

Processes and Outcomes in Student Teamwork. An Empirical Study in a Marketing Subject

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Abstract:

The presence of student teamwork is increasing in most university degrees. However, there is still a gap in the literature regarding the connection between teamwork processes and their outcomes. In this paper, we analyze these processes and how they relate to teamwork outcomes from the students' perspective. Data is gathered from 129 undergraduates in the first year of Economics and analyzed by means of structural equations modeling. The main results show that transitional processes are especially important for explaining students' perceptions of goal attainment, whereas interpersonal processes are key to explaining perceptions of improvement in skills and overall attitude towards the team. Furthermore, this work shows that students' perception of goal attainment also exerts an influence on improvement in skills and on overall attitude towards the team. The relations found in this work may help instructors to develop effective teamwork activities and to monitor their results.

Keywords: teamwork, students, processes, overall outcomes, goals attainment,

Introduction

In recent decades, most universities and business schools have been giving increasing importance to students' teamwork in their programs (de Hoyos-Guevara, 2004; Strauss, Alice and Young, 2011). There are various reasons for gradually changing the learning perspective from individual student work to more collaborative and interactive tasks. First, instructors seek to provide the student with experiences that may resemble, in certain ways, the work that students will need to develop in their future jobs. These include experiences with other students, with different opinions, and even with different cultures in the case of international students, that may improve student teamwork and problem-solving skills (Denson and Zhang, 2010). Especially in the field of marketing, employees frequently need to work in teams in their companies to fulfil many of their tasks (Crevet et al., 2004; Munoz and Huser, 2008). Despite this growing trend, there is still a gap between the level of teamwork skills required by employers and the level developed by students during their undergraduate courses (Willey and Gardner, 2009; Willcoxon, Cotter and Joy, 2011). Second, given the lack of time to meet with each student individually, meeting with teams of students may be a more reasonable and effective use of time (Pfaff and Huddleston, 2003). To sum up, teamwork is a core competency that is now common to most higher education studies.

Although the importance of teamwork competencies is clear and shared by instructors and team members, there are many questions that still need to be answered. It is assumed that higher levels of teamwork processes lead to higher teamwork performance. However, we still do not know the effect of each particular activity or teamwork process on final teamwork outcomes. Previous empirical studies show inconsistent results about this aspect (Smith, Peterson and Misumi, 1994; LePine, Piccolo, Jackson, Mathieu and Saul, 2008). Focusing on business students, Pineda and Lerner (2006) empirically examine which specific team processes are linked to particular team performance dimensions. Nevertheless, these authors analyse the determining factors of each outcome of teamwork separately and, therefore, a global and simultaneous view of all the different processes and their outcomes is still required. Besides, their paper is limited to direct relations between individual processes and overall outcomes; it would also be interesting to analyse the relations between different performance outcomes. Therefore, it is important to study not only the direct relations, but also to complement the picture with the indirect effects that may exist.

In order to fill these gaps, the current paper adopts a holistic view of the teamwork processes and their overall outcomes, through direct and indirect relations. The main goal of this paper is to study the effects that the accomplishment of different activities involved in teamwork processes may have on overall teamwork performance. This analysis is carried out using a global and integrated view of all these relations and from the students' perspective. The empirical study is developed in the context of a Marketing subject and is applied to students in the first year of their degree in Economics. The contribution of this paper is twofold. First, we go deeper into the study of the connection between individual teamwork processes and overall performance outcomes. Second, the results from this paper will show the importance of each team process to attain the highest level of teamwork performance. With this data, instructors may be able to see on which facets they should emphasize.

The structure of the paper is as follows. The next section is devoted to the literature review and the development of the hypotheses. In Section 3, the context of study and the methodology are described. Section 4 presents the main results and, finally, in Section 5, the conclusions drawn from these results are discussed.

Literature Review

A team is usually defined as “*a distinguishable set of two or more individuals who interact independently and adaptively to achieve specified, shared and valued objectives*” (Morgan, Salas, and Glickman, 1993). In the case of teams composed of students, they are usually time-limited in order to produce one-time outputs (Pineda and Lerner, 2006). In order to study teamwork and the development of teamwork skills, both the overall performance and each teamwork process employed to achieve this performance should be analyzed (Cannon-Bowers and Salas, 1997; Telleria, Little and MacBryde, 2002). An investigation limited to just one of these aspects, either the overall performance or the processes, will only show part of the picture. A study that deals only with performance outputs will be merely descriptive, since it does not reveal the possible causes of these outputs (Marks, Mathieu and Zaccaro, 2001). If the analysis only studies the processes, it will not provide information regarding the effectiveness of these processes on team performance. As a result, teams would be unaware of the deviation between the expected and the actual outcomes (Telleria *et al.*, 2002).

There are different perspectives that can be employed to study teamwork processes. Some previous works focus on teamwork competencies. In this line, Stevens and Campion (1994) identify five major areas, including planning and task coordination, goal setting and performance management, conflict resolution, communications and collaborative problem solving. Likewise, Cannon-Bowers and Salas (1997) group different competencies into three categories: knowledge, skills and attitudes. Focusing specifically on the activities related to these competencies, Marks *et al.* (2001) establish a classification where activities are grouped according to three different categories of processes: (1) transition processes refer to the activities in which team members are involved before the development of the main work; (2) action processes cover all the activities that are implemented as the team works to accomplish the goals and objectives; and (3) interpersonal processes deal with the activities that are focused on the management of interpersonal relationships. Although there are other proposals and related classifications (Oakley, Felder, Brent and Elhaji, 2004; Riebe, Roepen, Santarelli and Marchioro, 2010), the classification into transition, action and interpersonal processes is one of the most frequently cited in the previous literature (Marks *et al.*, 2001; Pineda and Lerner, 2006; LePine *et al.* 2008).

In this classification, each category is composed of a number of related activities that may vary depending on the authors. As can be seen in Table 1, transition processes cover activities such as developing and planning the team mission, goals, rules and guidelines, assessing the areas of expertise of team members, assigning roles and responsibilities within the team, and formulating the most suitable strategy. The action processes include activities such as tracking the progress towards the goals and pre-established deadlines, monitoring the systems and backup behavior, coordinating the actions of team members and mutual help between members. Finally, interpersonal processes encompass the evaluation of interpersonal strengths and weaknesses, working through disagreements, managing motivation and confidence building within the team, dealing with members' emotions, establishing a proper communication between members, and providing collaborative problem solving. All these activities have been extracted from previous contributions in the literature (Watson, 2002; Oakley *et al.*, 2004; Pineda and Lerner, 2006; Riebe *et al.*, 2010).

INSERT TABLE 1

An accurate management of teamwork processes may result in a diversity of outcomes. Performance, productivity, effectiveness, teamwork viability and cohesion are some of the most frequently studied concepts (Halfhill and Nielsen, 2007; LePine *et al.*, 2008). However, sometimes it is not easy to distinguish the limits between some of these outputs and, on occasions, there have even been difficulties to categorize them either as an outcome or as a part of the process (Marks *et al.*, 2001). This is the case of team efficacy or cohesion variables, which have been frequently used to represent processes in spite of being considered by other authors as products of team experiences. Marks *et al.* (2001) prefer to categorize them as “emergent states”. Nevertheless, when studying teamwork, each author has focused on specific ways to analyse its effects.

As in the case of teamwork processes, there are also different classifications in the literature regarding their outcomes. Torrelles *et al.* (2011) synthesises some of the most relevant classifications, and there are different criteria to categorize outcomes. For example, Legatt (2007) divides them into four categories: skills, knowledge, attitudes and reasons. These outcomes includes facets such as leadership, knowledge of one’s own strengths and weaknesses, co-operative attitudes, achievement of personal and teamwork goals, commitment, etc. In a similar vein, Humphrey, Karan and Morgeson (2010) classify the outcomes of teamwork into cognitive, affective and behavioural dimensions. Within this classification, they refer to aspects such as knowledge, satisfaction with the team, viability, cohesion, identification with the team, achievement of goals, etc.

Regardless of the classification considered, it is clear that teamwork outcomes can be studied from different angles and with different variables and, despite the broad possibilities for analysing teamwork results, the selection of these variables cannot be arbitrary. Both researchers and managers should carefully choose the most suitable facets for their specific study. Wageman, Hackman and Lehman (2005) criticize some teamwork practices that often reduce the analysis to some easy-to-obtain quantitative indicators. In their view, a suitable analysis of team effectiveness should include the study of three different aspects: the productive outcome of the team, the members’ capability to work together interdependently in the future, and the learning and well-being of individual team members. Pineda and Lerner (2006) point to similar facets: perception of goal attainment, satisfaction with the team experience, members’ intention to remain in the same team in future teamwork, perception of improvement in skills and

understanding of teamwork. We also use these variables for our study for two main reasons. First, these variables cover the cognitive, affective and intentional behaviour of team members. Consequently, this selection provides a broad view of the outcomes from the team members' perspective. Second, the variables used by Pineda and Lerner are tailored to analyse student teamwork by including a specific variable related to the improvement in teamwork skills. Given that our analysis is based on students' perceptions, this variable is especially suitable for our particular context of study. It is important to note that, although Pineda and Lerner refer to one of the variables as "satisfaction with the team experience", these authors measure the variable not only with measures of satisfaction but also with measures of members' intentions to remain in the same team in future work. For this reason, we have preferred to call this variable "overall attitude towards the team" in order to refer to its broader scope.

As can be seen in the conceptual model depicted in Figure 1, teamwork processes may determine members' perception of goal attainment, perception of improvement in teamwork skills and overall attitude towards the team. In turn, members' perception of goal attainment may exert an influence on their perception of improvement in teamwork skills, and both constructs may also affect members' overall attitude towards the team. We will now carry out a thorough revision of the literature concerning these relations.

INSERT FIGURE 1

Achievement of already defined goals is probably the most usual way to analyse the performance of teamwork. In fact, a team is conceptualized by Johnson and Johnson (2000, pg. 539) as "*a set of interpersonal interactions structured to achieve established goals*". Objectives vary depending on the specific situation and type of teamwork to be analysed. If the subject of study was a sales team, probably the most suitable goals would be sales or related figures; in a project team, the goals might be in relation to the efficiency of the team in terms of costs and timeliness of the project development (Mickan, 2005), etc. Concerning our subject of analysis, undergraduate students, the most suitable goals for them may be mainly related to the grades they receive from the instructors.

Goals can also be defined at different levels depending on the context of study. Goals in a business environment refer to objectives for the organization, in contrast with goals at the team level or goals at the individual level. There may be conflicts between goals

from different levels and, even within the same level, discrepancies may arise (Volet and Mansfield, 2006; Riebe *et al.*, 2010). In any case, both between and within-level objectives have to be considered in the analysis of teamwork, and all these goals should be properly aligned in order to avoid problems (Telleria *et al.*, 2002). When all these goals at different levels and of different members are aligned, a proper management of teamwork processes is expected to lead to suitable outcomes at every level and for all the members in the team. High quality teamwork processes may lead to task completion according to the pre-defined objectives, and all transition, action and interaction processes may be of importance for determining this outcome. LePine *et al.* (2008) showed that the relations between these three processes and team performance are remarkably similar in magnitude. Therefore, in this specific context, and focusing on goal attainment, we propose the following hypotheses:

H1: An accurate management of transition processes will have a positive effect on the perception of goal attainment in relation to teamwork

H2: An accurate management of action processes will have a positive effect on the perception of goal attainment in relation to teamwork

H3: An accurate management of interpersonal processes will have a positive effect on the perception of goal attainment in relation to teamwork

Even if team or individual goals were attained, this would not be irrefutable proof that the students had learned skills related to teamwork (Volkov and Volkov, 2007). Teamwork marks are usually centred on the quality of the work, and there may be situations where teamwork skills are not especially required to reach this quality. In consequence, the analysis of student teamwork should not be restricted to goal attainment outcomes. The study should be complemented with an analysis of other learning and social outcomes (Volet and Mansfield, 2006), such the improvement in teamwork skills. McCale (2009) posits that learning cannot be limited to contents, but must let students see the relevance of the skills that are being developed and how they are improving them.

Thus, instructors concerned about the development of teamwork skills should develop activities to effectively evaluate this learning (Hernández, 2002; Halfhill and Nielsen, 2007). They should also highlight the importance of learning teamwork skills both for

obtaining a good grade in the subject and for their professional careers in general. In these works, high marks should necessarily be the consequence of an accurate management of teamwork processes, being critical the interpersonal process such as conflict and emotions management (Fenwich, 2002). As a result of this, students may realise the importance of these processes and, therefore, pay attention to the development of their own skills in order to get a suitable mark. So, the perception of goal attainment may also determine the students' perception of learning. In consequence, the following hypotheses are proposed:

H4: An accurate management of transition processes will have a positive effect on the perception of improvement in teamwork skills

H5: An accurate management of action processes will have a positive effect on the perception of improvement in teamwork skills

H6: An accurate management of interpersonal processes will have a positive effect on the perception of improvement in teamwork skills

H7: The perception of goal attainment will have a positive effect on the perception of improvement in teamwork skills

Together with the perceptions of achievement of goals and improvement in teamwork skills, it is also important to analyse the student's overall experience with the group (Hernández, 2002). Student satisfaction and intention to remain in the team may be adequate proxies of their experience, and provide a view of their overall attitude towards the team.

Previous literature in teamwork suggests that group effectiveness includes the analysis of both group performance and viability, and viability refers to facets including members' ability to maintain a core group membership, commitment, cohesion and capability to accomplish the shared purpose (Halfhill and Nielsen, 2007). Similarly, group cohesiveness refers to the extent to which members of a group are attracted to one another, and how they are motivated to remain part of the group (Kozlowski and Bell, 2003).

Williams, Duray and Reddy (2006) show the connection between group cohesiveness and team-source learning. We think that a proper management of teamwork processes

will lead to a positive overall attitude towards the team, and this relation may also be mediated by students' perceptions of goal attainment and improvements in teamwork skills. Despite of some discrepancies in previous empirical works, the meta-analysis carried out by LePine *et al.* (2008) proves that transition, action and interpersonal processes are positively associated with members' satisfaction. In fact, these authors show that every activity composing each process has positive relationships with members' satisfaction. Moreover, the relations between the three processes and satisfaction are strong, positive and highly similar.

Perceptions of goal attainment and improvements in teamwork skills may also play a role in member's overall attitude towards the team. Students will be pleased and interested in continuing the collaboration with the same members when their goals have been achieved. This may also include their perception of improvement in teamwork skills as a specific and individual goal. If they perceive they have learned, and if this learning is considered to be important in present and future work, they will be more satisfied and tend to remain in the same team. Wageman *et al.* (2005) develop an instrument to analyse teamwork where processes, skills and learning are proved to be connected to member satisfaction. Therefore, we propose that:

H8: An accurate management of transition processes will have a positive effect on students' overall attitude towards the team

H9: An accurate management of action processes will have a positive effect on students' overall attitude towards the team

H10: An accurate management of interpersonal processes will have a positive effect on students' overall attitude towards the team

H11: The perception of goal attainment will have a positive effect on students' overall attitude towards the team

H12: Perception of improvement in teamwork skills will have a positive effect on students' overall attitude towards the team

Method

This study is focused on first-year undergraduate students. As the students hardly had any teamwork experience at the university, the teachers of the degree in Business

Management and of the degree of Economics contacted specialized staff to offer a session to these students about teamwork competences development. This session was implemented by external professionals and, although printed materials were provided, the session was based on team dynamics and simulations. The objectives were to show students the importance of teamwork in their careers, the processes and activities that are involved in teamwork, and how to deal with conflicts and team management.

Our context of study is the subject Principles of Marketing because students have to prepare two assignments that have to be carried out and presented as a team. In this subject, the students were grouped into teams of three, four or five persons and undertook a half-semester-long project. Self-selection was the method used for group formation as it is the preferred method for students (Strauss et al., 2011) and results in better performance (Chapman et al., 2006). In order to analyze student perceptions regarding teamwork processes and their outcomes, a questionnaire was drawn up by the teachers.

The data was collected during the first two weeks of April 2013. After submitting the first assignment, students were asked to answer a questionnaire online. All the items were measured on a seven-point Likert scale (1 “strongly disagree” to 7 “strongly agree”). A total of 129 valid questionnaires were obtained.

The teamwork processes were divided into three categories following the classification in Marks *et al* (2001): transition, action and interpersonal processes. The construct called transition processes refers to activities involved in mission and goal specification and strategy planning, and it is measured with three items. The action processes construct refers to activities directly related to task attainment such as tracking task progress; assisting teammates and coordinating work, and is made up of three items. Finally, the interpersonal processes construct includes activities that teams engage in to manage conflict, build confidence and regulate members’ emotions, and it is measured using four items.

Three outcomes of the teamwork process were analyzed. The first is the perceived attainment of goals and consists of two items; the perceived improvement in skills is based on two items; and, finally, the overall attitude towards the team is made up of two items. The items proposed have been used previously in the literature (Pineda and Lerner, 2006) and they can be seen in Table 2.

INSERT TABLE 2

Results

Validation of the Measurement Scales

The measurement model for constructs with reflective measures is assessed by looking at the individual item reliability, internal consistency and discriminant validity. The individual item reliability is evaluated by examining the loadings of the measures with the construct they are intended to measure. An exploratory factor analysis using principal component analysis (PCA) and indicators with factor loadings of less than 0.5 on each factor were eliminated (Carmines and Zeller, 1979). A confirmatory factor analysis (CFA) was conducted to test our measurement model. The PCA indicated that transition processes, action processes and interpersonal processes each loaded onto separate factors. Internal consistency was examined using the composite reliability index of Fornell and Larcker (1981). In our model, the composite reliability index for all constructs exceeds the minimum acceptable value of 0.7 (Hair *et al.*, 1998) and Cronbach's alpha exceeds the minimum limit of 0.7 (Nunnally, 1978). Table 3 shows that the measurement model is adequate.

INSERT TABLE 3

The next step was to evaluate discriminant validity. Table 4 shows the correlations among the reflective constructs. It also shows that the square root of the AVE (Average Variance Explained) is greater than the correlations among the reflective constructs, suggesting evidence of discriminant validity.

INSERT TABLE 4

Testing of the Research Hypotheses

Table 5 shows the results of the conceptual model with the significant path coefficients using SmartPLS 2.0 (Ringle, Wende and Will, 2005). To test predictive relevance, the Q^2 proposed by Stone-Geisser was calculated. All of the endogenous constructs show positive values for the Q^2 test, suggesting good predictive relevance.

INSERT TABLE 5

Results show that all the teamwork processes, transition, action and interpersonal processes have a positive and direct influence on the perception of goal attainment, so hypotheses H1, H2 and H3 are confirmed. Related to the antecedents of the perceived improvement of skills, the transition and interpersonal processes show a significant and positive effect, so H4 and H6 are accepted, while action processes have no significant influence, rejecting H5. We have also proposed that the perception of goal achievement could have a positive influence on the perception of improvement in teamwork skills. Our results corroborate this relationship which confirms H7.

The last groups of hypotheses were related to the team processes that influence the attitude towards the team and to the additional outcomes that may influence this general result. Related to the team processes, we have found that the action and interpersonal processes have a positive and significant influence on the attitude towards the team, while transition processes have no influence at all, confirming H9 and H10, but rejecting H8. Finally, only the perception of goal achievement has a slight influence on a positive attitude toward the team, which confirms H11. The perception of improvement of team skills has no significant influence on this attitude, so H12 is rejected.

We have tested for indirect effects of perceived goal achievement and improvement of skills. However, the direct effect of team processes on attitude towards the team does not change when we include these outcomes, and the variance explained of the variable *overall attitude towards the team* does not increase when we include the relationships between each teamwork process and the perception of goal attainment and between each teamwork process and the perception of improvement in teamwork skills. Table 6 shows the test of indirect effects and the confidence interval of the point estimates for each mediation effect following Chin (2010) and MacKinnon (2008).

INSERT TABLE 6

Discussion and Conclusions

In the light of the results obtained, we can draw a series of conclusions. First, with the exception of the effect of action processes on students' perception of improvement in teamwork skills and the effect of transition processes on the overall attitude toward the

team, the rest of the process-outcomes relations have been proved to be significant and positive. This means that, in general, all the processes are of importance to determine teamwork performance.

Second, this study has shown that not all the processes have the same impact on performance. Contrary to the results obtained by LePine *et al.* (2008), this study finds remarkable differences between processes. For instance, transition processes are the most important determining factor to explain goal attainment. When the focus is on goal achievement, students perceive that they have to place especial emphasis on establishing goals, rules and guidelines and also on assessing the areas of expertise of team members. These results are in line with those obtained by Pineda and Lerner (2006). However, and in contrast to the results of the latter authors, our results show that action and interpersonal processes are also of importance in determining goal attainment.

Regarding improvement in teamwork skills, our results have demonstrated that interpersonal and transition processes have significant effects on this performance outcome. These results are similar to those obtained by Pineda and Lerner (2006), where no significant effect is found from the action processes. Consequently, we corroborate that activities concerning tracking progress or coordination between team members are not perceived by the students to be important for improving their skills. We, therefore, suggest that teachers should transmit the importance of these activities as part of teamwork skills to their students. Furthermore, our paper shows that interpersonal processes have the biggest effect in explaining perceptions of improvement in skills. The importance of the activities involved in interpersonal processes was also highlighted in the work by Williams and Castro (2010) and by Fenwich (2002).

Finally, the action and interpersonal processes influenced overall attitudes towards teamwork. Here, interpersonal processes are the most important to explain the outcome. These results conflict with those of Pineda and Lerner (2006) where transition processes had the highest impact followed by interpersonal processes. Moreover, the results of these authors revealed non-significant effects from action processes. In any case, both of the above studies are in line with the results obtained by Ruiz-Ulloa and Adams (2004) where interpersonal activities had positive effects on individuals' attitudes towards teamwork.

Third, our results go one step further in explaining the relations between processes and outcomes. In this study, we have also analysed the relations between performance outcomes and, as a result, the indirect relations that processes and outcomes may have. Although we have found that all the team processes show a direct impact on the three outcomes analyzed, the lack of indirect effects should be taken with caution, because there may be other variables we have not included in our model that act as mediators. Further research should investigate other variables and their relationships with team processes.

In any case, the results obtained in this study have to be interpreted within the context analyzed. This work has been aimed at first-year undergraduate students with almost no experience of teamwork enrolled in an introductory Marketing subject in the degree of Economics. Different results might have been found if we had studied other subjects such as, for instance, students enrolled in MBAs or undergraduates in their final year. Furthermore, it is important to note that there are different ways to measure processes and outcomes. In this study, we have used what we considered the most suitable variables for our purposes. However, there are other possibilities. Second, even analyzing the same variables, there are several scales and methods to measure the same concept (self-reports, peer ratings, etc.) (Halfhill and Nielsen, 2007). Finally, we have to highlight the different perspectives from which to analyze the process-outcomes relationships. In this study, we have centered on the students' perceptions so it would be interesting to contrast these results with those of future works analyzing the teachers' point of view. Finally, additional variables could be included to act as moderators of the relationships proposed in our study, such as the level of student's involvement in the project or the size of the team.

All of these limitations indicate future research paths. This study will allow other researchers dealing with the same topic to contrast their results and, therefore, refute or generalize these findings. Work needs to be done to study teamwork processes in greater depth, especially regarding student teamwork. This will help teachers to propose suitable tasks to be carried out by their students in teams. Our study encourages teachers to propose activities that are not only addressed at improving specific skills and increasing knowledge about the content of the subject, but also at improving generic skills such as teamwork.

References

- Cannon-Bowlers, J.A., and Salas, E. 1997. A Framework For Developing Team Performance Measures In Training. In BRANNICK, M.T.; SALAS, E. AND PRINCE, C. (Eds). *Team Performance Assessment and Measurement – Theory, Methods and Applications*, Lawrence Erlbaum Associates, Hillsdale, NJ.
- Carmines, E., and Zeller, R. 1979. Reliability and Validity Assessment. In *Sage University Paper Series on Quantitative Applications in The Social Sciences (07-017)*. Beverly Hills, CA: Sage.
- Crevet, G., Bates, M., Bell, B., Patrick, C-J., and Cragolini, V. 2004. Developing Generic Skills at University, During Work Placement and in Employment: Graduates' Perceptions. *Higher Education Research & Development*, 23 (2), 147-165.
- Chapman, K., M. Meuter, D. Toy, and L. Wright. 2006. Can't we pick our own groups? The influence of group selection method on group dynamics and outcomes. *Journal of Management Education* 30, no. 4: 557-69
- Chin, W.W. 2010. How To Write Up And Report PLS Analyses. In V.E. Vinzi, W.W. Chin, J. Henseler, And H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods And Applications In Marketing And Related Fields* (Pp. 655-690). Berlin: Springer
- De Hoyos-Guevara, M.L.C. 2004. Assessment of Teamwork in Higher Education Collaborative Learning Teams: A Validation Study. *Phd. Dissertation*, University Of Texas At Austin
- Denson, N. and Zhang, S. 2010. The Impact of Student Experiences with Diversity on Developing Graduate Attributes, *Studies in Higher Education*, 35(5), 529–543
- Fenwich, T.J. 2002. Problem-Based Learning, Group Process And The Mid-Career Professional: Implication For Graduate Education. *Higher Education Research & Development*, 21, (1), 5-21
- Fornell, C. And Larcker, D.F. 1981, "Evaluating Structural Equation Models With Unobservable Variables And Measurement Error", *Journal of Marketing Research*, Vol. 18, N° 1, Pgs. 39-50.
- Hair., J.F., Anderson, R.E, Tatham, R.L., and Black, W.C. 1998. *Multivariate Data Analysis*. (5th Ed.), Prentice-Hall, Englewood Cliffs, NJ.
- Halfhill, T.R., and Nielsen, T.M. 2007. Quantifying The "Softer Side" Of Management Education: An Example Using Teamwork Competencies. *Journal of Management Education*, 31(1), 64-80
- Hernández, S.A. 2002. Team Learning In A Marketing Principles Course. *Journal of Marketing Education*, 24, (1),73-85.
- Humphrey, S.E., Karam, E.P., and Morgeson, F.P. 2010. Towards A Typology Of Team Effectiveness: A Meta-Analytic Review. *25th Annual Meeting Of The Society For Industrial And Organizational Psychology*. Atlanta GA
- Johnson, D.W.; And Johnson, F.P. 2000. *Joining Together: Group Theory And Group Skills* (7th Ed.). Needham Heights, MA: Allyn And Bacon.
- Kozlowski, S.J.W. and Bell, B.S. 2003. Work Groups and Teams In Organizations. In Borman, W.C., Ilgen, D.R. And Klimoski, R.J. (Eds), *Handbook of Psychology: Industrial And Organizational Psychology*, 12, Wiley, New York, NY, 333-375.
- Leggat, S.G. 2007. Effective Healthcare Teams Require Effective Team Members: Defining Teamwork Competencies. *BMC Health Services Research*, 7 17.
- Lepine, J.A., Piccolo, R.F., Jackson, C.L., Mathieu, J.E., and Saul, J.R. 2008. A Meta-Analysis Of Teamwork Processes: Tests Of A Multidimensional Model And Relationships With Team Effectiveness Criteria. *Personnel Psychology*, 61, (2), 273–307.
- Mackinnon, D.P. 2008. *Introduction to Statistical Mediation Analysis*: New York: Routledge.
- Marks, M.A., Mathieu, J.E., and Zaccaro, S.J. 2001. A Temporally Based Framework and Taxonomy of Team Processes. *Academy of Management Review*, 26, 355-376.
- Mccale, C. 2009. Experiential Learning and the Self-Marketing Plan: Transitioning Students from Theory to the "Real World. *Phd. Dissertation*, Argosy University Sarasota.
- Mickan, S.M. 2005. Evaluating the Effectiveness of Health Care Teams. *Australian Health Review*, 29, (2), 211-217.
- Morgan, B.B., Salas, E., and Glickman, A.S. 1993. An Analysis of Team Evolution and Maturation. *The Journal of General Psychology*, 120, 277-291
- Munoz, C., and Huser, A. 2008. Experiential and Cooperative Learning: Using a Situation Analysis Project In Principles of Marketing. *Journal of Education for Business*, 83(4), 214-220
- Nunnally, J. 1978. *Psychometric Theory*, 2nd Ed., Mcgraw-Hill, New York, NY.

- Oakley, B., Felder, R.M., Brent, R. and Elhajj, I. 2004. Turning Student Groups into Effective Teams. *Journal of Student Centred Learning*, 2 (1), 9-34.
- Pfaff, E., and Huddleston, P. 2003. Does it Matter if I Hate Teamwork? What Impacts Student Attitudes Toward Teamwork. *Journal of Marketing Education*, 25 (1), 37-45
- Pineda, R.C., and Lerner, R.D. 2006. Goal Attainment, Satisfaction and Learning From Teamwork. *Team Performance Management*, 12 (5/6), 182-191.
- Prichard, J. S., Bizo, L. A., and Stratford, R. J. 2006. The Educational Impact of Team-Skills Training: Preparing Students to Work in Groups. *British Journal of Educational Psychology*, 76, 119-140.
- Ringle, C. M., Wende, S., and Will A. 2005. Smartpls 2.0 (Beta). Smartpls, Hamburg (Available At [Www.Smartpls.De](http://www.smartpls.de)).
- Ruiz Ulloa, B.C., and Adams, S.G. 2004. Attitude toward Teamwork and Effective Teaming. *Team Performance Management*, 10 (7/8), 145-151.
- Smith P.B., Peterson M.F., and Misumi J. 1994. Event Management and Work Team Effectiveness in Japan, Britain, and USA. *Journal of Occupational and Organizational Psychology*, 67, 33-43.
- Stevens, M.J., and Campion, M.A. 1994. The Knowledge, Skill, and Ability Requirements for Teamwork: Implications for Human Resource Management. *Journal of Management*, 20, 503-530.
- Strauss P. Alice, U. And Young, S. 2011. I know the type of people I work well with: student anxiety in multicultural group projects. *Studies in Higher Education*, 36: 7, 815-829
- Telleria, K.M., Little, D., and Macbryde, J. 2002. Managing Processes through Teamwork. *Business Process Management Journal*, 8, (4), 338-350.
- Torrelles, C., Coiduras, J., Isus, S., Carrera, F.X., París, G. and Cela, J.M. 2011. Competencia De Trabajo En Equipo: Definición Y Categorización, Profesorado. *Revista De Formación y Curriculum del Profesorado*, 15 (3), 329-344.
- Volet, S., and Mansfield, C. 2006. Group Work At University: Significance Of Personal Goals In The Regulation Strategies Of Students With Positive And Negative Appraisals. *Higher Education Research & Development*, 5, (4), 341-356.
- Volkov, A. and Volkov, M. 2007. Teamwork and Assessment: A Critique. *E-Journal of Business Education and Scholarship Teaching*, 1(1), 59-64.
- Wageman, R., Hackman, J. R., and Lehman, E. 2005. Team Diagnostic Survey: Development of an Instrument. *The Journal Of Applied Behavioral Science*, 41, (4), 373-398.
- Watson, P. 2002. Innovative Teaching, Teamwork And Generic Skills In The University Environment. *Celebrating Teaching at Macquarie*, Macquarie University, Sydney, Pgs. 1-9.
- Willcoxon, L. Cotter, J. and Joy, S. 2011. Beyond the first year experience: the impact of attrition of students experience throughout undergraduate degree studies in six diverse universities. *Studies in Higher Education*, 36:3, 331-352.
- Willey, K., and Gardner, A. 2009. Developing Team Skills With Self And Peer Assessment. Are Benefits Inversely Related To Team Function?. *Campus-Wide Information Systems*, 26, (5), 365-378.
- Williams, E. and Castro, S.L. 2010. The Effects of Teamwork on Individual Learning and Perceptions of Team Performance. A Comparison of Face-To-Face and Online Project Settings. *Team Performance Management*, 16 (3/4), 124-147.
- Williams, E., Duray, R., and Reddy, V. 2006. Teamwork Orientation, Group Cohesiveness, and Student Learning: A Study of The Use of Teams in Online Distance Education. *Journal of Management Education*, 30, (4), 592-616.

Table 1: Teamwork processes and main activities involved

TRANSITION PROCESSES	<ul style="list-style-type: none">- Mission analysis, formulation and planning- Goal, rules and guidelines specification- Assess areas of expertise- Assign roles and responsibilities- Strategy formulation
ACTION PROCESSES	<ul style="list-style-type: none">- Progress monitoring toward goals and pre-established deadlines- Systems monitoring and back up behavior- Coordination- Mutual help between members
INTERPERSONAL PROCESSES	<ul style="list-style-type: none">- Evaluate interpersonal strengths and weaknesses- Conflict management (disagreements)- Motivation and confidence building- Affect management (dealing with members' emotions)- Communications- Collaborative problem solving

Table 2: Means and standard deviations for survey items

Item	Mean	Standard deviation
<i>The extent to which a student performed these transition process activities</i>		
Establishing team goals and personal goals	5.96	1.46
Establishing team rules and guidelines for all team members	5.55	1.28
Assessing the areas of expertise of each member	5.37	1.33
<i>The extent to which a student performed these action process activities</i>		
Tracking progress of the contribution of each member and of the whole assignment	5.62	1.29
Coordinating the actions of team members	5.71	1.44
Tracking progress of pre-established deadlines	5.73	1.38
<i>The extent to which a student performed these interpersonal process activities</i>		
Supporting each other during the assignment	6.06	1.12
Working through disagreements and conflicts	6.04	1.32
Generating enthusiasm or excitement	5.70	1.28
Dealing with members' emotions	5.65	1.34
<i>The extent to which the student felt about the following outcomes</i>		
<i>Goal achievement</i>		
Achievement of personal goals for the project	5.84	0.97
Achievement of goals that were set by the team	5.84	1.07
<i>Overall attitude towards the team</i>		
Satisfaction with the team	5.90	1.15
Willingness to work with the team again	6.08	1.31
<i>Improvement in teamwork skills</i>		
Improvement in understanding of how teams work	5.36	1.35
Enhancement of skills in working within teams	5.34	1.33

Table 3: Measurement model

		Loading	Composite reliability	AVE	Cronbach's Alfa
Transition	Tran 1	0.736	0.825	0.755	0.725
	Tran 2	0.763			
	Tran 3	0.848			
Action	Action 1	Eliminated	0.914	0.841	0.811
	Action 2	0.920			
	Action 3	0.914			
Interpersonal	Inter 1	0.825	0.917	0.789	0.881
	Inter 2	0.808			
	Inter 3	0.914			
	Inter 4	0.808			
Goals	Goals 1	0.920	0.913	0.841	0.810
	Goals 2	0.914			
Attitude	Att 1	0.936	0.931	0.873	0.851
	Att 2	0.930			
Improvement	Imp 1	0.960	0.956	0.917	0.909
	Imp 2	0.955			

Table 4: Discriminant validity

	Action	Transition	Interpersonal	Goal	Attitude	Improvement
Action	0.917					
Transition	0.593	0.783				
Interpersonal	0.614	0.544	0.858			
Goal	0.573	0.581	0.552	0.917		
Attitude	0.635	0.527	0.612	0.599	0.933	
Improvement	0.437	0.505	0.550	0.545	0.553	0.957

Table 5: Direct effects

	Goals	Improvement	Attitude
Goal		0.290***	0.126*
Improvement			0.103
Transition	0.334***	0.3026***	-0.04
Action	0.224**	-0.035	0.277***
Interpersonal	0.209**	0.410***	0.510***
R²	0.439	0.410	0.730
Q²	0.347	0.322	0.579

*** significant at 1%; **significant at 5%; * significant at 10%

Table 6: Indirect effects

<i>Indirect effect</i>	<i>Point estimate</i>	95% Confidence interval	
		<i>Low</i>	<i>High</i>
Transition*goal	-0.040	-0.004	0.094
Action*goal	0.028	-0.007	0.069
Interpersonal*goal	0.026	-0.005	0.073
Transition*improvement	0.021	-0.012	0.057
Action*improvement	-0.010	-0.030	0.019
Interpersonal*improvement	0.036	-0.020	0.074
Transition*goal*improvement	0.009	-0.006	0.023
Action*goal*improvement	0.006	-0.004	0.018
Interpersonal*goal*improvement	0.006	-0.004	0.016

Figure 1: Conceptual model

