5.1 Quantitative Measure

The first objective was to identify the teamwork competency after online discussion forums and virtual meetings in students teamwork implemented. A descriptive analysis was performed on data collected using pre- and post-Teamwork surveys in order to measure the skills they gained after engaging in the e-service learning while working together with their team member. The students are from various faculties and schools with a different level of academic background. Therefore some students enter the course with little knowledge of computer networks with cabling and others may have relatively strong expertise. The researcher utilized The Teamwork Scale for Youth survey instrument (Lower, L. et al, 2015) comprise of eight questions that measure students perceptions of their teamwork competency. The students answered the five point Likert scale questions ranging from 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree) and 5 (Strongly Agree). The researcher distributes the survey questionnaire in the classroom. The data were collected from 30 students (18 male and 12 female). The percentage score for pre- and post-test score were compared for each item. The results of the pre-test and post-test scores are listed in Table 2.

Table 2. Percentage Scores for subscales pre-test and post-test

Item	Item Statement	Pre-test / Post-test N=30	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Q1	I feel confident in my ability to work in a team.	Pre-test	0	17%	53%	27%	3%
		Post-test	0	0	0	77%	23%
Q2	I know how to team my team members feedback that will not hurt their feelings.	Pre-test	0	0	83%	10%	7%
		Post-test	0	0	10%	57%	33%
Q3	I ask others for feedback.	Pre-test	0	0	83%	14%	3%
		Post-test	0	0	20%	40%	40%
Q4	I make an effort to include other members of my team.	Pre-test	0	0	77%	20%	3%
		Post-test	0	0	8%	45%	47%
Q5	I value the contributions of my team members.	Pre-test	0	0	77%	17%	6%
		Post-test	0	0	21%	42%	37%
Q6	I treat my team members as equal members of the team.	Pre-test	0	0	84%	13%	3%
		Post-test	0	0	12%	45%	43%
Q7	I am good at communicating with my team members.	Pre-test	0	0	84%	10%	6%
		Post-test	0	0	20%	27%	53%
Q8	I feel confident in my ability to be a leader.	Pre-test	0	0	73%	21%	6%
		Post-test	0	0	30%	40%	30%

For item question number 1 shows the highest difference from pre-test and post-test. The result shows 100% agree have increased their teamwork competency in their ability to work in a team. Figure 2 shows the average distribution survey instrument of item number 1. The results indicate individual participant of online discussion forum and virtual meetings after e-service learning instruction have an increase of students' teamwork competency.
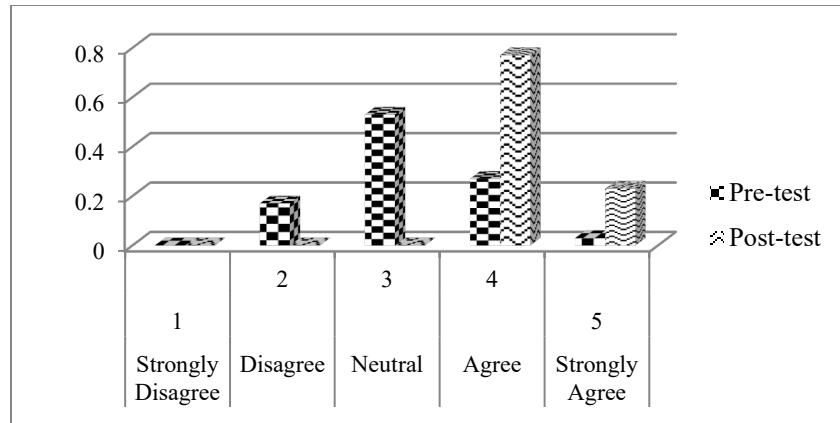
Figure 2. Average distribution survey instrument of item number 1

The students graduate attribute competency shown in Table 3 was based on CCSL students graduate attribute scoring rubrics. The instructor assessed five scoring rubrics including SC1, TW1, TW2, GC4 and AD2. From the results shows 8 students achieve A+, 12 students achieve A, 4 students achieve A-, 3 students achieve B+, 2 students achieve B, and 1 students achieve B-.

Table 3. Students Graduate Attribute competency

Grade	Total n = 30	
A+	8	**Scholarship 1 (SC1):** Ability to seek and manage relevant information from a variety of sources.
A	12	**Teamwork 1 (TW1):** Ability to establish rapport, interact and work effectively with others to accomplish common objectives.
A-	4	
B+	3	**Teamwork 2 (TW2):** Ability to lead and influence team members to complete given tasks.
B	2	**Global Citizen 4 (GC4):** Ability to act professionally and responsibly in carrying out duties.
B-	1	
Mean = 76		**Adaptability 2 (AD2):** Ability to recognize potential for improvement.

The average score of 76 indicate there are a need for improvement in the design of course assessments and instructional strategies in e-service learning platform. By giving students exposure for student work experience and implementing e-service learning systematically may help students prepare for further academic and non-academic work.

5.2 Qualitative Measure

The second objective was to identify the elements of e-service learning that effect students' teamwork. To answer research question number 2, the investigator asked students to comment on various aspects of the e-service learning platform and the teamwork experiences. After the final phase of service learning, students were asked to complete a simple online feedback to the following questions:

1. What aspect(s) did you like most about the service learning project through the online platform?
2. What aspect(s) did you not like about this service learning project through the online platform?

The first questions derived from students' written comments have been overwhelming. Here are six examples derived from student 3, student 5, student 1, student 7, student 20 and student 18 (S03, S05, S01, S07, S20 and S18):

1. "In my opinion, it is really beneficial to us and important for us to implement this kind of service learning project as it increases our knowledge and skills on self-development." (S03)

2. "It gives me a new experience about community services that I never had before." (S05)

3. "I think it is very useful and interesting as we get to help the community but also learn new things for ourselves. We have developed soft skills and technical skills throughout the community service learning program. It is always nice to experience new things." (S01)

4. "I think it is good because student can learn by action. The student can apply what been learned in terms of computer network knowledge and soft skills for future job." (S07)

5. "In my opinion, service learning for this community service is interesting to know the world of Information Communication Technology and the best part is we work together as a team to run this project as a community member." (S20)

6. "In my opinion, service learning implementation can give more benefit for student because it can give more knowledge, skill and student get experience how to be a volunteer to another place outside classroom to share their skill and knowledge." (S18)

The second question derived from student's written comments was developed into a number of emerging themes. After coding the data, we used Excel to begin categorizing those themes which enabled us to begin to see the patterns. Three themes emerged from this study indicating the following element as affecting student teamwork in e-service learning engagement: online collaborative skills, desire to cooperate and recognition. Here we present 6 written comments examples derived from student 17, student 23, student 19, student 13, student 4 and student 9 (S17, S23, S19, S13, S04 and S09):

(a) Online Collaborative Skills

Common responses included:
1. "We had one group member who rarely discusses through virtual meetings and forum discussion. When we tried to assign one of our group member with delegate task it was halfway done. So someone else had to complete them making it hard and late for us to complete the task." (S17)

2. "It was difficult to get cooperation from others as to complete the task requires teamwork." (S23)

(b) Desire to Cooperate

Common responses included:

1. "Every time when I asked for the cooperation of my team mates, he/she would say was busy with their other subject." (S19)

2. "When team mates did not response in the group discussion in whatsapp or forum discussion I would have to private message them to get response." (S13)

(c) Recognition

Common responses included:
1. "When there was teamwork concerning in the project service learning. It's not fair that I had to do most of the job while others sit around. Sometimes I feel the overload work I did was not seen by the instructors." (S04)

2. "I feel disappointed some of my team mates did not co-operate with me and did not get penalized for it." (S09)

The results of the current study indicate that:

a) using statistical pre-test and post-test, it appears that students teamwork competency increased after the

       service learning projects was implemented;

b) the average score of students graduate attribute competency has led to a need to create a meaningful e-service learning environment where student work is valued and appreciated;

c) the open-ended questions administered to analyze students satisfaction of e-service learning shows they understand and appreciate the connection between hands-on/application of service learning project outside classroom to achieve the knowledge and self-development;

d) the emerging themes derived from the open ended questions to assist course developer and content developer to better understand of students' challenges in engaging the e-service learning platform. The main elements that make activities engaging in e-service learning are online collaborative skills, desire to co-operate and recognition. This emerging theme derived by this study raise an interesting point to endorse the practice of motivation on the students graduate attribute development to enhance the chances of graduates need to succeed in the workforce.

6. Conclusion

The Hybrid III e-Service Learning (blended) approach has shown that it is realistic to complete a Network Cabling Infrastructure and Wifi project - 'from concept to innovation of product', that both excites the students and enhances the online learning covered in service learning, within 12 weeks. E-service learning in the inclusion of online discussion forums and virtual meetings are an effective method of service learning when executed successfully can provide students with a valuable and enjoyable learning experience that develops students graduate attributes competency. Through this study and previous research it has been demonstrated that the incorporation of e-service learning have the potential to have a positive effect on the level of student learning engagement affecting both the students' understanding and knowledge through teamwork.

The students particularly liked the community service aspects of this learning process. Since a number of the students from this study wrote positive comments about the community service and their experiences, the investigators believe that this may have implied that the manner in which students civic engagement were a success. The use of the basic component of service learning (academic content, community experience and reflection) and the five phase of service learning throughout the week was particularly successful in guiding and providing feedback so that the students applied the knowledge and hands-on practice gained from the e-service learning. The e-service learning in aspects of the students graduate attribute competency were particularly successful, despite the challenges occur in online collaboration and team member co-operation, based on their applied knowledge and skills students were able to document the proposal and final report.

A study of extrinsic and intrinsic motivation used to form the teams could lead to interesting findings. Individuals who are motivated intrinsically towards accomplishment are accustomed to deriving teamwork competency and satisfaction from these forms of e-service learning. Although intrinsic motives can be more effective compare with extrinsic rewards; both extrinsic and intrinsic motives play an important role in determining teamwork competency and satisfaction to the learner. This is to develop learners both have self-motivated and self-directed since the activity itself is interesting and aiming for the service learning outcome is important.

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