

Teamwork Perceptions: Student vs Faculty

Abstract

Understanding the differences between student and faculty perceptions of the elements that affect positive team experiences in the classroom informs faculty as they consider which elements to use in the classroom. Using Q Methodology (Stephenson, 1935) students evaluated a large set of teamwork elements at the beginning and end of a semester. Specifically, elements which can be controlled or influenced by faculty were considered. The results were then compared to faculty evaluation of the same elements to understand the differences in perceptions.

Keywords: Positive team experience; Perception; Q Methodology.

Introduction

Few faculty would challenge the assumption that incorporating the use of teams in the classroom, especially in the business disciplines, is a worthwhile endeavor. Many students, however, view teamwork in the classroom with cynicism. There is an enormous body of literature which addresses many challenges and issues related to teamwork in the classroom. However, the literature presents little research in which the only team elements considered are those which faculty can influence or control. Further, the literature includes few instances in which students are forced to rank order their perception, versus, for example, rating their perception on a Likert scale. Opatrny-Yazell and Houseworth (2018) reviewed the literature on effective use of teams in the classroom. Thus, for the sake of brevity, an extensive literature review is not included here.

One study which does address these two issues is Opatrny-Yazell and Houseworth (2018). They identify areas of student agreement and “significant differences in student perceptions of elements that affect positive team experiences (Opatrny-Yazell and Houseworth,

2018, p. 43). This study seeks to extend their research by comparing faculty perceptions of the elements of teamwork to the student perspective. By understanding the differences between student and faculty perceptions, faculty can begin to address these issues in the classroom and reconcile their perceptions with those of students. This research seeks to understand how the faculty perception of elements that affect good/positive team experiences in the classroom differs from that of the student perspective. Specifically, this study is limited to team elements which can be controlled or influenced by faculty.

Q Method

As noted in “Understanding Student Perceptions of Teamwork” (Opatrny-Yazell and Houseworth, 2018), “the authors embarked on a study to understand the student perspective on which elements of teamwork are important to good team experiences in the classroom. Analyzing factors using Q Methodology uses the contextuality principle as explained by Lasswell (1948). The researcher focuses on the patterns of meaning within the context of the factor array, and as appropriate, to the relevance of patterns presented in particular theories (McKeown & Thomas, 2013).”

Opatrny-Yazell and Houseworth, (2018) chose Q Methodology, often described as mixed-method, which allows consideration of subjective viewpoints which are analyzed quantitatively via factor analysis (Newman & Ramlo, 2010). Q Methodology, originally developed by Stephenson, is used in this research as presented and interpreted by Stephenson (1977, 1935, 1953), Brown (1980, 1986), McKeown and Thomas (1988, 2013) and Watts and Stenner (2012). Q Methodology allows analysis of subjective perceptions of the most and least important elements, in this case those related to positive use of teams in the classroom (McKeown & Thomas, 1988). Mathematically, Q Method is not significantly different from

factor analysis; the difference is what is measured. A full explanation can be found in Brown (1980), McKeown and Thomas (1988; 2013), Watts and Stenner (2012), The journal *Operant Subjectivity*, and QMethod.org are also useful references.

The Statements and Methodology

This research uses the same research protocol as Opatrny-Yazell and Houseworth (2018). They used a discursive approach to identify themes related to teamwork from student self-reflections after completion of a major team project. These themes became the 29 statements for the Q sample. The Q sample is the set of statements which are ranked against each other by each subject. The Q sample is shown in the first column of Table 1. McKeown and Thomas (2013) explain this structured method for creating a hybrid Q sample. Each statement was then linked to the Team-Based Learning (TBL) literature (Michaelsen, Knight & Fink, 2004). While this particular research is not a study of TBL, the authors found it useful to tie the Q sample to one pedagogical theory in a grounded and cohesive manner, rather than drawing connections multiple pedagogical theories. Q Methodology is unique in its ability to both require the user to rank the elements in terms of their own importance and their importance with respect to other elements.

Table 1. The Q sample	TBL: Pro, Anti, Neutral	Type	Team Process	Forming Teams	Classroom	Roles	Contribution	Assignments	Teaching	Grading	Equity
	01. Teams should be very diverse (race, major, gender, etc).	P	T		x						
02. Teams should be formed by the course instructor	P	T		x							
03. Teams should be encouraged to choose a leader	A	T	x								
04. Teams should largely consist of people who know each other	A	T		x							
05. Faculty who lecture and use teams create the best environment	A	O							x		
06. The classroom should be constructed in a way as to support team interaction	P	O			x						
07. Team work should be done in the classroom, enough class time should be given for team work	P	O						x	x		
08. Groups should sit together every day	P	O			x				x		
09. Team members should make sure everyone participates and understands	P	O	x								x
10. Everyone should do their fair share	A	O	x				x				x
11. Team members should divide work equally	A	O	x				x				x
12. Team members should rotate who does which assignment	A	O	x			x	x				
13. Roles of team members should be clearly defined	A	O	x			x	x				
14. Team assignments should require teams to use course concepts to make decisions and report those decisions in a simple form comparable across teams	P	G						x			
15. Team assignments should generate a high level of interaction	P	G						x			
16. Teams should create something that can be readily compared across teams	P	G						x			
17. Assignments must promote both learning and team development	P	G						x			
18. Assignments should be structured such that each person can do his/her own part and then the team can combine their efforts before the assignment is due	A	G						x			x
19. Peer evaluations should affect grades	P	G								x	x
20. Teams should complete both small projects & assignments as well as bigger projects	N	G						x			
21. Individual members should be responsible for pre-class individual preparation	P	G						x			x
22. Students should have both individual and team grades assigned	P	G						x		x	x
23. Grades should be based on each member's contribution to the team	N	G					x			x	x
24. Teams should include people on a similar schedule so they can meet outside of class	A	T		x							
25. Teams should be encouraged to adopt a formal decision making process	A	T	x								
26. Teams should include of people with similar motivation levels	A	T		x							
27. Team members should be switched frequently	A	T		x							
28. Teams should be formed by students	A	T		x							
29. Teams should include people with similar personality types	A	T		x							

Opatrny-Yazell and Houseworth do not attempt to convince readers of the merits of various instructional strategies such as of Team-Based Learning (TBL), Cooperative Learning

(CL) or other pedagogies. *The Journal on Excellence in College Teaching* (2014, vol. 25, Issues 3 & 4), especially Michaelsen, Davidson and Major (2014), provides a comprehensive review and comparison of TBL, CL, and Problem Based Learning (PBL).

Table 1 also shows each statement and its relationship to the TBL literature, as identified by Opatrny-Yazell and Houseworth (2018). Each statement was identified as either in agreement with TBL (pro-TBL), in disagreement with TBL (anti-TBL) or neutral relative to TBL. The statements were also identified as belonging to one of three types: those related to forming teams (T); those related to teaching, grading, and assignments (G); and other statements such as those about team processes, the classroom space, member roles, and contributions (O). Lastly, the Q statements were categorized at a micro level as either team processes, forming teams, the classroom space, member roles, contribution, assignments, teaching, grading and/or equity as shown in Table 1.

Data Collection and Analysis

In the original study of student perceptions, the instrument consisted of a short demographic survey and a Q sort with directions accompanied by 29 small cards each printed with one Q statement (Appendix A). This research study builds on the original work of Opatrny-Yazell and Houseworth (2018). This particular research seeks to extend their study by incorporating the viewpoints of faculty who effectively use teams in their classrooms. The data from the original study by Opatrny-Yazell and Houseworth (2018) are utilized here for comparison with faculty perceptions using the same methodology. Specifically, the authors of this study will use the OBTS listserv to request that OBTS members participate in this study before the 2019 OBTC. The results will then be the subject of the roundtable discussion.

Prior to OBTC 2019, the authors will use the OBTS listserv to ask for faculty participants who will complete the Q sort of the Q sample. Q Methodology is particularly robust with regard to the number of participants needed. Q Methodology only requires enough subjects to establish the existence of a factor for purposes of comparing one factor with another (Brown, 1980, p. 191-192; Benedict 1946, p. 16). Ideally, at least 20 OBTS members will volunteer as participants. Then, the Q sorts from each subject will be analyzed with the PQ Method software in the same way that the original study analyzed the data. In the original study, Q sort data along with the subject number were entered into a downloaded version of PQ Method Release 2.35 which is available from <http://schmolck.userweb.mwn.de/qmethod/>. After the data were entered, a factor analysis was conducted and a varimax rotation was then conducted.

It is expected that the analysis will generate 8 or fewer resultant faculty factors. PQ Method can report a maximum of 8 factors which is sufficient since there is some point at which evaluating each additional factor provides no new insights. After the faculty factors are generated, they will be compared with the eight student factors which resulted from the research of Opatrny-Yazell and Houseworth (2018).

Thus, the question of how to most relevantly compare the student and faculty factors becomes pertinent. Through correspondence with Brown (2019), he indicated that one strategy for this comparison is “a second-order analysis...Brown 1976 (p. 111) and on pp. 66, 168 of *Political Subjectivity* (Brown, 1980). This consists of entering the factor-score arrays from the factors in study 1 [student] along with the factor-score arrays from the factors in study 2 [faculty] and then factor analyzing the factors to determine which ...[are] comparable” (Brown, 2019).

Q Method and the roundtable discussion (Session Description)

Once the research is completed, and prior to OBTS 2019, the authors will analyze the data as discussed above. The analysis itself, is the factor analysis of the Q sorts of the participants, both faculty and students. Mathematically, this method works in the same way as factor analysis. The difference is in the meaning of the interpretation. “Q studies, from conception to completion, adhere to the methodological axiom that subjectivity is always self-referent and can be demonstrated to have structure and form” (McKeown and Thomas, 2013, pp. 2-3; from Brown, 1986). “In Q Methodology, the observer and the observed are identical; only the individual can measure his or her subjectivity. The methodology seeks to reveal these subjectivities without confounding them with operational measurements” (McKeown and Thomas, 2013). The student and faculty factors which will result from this analysis will be represented as a factor array which can be viewed as a composite Q sort of all the subjects on that particular factor.

The Roundtable Discussants will assist in the final step of the analysis through their discussion of the relevant results which will be provided in succinct tables by the authors. The final step, as described by McKeown and Thomas (2013) “is the task of distilling the core meanings...achieved in terms of consensual and divergent subjectivity, with a special emphasis on the *contextuality principle* given succinct expression by Lasswell (1948): ‘The meaning of any detail depends on its relationship to the whole context of which it is a part’ (p.215). Rather than focusing on the placement of individual statements [in the factor array], an effort is made to examine the patterns of meaning within the broader contextual constellation provided by a given factor array, with attention given to the relevance of such patterns to existing or emerging theories or propositions” (p. 6).

The Roundtable Discussion at OBTS will consist of two parts. First, the authors will provide an explanation of the Q method output data. Discussants will be provided with appropriate tables and charts for the analysis discussion. Then, the Roundtable participants will discuss the data and their perceptions of its meaning as described above. Because OBTS faculty are widely recognized for their use of teams and experiential learning in the classroom, their insights related to the results should provide for a lively discussion of both the meaning within the resultant factor arrays and the use of this information by faculty who use teams in the classroom.

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Appendix A. Q Sort* Instructions

You have been given 29 statements on small slips of paper (they are clipped to this paper). You should arrange those slips of paper on the diagram at the top of page and then write the number from each statement into the diagram at the bottom of the page using the following directions.

Your directions: As you consider each statement on each slip of paper, you should think about whether or not you think that **the particular statement describes something which is important to good team experiences in the classroom or not**. Then, arrange the statement slips of paper onto the top diagram in the shape of a normal distribution as shown. Place the statement that you think is most important to good team experiences in the classroom on the far right top row of the chart (under +4). The statement you think is the least important to a good team experience in the classroom should be placed on the far left of the chart (under -4). Continue arranging the statement slips of paper until the chart is full. Then write the number of each statement as you sorted them on to the diagram at the bottom of the page.

-4 Least Important	-3	-2	-1	0 Neutral	+1	+2	+3	+4 Most Important

-4 Least Important	-3	-2	-1	0 Neutral	+1	+2	+3	+4 Most Important

Record the numbers on the statement slips which you sorted above on the chart below
 Now, collect the statement slips, clip them back together, put the slips and this paper into the envelope provided and seal the envelope. Then hand in all materials. Note that your name will only be used to match your results to the survey in the database, then all identifying information will be deleted. Also, the instructor will NOT see your results, a third party will process all results and provide raw data to the instructor.

*Each subject was given a consent form, a short demographic survey, a 11"x17" version of Appendix A, each statement already cut out to an approximately 1.5"x2" size and an envelope. Subjects instructions were in keeping with "a condition of instruction" as described in McKeown and Thomas (2013, p 26).