
Attitude toward teamwork and effective teaming

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Abstract

The business sector has created a need for higher educational institutions to prepare students to be effective team players. Responding to this need, higher educational institutions have been using different forms of active learning as methods to promote teamwork among students and enhance their learning. Results from such initiatives have shown that students recognize that the teaming experience improves their interpersonal skills, yet they still prefer work individually. Attitude originated from negative team experiences. The purpose of this study was to determine what relationship exists between individual attitudes toward teaming and the presence of characteristics deemed essential for an effective team. The study suggests that when mature communication, accountable interdependence, psychological safety, common purpose, role clarity and clear goal are present during the process of teaming, the experience will have a positive effect on individuals' attitude toward teamwork.

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Experiences from organizations using the team approach for improving performance have pointed to teamwork as an important tool in business success. This finding has prompted organizations to start looking for teamwork skills in their new employees. Although employers may be willing to provide on-the-job training, they expect that their new employees at least possess the basic understanding of why teamwork skills are important to their organization.

Looking for ways of shortening the new employees learning experience on acquiring teamwork skills in the workplace, organizations are suggesting institutions of higher education to prepare future employees (students) to be effective team players (Busse, 1992; Alexander and Stone, 1997; McFarland, 1992; Kunkel and Shafer, 1997). For this reason, accreditation organizations at the collegiate level such as the Accounting Education Change Commission (AECC), the joint Commission for Accreditation of health Care Organizations (JCAHO) and the Accreditation Board for Engineering and Technology (ABET), among others, are requiring higher education institutions to introduce teamwork activities into their curriculums (Ravenscroft and Buckless, 1995; ABET, 2002; Richardson *et al.*, 1999).

In response to this demand, institutions of higher education are developing methodologies for introducing teamwork in their classrooms. They also want to enhance the process of learning through the use of teams knowing that in corporate environments teamwork has been a key element to improving employee performance and learning (Cohen and Bailey, 1997; Katzenbach and Smith, 1993; Guzzo and Dickson, 1996; Devine *et al.*, 1999).

Research in educational settings shows that most of the students recognize the necessity of teamwork for improving interpersonal skills, but they still prefer individual work when the goal is achieving good performance (Porter, 1993; McCorkle *et al.*, 1999). Studies also prove that there are many elements involved in the process of introducing teaming into the workplace as well as into the classroom (Venter and Blignaut, 1998; Kunkel and Shafer, 1997; Manzer and Bialik, 1997). When these elements are not very well managed they can provide negative teamwork experiences discouraging individuals from continued participation in teams (Pfaff and Huddleston, 2003). Negative team experiences create negative attitude toward teamwork that are transferred to the workplace (Krug, 1997).

These results have compelled educational researchers to look to the business world to find the elements that make teams effective in organizations. They found that it is not just putting individuals together and assigning them a task. Individuals in teams need to understand that there



are specific required skills for achieving team effectiveness.

Adams *et al.* (2002), in their study for understanding team effectiveness identified seven characteristics as the main elements that need to be present in the process of teaming in order for the team to be effective. These characteristics are productive conflict resolution, mature communication, role clarity, accountable interdependence, goal clarification, common purpose and psychological safety.

The purpose of this study was to determine if the presence of these characteristics for effective teaming make a difference in individuals' attitudes toward teamwork. Is there any relationship between these elements and the attitudes of individuals toward teamwork?

Literature review

Attitude toward teamwork

There is extensive research about cooperative and collaborative learning and the use of groups in the classroom setting. Research shows that the process of developing teamwork is highly complex and when it has not been well managed it has generated in individuals a negative attitude toward teamwork (Pfaff and Huddleston, 2003; Krug, 1997).

According to Gagne and Medsker (1996) attitude is defined as an internal state that influences an individual's choices of personal action, or a response tendency. Therefore, attitude toward teamwork is defined as the individual willingness (internal state) to continue working together with the same team as well as in other teams (personal action) (Gardner and Korth, 1998).

There are few studies about students' attitudes toward teamwork, and findings from these studies show contradictory results. For instance, Gardner and Korth (1998), and Scaraffioti and Klein (1994) in their study with graduate students and engineering employees respectively found that even though the results were not statistically significant, individuals' attitude changed positively after their participation in teams. By contrast, Porter (1993), McCorkle *et al.* (1999) and Buckmaster (1994) found that students that participated in their studies were frustrated by the teamwork experiences. Although students recognized that the experience improved their interpersonal skills, they still preferred to work individually.

Team effectiveness

Team effectiveness is defined as performance and employee satisfaction (Gladstein, 1984). More explicitly, Hackman (1990) defines it as the degree to which a group's output meets requirements in

terms of quantity, quality, and timeliness (performance); the group experience improves its members' ability to work as a group in the future (behavior), and the group experience contributes to individual satisfaction (attitude). This definition makes team effectiveness a function of performance, attitude, and behavior.

There are different models available in the literature to measure team effectiveness and each of them makes reference to specific and necessary characteristics for teams to become effective. Trying to identify the most relevant and common characteristics among these models, Adams *et al.* developed a framework to assist in the facilitation and measurement of effective teamwork (Adams *et al.*, 2002). In this model, seven constructs were identified as characteristics that need to be present during the team process for it to be effective. The seven constructs are productive conflict resolution, mature communication, accountable interdependence, clearly defined goals, common purpose, role clarity and psychological safety.

Productive conflict resolution refers to the procedure and actions taken when a conflict occurs that lead to results such as facilitating the solution of the problem, increasing the cohesiveness among team members, exploring alternative positions, increasing the involvements of everyone affected by the conflict and enhancing the decision-making process (Capozzoli, 1995).

Mature communication refers to the process in which team members are able of articulating ideas clearly and concisely, giving compelling reasons for their ideas, listening without interrupting, clarifying what others have said and providing constructive feedback.

Accountable interdependence is defined as the mutual dependence that all team members have regarding the quality and quantity of each individual's work within the team.

Clearly defined goals are quantifiable and commonly agreed upon statements that define the actions to be taken by the team. Team members need to know and understand what has to be done by the team. The goal has to be tied to specific objectives that lead the team to achieve its goal. Also, team members should be committed to the goal and should participate in its development (Simon, 2001).

Common purpose is related to the knowledge and understanding by team members of why the team is there and why it was assigned to the specific task. It is the main objective of the team.

Based on Salton's (2000) definition of roles, role clarity is defined as the understanding for team members of what is expected for each one in the team. It is to know, understand and respect the authority of each team member in his or her task. This role clarity will allow team members to

identify how to complement the skills and efforts of each other to make the team effective.

Psychological safety, introduced by Edmonson (1999), is defined as a shared belief that the team is safe for interpersonal risk taking. It refers to the individual's state of feeling confident that the team will not act against him or her for expressing his or her point of view in the team. Sense of trust and respect are the main elements that support a climate of psychological safety.

Methodology

The research sample

The participants in this study were 188 students from the College of Engineering and Technology at the University of Nebraska – Lincoln registered in senior design classes for the spring semester 2002. This sample was used because of the teamwork requirement in these classes, the availability of the participants and the relatively convenient conditions for contacting them.

The participating senior design classes were from the departments of Agricultural and Biological Systems Engineering, Chemical Engineering, Computer Engineering, Construction Management, Electrical Engineering, Industrial Engineering and Mechanical Engineering.

Variables and measures

For the purpose of this study the seven constructs identified by Adams *et al.* (2002) were considered to be the characteristics of effective teams whose relationship with individuals' attitude toward teamwork were evaluated. All variables – the seven constructs and attitude toward teamwork – were measured using the team effectiveness questionnaire (TEQ).

The TEQ questionnaire

After a careful review of instruments measuring attitudes toward teamwork in the Buros Institute of Mental Measurement and the literature available, it was not possible to identify an instrument that allowed the researcher to measure all the variables involved in this study. Therefore, a questionnaire was developed using as its foundation the team performance questionnaire designed by Simon (2001) and adding elements that made it valid for the purpose of this study.

The designed questionnaire was structured in four sections. The first section corresponding to items 1 to 62 asked about the individual perceptions of student team experience. These responses were measured using a five-point Likert scale ranging from "strongly agree (SA)" to "strongly disagree (SD)". In this section the variable attitude toward

teamwork and each of the seven characteristics of an effective team were measured.

The second section – questions 63 to 65 – intended to describe the team and to ask students about their preference for selecting team members. Questions 66 through 72 in the third section intended to gather information about student experiences when working with other teams, and finally demographic information was collected in the fourth section, questions 73 through 76.

Survey procedures and data processing

The questionnaire was administered in person either by the investigator or the course professor during class session. Having students fill out the questionnaire in class increases the response rate (Simon, 2001). The class professor contacted those students who were not in class when the questionnaire was administered and asked them to fill out the questionnaire and return it later. The questionnaire was administered at the end of the semester once the students had gone through the team experience.

The data was processed using SPSS 11.0. Statistic descriptives on demographics variables were calculated in order to define the profile of the sample. Also, considering that the instrument was designed to suit the study, reliability analysis on questionnaire scores was done using Cronbach's coefficient alpha to estimate consistency of the scores from the questionnaire. As a way of evaluating construct validity of the instrument a factor analysis was conducted to identify the items more related to the constructs and the fewest possible constructs needed to reproduce original data (Gorsuch, 1997). Correlation and multiple regression analyses were also run to identify the relationship between variables and identify those variables that could allow for the prediction of individuals' attitudes toward teamwork.

Results

Demographics

In the sample ($n = 188$), 84 percent of the participants were male and 16 percent female. This gender breakdown was expected because of the characteristic sample of engineering students. These statistics reflect that male domination still exists in the engineering field.

The majority of the participants (65 percent) were between 22 and 24 years-old and most of them (40 percent) have spent between four and five years in college. A total of 40 percent of them have a GPA between 3.0 and 3.5 and only 32 percent have a GPA greater than 3.5. The majority of the participants in the sample (90 percent) were White/Caucasian.

Reliability

As mentioned before in the methodology section, a questionnaire was developed to measure the variables of the study. For assessing the internal consistency of the questionnaire, it was necessary evaluate the instrument for reliability. As a measurement of reliability, Cronbach's coefficient alpha was calculated for each of the eight factors considered in the study. As Table I shows, all of the factors produced alpha values greater than 0.5 indicating a high internal consistency. In other words, items assigned to each construct are measuring the same characteristic making the instrument reliable.

Factor analysis

As the questionnaire used to measure the variables of the study was applied for the first time, it was also necessary assess its validity. Validity determines if the instrument is actually measuring the desired variables.

Validity is measured in four different components. First, face validity that refers to the relevance that the measurement instrument has to those subjects to be surveyed. This is evaluated by asking individuals similar to those participating in the study if they think the instrument adequately and completely measures what is intended. Second, content validity refers to the relevance that the instrument has to those expert subjects in the field. Third, criterion validity indicates that the measuring instrument has the ability to predict or agree with constructs external to that which we are measuring. Finally, construct validity refers to having the results from the instrument being able to correlate with other related constructs or variables that are similar (The Royal Windsor Society for Nursing Research, 2002).

In order to address the issue of validity for the designed questionnaire only face, content and construct validity were assessed. Face validity was evaluated by asking 15 engineering students to fill out the questionnaire and give feedback about their thinking of the questionnaire before it was administered to the entire sample. The feedback

allowed for item rewording and questionnaire restructuring. Content validity was addressed through literature review and construct validity was assessed using factor analysis.

Factor analysis is a technique that allows for selecting items in an instrument that are most related to a specific construct and identifying the fewest possible constructs needed to reproduce the original data (Gorsuch, 1997). In other words, with this technique items related to a specific construct and the number of constructs measured by the instrument is identified. This allows for evaluating if the number of constructs intended to measure is actually being measured by the questionnaire, and if the items assigned to each construct are actually related to that construct.

Factor analysis uses principal component analysis with varimax and oblique rotation to minimize the number of items that load on a construct and to minimize the number of constructs both loading the same items (Gorsuch, 1997). This means that the ideal item loads on only one construct. Thus, this analysis gives the opportunity for looking at the loading structure of the data.

For this study, using principal component analysis with varimax and oblique rotation, ten factors were identified as the fewest possible constructs needed to reproduce the original data, explaining 67.7 percent of the variation. Unfortunately the loading distribution was not as expected. The expectation was to obtain seven factors (constructs of the study) with items loading on each factor. The analysis showed that five factors accounted for a significant part of the items loading. Question 29 did not load on any factor that was a concern. Therefore, a new analysis was run excluding question 29 and forcing the analysis to use seven factors in order to evaluate the instrument on the original conditions (measurement of the seven constructs). The variance explained by the seven factors was 61.5 percent and once again the loading was not as expected. However, there was an improvement as the items distribution showed a better loading.

Table I Questionnaire internal reliability

Variable	Number of cases	Reliability coefficients	Alpha ^a	Standardized item alpha
Attitude	188	15	0.9142	0.9181
Conflict	188	8	0.7238	0.7342
Communication	184	8	0.8136	0.8174
Goal	188	6	0.7958	0.7932
Purpose	188	7	0.8745	0.8774
Psychological safety	187	7	0.7547	0.7647
Role	186	5	0.7920	0.7955
Accountable interdependence	187	8	0.8451	0.8436

Note: ^aCronbach's coefficient alpha

According to Gorsuch (1997) item factor analysis face some problems. Among them are the sample size and the type of respondents. Any analysis is enhanced if the sample has a wide variety of people. This study lacked of said variety because of the condition of having a convenient sample of senior engineering students. Furthermore, the sample size required for a stable factor analysis is usually given as a function of the number of items. For most item analysis of previously untested items, a sample size of 300 is recommended. (Gorsuch, 1997). In this case, a minimum of 300 subjects would be required for a stable factor loading. Therefore, further testing of the questionnaire in a larger and more varied sample is required in order to validate the questionnaire.

Correlation and regression

Correlation between variables was evaluated running 28 correlation analyses. This situation in which a high number of correlations are required increases the probability of making type I error. In order to control this error, the Bonferroni approach was used and a p -value of less than 0.0018 ($0.05/28 = 0.0018$) was required for significance. Table II shows the correlation values between the variables of the study. The results show high values with significant statistical correlation between variables.

High correlation between independent variables could indicate the presence of collinearity between them. It means the possibility of different independent variables measuring the same effect and producing imprecise estimates of regression coefficients, therefore misleading the results of the study (Pedhazur, 1997).

Among the procedures used for evaluating collinearity the variance inflation factor (VIF) is commonly used. The VIF indicates the inflation of the variance of the coefficient of regression (b) as a consequence of the correlation between independent variables. The higher the correlation between the independent variables the greater the

inflation of the variance of the b (Pedhazur, 1997). Then, in order to evaluate for collinearity in the data, the VIF values were analyzed. Table III shows the results of this estimator.

According to Pedhazur (1997), there is an indication of collinearity when the value of VIF is grater than ten. It seems that in this study there is no presence of significant collinearity between independent variables. In other words, variables in some way are measuring different effects.

A regression analysis was run using the enter method in order to identify the variation in the variable attitude due to the seven independent variables. In the enter method, all variables are included in the analysis one by one. The first variables entered were those thought, according to the literature, to contribute the most to the variation of the dependent variable. Said entering order was as follows: communication, accountable interdependence, psychological safety, purpose, role, goal and at last conflict.

Before analyzing results from the regression procedure, assumptions on regression analysis were checked in order to ensure valid interpretation of the results. In this context, normality, homoscedasticity and linearity were evaluated finding that these assumptions were not violated. Therefore, the results from the regression procedure allow for evaluating explanation and prediction of the variables.

It was observed that the six first variables entered were statistically significant and accounted for 72.4 percent ($r = 0.85$) of the variance as

Table III Collinearity statistics

Variables	VIF
Psychological safety	4.758
Accountable interdependence	4.343
Productive conflict resolution	3.486
Mature communication	4.625
Role clarity	2.487
Common purpose	5.749
Clear goal	3.731

Table II Correlation between variables

Variables	Attitude	Psychological safety	Accountable interdependence	Conflict	Communication	Role	Purpose
Attitude							
Psychological safety	0.790*						
Accountable interdependence	0.782*	0.807*					
Conflict	0.726*	0.790*	0.778*				
Communication	0.751*	0.833*	0.762*	0.788*			
Role	0.543*	0.694*	0.579*	0.625*	0.683*		
Purpose	0.800*	0.797*	0.830*	0.754*	0.793*	0.726*	
Goal	0.726*	0.708*	0.735*	0.680*	0.762*	0.696*	0.839*

Note: * $p < 0.001$

Table IV shows. Conflict was not statistically significant ($p = 0.38$).

In testing whether the presence of the seven characteristics of team effectiveness could predict attitude toward team work, the B coefficients for the regression were analyzed. Table V shows the B coefficient values.

According to the results, the variables conflict ($p = 0.38$), interdependence ($p = 0.11$) and communication ($p = 0.21$) are not statistically significant for predicting attitude toward teamwork. This result was not expected because according to the literature, communication and interdependence are factors that have significant impact on team effectiveness (Jehn, 1998; Devine *et al.*, 1999; Gladstein, 1984). However, in reviewing the results from the regression analysis it was observed that conflict does not contribute to the variance explained (R^2 change = 0.001, $p = 0.38$) and goal clarity, even though its contribution was statistical significant, did not overly contribute to the explained variance (R^2 change = 0.006, $p = 0.047$). Taking these results into account, this researcher decided to analyze a new model excluding the goal clarity and conflict variables. Tables VI and VII show the results.

Tables VI and VII show that this model accounts for 71.7 percent ($r = 0.84$, $F(1,175) = 8.06$, $p < 0.01$) for the explained variance and mature communication, accountable interdependence, psychological safety, common purpose and role

Table IV Regression analysis summary

Model	R	R ²	R ² change	F change	Sig. F change
1	0.750	0.563	0.563	230.762	0.000**
2	0.811	0.658	0.095	49.255	0.000**
3	0.828	0.686	0.028	15.852	0.000**
4	0.839	0.704	0.018	10.805	0.001**
5	0.847	0.717	0.013	8.067	0.005**
6	0.851	0.724	0.006	3.989	0.047*
7	0.851	0.725	0.001	0.766	0.383

Notes: * $p < 0.05$; ** $p < 0.01$; variables were entered for each model according to the following order: communication, interdependence, psychological safety, purpose, role, goal, and conflict; dependent variable: attitude

Table V Multiple regression coefficients

Variable	B coefficient	t	Sig.
Constant	1.691	1.073	0.285
Communication	0.203	1.248	0.214
Interdependence	0.194	1.619	0.107
Psychological safety	0.696	4.011	0.000**
Purpose	0.528	2.909	0.004**
Role	-0.524	-3.237	0.001**
Goal	0.373	2.004	0.047*
Conflict	0.119	0.875	0.383

Notes: * $p < 0.05$; ** $p < 0.01$

Table VI Regression analysis summary

Model	R	R ²	R ² change	F change	Sig. F change
1	0.750	0.563	0.563	230.762	0.000*
2	0.811	0.658	0.095	49.255	0.000*
3	0.828	0.686	0.028	15.852	0.000*
4	0.839	0.704	0.018	10.805	0.001*
5	0.847	0.717	0.013	8.067	0.005*

Notes: * $p < 0.01$; variables were entered for each model according to the following order: communication, interdependence, psychological safety, purpose, role; dependent variable: attitude

Table VII Multiple regression coefficients

Variable	B coefficient	t	Sig.
Constant	2.917	2.137	0.034*
Communication	0.319	2.088	0.038*
Interdependence	0.242	2.070	0.040*
Psychological safety	0.688	4.035	0.000**
Purpose	0.691	4.187	0.000**
Role	-0.454	-2.840	0.005**

Notes: * $p < 0.05$; ** $p < 0.01$

clarity can be predictors of attitude. The resultant model is represented by the following expression.

$$\begin{aligned} \text{Attitude} = & 2.917 + 0.319 \times \text{Communication} \\ & + 0.242 \times \text{Interdependence} + 0.688 \\ & \times \text{Psychological safety} + 0.691 \text{ Purpose} \\ & - 0.454 \times \text{Role} \end{aligned}$$

The model shows that psychological safety and common purpose contribute the most for predicting attitude toward teamwork.

Discussion

As expected the results showed that attitude toward teamwork is highly related to each of the seven characteristics considered essential for a team to become effective. However, all of them did not account for the explained variance in attitude. In fact, only six of these characteristics, mature communication, accountable interdependence, psychological safety, common purpose, role clarity and clear goal, were shown to contribute to the explanation of the variance on attitude toward teamwork. The explained variance accounted for by the variables was of 72.4 percent.

This situation could be because collinearity was not assumed based upon the VIF criteria, but it is possible that some degree of collinearity was present causing the effect of conflict to be measured through other variables. This researcher feels that productive conflict resolution in some way is embedded in the other variables, thus it could have been measured through them.

The multiple regression analysis shows that only five of the seven constructs (mature communication, accountable interdependence, psychological safety, common purpose and role clarity) contribute to predicting attitudes toward teamwork. This was reflected in a regression model that accounts for 71.7 percent of the variation. Therefore, these results allow claiming that as minimum requirement for predicting attitude toward teamwork it is necessary take into account mature communication, accountable interdependence, psychological safety, common purpose and role clarity as predictor variables.

In summary, there is a positive relationship between the characteristics for effective teams and students' attitude toward teamwork. The presence of the characteristics for effective teams makes a difference in the attitudes of students toward teamwork. When students are able to develop and show mature communication, accountable interdependence, psychological safety, have a common purpose and have a clear understanding of what their role is when working in teams, their team experience will contribute and support a better attitude toward working in teams in the future.

References

- Accreditation Board for Engineering and Technology (ABET) (2002), *Criteria for Accrediting Engineering Programs*, ABET, Baltimore, MD.
- Adams, S., Simon, L. and Ruiz, B. (2002), "A pilot study of the performance of student teams in engineering education", *Proceedings of the American Society for Engineering Education Annual Conference and Exposition, Montreal, June*.
- Alexander, M.W. and Stone, S.F. (1997), "Student perceptions of teamwork in the classroom: an analysis by gender", *Business Education Forum*, Vol. 51 No. 3, pp. 7-10.
- Buckmaster, L. (1994), "Effects of activities that promote cooperation among seventh graders in a future problem-solving classroom", *Elementary School Journal*, Vol. 95 No. 1, pp. 49-62.
- Busse, R. (1992), "The new basics: today's employers want the 'three Rs' and so much more", *Vocational Education Journal*, Vol. 67 No. 5, pp. 24-5.
- Capozzoli, T.K. (1995), "Resolving conflicts within teams", *The Journal for Quality and Participation*, Vol. 18 No. 7, pp. 28-31.
- Cohen, S. and Bailey, D. (1997), "What makes teams work: group effectiveness research from the shop floor to the executive suite", *Journal of Management*, Vol. 23 No. 3, pp. 239-90.
- Devine, D., Clayton, L., Philips, J., Dunford, B. and Melner, S. (1999), "Teams in organizations: prevalence, characteristics, and effectiveness", *Small Group Research*, Vol. 30 No. 6, pp. 678-711.
- Edmonson, A. (1999), "Psychological safety and learning behavior in work teams", *Administrative Science Quarterly*, Vol. 44 No. 2, pp. 359-83.
- Gagne, R.M. and Medsker, K.L. (1996), *Conditions of Learning: Training Applications*, Harcourt Brace, Fort Worth, TX.
- Gardner, B. and Korth, S. (1998), "A framework for learning to work in teams", *Journal of Education for Business*, Vol. 74 No. 1, pp. 28-33.
- Gladstein, D. (1984), "Groups in context: a model of task group effectiveness", *Administrative Science Quarterly*, Vol. 29 No. 4, pp. 499-517.
- Gorsuch, R. (1997), "Exploratory factor analysis: its role in item analysis", *Personality Assessment*, Vol. 68 No. 3, pp. 532-60.
- Guzzo, R. and Dickson, M. (1996), "Teams in organizations: recent research on performance and effectiveness", *Annual review of Psychology*, Vol. 47 No. 30, pp. 307-38.
- Hackman, J.R. (1990), *Groups that Work (and Those That Don't)*, Jossey-Bass Publishers, San Francisco, CA.
- Jehn, K. (1998), "Qualitative analysis of conflict types and dimensions in organizational groups", *Administrative Science Quarterly*, Vol. 42, pp. 530-57.
- Katzenbach, J. and Smith, D. (1993), "The discipline of teams", *Harvard Business Review*, Vol. 71 No. 2, pp. 111-20.
- Krug, J. (1997), "Teamwork: why some people don't like it", *Journal of Management in Engineering*, Vol. 13 No. 2, pp. 15-16.
- Kunkel, J.G. and Shafer, W.E. (1997), "Effects of student team learning in undergraduate auditing courses", *Journal of Education for Business*, Vol. 72 No. 4, pp. 197-200.
- McCorkle, D., Reardon, J., Alexander, J., Kling, N., Harris, R. and Iyer, V. (1999), "Undergraduate marketing students, group projects, and teamwork: the good, the bad, and the ugly", *Journal of Marketing Education*, Vol. 21 No. 2, pp. 106-17.
- McFarland, W.P. (1992), "Meeting of the minds: Recognizing styles of conflict management helps students develop 'people skills'", *Vocational Education Journal*, Vol. 67 No. 5, pp. 26-7.
- Manzer, J. and Bialik, D. (1997), "Team and group learning strategies for business and economics classes", *Business Education Forum*, Vol. 151 No. 4, pp. 32-5.
- Pfaff, E. and Huddleston, P. (2003), "Does it matter if I hate teamwork? What impacts student attitudes toward teamwork", *Journal of Marketing Education*, Vol. 25 No. 1, pp. 37-45.
- Pedhazur, E. (1997), *Multiple Regression in Behavioral Research*, Harcourt Brace, Fort Worth, TX.
- Porter, G. (1993), "Are we teaching people not to work in teams: reflections on the team based assignments in the college classroom", *CSWT Proceedings*, available at: www.workteams.unt.edu/proceed/porter.htm
- Ravenscroft, S.P. and Buckless, F.A. (1995), "Incentives in student team learning: an experiment in cooperative group learning", *Issues in Accounting Education*, Vol. 10 No. 1, pp. 97-110.
- Richardson, J., Montemuro, M., Mohide, E., Cripps, D. and Macpherson, A. (1999), "Training for interprofessional teamwork: evaluation of an undergraduate experience", *Educational Gerontology*, Vol. 25, pp. 411-34.
- (The) Royal Windsor Society for Nursing Research (2002), "Components of validity", available at: www.kelcom.igs.net/~nhodgins/instrument_validity.html
- Salton, G.J. (2000), "Getting a grip on group behavior", *Industrial Management*, November-December, pp. 26-33.
- Scaraffioti, J. and Klein, J. (1994), "Effects of cooperative learning strategies on performance, attitude and group behaviors in a technical environment", paper presented at the Annual Meeting of the American Educational Research Association (ERIC Document Reproduction Service No. ED 378 192).
- Simon, L.C. (2001), "Study of the performance of student teams in engineering education", unpublished master's thesis, University of Nebraska, Lincoln, NB.
- Venter, I. and Blignaut, R.J. (1998), "Teamwork: can it equip university science students with more rigid subject knowledge?", *Computers and Education*, Vol. 31 No. 3, pp. 265-79.