**Exploring Differences in Students’ Perspectives on Instructors’ Instruction, Commitment, and Feedback in Team-Based Projects**

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**ABSTRACT**

The popularity of team projects as a pedagogical approach in business programs suggests a need to study the variables which influence the team learning experience. The focus of this paper is on the role of the instructor during the team project assignment. A survey of 181 students at a medium-sized northwestern university assessed their instructors’ instruction i.e., project objective- and progress-focused, commitment, and feedback. Results indicate that students’ perceptions of instructors’ roles are influenced by gender, class standing, professional experience, and the number of projects in which students are involved. Most significantly, female respondents perceive that they receive less instructors’ process-oriented instruction, commitment, and feedback than the male respondents. Based on the findings, pedagogical implications are addressed and limitations of the study are identified.

*Key words:* Group learning, team-based project, instruction, commitment, feedback

**INTRODUCTION**

Team-based projects have been widely used as a pedagogical method in business schools due to the recognition of the benefits of having students work together in teams. Development of effective teamwork skills including communication, collaboration, and compromise, understanding of real business world such as group-oriented professional working environments, and opportunities to learn from members with different perspectives, are some of the frequently mentioned positive outcomes for the students participating in team projects (e.g., Bacon, Stewart, & Stewart-Belle, 1998; Chapman et al., 2006; Katzenbach, 1997). To improve students’ experience in team-based projects, researchers have examined the variables influencing their success. Characteristics of individual members such as academic ability, attitude toward teamwork, and leadership (e.g., Bacon et al., 1998; Pfaff & Huddleston, 2003) have been studied as well as intragroup heterogeneity including attributes such as diversity of gender, age, and ethnicity (e.g., Bacon et al., 1998; Shaw, 2004). Behavioral and cognitive variables associated with team membership including team dynamics, trust, role ambiguity and conflict, and social loafing (Chapman et al., 2006; Freeman & Greenacre, 2011; Huff, Cooper, & Jones, 2002; Shaw, 2004) have also been investigated. Further, factors under the control of instructors, such as team size and group composition methods (e.g., Bacon et al., 1998; Chapman et al., 2006) and sharing class time for group assignments and peer evaluations (e.g., Pfaff & Huddleston, 2003) have been also discussed.

While relevant studies undertaken have improved our understanding of team-based projects as a critical teaching method, it is important to recognize that the success of group work comes from the participation of both sides: students and instructors. However, the roles of instructors have been rarely studied in team-oriented business education. Moreover, research related to how instructors’ engagement is perceived by different students has been seldom conducted. Chapman and Van Auken (2001) argue that instructors can have a direct and indirect influence on students’ attitudes, beliefs, and concerns, but currently, instructors’ efforts are generally viewed as inadequate. They have empirically tested the instructors’ role in shaping what and how well students do in their groups, and have demonstrated that instructors contribute to students’ affirmative attitudes toward team projects. In their study they advise instructors to address the benefits of group work, grading standards, group dynamics, and project process. Pfaff and Huddleston (2003) assert the importance of the instructors’ roles especially when students need a clear direction, and even intervention, to manage disruptive team dynamics. Additionally, Yorke (2003) proposes that the provision of information and feedback about performance from instructors can enhance student learning in a general educational setting.

While instructors cannot control the characteristics of the students in their courses, i.e. demographics, motivation, self-efficacy, they do have the ability to control their own inputs into the team experience. As relevant studies imply, there are multiple roles required from instructors for the successful experience of students in group work. We believe that instructors’ delivery of clear instructions such as a goal and assessment criteria, personal care and involvement into the project process, and quality feedback can be crucial aspects in students’ learning through team projects. Thus, this study analyzes the perceptions of students when evaluating their instructors’ efforts in team learning. Furthermore, we empirically compare different levels of perceptions among different groups. Specifically, groups based on individual characteristics of students such as gender, school year standing, and professional experience, as well as contextual conditions such as numbers of concurrent projects, would judge instructors’ guidance differently. Diagnosis of the perceived quality of instructors’ contributions in this study may provide valuable information for the development of instructors’ roles and responsibilities for student group-oriented learning experiences in a business school.

**LITERATURE REVIEW**

**Team-Based Projects in Business School**

The use of team projects is an active learning approach which provides the means for students to improve their learning ([Deeter-Schmelz](http://jmd.sagepub.com/search?author1=Dawn+R.+Deeter-Schmelz&sortspec=date&submit=Submit), Kennedy, & Ramsey, 2002; Volkema, 2009), to obtain project management skills, and to learn how to address business issues (Volkema, 2010). Pfaff and Huddleston (2003) state that interpersonal skills are required in most working environments, and these skills are developed through team activities. Providing further support for the technique, Scott (1988) emphasizes technical reporting skills and group-dynamic management ability as outcomes from group learning. These tools and skills acquired from group work experience become an important knowledge set for business school graduates. Therefore, team-based projects improve not only the educational value of business school but also students’ employability and career success. Chapman et al. (2010) assert that recruiters actively seek out candidates who can demonstrate their ability to work well in a group, and Corbin (2002) explains that business leaders have been emphasizing team building and group collaboration competencies in prospective business leaders.

As researchers have sought to improve team effectiveness, they have studied: intragroup diversity and diversity management skills (Shaw, 2004), social loafing (Poddar, 2010), personality composition of teams and resultant communication style (Amato & Amato, 2005), incentivizing leadership (Ferrante, Green, & Forster, 2006), assessment tools (Corbin, 2002), format of project, i.e. real versus simulated (Maher & Hugher, 2005), group composition methods, i.e., random versus self-selected (Chapman et al., 2006), team size (Bacon et al., 1998), and team norms (Mottner, 2009). These have given researchers greater insight into the dynamics and complexities of group behavior. While the majority of the research focuses on the characteristics and behaviors of members and context-based conditions set by the objectives of active learning, less work has focused on the active roles of the instructor.

**Instructor’s Roles in Team-Based Projects**

When instructors use team-based projects as a pedagogical tool within their classrooms, they should clearly address the benefits of collaborative learning, and encourage students to participate in the active learning endeavor. Their objective is for their students to have a fair and successful team experience. Therefore, instructors’ responsibilities fall into, but are not limited to, directing students’ efforts, engaging in the process themselves, and providing assessments and feedback. Although the benefits of team-based projects and the importance of instructors’ roles in students’ group learning experience are highlighted, concerns about the attitudes of instructors themselves are expressed. Hansen (2006) states that instructors often provide little guidance relating to team functioning. Chapman and Van Auken (2001) state that such an occurrence may result in a dysfunctional group and subsequently affect students’ attitudes toward team projects. Chapman et al. (2010) assert that faculty remember emotionally wrenching and negative experiences with student groups, and subsequently, form a negative attitude toward team projects themselves. McCorkle et al. (1999) mention the motivation of using team-based projects by instructors, and warn that instructors should not force teamwork to reduce the burden of evaluating individual projects or simply adopt it due to its popularity and trend in modern business education. Thus, it is suggested that the instructors should clearly define their own roles in supporting the team project experience, and carefully examine how well they are recognized by students. Furthermore, understanding how different groups of students perceive the instructors’ endeavors is important to increase the effectiveness of group learning for the students with different standards and backgrounds.

Several researchers have suggested that having a clear team vision (e.g., Burningham & West, 1995) or at least a clear understanding of team objectives (e.g., Fowler, 1995) is important for team success. As the literature implies, instructors’ instructions such as establishing clear goals (e.g., Hansen, 2006) and providing adequate descriptions of outcomes and processes (e.g., Bacon et al., 1999) should be well delivered to students from the initial stage of the group learning. As the teams form and develop group norms, instructors’ contributions to monitoring progress, emphasizing the importance of teamwork, and encouraging fair contributions and positive attitudes may become more critical for the students’ learning experience. Furthermore, a facilitative role for classroom teachers is more effective than that of knowledge dispenser (Shelton, Lane, & Waldhart, 1999), and therefore, instructors’ engagement, commitment, and care for the students’ team learning should be well noticed and received by students. As Ackerman and Gross (2010) emphasize the importance of feedback as critical information for the students, understandability, helpfulness, and timeliness of instructors’ feedback should be appreciated by students for their more positive experience with team learning.

**HYPOTHESES**

The study considered a number of individual and contextual factors such as gender, school year standing, professional working experience, and number of concurrent team-based projects. The research contributes to the literature by specifically comparing these factors for three major instructors’ roles in team-based projects: instruction, commitment, and feedback. Thus, we formulated and tested the following hypotheses.

***Gender***

Buttner (2004) finds gender differences when examining students’ perceptions of instructor behavior. When identifying disrespectful instructor behaviors, males report lack of recognition, responsiveness, and integrity issues while females show more concern about treatment issues. When identifying respectful instructor behavior, males report recognition, responsiveness, and integrity issues while females show more concern about task-relevant help and affirmation. In general, females show greater sensitivity to treatment. In an online learning environment, Fredericksen et al. (2000) find that women feel that they participate at higher levels than men although the difference is small but still reliable. Thus, more engaging female students in group learning may become more demanding of their members to contribute fairly and equally, and may require excessive effort and a high level of involvement into the process by their instructors. This expectation from female students may mitigate the amount of perceived support from the instructors. Hence, we hypothesize:

**H1:** Student perceptions of the extent of instructors’ support in team-based projects for a) instruction, b) commitment and c) feedback will differ between males and females.

***School Year Standing***

Marks, Sibley, and Arbaugh (2005) argue that the experience variable is not related significantly to perceived learning and satisfaction. However, other research reports a positive relationship between age and satisfaction with academic courses (Billings, Connors, & Skiba, 2001) and with increased learning experiences (Arbaugh, 2000). In their e-learning setting, Fredericksen et al. (2000) claim that the youngest students (16-25 years old) report that they learn the least, and are the least satisfied with online-learning. In a general educational setting, Arbaugh and Duray (2002) find that age directly influences perceived student learning, and indirectly affects perceived students’ satisfaction with taking the course. Due to enhanced self-control of academic activities, senior students may organize their school assignments better, and know how to utilize available educational resources, thus, their attitude is affirmatively formed more toward academic group work than junior students. Hence, we hypothesize;

**H2:** Student perceptions of the extent of instructors’ support in team-based projects for a) instruction, b) commitment and c) feedback will differ between junior students and senior students.

***Professional Working Experience***

The term of professional is used as shorthand to describe a particular social stratum of well-educated, salaried workers who enjoy considerable work autonomy, and are commonly engaged in creative and intellectually challenging work (Beeghley, 2004; Eichar, 1989). Thus, reasonable work morale and motivation are presented as one of the qualities of being professionals. Students with more professional working experience may understand the nature of group work better, know their responsibilities, and progress through the project on their own, resulting in a more favorable judgment of instructors’ minimum support. On the other hand, due to the lack of prior knowledge and experience in team work and group communication, students with no or limited professional experience, may demand more from instructors to attain their team project success, thus forming a less favorable attitude toward group learning and their instructors. Fredericksen et al. (2000) claim that the more mature students, possibly with more years of professional work, report to be more satisfied with course learning quality and experience. While years of professional work experience is likely to be related to age, it is the nature and extent of the professional work experience that most resembles group projects and therefore is more likely to impact perceptions. Hence, we hypothesize;

**H3:** Student perceptions of the extent of instructors’ support in team-based projects for a) instruction, b) commitment and c) feedback will differ between students who have more years of professional experience and those who have fewer years of professional experience.

***Number of Team-Based Projects***

Due to the prevalence of team-based projects in business programs, students commonly engage in multiple numbers of different types of group work. Although multi-tasking is a desirable business professional quality, and complexity is the nature of any kind of business, students feel overwhelmed, confused, distracted, and interrupted by profound information overload. At a social level, cognitive overload, a consequence of too much information, results in tension with colleagues, loss of job satisfaction, and strained personal relationships (Kirsh, 2000). Wurman (1999) explains that information anxiety is produced by the ever-widening gap between what we understand and what we think we should understand. Therefore, it is the overwhelming feeling one gets from having too much information or being unable to find or interpret data. Due to multiple projects assigned at the same time, students may be confused with all different schedules and rules, and perceive that they are not guided enough to successfully manage all assignments. Hence, we hypothesize;

**H4:** Student perceptions of the extent of instructors’ support in team-based projects for a) instruction, b) commitment and c) feedback will differ between students who have more concurrent team projects and students who have fewer concurrent team-based projects.

**METHODOLOGY**

***Sample***

The participants in the study consisted of students enrolled in the business program at a northwestern university. Data were collected in two ways, in classroom settings (116 students) and hallway interventions (71 students). After discarding six unusable responses from the data collected in class, a total of 181 were pulled to analyze for the results. To check validity and nonresponse bias, we compared the two types of data collection methods: classroom setting vs. hall interruption, to examine the differences regarding the characteristics across the sample. The result showed the means of each focal variable between the two groups, i.e., instructors’ goal and process-oriented instruction, commitment, and feedback, were not statistically different (p>.10). Therefore, we can conclude that nonresponse bias is not a concern. The final sample consists of 91 males, 88 females, and two students that did not report their gender. Each sample was involved in at least one or more group learning activities in the previous academic year i.e., for three regular quarters. The paper-and-pencil questionnaire consisted of three parts. Part One provided an introduction to the study and assurance of confidentiality. Part Two had a total 18 items to measure students’ perspectives on their instructors’ instruction, commitment, and feedback in team-based projects. Part Three included questions regarding respondents’ demographic information such as major and school year standing. Seven-point, Likert-type scales with anchors 1=strongly disagree to 7=strongly agree, were used across the survey. The demographic information of respondents is presented in Table 1.

**TABLE 1**

**STATISTICAL INFORMATION OF RESPONDENTS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | No. | % | Accumulated % |
| Gender | Male | 91 | 50.3 | 50.3 |
| Female | 88 | 48.6 | 98.9 |
| Rather not to say | 2 | 1.1 | 100.0 |
| Major | Marketing | 61 | 33.7 | 33.7 |
| General Management | 44 | 24.3 | 58.0 |
| Finance | 21 | 11.6 | 69.6 |
| Human Resource Management | 18 | 9.9 | 81.2 |
| Accounting | 11 | 6.1 | 85.6 |
| Management Information System | 5 | 2.8 | 88.4 |
| Others & Missing | 21 | 11.6 | 100.0 |
| School Year | Sophomore | 2 | 1.1 | 1.1 |
| Junior | 53 | 29.3 | 30.4 |
| Senior | 123 | 67.9 | 98.3 |
| Graduate | 2 | 1.1 | 99.4 |
| Missing | 1 | 0.6 | 100.0 |
| Working Experience | 0 | 52 | 28.7 | 28.7 |
| >= 1 and <= 2 | 43 | 23.8 | 52.5 |
| >= 3 and <= 5 | 50 | 27.6 | 80.1 |
| >= 6 | 36 | 19.9 | 100.0 |
| No. of Projects  (In business courses) | >= 2 | 41 | 22.7 | 22.7 |
| >= 3 and <= 4 | 58 | 32.0 | 54.7 |
| >= 5 and <= 6 | 52 | 28.7 | 83.4 |
| >= 7 | 30 | 16.6 | 100.0 |
| Nationality | USA | 173 | 95.6 | 95.6 |
| International | 8 | 4.4 | 100.0 |

Notes: N = 181;

***Measures***

To develop the measures for the study, raw items and conceptual scales were generated through a literature review. Due to the limited numbers of studies in the specific research topic area, the expert judge method was also used by inviting two business professors to assist the authors. To measure instructors’ instructions for team-based projects, five items regarding the instructors’ role from Chapman and Van Auken’s (2001) study were adapted and categorized for the purpose of the study. To measure group work feedback from instructors, scales for written feedback from Svinicki and McKeachie’s (2011) study were used with little modification. Through three meetings of intensive discussions among authors and experts, a total of 18 items were selected. Eight items were used to measure instructors’ instruction, five items to measure instructors’ commitment, and five to measure instructors’ feedback. Detailed measures are presented with means and standard deviation (S.D.) in Table 2.

**TABLE 2**

**MEASURE CHARATERISTICS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Measures | | Mean | S.D. | Cronbach’s α |
| **Instructor’s Objective-focused Instruction** (all)  In my experience, most instructors… | | **5.13** | **1.061** | **.733** |
| 1 | introduced an objective of group projecta | 5.49 | 1.191 |  |
| 2 | explained rubrics/evaluation criteria for project outcomes | 5.35 | 1.348 |  |
| 3 | provided sufficient structure (e.g., sample report) for project success | 4.55 | 1.396 |  |
| **Instructor’s Process-focused Instruction** (all) | | **4.19** | **1.271** | **.852** |
| In my experience, most instructors… | |  |  |  |
| 4 | monitored group's time management/progress | 3.29 | 1.533 |  |
| 5 | encouraged equal and fair contributions | 4.90 | 1.609 |  |
| 6 | gave information about group dynamicsa | 4.18 | 1.525 |  |
| 7 | communicated benefits of group worka | 4.08 | 1.704 |  |
| 8 | promoted positive attitudes about groupsa | 4.53 | 1.642 |  |
| **Instructor’s Commitment** (all) | | **4.75** | **1.150** | **.861** |
| In my experience, most instructors… | |  |  |  |
| 1 | were available for discussing team problems and conflictsa | 5.19 | 1.391 |  |
| 2 | showed great interest in our team project | 4.71 | 1.389 |  |
| 3 | showed care and concern for team project | 4.73 | 1.402 |  |
| 4 | were knowledgeable about our project topic | 5.19 | 1.506 |  |
| 5 | often discussed the progress of team project | 3.92 | 1.477 |  |
| **Instructor’s Feedback** (all) | | **4.84** | **1.192** | **.887** |
| In my experience, most instructors’ feedback… | |  |  |  |
| 1 | was easy to understandb | 5.04 | 1.431 |  |
| 2 | was helpfulb | 4.91 | 1.303 |  |
| 3 | provided enough detailb | 4.68 | 1.409 |  |
| 4 | was provided in timely mannerb | 4.85 | 1.565 |  |
| 5 | enhanced our project outputsb | 4.71 | 1.456 |  |

Notes: N = 181; Answers were all based on a 7-point Likert scale where 1 = *strongly disagree* and 7 = *strongly agree*.

a. Items adapted from the scales for instructor’s role in Chapman and Van Auken’s (2001) research

b. Items adapted from the scales for written feedback in Svinicki and McKeachie’s (2011) book

***Measurement Validation***

Means, standard deviation, and inter-construct correlations are presented in Table 3. The validity of the scale items used was assessed via principal-axis factoring which completed using an eigenvalue of 1.0 and factorings of .50 as the cut-off point suggested by Zaichkowsky (1985). All items were loaded significantly on the corresponding latent construct with no evidence of cross-loading. However, we expected to have three factors for all 18 items, but the actual factoring test showed that instructors’ instruction has two sub-groups for our scales. After careful evaluation of the results, we decided to accept the consequence and we named them as two dimensions: project objective-focused instruction vs. process-focused instruction. In Table 4, the fit statistics were appropriate and the overall factor loadings of all items ranged between .52 and .85, exceeded the .50 threshold (Bagozzi et al., 1991). A test of reliability using Cronbach’s coefficient alpha showed that all of the focal constructs (objective-focused instruction: .733; process-focused instruction: .852; commitment: .861; feedback: .887) exceeded Nunnally’s (1978) standard of .70. Therefore, we established support for convergent validity (Bagozzi et al., 1991) of the constructs, exhibiting good measurement properties. Both individual and the summed means of the constructs were used for the analysis.

**TABLE 3**

**CORRELATION, COEFFICIENTS, AND DESCRIPTIVE STATISTICS**

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Inst\_Obj | 1 |  |  |  |  |  |  |  |
| 2. Inst\_Prc | .603\*\* | 1 |  |  |  |  |  |  |
| 3. Cmmt | .642\*\* | .680\*\* | 1 |  |  |  |  |  |
| 4. Fb | .615\*\* | .635\*\* | .711\*\* | 1 |  |  |  |  |
| 5. Gender | -.102 | -.206\*\* | -.287\*\* | -.238\*\* | 1 |  |  |  |
| 6. Schl Yr | .227\*\* | .003 | .108 | .093 | .023 | 1 |  |  |
| 7. Prf Wrk Yr | .154\* | .080 | .092 | .100 | .161\* | .188\* | 1 |  |
| 8. No. of Prj | .014 | -.259\*\* | .043 | -.064 | .032 | .301\*\* | -.052 | 1 |
| Mean | 5.129 | 4.195 | 4.750 | 4.837 | n/m | 3.69 | 3.76 | 4.52 |
| S.D. | 1.061 | 1.271 | 1.150 | 1.192 | n/m | .508 | 5.004 | 2.546 |

Notes: N = 181; Inst\_Obj: Instructor’s objective-focused instruction; Inst\_Prc: Instructor’s process-focused instruction; Cmmt: Instructor’s commitment; Fb: Instructor’s feedback; Schl Yr: School year standing; Prf Wrk Yr: Professional working year; No. of Prj: Numbers of projects in last academic year; n/m: not meaningful

\*\*p < .01, \*p < .05.

**TABLE 4**

**FACTOR ANALYSIS OF VARIABLES**

|  | Factor | | | |
| --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| Inst\_Obj 1 |  |  |  | .846 |
| Inst\_Obj 2 |  |  |  | .613 |
| Inst\_Obj 3 |  |  |  | .545 |
| Inst\_Prc 4 |  | .698 |  |  |
| Inst\_Prc 5 |  | .518 |  |  |
| Inst\_Prc 6 |  | .749 |  |  |
| Inst\_Prc 7 |  | .848 |  |  |
| Inst\_Prc 8 |  | .693 |  |  |
| Cmmt 1 |  |  | .584 |  |
| Cmmt 2 |  |  | .646 |  |
| Cmmt 3 |  |  | .663 |  |
| Cmmt 4 |  |  | .752 |  |
| Cmmt 5 |  |  | .699 |  |
| Fb 1 | .790 |  |  |  |
| Fb 2 | .834 |  |  |  |
| Fb 3 | .791 |  |  |  |
| Fb 4 | .589 |  |  |  |
| Fb 5 | .641 |  |  |  |

Notes: N = 181; Rotation: Varimax with Kaiser normalization; Inst\_Obj: Instructor’s objective-focused instruction; Inst\_Prc: Instructor’s process-focused instruction; Cmmt: Instructor’s commitment; Fb: Instructor’s feedback

**ANALYSIS AND RESULTS**

***Hypotheses Analysis***

All tests of mean differences between ratings of hypothesized groups (e.g., male vs. female to test gender differences) used t-tests. We believe that the t-test is an appropriate hypothesis testing method for our study because t-test compares the actual difference between two means in relation to the variation in the data, despite different numbers of replicates in two test samples.

To test H1, we divided the entire sample for each gender. Among the whole sample, male respondents were 91, female respondents were 88, and two students refused to identify their gender. Again, to test the moderating effects of gender, students who clearly identified their gender were only pulled to analyze. Gender failed to statistically moderate instructors’ objective-focused instruction (Mmale= 5.22 vs. Mfemale= 5.05, p > .10). However, gender successfully moderated instructors’ process-focused instruction (Mmale= 4.45 vs. Mfemale= 3.95, p < .01), commitment (Mmale= 5.04 vs. Mfemale= 4.50, p < .01), and feedback (Mmale= 5.12 vs. Mfemale= 4.56, p < .01). Thus, H1a was partially supported, and both H1b and H1c were fully supported. Perceived reception of instructor’s instruction, commitment, and feedback in team-based projects exhibited statistically lower ratings by female students than that of male students.

To test H2, two groups based on the respondents’ school year were formed. The median was taken as a center of the split for a median split method for turning the continuous variable into a categorical one. Students who are of sophomore or junior standing were grouped as a junior group and the rest i.e., senior and graduate, were grouped as a senior group. One respondent failed to identify his/her school standing, therefore, 55 respondents for a junior group and 125 respondents for a senior group were used for analysis. Students’ school standing successfully moderated instructors’ objective-focused instruction (Mjunior= 4.75 vs. MSenior= 5.29, p < .01), however, failed to moderate instructors’ process-focused instruction (Mjunior= 4.21 vs. MSenior= 4.18, p > .10), commitment (Mjunior= 4.60 vs. MSenior= 4.82, p > .10), and feedback (Mjunior= 4.71 vs. MSenior= 4.89, p > .10). Thus, H2a was partially supported, but both H2b and H2c were not supported. Senior students perceived that they received better instructions in terms of project objectives and assessment criteria than juniors. Although the means of commitment and feedback from instructors in the senior group were higher than those of juniors, the differences were not statistically meaningful.

To test H3, two groups based on the respondents’ professional working experience were formed. Students who had two years of working experience or fewer and students who had three or more years were grouped separately based on the median split method. Ninety five students were grouped for a less experienced group and 86 for more. Professional working experience successfully moderated instructors’ objective-focused instruction (Mless= 4.98 vs. Mmore= 5.30, p < .05), while failing to moderate instructors’ process-focused instruction (Mless= 4.15 vs. Mmore= 4.24, p > .10), commitment (Mless= 4.70 vs. Mmore= 4.81, p > .10), and feedback (Mless= 4.82 vs. Mmore= 4.85, p > .10). Thus, H3a was partially supported, but both H3b and H3c were not supported. Students with more professional experience perceived that they were better guided with objective-focused instructions than students with fewer years of working experience.

To test H4, based on students’ reported numbers of projects during the previous academic year, a group with a smaller number of group projects i.e., four or less, was formed with 99 students and another group with a larger number of group projects i.e., five or more was formed with 82 students. For this case, the median split method was again used. Numbers of projects failed to statistically moderate instructors’ objective-focused instruction (Mlow= 5.13 vs. Mhigh= 5.13, p > .10), commitment (Mlow= 4.79 vs. Mhigh= 4.71, p > .10), and feedback (Mlow= 4.89 vs. Mhigh= 4.77, p > .10). However, numbers of projects successfully moderated instructors’ process-focused instruction (Mlow= 4.52 vs. Mhigh= 3.80, p <. 01), Thus, H4a was partially supported, but both H4b and H4c were not supported. Students with more team-based projects within a given time frame perceive that they received less of instructors’ process-focused instruction than the students with fewer team projects.

**TABLE 5**

**T-TEST RESULTS OF DIFFERENT GROUPS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | M | Gender | | | School Year | | | Working Experience | | | No. of Projects | | |
| Measures | All  (181) | M  (91) | F  (88) | p value | Jr  (55) | Sr  (125) | p value | 0-2  (95) | >=3  (86) | p value | 1-4  (99) | >=5  (82) | p value |
| Inst\_Obj (all) | 5.13 | 5.22 | 5.05 | .275 | **4.75** | **5.29** | **.001** | **4.98** | **5.30** | **.041** | 5.13 | 5.13 | .973 |
| 1 | 5.49 | 5.49 | 5.48 |  | **5.15** | **5.64** | .010 | **5.31** | **5.70** | .026 | 5.47 | 5.51 |  |
| 2 | 5.35 | 5.47 | 5.27 |  | ***5.05*** | ***5.47*** | .056 | 5.25 | 5.45 |  | 5.35 | 5.34 |  |
| 3 | 4.55 | 4.70 | 4.40 |  | **4.04** | **4.77** | .001 | ***4.37*** | ***4.74*** | .070 | 4.57 | 4.52 |  |
| Inst\_Prc (all) | 4.19 | **4.45** | **3.95** | **.008** | 4.21 | 4.18 | .853 | 4.15 | 4.24 | .634 | **4.52** | **3.80** | **.000** |
| 4 | 3.29 | **3.54** | **3.08** | .043 | 3.27 | 3.29 |  | 3.35 | 3.22 |  | **3.55** | **2.98** | .012 |
| 5 | 4.90 | **5.26** | **4.52** | .002 | 4.69 | 4.98 |  | 4.88 | 4.92 |  | **5.24** | **4.49** | .002 |
| 6 | 4.18 | ***4.34*** | ***3.98*** | .098 | 4.29 | 4.12 |  | 4.15 | 4.21 |  | **4.45** | **3.84** | .007 |
| 7 | 4.08 | 4.25 | 3.90 |  | 4.33 | 3.95 |  | 3.96 | 4.21 |  | **4.56** | **3.50** | .000 |
| 8 | 4.53 | **4.86** | **4.25** | .012 | 4.49 | 4.54 |  | 4.42 | 4.65 |  | **4.80** | **4.21** | .016 |
| Cmmt (all) | 4.75 | **5.04** | **4.50** | **.001** | 4.60 | 4.82 | .230 | 4.70 | 4.81 | .529 | 4.79 | 4.71 | .649 |
| 1 | 5.19 | ***5.40*** | ***5.01*** | .065 | 5.11 | 5.26 |  | 5.14 | 5.26 |  | **5.40** | **4.94** | .025 |
| 2 | 4.71 | **5.15** | **4.32** | .000 | 4.53 | 4.78 |  | 4.65 | 4.78 |  | 4.75 | 4.67 |  |
| 3 | 4.73 | **5.13** | **4.38** | .000 | 4.76 | 4.71 |  | 4.71 | 4.76 |  | 4.83 | 4.61 |  |
| 4 | 5.19 | ***5.43*** | ***5.02*** | .066 | **4.82** | **5.38** | .019 | 5.08 | 5.31 |  | 5.08 | 5.33 |  |
| 5 | 3.92 | 4.09 | 3.80 |  | 3.78 | 3.98 |  | 3.92 | 3.93 |  | 3.87 | 3.99 |  |
| Fb (all) | 4.84 | **5.12** | **4.56** | **.002** | 4.71 | 4.89 | .366 | 4.82 | 4.85 | .856 | 4.89 | 4.77 | .470 |
| 1 | 5.04 | **5.31** | **4.76** | .011 | 4.89 | 5.10 |  | 5.05 | 5.02 |  | 5.03 | 5.05 |  |
| 2 | 4.91 | **5.20** | **4.63** | .003 | 4.73 | 4.98 |  | 4.84 | 4.98 |  | 4.93 | 4.88 |  |
| 3 | 4.68 | **4.95** | **4.42** | .013 | 4.53 | 4.74 |  | 4.71 | 4.65 |  | 4.62 | 4.76 |  |
| 4 | 4.85 | **5.21** | **4.50** | .002 | 4.84 | 4.86 |  | 4.86 | 4.84 |  | **5.14** | **4.50** | .006 |
| 5 | 4.71 | ***4.92*** | ***4.50*** | .053 | 4.58 | 4.77 |  | 4.64 | 4.78 |  | 4.76 | 4.65 |  |

Notes: N = 181; Inst\_Obj: Instructor’s objective-focused instruction; Inst\_Prc: Instructor’s process-focused instruction; Cmmt: Instructor’s commitment; Fb: Instructor’s feedback

Numbers in **Bold**: Differences between means or proportions are statistically significant at *p* < .05.

Numbers in *Italic*: Differences between means or proportions are statistically significant at *p* < .10.

***Additional Analysis***

Comparison among the means of focal constructs can enrich our understanding regarding the students’ perceived extents of instructors’ support in their collaborative learning. We conducted an additional analysis in order to identify the differences among four dimensions without proposing any specific hypotheses. A series of paired t-test methods were used to compare two population means among all four defined constructs. Significant differences in terms of perceived extents by students were observed. Based on the entire sample, students reported that they received instructors’ objective-focused instructions better than any other support (Inst\_Obj: M= 5.13; Inst\_Prc: M= 4.19; Cmmt: M= 4.75; Fb: M= 4.84). Instructors’ process-focused instruction was perceived as the least received support, which invites more caution from instructors as the teams progress.

**TABLE 5**

**PAIRED DIFFERENCE T-TEST RESULTS**

|  | | Mean | S.D | Std. Error  Mean | t | D.F. | p |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Pair 1 | Inst\_Obj - Inst\_Prc | .93444 | 1.05567 | .07847 | 11.909 | 180 | .000 |
| Pair 2 | Inst\_Obj - Cmmt | .37864 | .93963 | .06984 | 5.421 | 180 | .000 |
| Pair 3 | Inst\_Obj - Fb | .29245 | .99608 | .07404 | 3.950 | 180 | .000 |
| Pair 4 | Inst\_Prc - Cmmt | -.55580 | .97493 | .07247 | -7.670 | 180 | .000 |
| Pair 5 | Inst\_Prc - Fb | -.64199 | 1.05494 | .07841 | -8.187 | 180 | .000 |
| Pair 6 | Cmmt - Fb | -.08619 | .89099 | .06623 | -1.301 | 180 | .195 |

Notes: N = 181; Inst\_Obj: Instructor’s objective-focused instruction; Inst\_Prc: Instructor’s process-focused instruction; Cmmt: Instructor’s commitment; Fb: Instructor’s feedback

**Discussion**

This research explored how well instructors are perceived to be supporting students’ group learning in terms of team-based projects, based on three critical areas: instruction, commitment, and feedback. We observed significant variances in students’ perspectives from different groups on each of instructors’ three roles. Specifically, female respondents perceived that they received less instructors’ process-oriented instruction, commitment, and feedback than the male respondents. Students in their senior year or with longer working experience perceived that they received objective-focused instruction to a greater extent than did juniors or those with fewer working years. Students with more concurrent projects perceived that they received process-oriented instruction to a lesser extent than the students with fewer projects. While the same instruction and support may have been given to all of the students, different standards, different needs, and information overload may have caused students to recognize, process, and retain the extent of instructors’ engagement in distinct ways. From the additional analysis, instructors were found to provide objective-focused instruction more successfully than any other responsibilities. Project objectives, evaluation criteria, and the structure of outcomes were well received by the students. However, process-related instruction was claimed to be received least. It may be assumed that instructors actively get involved in students’ team learning at the initial stage by setting goals and guidelines, but leave the process to students without training them with strategies to get through the project. Some projects go for the entire semester, so it is essential for students to have a clear sense of group dynamics, the value of group work and fair contributions, and time management to have a better learning experience. As Chapman and Van Auken (2001) have empirically demonstrated that process-related information from instructors directly influences students’ affirmative attitude toward team work, instructors should understand their role as a facilitator and get engaged into the group learning from the beginning, through the process, and to the end.

**PEDAGOGICAL IMPLICATIONS AND RECOMMENDATIONS**

From the findings of the study, we provide pedagogical implications to instructors, students, and institutions to improve students’ group learning experience by understanding the perceived level of instructors’ engagement in team-based projects and the variety of their perspectives.

***Advice for the Instructor***

*1. Accept differences among students and be flexible.*

Individual differences such as gender and year in school may affect the communication process between the student and the instructor. While instructors may view their directions and explanations as adequate and well-delivered, students may perceive these differently. To address this concern, instructors should provide the information multiple times and in varied formats i.e., written, verbal, and on web-board to ensure students’ understanding related to group learning. Instructors can also provide pre-organized Q&A with possible inquiries and treatment, as well as responding to questions from students. Especially, instructors teaching introductory business courses to freshmen or courses consisting of unbalanced gender populations should make an extra effort to let students understand rules and guidelines when including group work assignments in their curriculum. Moreover, when dealing with complaints and frustrations, instructors should try to gauge different understanding levels among students, and to seek a solution.

*2. Recognize the importance of your engagement from the beginning, through, and to the end.*

Students may want more of instructors’ engagement related to progress checks, promotion of the intergroup relationships, and encouragement of contributions from each member as the team assignments progresses, based on the findings of the study. Although instructors have been found to perform a better job at informing project objectives, evaluation rubric, and possible outcome structure as well as at providing understandable, helpful, and timely-turned in feedback, perceived quality of support from instructors through the project process seems to fall short. It is important to realize that a team-based project is a set of learning processes, and the instructor’s job does not end by setting the start line or checking teams’ rankings at the finish line. As a facilitator, consistent and carefully allocated efforts from instructors are desired to cultivate students’ positive experiences in group learning. In addition, instructors should not assume that students have the knowledge and skills to manage their teams on their own despite their claim for autonomy and independence. Students may perceive the self-management process as a lack of commitment or support on the part of the instructor. It is important, therefore, for instructors to explain their level of involvement throughout the project so that students possess a clear understanding of the instructor’s role as well as their own.

***Advice for Students***

*1. Communicate with the instructor.*

Clearly, students show different attitudes about their instructors’ behavior in team learning as noted in our research. One issue is that students often expect instructors to address their concerns without actually communicating these to the instructor. Facilitation in two-way communication between instructors and students would likely reduce the degree of stress and frustration. Furthermore, shared information between the two parties may help set up clear expectations of the roles of each party. Students are encouraged to actively participate in team learning by revealing questions, concerns, burdens, and worries to their instructors in order to work on solutions together and then implement strategies to cultivate the positive outcomes by themselves.

*2. Respect members’ different perspectives.*

As we observed the different perspectives from different students in our study, students may experience a difficult time attempting to form great chemistry within a team. Although diversity among students may bring advantages such as different approaches and altered views into team learning, it may require sufficient time for information exchange. Thus, students should acknowledge different levels of understanding and perceptions among team members, and patiently work through these to capitalize on the strengths that they eventually offer. Group learning allows students the opportunity to interact with different people in a manner that mirrors the work environment. The business environment becomes ever international and global, thus, relevant skills must be practiced rather than learned from a textbook and ideally are recognized as part of the educational process.

***Advice for Institutions and Administrators***

*1. Look at the curriculum holistically.*

Those who are in charge of designing the curriculum for the business program should seek some balance in requirements while still fulfilling program mandates. If multiple courses include team learning, one should consider the effectiveness of the approach throughout the program. Students attempting to manage multiple projects are likely to experience more stress and subsequently develop negative attitudes toward group work. Overwhelmed students may feel difficulties in dealing with varied rules and relationships, express exhaustion, present disruptive behaviors, and furthermore drop the course. By evaluating teaching strategies in the entire business program, directions on more desirable combinations of teaching methods for each course can be given to optimize students’ learning. This may resolve unevenly distributed numbers of team-based projects and give students a manageable workload for the successful experience of the whole program.

*2. Provide and strive for consistent guidelines throughout the program.*

While instructors expect to have freedom in the manner that they conduct classes, it may help students if there was some degree of consistency across the design in group learning assignments. Team-based project guidelines and a checklist which provide general information related to team learning, objectives, process, and expectations should be shared among faculty in the program. This coordination would simplify the development and assessment of the project for the instructor, and students may see this standardized guideline as fair, and efficiently focus on achieving team goals rather than comprehending varied rules. It will eventually lead to improved understanding and performance on the part of the students and thus, students may gain more confidence, improve their skills, perhaps rely less on instructors for assistance, and furthermore become capable in independent learning.

**LIMITATIONS AND FURTHER RESEARCH OPPORTUNITIES**

The authors acknowledge limitations in the study. We have observed three roles of the instructor, but have not addressed other important behaviors such as providing office hours to answer issues and scheduling class time to work on the project. These actions may affect students’ perceptions, especially those pertaining to commitment. The variables used in the study have not considered the amount or quality of the instructors’ contributions. This may be especially significant for feedback since Ackerman and Gross (2010) mention different impacts resulting from a high amount, low amount, and no feedback. The study has not examined the impact of age, ethnicity, nor employment in specific types of jobs. Their inclusion would help instructors meet the challenge of a more diverse classroom population. We have not included possible consequences of team learning such as perceived effectiveness or students’ satisfaction due to the purpose of the study. Future research is invited to investigate different influences of variables including focal constructs to enhance students’ team-project experience. Finally, the study findings are based on the students attending a regional comprehensive university on the west coast, so generalizations are not justified. It might be meaningful to observe the results of research with relevant constructs across universities in different regions and countries. Further studies in varied settings with fine-tuned measures are recommended.

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