether the Xenegrade System increases their academic productivity, 28% stated that they agreed and 9% stated that they strongly agreed that the Xenegrade System increases academic productivity.

NB6: Overall, using Xenegrade enhances student performance.
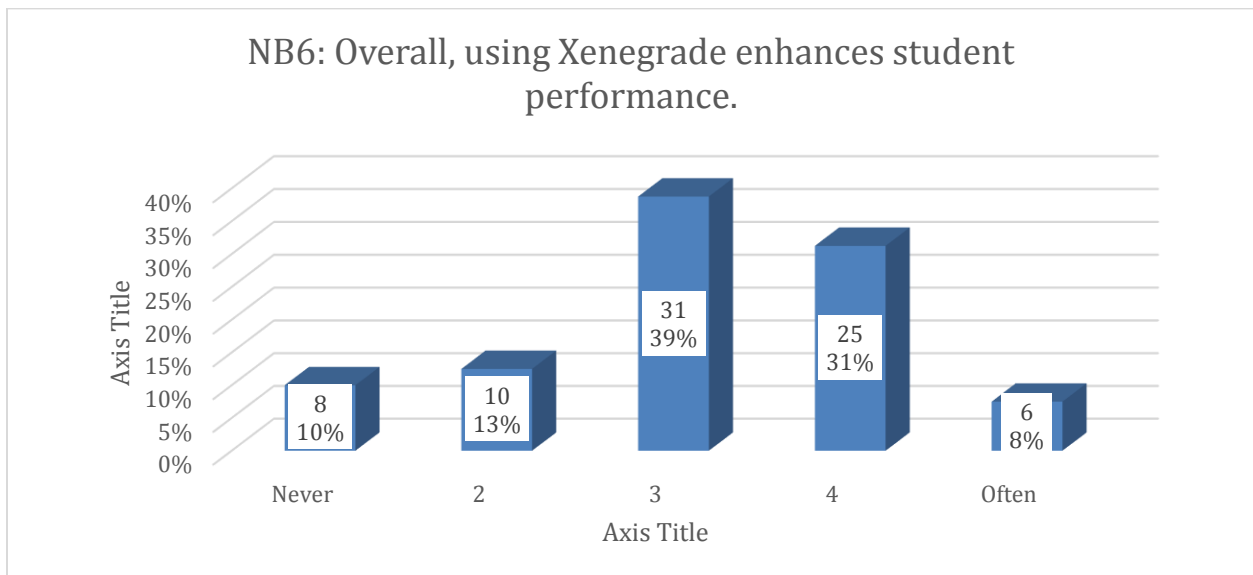
Most students 39%, were impartial to whether Xenegrade System enhances student performance, 31% stated that they agreed and 8% stated that they strongly agreed that the system does enhances student performance.

Overall Efficiency of Net Benefits
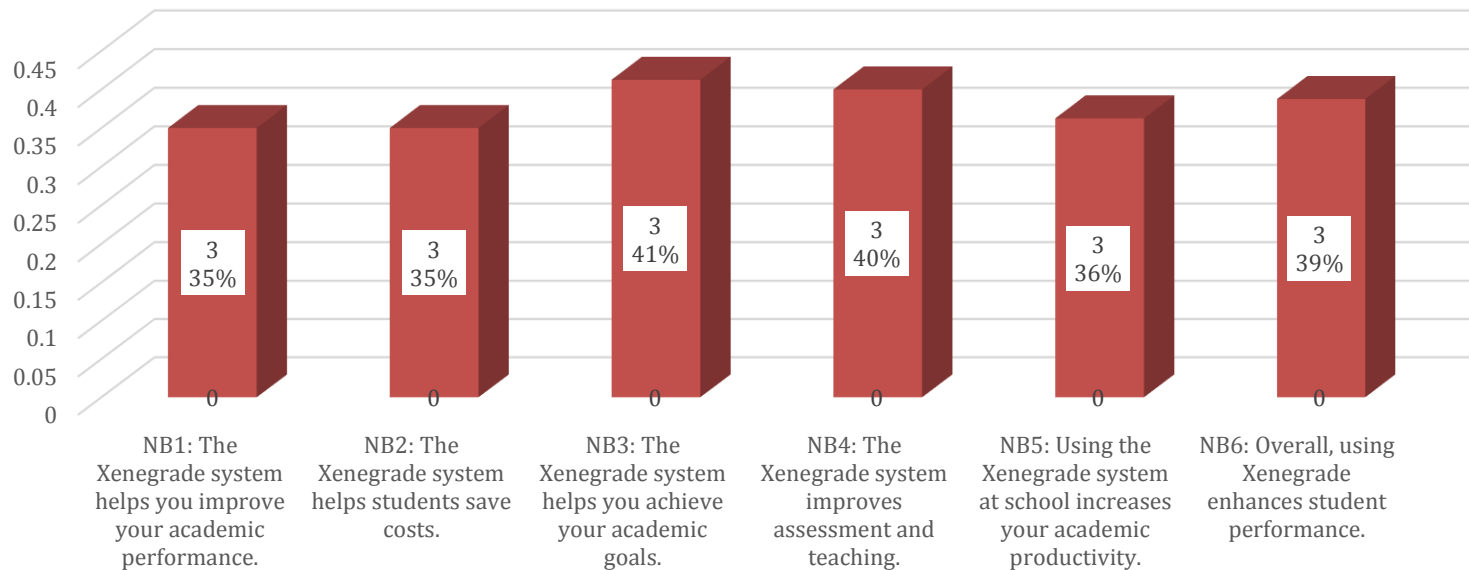
The overall efficiency of the perceived net benefits was determined by calculating the average obtained from the maximum grade from each question. For NB1 the maximum response when asked if the System improved their academic performance, 35% students stated that they are neutral-grade3. For NB2 (35%) was grade 3; NB3 (41%), was grade 3; NB4 (40%), was grade 3; NB5 (36%), grade 3 and NB6 (39%) was grade 3. The average of 3, 3, 3, 3, 3, 3, is 3. This shows that students are not aware of the benefits provided by the Xenegrade System.

The Overall Efficiency of the Xenegrade System
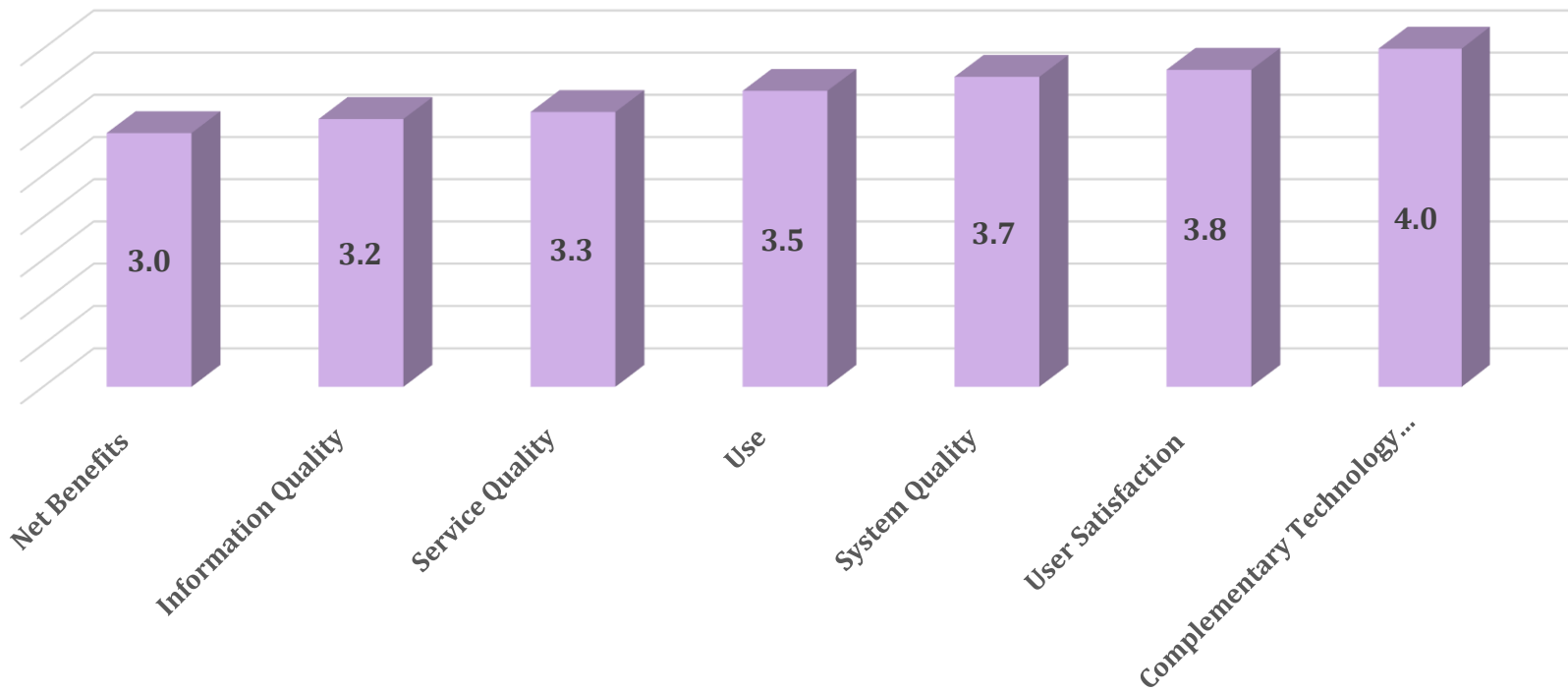
The overall efficiency of the Xenegrade System was determined by finding the average grade of the maximum responses for each category being Net Benefits, Information Quality, Service Quality, Use, User Satisfaction, System Quality and Complementary Technology Quality. The categories are sorted by lowest average grade obtained to highest average grade obtained for each category. Net benefits scored a grade of 3, which shows that students unaware of the benefits provided by the Xenegrade System. Information Quality scored a grade of 3.2 that shows that students are not fully aware of the information provided by the Xenegrade System. The Service Quality scored a grade of 3.3, which shows that students are not aware of the services offered by the support staff. The Use scored a grade of 3.5, which reflects that students are not familiar with how often they access the system and how dependent they are. It reflects the knowledge that is required to utilize the system. The System Quality scored a grade of 3.7, which shows that the system

is easy to use, that the system is user friendly and that the system provides interactive features between the users and the system. The User Satisfaction scored a grade of 3.8 which shows that the system met the expectations of the students and that they are satisfied with the overall use of the system. The Complementary Technology Quality scored a grade of 4.0, which was the highest. This shows that the devices and the internet connect used to access the system is reliable and efficient.

Limitations of study

The limitations presented from this research included the information gathered from the sample size of respondents who participated. The sample size is not a true representation of the student community at the University of Belize. Majority of the students who participated were from the Faculty of Management and Social Sciences (50 students), Faculty of Education and Arts (14 students), Faculty of Science and Technology (10 students) and Faculty of Nursing, Allied Health and Social Work (6 students). Furthermore, majority of the students were in their 1st and 2nd year who may not be knowledgeable of the system, or aware of how the system was before the Xenegrade System was introduced. .

Another limitation was the duration of the research. Time was limited to make any alteration to the research if needed. Xenegrade System has various services that is offered to students, registration system, viewing of invoices and accessing of reports. These areas could have been evaluated separately within the questionnaire to see which areas are the most difficult to use and which is the easiest.

The willingness of the students to participate was also a limitation.

Conclusion

The objective of the research was to evaluate the success of the Xenegrade System at the University of Belize, Belmopan Campus. The success was determined by distributing 100 online questionnaires to students enrolled at the University of Belize, Belmopan Campus via WhatsApp and email. From the 100 links distributed, 80 students participated.

The overall efficiency of Information Quality was grade 3.2 out of 5 (neutral or impartial) which states that students are not mindful of the information Xenegrade offer. Majority of the responses were neutral when asked about the information Xenegrade provides, the timeliness in which Xenegrade provides the information, the relevance of the information provided, if the information is sufficient, comprehensiveness of the information and if the information is up to date.

The overall efficiency of the System quality scored 3.7 out of 5. Students responded positively when asked if the system is easy to understand, the user-friendliness of the system and the interactive features of the system.

Students responded positively when asked about the Complementary Technology Quality, it scored grade 4 out of 5. From the responses, it was gathered that there were no issues with the devices or with the internet connection used to access the Xenegrade System.

Service Quality scored grade 3.3 out of 5 when evaluating the support received from technician staff. It was evaluated whether the support staff kept the information up to date, if the staff was sincere when providing assistance, if answers were provided in a timely manner and whether the staff explained exactly what is expected to do.

User satisfaction scored grade 3.8 out of 5 when evaluating the knowledge of users, whether there is a positive attitude towards Xenegrade, if they think that Xenegrade is utilized often and whether users are satisfied.

The use of the system scored grade 3.5 out of 5 which evaluates the frequency that the student access the Xenegrade System, if they depend on the System, if they were able to complete tasks when they access without assistance and if they possess the knowledge to use the Xenegrade System.

Net benefits of using the Xenegrade scored grade 3 out of 5 overall. Xenegrade reduces cost by preventing students from having to travel to register for courses and to obtain account balance since these services are offered through the Xenegrade System. This goes to show that students are unaware of all the benefits that the Xenegrade System offers.

The overall success of the Xenegrade System ranked grade 3.5 out of 5. This is a result of the age and year of the participants. Majority of the students were under 25 years of age and within their 1st or 2nd year. Students who started the University of Belize after 2010 when the system was introduced are not well versed on the the benefits that the System provides. Recently enrolled students are unfamiliar with the information generated by the system and may be unaware of how the system was before the Xenegrade system was introduced so they cannot answer to compare the prior system.

Recommendations

1. Promote an insight on the Xenegrade System in order for new entrants to be knowledgeable when using the Xenegrade System.
2. Educate new students on the importance and benefits of the Xenegrade System.
3. Encourage the support technician staff to be more inclined in assisting students concerning any issue of the Xenegrade system.
4. A broader research can be done within all UB campuses, so that accurate data can be gathered.

Future Research

This research can be further developed by upcoming researchers, and can consider the following:

1. The use of the Records Office to send out emails to new and returning students to balance out the year in which the students are in. This will show a variation in responses when comparing knowledge of new students to students who have nearly completed their degree in regards to the Xenegrade System.
2. Have a section in the questionnaire that can measure areas of the Xenegrade System to determine which areas are efficient and which are not.
3. Researcher would need more time and may want to focus on all of UB campuses to gather sufficient information. This can be further excellence in exposing the Xenegrade System to student who are not aware of it.

References

Axiom Resources. (2019). *Axiom partners with Xenegrade to support non-credit programs.* Retrieved from February 17th, 2019: https://www.axiomhighered.com/articles/axiom-partners-xenegrade-support-non-credit-programs/

CIO Review. (2019). *Student Registration Data In Integrated Cloud-Based System:*Retrieved February 12, 2019, from Xenegrade: https://www.cioreview.com/company-cms/xenegrade-student-registration-data-in-integrated-cloud-based-system-cid-418.html

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A ten-Year Update. *Journal of Management Information Systems, 9*, 9-930. Retrieved March 15, 2019, from https://www.jstor.org/stable/40398604?seq=1#page_scan_tab_contents

(Scooper and Schindler 1997). (n.d). *Research Design and Methodology.* Retrieved from: https://www.google.com/http://shodhganga.inflibnet.ac.in/bitstream

Shona McCombes. (2019). *How to write a methodology:* Retrieved from: https://www.scribbr.com/dissertation/methodology/

Westby, E. H., Zaldana, N., Reyes, R., & Dixon, S. (2017). *Open Journal Systems Public Knowledge Project.* Retrieved February 12, 2019, from Success of a Registration Information System: The Case of the University of Belize: http://ojs.ub.edu.bz/index.php/PRNDC/article/view/27

Wikipedia. (2019). *Information System Success Model.* Retrieved from: https://en.wikipedia.org/wiki/Information_systems_success_model

Xenegrade Support Center. (n.d). *Knowledgebase: Xendirect Overview.* Retrieved February 17, 2019: https://xenegrade.kayako.com/Knowledgebase/List/Index/1/xendirect-overview

(Zain, Atan, and Idrus 2004) Organisation for Economic Cooperation and Development. The knowledge-based econohttps://xenegrade.kayako.com/Knowledgebase/List/Index/1/xendirect-overview

Appendix

"Success of Xenegrade"

Purpose

This research is required for the CMPS3012 MIS course at University of Belize University. This questionnaire asks for information about yourself and how often you use the Learning Management System Xenegrade. The data gathered will be analyzed to determine the success of Xenegrade at our University.

Kindly answer each question based on your use of Xenegrade. Your individual responses to the questionnaire will be strictly confidential and used solely for this research.

Instructions

This is a survey, not a test; there are no right or wrong answers. Kindly tick the boxes to mark your answers.

1. Background Information	Answers:
Kindly indicate your gender:	Male Female
Kindly indicate your age:	<25 25-35 36-45 46-55 >55
Kindly indicate what year you are currently in at University of Belize:	1st Year 2nd Year 3rd Year 4th Year
Kindly indicate your working experience:	<5 5-10 11-15 >15
Kindly indicate Faculty	FMSS FNAHSW FEA FST

Indicate your agreement with each statement by rating it from (1) strongly disagree to (5) strongly agree.

2. Information Quality	Disagree -------------------- Agree

IQ1: The Xenegrade system provides information that is exactly what you need	1 2 3 4 5
IQ2: The Xenegrade system provides information you need at the right time	1 2 3 4 5
IQ3: The Xenegrade system provides information that is relevant to your class	1 2 3 4 5
IQ4: The Xenegrade system provides sufficient information	1 2 3 4 5
IQ5: The Xenegrade system provides information that is easy to understand	1 2 3 4 5
IQ6: The Xenegrade system provides up-to-date information	1 2 3 4 5
IQ7: The Xenegrade system provides sufficient information	1 2 3 4 5
3. System Quality	**Disagree ---------------------Agree**
SQ1: The Xenegrade system is easy to use	1 2 3 4 5
SQ2: The Xenegrade system is user-friendly	1 2 3 4 5
SQ3: The Xenegrade system provides interactive features between users and the system	1 2 3 4 5

4. Complementary Technology Quality	**Disagree ---------------------Agree**

CTQ1: The computer (desktop, laptop, mobile device) you normally use to access Xenegrade is adequate	1 2 3 4 5
CTQ2: The computer (desktop, laptop, mobile device) you normally use to access Xenegrade has a fast and reliable internet connection	1 2 3 4 5

5. Service Quality	**Disagree --------------------- Agree**
SV1: The support staff keep the Xenegrade system softwa up to date	1 2 3 4 5
SV2: When users have a problem the Xenegrade syste support staff show a sincere interest in solving it	1 2 3 4 5
SV3: The Xenegrade system support staff respond promp when users have a problem	1 2 3 4 5
SV4: The Xenegrade system support staff tell users exac when services will be performed	1 2 3 4 5

6. User Satisfaction	**Disagree --------------------- Agree**

US1: Most of the users have a positive attitude of Xenegrade the Xenegrade system function.	1 2 3 4 5
US2: You think that the utility of the Xenegrade system high.	1 2 3 4 5
US3: The Xenegrade system has met your expectations.	1 2 3 4 5
US4: You are satisfied with the Xenegrade system.	1 2 3 4 5
7. Use	**Never ---------------------- Often**
U1: Your frequency of use of the Xenegrade system is high	1 2 3 4 5
U2: You depend upon the Xenegrade system	1 2 3 4 5
U3: You were able to complete a task using Xenegrade even when there was no one around to tell you what to do	1 2 3 4 5
U4: You have the knowledge necessary to use the Xenegrade system	1 2 3 4 5
8. Perceived Net Benefits	**Never ---------------------- Often**
NB1: The Xenegrade system helps you improve your academic performance	1 2 3 4 5
NB2: The Xenegrade system helps students save costs	1 2 3 4 5

NB3: The Xenegrade system helps you achieve your academic goals	1 2 3 4 5
NB4: Using the Xenegrade system improves assessment and teaching	1 2 3 4 5
NB5: Using the Xenegrade system at school increases your academic productivity	1 2 3 4 5
NB6: Overall, using Xenegrade enhances student performance	1 2 3 4 5

Kindly return this survey to the person who gave you the form.

Thank you for your participation.