2017-2018 General Education/Institutional Learning Outcomes

Teamwork Assessment

Learning Outcomes Council

Palomar College

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Section I: Introduction

Institutional Learning Outcomes represent the overall set of abilities and qualities a student graduating from Palomar should possess. These outcomes were adopted from the Association of American Colleges and Universities LEAP framework and modified by Palomar College faculty, administrators and staff to reflect the College's particular set of values. Palomar College GE/ILOs . In academic year 2017-2018, in accordance with Student Learning Outcome 2: Intellectual and Practical Skills, we focused on assessing Teamwork at Palomar College. We sought to understand the extent to which instructors and students utilize teamwork in the classroom and to explore the benefits and challenges involved in teamwork collaboration, both from the perspectives of students and faculty. We used multiple measures, both quantitative and qualitative to assess this learning outcome. More specifically, we began by gathering faculty from various disciplines across the Palomar campus to discuss the dimensions of teamwork and possible ways to assess it on our campus. This report focuses on our assessment of teamwork from a variety of sources and methodologies. Our approach includes an initial exploratory meeting with multi-disciplinary faculty, followed by the development of two survey instruments, one for students and one for faculty. In addition, we followed up our survey data collection by conducting a series of focus groups with faculty who use teamwork in their classes. These three methods of data collection (student survey, faculty survey and focus groups) allowed us to better understand how teamwork is implemented in

classrooms at Palomar. This report describes and summarizes the methods used to assess the teamwork GE/ILO learning outcome and also analyzes the data collected via these methods. We discuss the results of our research and summarize a set of recommendations for future teaching and learning about teamwork on our campus.

Faculty Discussions on Dimensions of Teamwork

In January of 2018, we gathered a group of 6 faculty members from Behavioral Sciences, Library, Performing Arts, Media Studies and Kinesiology to discuss the dimensions and challenges in teaching teamwork in a variety of classroom settings. This exploratory phase of our assessment of teamwork included wide-ranging discussion on the following topics: definitions of teamwork; ways to assess teamwork; an examination and review of teamwork rubrics and an overall plan of assessment for Palomar.

We began by defining teamwork and examining several Teamwork rubrics used at other colleges and universities. We discussed various definitions of teamwork, and how and if teamwork strategies are taught before a teamwork activity is assigned or whether instructors assumed that students would already possess teamwork skills before coming to the classroom. As a result of these discussions, faculty developed the following dimensions of teamwork to guide us in developing an assessment plan:

Teamwork Dimensions

1. Group formation - how do instructors assign students to teams? For example are they self-selected, randomized, other means of creating teams.
2. Contributions of team members - attend meetings, prepare and come prepared for meetings, roles clearly defined, follow through on completion of activities in team
3. Collaboration, building on the ideas of others, creative input, facilitate contributions, value teammates.

4. Motivation- accountability, responsibility, relevance to course, personal relevance
5. Commitment- ownership, investment
6. Interpersonal communication - listening skills, questioning, discussing, being respectful
7. Work habits- time management, communication, focusing on task, preparedness
8. Conflict management-problem solving, emotional intelligence
9. Research and information sharing

After reviewing various teamwork rubrics and subsequent to a lengthy discussion on the various dimensions of teamwork, we formulated a general plan for the GE/ILO assessment, based on those dimensions. The work group created a plan for students to self-assess their performance on a teamwork related project in the Spring 2018 semester and also for faculty to assess their own participation and perceptions about teamwork in their classes. Institutional Research and Planning implemented and collected the data for the student survey. The faculty survey was created online in Survey Monkey. Finally, three faculty focus groups were planned to gather qualitative data and to explore the ways in which faculty use teamwork in their classrooms.

The next section of this report summarizes each method of data collection followed by a section that details the results. The last section will include a discussion and recommendations for improving and implementing teamwork teaching and learning in the classroom at Palomar College.

Section II: Methods of Data Collection

Student Survey

The student survey was developed as a result of extensive research looking closely at how other colleges and universities assessed teamwork. We used a document from the Schreyer

Institute for Teaching Excellence from Penn State University as a starting point for developing our own survey (http://www.schreyerinstitute.psu.edu/pdf/team_peer_evaluation_examples.pdf). After consulting with various faculty with expertise in survey construction, we finalized a survey with two sections. A copy of the this survey can be found in Appendix B. The first section of our student survey was comprised of 9 Likert scale questions asking students to reflect on the overall experience of a specific teamwork activity in their class. These scaled questions tapped into many of the teamwork dimensions developed by the faculty workgroup. For example, we asked students to assess the effectiveness, participation, task identification, problem solving, time management, organization, responsibility-sharing and creativity of their team work project. We also included two open ended questions that asked students about practical changes their team might make to improve learning along with an open-ended question that asked students to reflect in an overall way on their team work experience. The second part of the student survey included another short series of Likert scaled questions that asked students to evaluate their own participation in their teamwork project. The self-assessment portion of the student survey asked students the extent to which they, themselves contributed to the team, how well they communicated, the extent to which they accepted criticism and how well they felt they did as a team member. The self-assessment portion included one open ended question asking for comments on these self-evaluation questions. Once the survey instrument was completed, we turned to Institutional Research and Planning to implement the survey and collect the data. The student survey was distributed online to a random selection of courses that were mapped to teamwork in the GE/ILO section of Trac Dat, the system Palomar uses to report student learning outcome data. The methodology of selecting student respondents is included in the student survey results report in the results section.

Faculty Survey

In addition to student assessments of teamwork, we also developed a short survey to assess teamwork from the perspective of faculty. The faculty survey also drew from the original set of teamwork dimensions developed in the faculty workgroup. We wanted to understand the challenges faculty faced in implementing teamwork activities in their classrooms. This survey asked faculty to report on how they divided their classes into teams, the extent to which students met faculty expectations, whether faculty taught collaboration skills in the classroom. Additionally, we asked faculty to reflect in open ended questions on the extent to which they used technology in their teaching, if they felt institutionally supported in their efforts at teaching teamwork. The faculty survey included open ended questions that allowed faculty to provide us with details on why they included team work activities and to comment holistically on their overall experiences with teaching and using teamwork activities in the classroom.

Faculty Focus Groups

The third phase of our research was a series of three focus groups composed of faculty from a variety of disciplines who met to discuss teaching teamwork in the classroom. From our initial selection of classes invited to participate in this study, we asked faculty to meet for approximately one hour for in-depth discussions about teaching teamwork. More specifically, we asked faculty to reflect on why they felt teamwork was an important component of learning, how they assessed teamwork, whether they had training in teaching teamwork. We also explored the extent to which they taught teamwork skills in the classroom and to talk in more depth about the challenges they faced in teaching teamwork. Several themes emerged from these focus group discussions and we discuss those in our results section below.

Section III Quantitative Results:

In this section, we analyze results from all three data collection strategies described above to assess teamwork.

Student Survey Results:

The student survey questionnaire included items regarding team activity, participation of the team, and self-evaluation of the respondent's participation. Data collection proceeded from May 7 to May 26, 2018, with 313 students completing the questionnaire. The survey data were linked to the college's data to provide demographic information for the student participants.

Demographics:

Figures 1 through 4, and Table 1, summarize the demographic characteristics of the survey respondents. Students ranged in age from 16 to 58 years of age; the average age was 27 (SD = 9,957) (see Table 1). The gender composition in Figure 1 shows a disproportionate representation of females (73.9%) versus males (26.1) However, this is likely because the courses that agreed to participate had more female than male students. When the effect of gender on teamwork evaluations was examined, there was no effect and so it was not necessary to weight the gender variable.

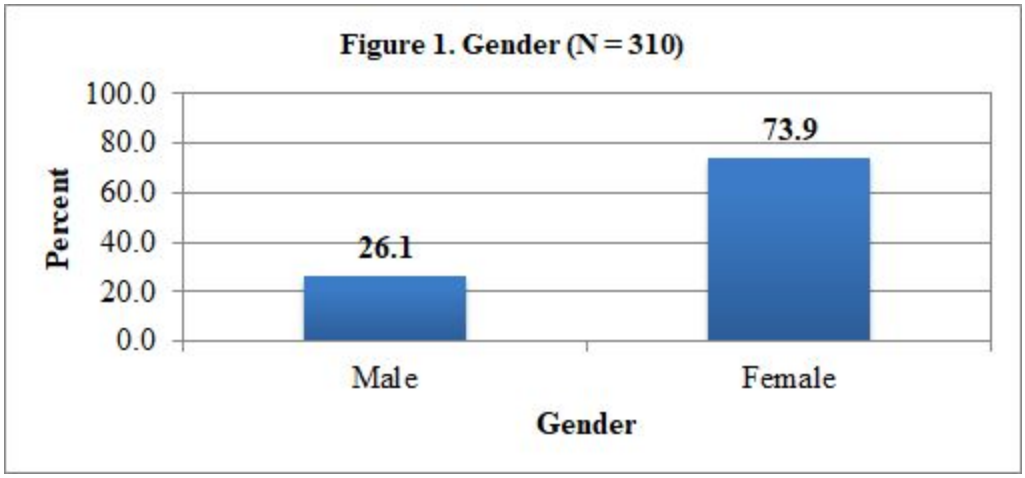
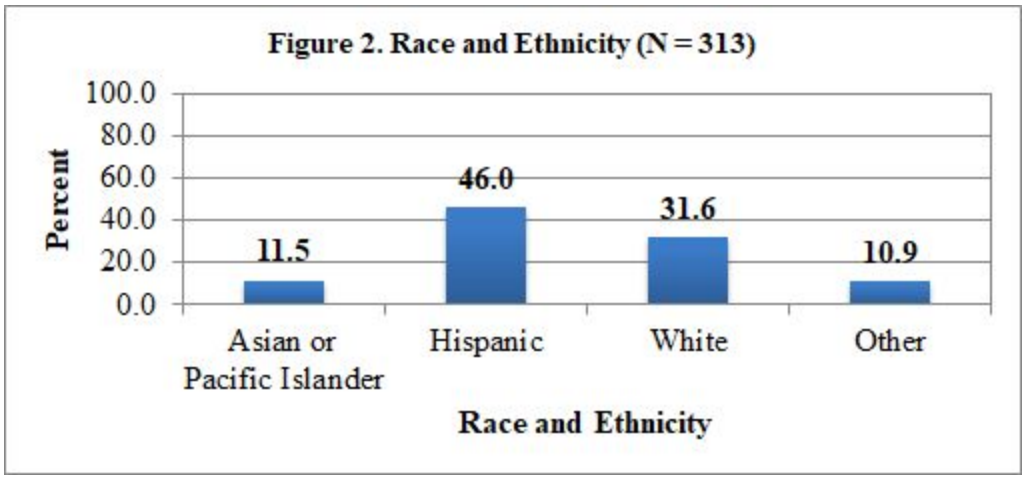


Figure 2 shows the ethnic/racial distribution of respondents and consisted of 46% Hispanic, 31.6% White, 11.5% Asian/Pacific Islander and 10.9% as “other” ethnicity. In terms of class load, Figure 3 indicates that the majority (58%) of participants attended school during the day, 35.3% reported attending both day and evening classes and only 6.7% attended evening only classes. Figure 4 indicates that 53.8% of student respondents were part-time and 46.2% reported full time status. In terms of class load 53.8% were part time and 46.2% were full time students.



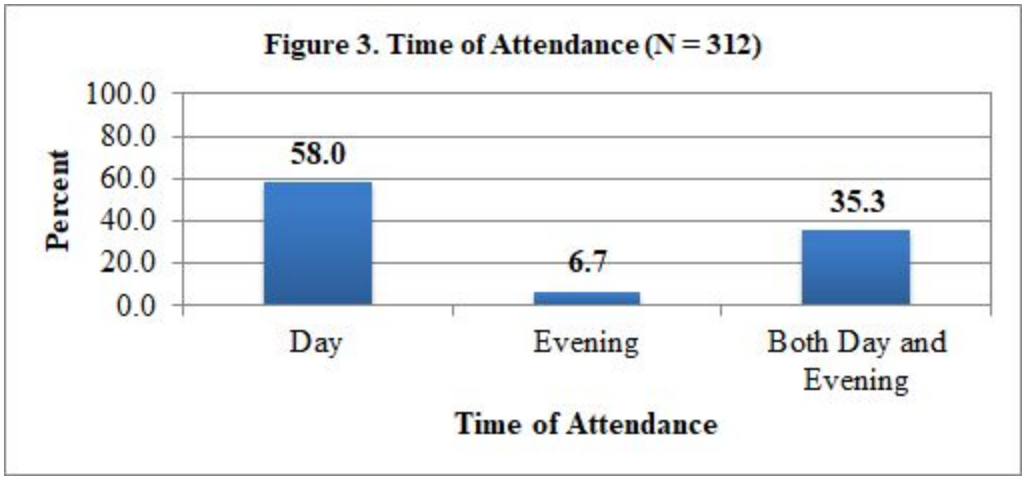
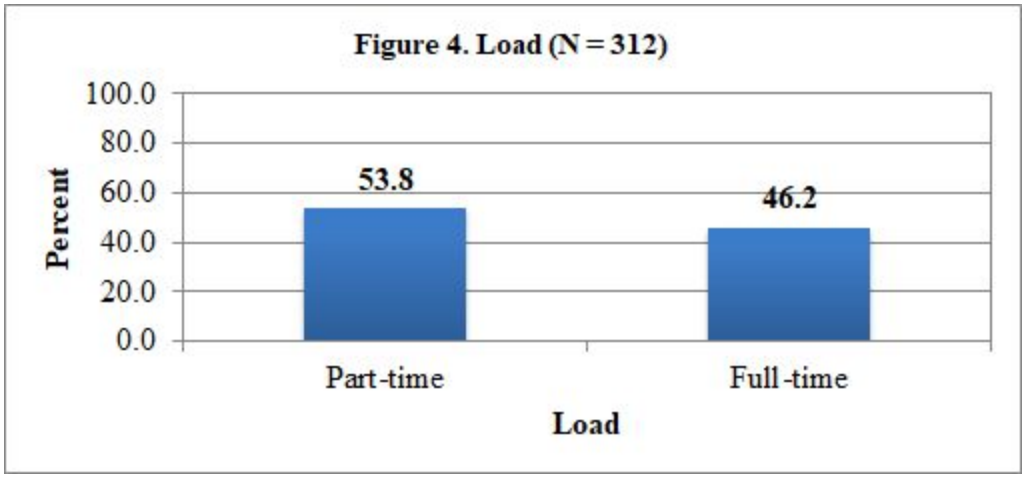


Table 1. Age Statistics	
N	312
Mean	27.0
Median	23.0



Team Evaluation

A number of questions asked respondents to evaluate the teamwork performance of their entire team. Participants were asked to give an overall evaluation of the effectiveness of their team. In addition, respondents were asked 10 questions that evaluated their team along more specific

dimensions. These ratings were measured on a seven-point scale, with 1 meaning “not at all,” and 7 meaning “completely.”

For students who responded to more than half of these 11 team evaluation items, their responses were averaged into an aggregate team evaluation scale with a possible range of 1 to 7. This scale had a reliability of 0.96. Table 2 shows the mean and median scores for the respondents on this team evaluation scale. The table reveals that the aggregate teamwork scores were quite high (M=.5,44, N=312)

Table 2. Aggregate Teamwork Evaluation of Team

N	312
Mean	5.44
Median	5.73

Figures 5 through 8 indicate that evaluations of teamwork were relatively high and did not vary much by the demographic characteristics of the students. Gender, race/ethnicity, time of attendance and load show little differences in the evaluation of team rankings. Figure 7 shows a slight difference between the evaluations of students who attend day classes () and those who attend night classes but this difference is not significant. Students consistently rank their evaluations of their teams on the scaled questions as high, overall and the ???

Figure 5. Overall Teamwork Evaluation of Team by Gender (N = 309)

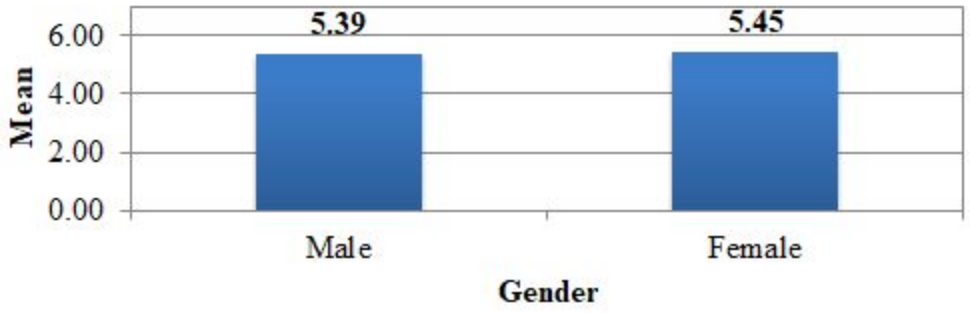


Figure 6. Overall Teamwork Evaluation of Team by Race and Ethnicity (N = 312)

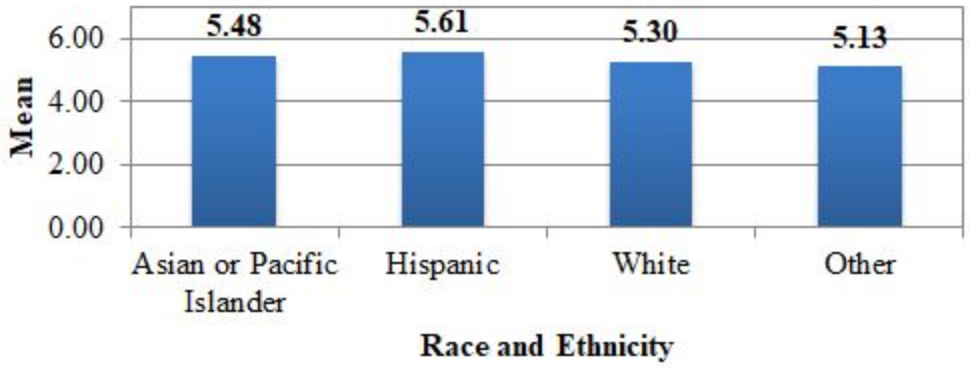
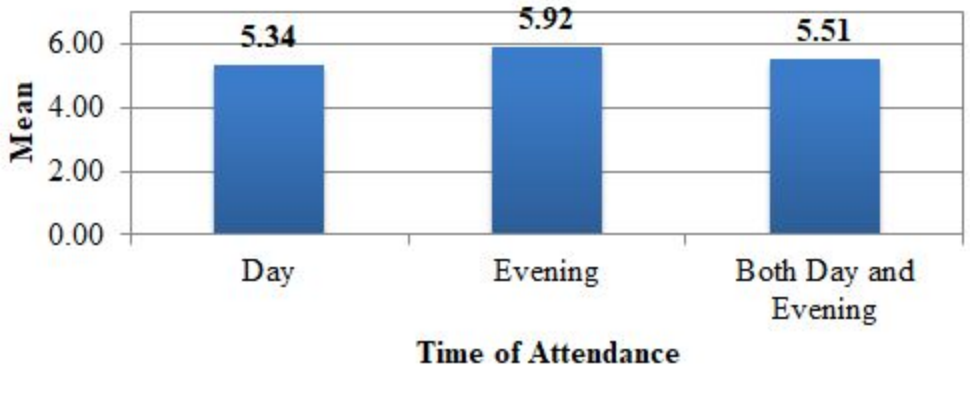
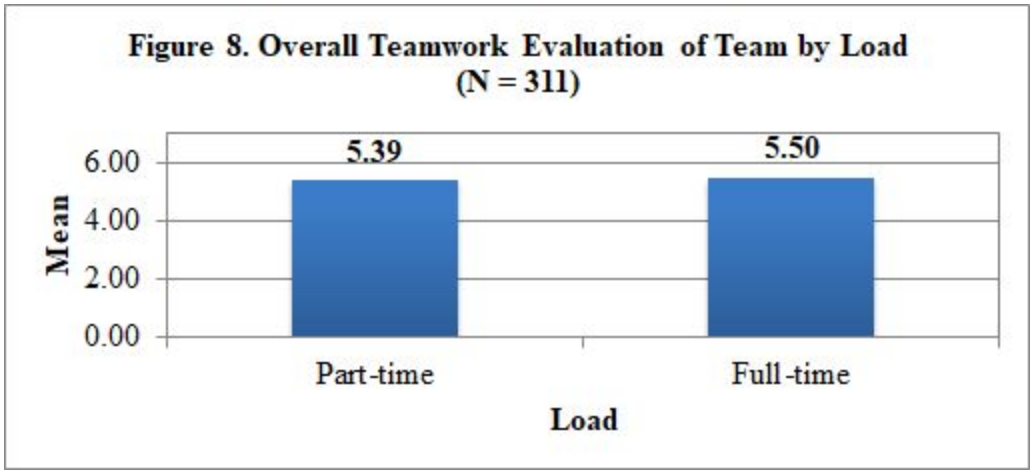
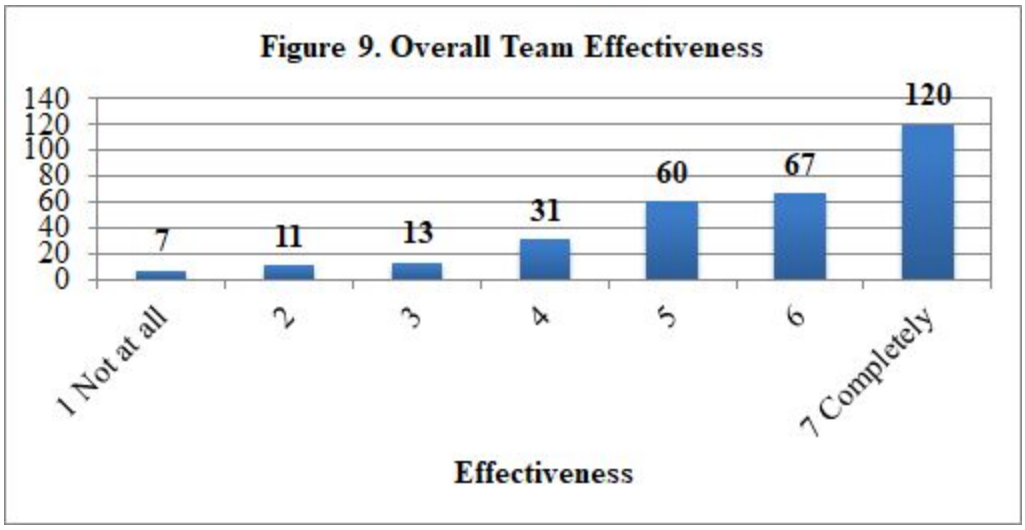


Figure 7. Overall Teamwork Evaluation of Team by Time of Attendance (N = 311)





As noted, the team-evaluation scale was constructed using the overall rankings of teamwork effectiveness as well as several more specific dimensions. The distribution of the overall item is shown in Figure 9. This graph shows a clear negative skew to the distribution and supports the conclusion that most students rank the overall teamwork effective. In fact, nearly 80% of students (79.9) rank the overall team effectiveness as 5, 6 or 7 on the scale and nearly 40% of students (38.8) report that their team is completely effective. These characteristics (negative skew and high rankings) hold true for all of the teamwork-evaluation items.



Team Activity Items

The teamwork evaluation items contained two general types of ratings: teamwork activities and participation. The teamwork activities items are summarized in Table 4. Again, there is consistency in these rankings and no significant differences between the items in terms of ratings. Most students ranked their evaluations of activities high with the mean slightly lower than the median further bolstering the high ratings of student respondents.

Table 4. Team Activity Ratings

Teamwork Dimension	N	Mean	Median
Overall Team Effectiveness	309	5.6	6.0
Team Understanding of Requirements	311	5.8	6.0
Team Time Management	308	5.4	6.0
Team Organized Approach	308	5.6	6.0
Team Shared Responsibility	309	5.5	6.0
Team Interest in Planning	310	5.3	6.0
Team Creative Approach	307	5.6	6.0

Ratings for team participation are summarized in Table 5 and show that students evaluate their own participation highly.

Table 5. Participation Ratings			
Team Participation in ...	N	Mean	Median
Task Identification	305	5.3	6.0
Task Definition	307	5.2	6.0
Problem Identification	308	5.3	6.0
Working toward Solutions	306	5.4	6.0

Section IV Qualitative Results:

In the next section, we discuss the qualitative open ended questions and comments. Respondents were asked two open-ended questions regarding the evaluation of their team. They were asked what practical change their team could make to improve student learning. Their responses to this question are found in Appendix B. They were also asked if they had any other comments about team work experience in their class. These comments are found in Appendix C. The responses to these questions contained a few general themes: positive group experiences, inequitable contributions, time management, and communication. The open-ended comments tended to focus more on the negative than the responses to the other items summarized the previous tables. Though this may appear contradictory, it should be noted that open-ended questions tend to be utilized by a subset of respondent and, by their nature, invite critical comments. However, these comments provide a great deal of insight into the challenges students face in team work and also pinpoint the areas where teamwork learning can be improved.

In addition to the quantitatively scaled responses of perceptions of teamwork discussed above, students were asked to comment in an open-ended question about their teamwork experience. This allowed students to reflect and provide more in-depth details about their teamwork experience. Several interesting findings emerged from the qualitative portion of the student survey. The analysis of student comments revealed perceptions and attitudes about the teamwork experience that appeared to both illuminate and, in some cases, contradict the quantitative scaled responses.

Several themes emerged that coalesced around the teamwork dimensions initially discussed by the faculty workgroup. In particular, students provided both negative and positive evaluations of how they experienced collaboration, commitment, and communication. Below is an illustration of the extent to which students evaluated their experience as positive or negative along various dimensions of teamwork.

Qualitative student comments on teamwork

Commitment	Positive 11%	Negative 44%
Collaboration	Positive 80%	Negative 38%
Communication	Positive 9%	Negative 18%

Commitment

Many students made comments about their teammates commitment to the teamwork activities. Many felt that all students in the groups did equally commit and contribute to the project. One negative comment was, “Some team members aren’t willing to put in hard work to get things done and were just willing to put in the bare minimum which made other team members work harder.” However, other students commented on how their teammates were very committed to the project. One of the positive comments was, “My team was on task and completed everything on time. This is the most productive team I have had while attending Palomar.”

Collaboration

Some of the positive themes were that students were happy with how their teammates worked together. One student said, “The team that I worked in worked very well together and assisted each other when questions were asked, was an overall great team!” Another student commented, “My team has been amazing. We get along very well and have no problem working together.” A negative theme that emerged was that students did not think that their group members contributed equally. “It is challenging being in a group where half the people have a good work ethic and the other half does not.” In addition students felt like the quality of the work suffered because of some team members. “My group did not provide quality work. I ended up having to re-write all of their parts.”

Communication

Another common issue was the presence or lack of communication skills among their group members. Some students felt like communication wasn’t a problem, “It was amazing that

everyone was available to communicate and participate by answering questions and solving issues." While another student commented, "One person was bossy and acted superior." Language was also a communication barrier for some students, "It's been hard since we are three Spanish speakers and one Chinese, so even though we speak English, it is still hard for us to communicate what we truly want to say." In addition, students complained that they were not listened, "I was very disappointed with my team. I felt ignored throughout the time working on the assignment."

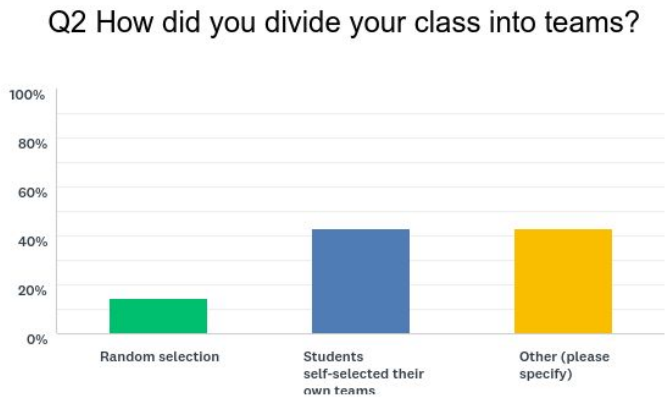
There were some other areas that emerged in the analysis. Another concern was the challenge of working on teams as part of online classes. One student commented, "Most people who take online classes, take them because they work full time or have busy schedules so they like the flexibility of online classes. It was impossible to get everyone in the group together." Another concern was how students were assigned to a group. "It would have been much better if we could have chosen teams." There were also some concerns about the lack of preparation students were given. "Everyone was lost on exactly the project was because instructions were not too good and we weren't well prepared. " On a positive note, many comments illustrated that students understood the importance of the teamwork activities. "This is hands-on teamwork learning that we can use when we get hired in the actual work field. That was one of great class." Another student commented "I feel like the best I've ever learned from the class, was when the demonstrations involved the students directly."

Students were also given the opportunity to recommend changes to improve learning. All of the teamwork dimensions were included in the suggestions. The following list includes some of the student suggestions:

1) Efficient time management.
2) Equally divide up responsibilities in an organized manner prior to beginning the assignment
3) Have a way for peers to grade the members of their team at the end of the semester.
4) Having a set, organized plan to ensure productivity.
5) Having an additional in class meeting would have helped because of conflicting personal schedules.
6) I think it would be beneficial if there was a chat discussion board or something like that, just for the group so that it would be easier to communicate and plan together.
7) Make sure the professor reviews the assignment briefly that way we don't have to continue to ask questions.
8) Reading through the project before starting anything, identifying what needs to be done and then dividing work and identify problems.
9) Providing more encouragement to those who are discouraged by their own inexperience.
10) Take responsibility for a task to be completed and bring the knowledge gained to the group to be shared.
11) The team would work better if we all had put in our fair share and had taken the assignment seriously.
12) Teacher involvement throughout the project. Feedback loops midway through or progress checks.
13) Set benchmarks/ dates for when tasks should be completed.
14) The best thing we could have done practically was to had a more structured way to check that all of the assignments were being completed besides word of mouth, as this became a minor issue.
15) Setting deadlines could have helped us stay on top of our work/prevent procrastination.
16) In an online class, define steps to planning outcome of project. For example, sign up sheet for certain tasks that could outline assignment
17) Be motivated to work together outside of class time to work on the project.
18) Communication is challenging with online classes, setting up conference times in advance for groups might help teams work better together.
19) Communication is key! All team members must be responsive via email or texting, with an understanding the group project affects every member of the team.
20) Each person on the team should have a task and a deadline due required by the professor to ensure that they have done their work along with the team.

Faculty Survey Results

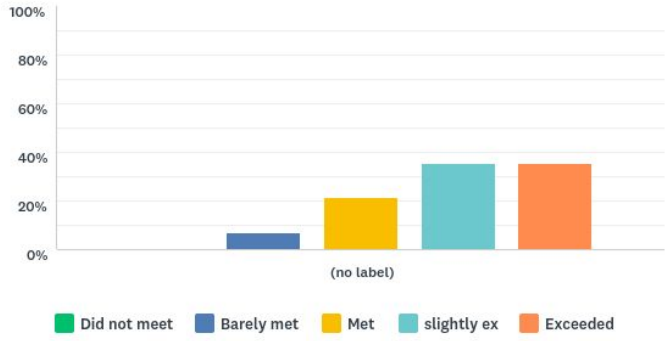
The faculty survey on teamwork was administered to instructors whose classes participated in the student survey. A total of 15 faculty agree to participate. Below are the highlights of their responses to the survey. Instructors were asked how they created or divided their students into teams. Two instructors used random selection to create teams and 6 reported that students self-selected into their own teams. The remaining 6 instructors reported a variety of methods. For example, teams may have been groups according to native language, through random selection and self selection depending on the assignment. One instructor created teams based on common interests in the topic under consideration. There are many variables that may go into the creation of teams including (but not limited to) classroom participation, language ability, experience of students, personality factors, etc. One instructor does a live television production and so student shift responsibilities to learn all aspects of television production. In a Dance performance class, students are encouraged to learn to dance in unison which requires the entire class to understand the perspective of other students in order to produce a performance that requires timing and unison.



We also asked instructors to report on the the extent to which students met or exceeded instructor expectations. This question was measured on a Likert-like scale that ranged from

1=did not meet expectations to 7=exceeded expectations. Most instructors reported that their students either met or exceeded expectations. Only one instructor reported that the class did not meet expectations. The average was 4 on this scale but there was a negative skew indicating that, by and large, instructors evaluated their students as exceeding expectation in teamwork projects.

Q3 Figure 2: To what extent did your students meet or exceed your expectations?



When asked if collaboration skills were taught about half of respondents (46.67%, n=7) reported that collaboration was taught in the classroom. Another 13.33% (n=2) stated they expected students to have skills. Of the 40% (n=6) who indicated “other” in response to this question, several indicated that they teach a variety of team building skills. Collaboration is discussed in the classroom, collaborative exercises are done to establish team norms., and activities are specifically designed to foster community, trust and creative problem solving in group work.

When instructors were asked if they felt supported in teaching teamwork skills, Most instructors (n=11, 73.33%) report feeling supported in teaching teamwork. Although, comments reveal some confusion about what “support” means in this context. One instructor stated that fellow

instructors share “tips” and another said that they felt encouraged to promote collaborative learning in the classroom. Only one instructor indicated they did not feel supported.

When faculty were asked to report on the use of class time to support collaboration, 80% (n=12) instructors indicated that they used significant class time. Several instructors indicated that their courses were online and that collaboration was built into their Canvas modules. One instructor noted the unique challenge of doing teamwork online and indicated that instructions to students need to be direct and complete. Teamwork online is more challenging that in the face to face format and deserves further study.

We were also interested in the extent to which faculty incorporates technology to facilitate a teamwork project. Of the 15 who responded, 3 (20%) said “yes,” and 4 (26.67%) said “no”. Of those who indicated that they do use technology, the most popular technology used is Google Doc in Canvas. Other forms of technology mentioned were Kahoot, Skype, ConferNow (Zoom), Live Plan. One performance arts instructor used Facebook to post rehearsal videos and has a community forum for the class.

Finally, we asked two open-ended questions that asked faculty to comment on why they teach teamwork and if there were any other comments they had related to this topic .These open-ended qualitative questions yielded a variety of responses. Major themes that emerged was the belief that students learn best when they are a) teaching each other and b)when they actively participate in speaking, listening, hearing ideas, thinking and understanding different perspectives/. One instructor mentioned the importance of scaffolding when introducing complicated concepts. The idea that teamwork mirrors real-world workplaces was mentioned in

several comments. In addition, instructors believed that teamwork helps students to develop meta-cognitive skills as well as critical thinking. Student engagement is also a important value in teamwork activities. Overall, teamwork is critical in many aspects of education in terms of engagement, collaboration, fun, professionalism. Most of all, most instructors see teamwork as one of the most effective ways that students learn. Online teachers noted the challenges of creating teamwork activities in online classes.

The following comments from instructors help illustrate the faculty perspective on teaching teamwork and expresses the value of this pedagogy to enhance learning.

1) "...a wonderful way to involve students more deeply in their learning and to enhance the classroom experience."
2) "..only effective if there is a lot of oversight, scaffolding, and structure…"
3) "...time consuming but worth the effort for both faculty and students...encourages engagement, builds community and makes students feel supported in online environment."
4) "„in addition to the professional benefits, developing teamwork increases student empathy and respect for each other, skills that will help them in every arena in life."
5) "...although there are minor issues along the way, most students value collaboration and form friendships as a result…"
6) "I assign the teams randomly at the first day, sometimes they shift based on language skills or friends in the class ...The success teams have been very useful in creating a social/collaborative environment.
7) "Students are more interactive with each other and with the class in general.. The only issue is when students are absent,... sometimes I get really shy students or if their English skills are below average they have a hard time working in groups"
8) " the cohesion built from relying on one another is invaluable and makes for a tight knit group"
9) "Each class is different and some classes prefer me to be "hands off" while other need guidance."

Clearly, faculty feel strongly that teamwork is an important part of the toolbox instructors use in the classroom. One of the strongest and most recurring themes that emerged in the faculty survey comments was the idea that "teaching is learning" and teamwork is an important way for students to learn from each other.

Faculty Focus Groups:

The final method of data collection included three focus groups that brought faculty together to discuss the benefits and challenges of doing teamwork in the classroom. Faculty from a wide

variety of disciplines (Psychology, English, Drama, Media, etc) met for hour-long discussions. Below are some of the take-aways from these discussions.

Benefits of Teamwork:

Teachers overwhelmingly expressed that they find teamwork valuable, and essential, to the advancement of students in their classes. Collaboration in the form of group projects is beneficial because it:

a. Cultivates exchange of knowledge between students across skill set level and life experience
b. Creates community in classrooms that can feel increasingly isolated. This is particularly relevant for on-line courses
c. Teaches valued skills of partnership, delegation, and personality management that will be employed in advanced educational studies and the work-place

How Teachers are Currently Guiding Teamwork

Teachers bring a diverse range of collaboration skills (drawn from their backgrounds in graduate school, the workforce, and military) to the classroom. They are guiding students/cultivating productive teamwork environments in the following ways:

a. Encourage open dialogue between student and teacher during process and after with feedback forum for students to assess group
b. Utilize grading framework that accounts for personal contribution as well as team product
c. Encourage group collaboration up front by imparting general problem solving/collaboration guidance, ice breakers, and strategies for dividing work

Challenges of Teamwork:

While teachers find teamwork projects to be overwhelming worthwhile, they still face significant challenges as they seek to cultivate productive team work exercises. These challenges include:

a. Concern from students in regards to uneven distribution of work based on individual investment and skill level of group members
b. Time restraints and resource distribution across students of varying backgrounds (working, commuter, and parent students) can pose significant challenges to collaboration
c. Default to homogeneity in groups when chosen by students

What Teachers Need:

Teachers expressed that they feel significant resources exist for their professional development. In regards to group collaboration they felt that additional support can be provided in the following ways:

a. Promotion of existing Professional Development teamwork building resources, surfacing of relevant materials
b. Expansion of resources on group collaboration. May include implementation of “student skill-shops” to improve participation and collaboration skills. Online modules were also suggested.
c. Teamwork modules where teachers can send students to complete before assigning a group project.

d. Increased cross-discipline collaboration in knowledge-share and campus wide functions

Section V: Recommendations

We conclude with some discussion and recommendations for utilizing this research to improve teamwork teaching and learning at Palomar. This work may also serve as a baseline and point of comparison for future GE/ILO assessment.

Completed follow-up based on assessment results:

Added materials about teaching, supporting, and assessing teamwork to the Teaching Excellence Website.

Additional follow-up options for the future:

Increase cross-disciplinary collaborations among faculty to create project-based assignments that encourage teamwork.

Encourage faculty to map opportunities for developing teamwork skills on the certificate and degree maps created as part of Guided Pathways.

Create in-person SkillShops for students about techniques for effectively working in teams and/or license multimedia content on that topic so professors can direct students to additional information about working in teams when collaborative projects are assigned.

Section VI: Appendix

a. Teamwork Dimension

b. Surveys
c. Large report
d. Charts & Graphs - faculty survey
e. Summary of focus groups