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Team Work in Higher Education: An Exploratory Study in an UAE University

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Abstract

Teamwork is perhaps the key to organizational learning, productivity and growth. Why do some teams succeed in achieving these, while others falter at different stages? Building teams in higher education institutions has been a challenge and an open-ended constructivist approach was considered on an experimental basis for this study to address this challenge. For this research, teams of students from the MBA program were chosen to study the effect of teamwork in learning, the motivation levels among student team members, and the effect of collaboration in achieving team goals. The teams were built on shared vision and goals, cohesion was ensured, positive induction in the form of faculty mentoring was provided for each participating team and the results have been presented with conclusions and suggestions.

Keywords: Teamwork, Leadership, Motivation and Reinforcement, Collaboration.

Introduction

Teamwork has gained the interest of educators as an effective pedagogical tool. Jones (1996) suggests that one of the major benefits using teams is to build a sense of empowerment enabling members to learn content, imbibe a sense of generative learning and creating a lifelong interest to learn. Group-working has also become a very established way of strengthening learning (Li, 2001; Strauss and U, 2007). Understandably teamwork supports 'students' preparation for the "real-world". When asked for what best prepared students for corporate challenges, employers often cited teamwork – abilities to collaborate, communicate and to work on common goals (Holloway, 2004).

Supporting this perspective, Page and Donelan (2003) enlist interpersonal skills as a core competency required by a student to be successful as a business professional.

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"You cannot push anyone up the ladder unless he is willing to climb himself" – Robert Schuller

Another facet necessary in ensuring that teams and teamwork succeeded is to have teams motivated. Students for this research on teamwork had to be motivated both extrinsically and intrinsically. Students could be motivated extrinsically for team projects with a likelihood of achieving a high GPA (Lei, 2010). Whereas, intrinsic motivation such as the opportunity of self-expression, being creative, being recognized and a felt-state of identity and significance could strengthen academic performance (Daniels, 2010; Afzal et al, 2010).

The reinforcement element of motivation for this research came in the form of assured job opportunities from various participating client organizations. Team environment, learning through sharing, mastering new challenges, improved personal effectiveness, satisfaction from being able to apply course content on real-life tasks were intended to provide the needed reinforcement.

Leadership in higher education has been hitherto researched at the Departmental level in Higher Education Institutions. Of interest to the authors was the leadership role faculty mentors would play in ensuring team work and team learning. Faculty mentors were expected to provide each team with a clear sense of direction, securing for the team the time and resources needed to improve, develop and grow (Benoit and Graham; 2005). Further the faculty mentors ability of being considerate, consider the teams' perspective, constraints, and guide efforts could considerably influence team efforts and performance (Ambrose et al., 2005). Among behaviors associated with effective transformational leadership is the willingness to allow and support participation from team members in key decisions (Bland, Centre et al 2005). Faculty mentors were expected to encourage open communication throughout the experiment. Transformational leadership encompasses the credibility of the individual in playing a role model to team members (Bareham, 2004). Such leaders must also be able to enhance the institution's / department's cause with respect to constitutional both internal and external and stay proactive in doing so (Weber- Main et al, 2005). Also the leader must be able to provide feedback on performance from time to time and be able to guide and direct corrective measures (Harris et al., 2004).

When a team vision is shared, members hold a similar picture of the vision that is congruent to their personal vision. The members therefore stay committed to the vision, have collective aspirations and are motivated (Senge, 1990). The basic distinction between a group of interacting members and a team is that a team shares common goals (Yen et al., 2001).

In a genuine effort to improve learning amongst management students, the concept of teamwork was being promoted and ushered in. Student teams were constituted to explore the possibilities of facilitating team work and team learning. Student teams were carefully chosen each of which were to be headed by a Faculty mentor. In a class of 60, teams comprising of six members were chosen for this experiment. This strategy was based on the shift from a predominantly instructive to constructivist pedagogy with the need for using/ creating a learning environment based on team projects, team tasks or being involved with problem-based scenarios (Oliver, 2001). These learning designs promote the construction of knowledge as they are embedded in a social experience within a team environment (Vygotsky, 1978).

The rationale for employing teamwork in facilitating learning is based on various (attributes) results that could be achieved through team learning. Teamwork is defined by Scarnati (2001, p.5) "as a co-operative process that allows ordinary people to achieve extraordinary results". Teams also enable individuals to harness their competencies to achieve a shared common goal. Shared learning, social sensitization, feeling of belongingness and camaraderie are off-shoots of good teams. Successful teams are built on synergism that is pivotal to environments that strengthen positivity, effectiveness and win-win scenarios. Team members however must be flexible enough to adapt to cooperative working environments where goals are achieved through collaboration and social interdependence rather than individualized, competitive goals (Luca and Tarricone, 2001). Various attributes that contribute to successful teamwork were assessed before the case study was taken up. Among the important, some of them are presented in this paper.

Method

The research was undertaken to examine the impact of a constructivist approach to team learning in higher education. The research was based on having multiple stakeholders – students, faculty mentors and client organization in the learning process and in evaluating the quality of learning and contributions.

Students' learning in a team environment was assessed using a questionnaire that was administered to each of the team members after the completion of the team project. The students were given a seventeen-item survey to measure their attitude towards the collaborative team learning experience. The factors that were considered to determine students' attitude towards team learning were

- Commitment
- Shared Goals
- Interpersonal skills
- Skill acquisition

- ❖ Autonomy / Self-Expression
- ❖ Team learning
- ❖ Cohesiveness
- ❖ Supervision / Mentoring
- ❖ Conflict resolution

The research utilizes a constructivist design wherein teams comprising of students and a faculty mentor had a team project to accomplish in a client organization. The objective was to create a learning environment wherein team members support one another, apply theory, tools and techniques learnt during their MBA program in problem-solving activities (Wilson, 1995). Constructivist learning involves meaningful, interesting and relevant problems to solve (Jonassen, 1999). The team projects mandated by the Master Syllabi being implemented for the MBA program went through the following stages that constructivist learning environments symbolize (Jonassen, 1999).

- Conception of the Problem – with the client organization
- Interpretation – Student teams' interpretation of the problem
- Information sources to support understanding of the problem – with inputs from the faculty mentor during problem definition, data collection and interpretation phase
- Cognitive tools – use of software tools provided by the University
- Collaboration and communication tools – emails, chat, Black Board, Meetings

The client organizations' inputs were taken from the liaison-contact executive in each client organization. The input was taken periodically to monitor progress of each team several times during the year through informal unstructured discussions. A formal feedback survey was taken after each team had presented their completed work to their respective client organization. The feedback survey contained thirteen items. The major factors that were considered for the survey were

- Problem identification
- Analysis
- Solutions / Recommendations
- Reflections / Presentation
- Team Work
- Innovativeness

Faculty teams' assessments of teams' performance was based on collected evidences (draft reports, final project reports and presentations). Assessment was done by a panel of two faculty members using the rubrics that have been used for the MBA Program.

The learning outcome that is relevant for this research paper is 1G : Works collaboratively in Teams. This particular learning outcome (as enunciated by the rubrics for the MBA program) comprised of five dimensions:

1. Contributes to teams: The member helps the team move forward by articulating the merits of alternative ideas or proposals
2. Facilitates the contribution of Team Members: Engages team members in ways that facilitate both constructive building upon and synthesizing the contributions of others.
3. Individual contributions: Completes assigned tasks by deadline; advances the project, helps other members achieve excellence in reaching goals.
4. Fosters Team climate: treats team members respectfully, uses positive vocal tone, motivates and provides assistance to others to contribute to the project.
5. Responds to conflict: Addresses conflict directly, helps in resolving conflict, and strengthens overall cohesiveness and effectiveness in solutions, and presentations.

Background of the Experiment:

Training for Faculty Mentors: As a precursor to the whole experiment, training in the form of two workshops were organized giving the faculty mentors theoretical inputs on leadership, coaching, behavior modeling, and team building. The second workshop was centered on team building and sensitivity training that would be useful for faculty mentors when they eventually took over the teams. Faculty was also encouraged to use some of the team building exercises to foster team work amongst team members. Some of them were on communication, group formation stages, leadership, Transactional Analysis, Johari window and MBTI.

Faculty Profile: The entire faculty involved in this experiment had 5 years plus experience in handling master's programs in management and had been working in the school for the same period or more. Fortunately, continuity of service, security, and equitable compensation ensured high motivation levels and the faculty evinced keen interest in the experiment. Faculty was academically qualified and possessed doctoral degrees in management. Of the ten faculty members involved in the experiment, three were female members.

Student Profile: Teams/Groups could go through forming, storming, norming, performing and transforming stages. The first stage – forming – could be carried out either through assignment or self-selection. The Forming phase is characterized by group members becoming familiar with each other and their abilities (Vik, 2001). Team selection in this research was done by the faculty mentor to ensure the right blend or balance of academic abilities in each team.

Further, such a pre-emptive relation of team members is to have individuals find working in teams to their distinct advantage and to understand that collaboration can get them, the results that as individuals they would find difficult to achieve (Wagner, 1995). The number of students chosen for this study was 60 and all were the students of the two year master's program in management. Teams were carefully picked taking into consideration their academic performance in the mid-term examinations of the first semester and due consideration was also given to the optimal mix of skills that members would have in the team. Care was taken to distribute female students among the ten teams with emphasis on ensuring complementary skills amongst team members. Teams were apprised of the experiment, consent taken and were part of extensive workshop sessions imparting theoretical and practical aspects of communication, importance of group work, team building, emotional quotient, leadership, managerial functions and goal accomplishment. Each team comprised of six students to ensure uniformity in the size of each team working with a client organization.

Projects undertaken: The projects assigned to the student teams were single long-term projects for a period of three semesters and the teams presented their findings, inferences, and suggestions to clients and faculty mentors during the last semester. Clients included industries from the Cements, Steel, Pharmaceuticals, FMCG companies, Finance Corporations, and Service Industries. The Client was also informed and briefed of the on-going experiment and the client's collaboration, support and mentoring was solicited. Client contact persons were regularly met by faculty mentors to ascertain a) the progress on the project, feedback and support needed for student teams b) the evaluation of student teams on various parameters considered for this study.

Mentor's Roles: Faculty mentors met with student teams weekly to begin with and then fortnightly to discuss various stages of the projects, give them the needed support and theoretical and conceptual base to identify client problems, choose their problem, model the project, develop action plan to carry out the project, data collection, validation of data collected, data analysis, drawing inferences, developing models for the client, meeting with the client at different stages of the project, final presentation of solutions and recommendations addressing client problems.

Team Meetings: Fortnightly meetings were organized for each team to review work progress, address team related issues and to thrash out differences if any relating to team harmony, technical project related issues and modus operandi to go ahead with the carrying out the project in accordance with client requirements.

Allocation of tasks: As teams comprised of members with complementary skills, allocation of work depended on the strengths of each member.

For example, finance related issues of a client's problem would be addressed by the team member who possessed knowledge in finance. Also, members of each team had the freedom to approach the Finance Faculty apart from taking inputs from their respective faculty mentor. Faculty worked synergistically and collaboratively emphasizing a win-win situation for individuals, teams and the school as a whole if the projects were done methodically and with commitment.

Team Leadership: The faculty mentor was assigned the role of the team leader who would then strive to ensure that leadership responsibilities of the team would be shared by team members. One of the objectives of the study being strong team learning, leadership it was felt should be every member's responsibility. It must be mentioned here that emergent informal leadership did surface from time to time and efforts were made by the faculty mentor to functionally align the informal leadership.

Rewards: One of the major sources of extrinsic motivation comes from what students perceive as desirable results, in this case the possibility of a good GPA (Lei, 2010). Among various individual and social factors that affect academic motivation are the probability of finding a job, future expectations and distinctiveness of testing and measuring activities (Celikoz, 2010). The students' perception of a purposeful connection with work, their assignments being a source of self-expression, exploration and creativity act as a source of emergent motivation. Teamwork could act as one of the means of fostering emergent motivation. Team projects presented challenging tasks that were related to not only possible high GPAs' but also their willingness to stay motivated for these rewards. This research was aimed at having students involved with learning in retraining and to self-regulate motivations and enhance their effort-regulation capacities (Richardson and Abraham, 2009).

Rewards for students came in the form of higher scores in their project works, and better grades. Teams that were doing well and appreciated by their client had a cash prize up for grabs at the end of their presentation from the client. Further, clients also promised to hire and offer jobs for members whose performance they found to be excellent. Job opportunities and the opportunity to be associated with a reputed company to launch their career was the biggest motivator for the students apart from the grade and recognition amongst colleagues.

Rewards for faculty mentors was time release and course release that was offered to each faculty mentor. Clients offered 'Letters of Appreciation' to faculty mentors' whose teams did beyond expectations. These measures ensured that both faculty mentors and student members were offered enough intrinsic and extrinsic motivation to participate in this constructivist exercise.

Success dimensions: Success of teams was determined based on faculty assessment, feedback from team members and the clients' feedback on team members. Clients' feedback was an important input to measure how successful a team was. Periodic informal meetings were organized either at the school or at the client's office to ascertain team performance at different stages of the project. Faculty mentors also assessed success by taking into consideration the initiative exhibited by team members and the team as a whole to go the extra mile during the formulation and execution of the project. Client and faculty mentor feedback on the team's sense of urgency, empowerment, and focus on learning as a major reinforcement were integral in assessing the degree of success of a team. Apart from these dimensions, the approach of the team members in confronting conflict and in conflict management to maintain cohesiveness was pivotal in assessing success levels of the team.

Team – Mentor Relationship: It was presumed that each faculty mentor enjoyed and shared good relationship with the student community and faculty mentors were assigned to teams on a random basis so as to overcome any bias. However, it remained up to the individual faculty to develop a rapport with team members to facilitate group work. Sometimes other faculty members' intervention was necessary to bolster team processes. The possibility of re-assigning faculty mentors to different teams was not tried out and future studies on collaborative team work could possibly incorporate the option of re-assigning faculty mentors at different stages of the experiment to ascertain the impact of such a change.

Various Dimensions Considered For This Study

Commitment as an attribute:

We all realize that commitment to shared goals is a pre-requisite for team success. When participants understand their purpose and share the goals, achieving the mission is possible (Francis and Young, 1979). Having a strong goal essentially points to "what" to be achieved and the "where" individuals envision themselves over a period of time. A clearly enunciated goal triggers the strategy formulation or "how" to "achieve it" or "reach there". It is imperative that members must share a strong common goal (Kets De Vries, 1999). Commitment amongst members is necessary to promote group cohesion (Bradley and Frederic, 1997). Another tenet of a successful team is interdependence.

It is not amiss here to reiterate the impact of other members' success on individual and group success. Team members build on the capabilities of their colleagues, the combinations energized through synergy (Francis and Young, 1979). Teams for this study were comprised of members with complementary skills, skills that were required to work on projects for industrial clients.

These projects were challenging and required skills in project management, marketing research, finance, scheduling, HR and reporting. The nature of tasks required to be performed by the teams' necessitated interdependence, a systems-oriented approach to accomplishing goals.

Interpersonal Skills:

Anyone who has worked in successful teams can safely vouch for the fact that teamwork depends to a great extent on how members can protect and support each other. This is required to foster trust, confidence and commitment within the group (Harris and Harris, 1996). Members must not only be respectful and supportive of one another but also be realistic in mutual expectation (Harris and Harris, 1996). When members have trust, they can express freely and that in turn builds greater trust. The trust-open-communication cycle is the foundation for constructive criticism, suggestions and corrective action. Interpersonal skills come to the fore to enable members give and accept feedback in a non-defensive manner (Harris and Harris, 1996). A combination of complementary skills and openness in communication and feedback ensure that teams accomplish what they set forth to achieve. Communication further facilitates indoctrination of norms, clarification of roles, task allocation, coordination and approach to goal accomplishment.

Communication is also closely linked with an integral team process, decision-making. In successful teams decisions are arrived at through consensus (Critchley and Casey, 1986). Members must encourage group participation and consensual decision-making. Regular meetings were organized for the teams considered for this case study to enable regular interaction opportunity and freedom to participate and encourage consensual decision making. Members were encouraged and empowered to shoulder leadership responsibilities. Through empowerment individuals were taught to accept responsibility and stay accountable for tasks assigned to them. With teams that have motivated members it is that much more possible that they subscribe to distributed leadership.

Autonomy

Was a key feature of these teams as a great deal of freedom was embedded into their teams' processes, goal setting, strategy formulation, task allocation, review processes and remedial actions.

Autonomy has been found to be positively associated with attitudinal measure of organizational commitment (Cordery et al, 1991). Autonomy was also found to be positively associated with the sense of satisfaction (Cordery, Mueller and Smith, 1991).

Size

Was a big question that we had to answer before this constructivist approach to team building and team learning for the students of the MBA Program was taken up. Research suggests that size has a curvilinear (Steiner, 1971) or inverted U-shaped relation to effectiveness such that too few or too many members reduce performance. Therefore, the teams for this case study were limited to six members in each team.

Rewards / Reinforcement

The teams involved in this study were student teams and there were no monetary rewards up for the taking. One of the big reinforcement that was planned for team performance was the recognition and appreciation that they would receive. These were the motivators akin to "motivators" or "satisfiers" that Herzberg (1987) enunciated as factors that influence motivation. It was conceived that an honors gala for all successful teams would be organized and appreciation letters would be presented to outstanding performers. Membership to these teams was perceived by students as an incentive to learn, grow and self-actualize.

Another reinforcement which student members saw was the association of the faculty mentor as a facilitator of team learning. A faculty mentor would be catalyst in accessing information, giving directions and inputs, train, counsel and offer timely feedback for members to ascertain the progress they make as individuals and as a team. Cohen et al (1996) found that management recognition was positively associated with team ratings of performance, trust in management, and satisfaction for both self-directed and traditionally managed groups. When joined with other contextual variables (information access, training, resources, and feedback), it proved a strong positive predictor of performance ratings for groups. When tasks are interdependent and members have over the period of their assignment complemented, supported and backed each other, collective recognition motivates them.

Supervision

As part of the constructivist approach to team building, faculty mentors were advised to exhibit positive mood and talk to strengthen team ties. George and Battenhausen (1990) found that a supervisors' positive mood had positive impact on pro-social behavior.

Also, faculty mentors were required to fulfill the role of a formal leader as members shared leadership responsibilities through empowerment and were also accountable for team outcomes. Studies indicate that leader 'affect' and leader 'cognitions' affect team performance (Eden, 1990).

Teams met voluntarily to conduct business on projects for clients, review and report to their faculty facilitator. Faculty would then be convening a steering committee meeting to discuss progress, further course of action and the support needed for teams to be effective and successful in accomplishing goals.

Conflict

One other attribute that was considered as an important component of successful teams is the comprehension of the nature of conflict and the process of conflict resolution. Two major types of conflicts were being considered, relationship conflict and task conflict. Relationship conflict stems from interpersonal incompatibilities, animosity, tension and annoyance. Task conflict on the other hand is caused due to the disagreement among group members about task content. The tasks for these teams were non-routine and members evinced great deal of interest and were ready to expend effort to accomplish them. Disagreements within groups were civilized, members interacted more often to thrash out the differences and move on. Timely intervention of the faculty mentor was solicited in order to prevent conflict escalation to a point where it would be dysfunctional. Relationship conflict could have a negative impact on team performance as members of teams avoided some people and with high levels of task interdependence such a scenario could only stifle team performance.

Cohesiveness

Cohesion is defined as "a dynamic process reflected in the tendency for a group to stick together and remain united in the pursuit of instrumental objectives and /or the satisfaction of member affective needs" (Carron et al, 2002). In simpler terms, cohesion could be understood to be the degree to which members of a team are attached to one another and sustain the desire to stay with the team. Cohesiveness is believed to contribute to satisfaction of affiliation need of group members (Zaccaro, 1986) and also moderate the detrimental effects of environmental constraints on organizational behavior (Evans, 1991) and as a result lead to substantially better team performance (Langfred et al. 1998).

In a meta-analysis of various studies Evans and Dion (1991) found a strong relationship between cohesion and performance. Cohesiveness has also been found to have a therapeutic value for promoting personality change.

Literature also reveals the impact of cohesion on team success, collective efficacy, group communication and performance (Bettenhausen et al, 1991). Research by Gully et al, (1995) proved that task interdependence was a major moderator in cohesion-performance relationship.

The tasks that require much of interaction, communication, interdependence, coordination, mutual monitoring among members are strongly related to determine this relationship than the tasks, which require minimal presence of these factors (Zaccaro et al. 1986). Sometimes cohesiveness could be dysfunctional and adversely affect performance. Schachter et al. (1951) found in their studies that cohesiveness – productivity relationship was being moderated by the extent to which the group considered the task important. They also discussed the impact of positive induction, for example, positive leadership on productivity. Highly cohesive teams with positive induction showed a spurt in productivity and with negative induction, productivity dropped substantially. In another study, Langfred (1998) found that group task norms moderate the relationship between group cohesiveness and group/ team effectiveness. He found groups with high cohesiveness and task norms were only more effective than other groups and that the combination of high cohesiveness and non-task norms were found to be associated with poor performance.

Analysis and Discussion:

Faculty teams' assessments of teams' performance was based on collected evidences (draft reports, final project reports and presentations). Assessment was done by a panel of two faculty members using the rubrics that have been used for the MBA Program. The learning outcome that is relevant for this research paper is 1G : Works collaboratively in Teams. This particular learning outcome (as enunciated by the rubrics for the MBA program) comprised of five dimensions elaborated below.

1. Contributes to teams: The member helps the team move forward by articulating the merits of alternative ideas or proposals
2. Facilitates the contribution of Team Members: Engages team members in ways that facilitate both constructive building upon and synthesizing the contributions of others.
3. Individual contributions: Completes assigned tasks by deadline; advances the project, helps other members achieve excellence in reaching goals.
4. Fosters Team climate: treats team members respectfully, uses positive vocal tone, motivates and provides assistance to others to contribute to the project.
5. Responds to conflict: Addresses conflict directly, helps in resolving conflict, and strengthens overall cohesiveness and effectiveness in solutions, and presentations.

1G: Works Collaboratively in Teams (Rubrics Scored on a Scale of 1-5, 5 – Superior, 3 – Benchmark, 1 – Minimal)								
	Teams	Mean	5	4	3	2	1	SD
1.Contributes to Teams : Helps the team move forward by articulating The merits of alternative ideas or proposals.	Successful	4.07	24.4	62.1	11.4	0	1.7	0.72
	Unsuccessful	2.28	5.0	9.2	9.6	62.2	14.1	0.45
2. Facilitates the Contributions: Facilitates the contribution of team members Engages team members in ways that facilitate both constructive building upon on and synthesizing the Contributions of others.	Successful	4.12	26.2	62.1	9.3	1.8	0	0.64
	Unsuccessful	2.21	2.7	11.3	8.3	58.9	18.7	0.49
3. Individual Contributions: Completes assigned tasks by deadline; advances the project, helps other members achieve excellence in reaching goals.	Successful	4.14	26.6	62.4	11.1	0	0	0.59
	Unsuccessful	2.40	3.1	12.2	16.6	60.8	7.6	0.44
4. Fosters Team Climate: Treats team members respectfully, uses positive vocal tone, motivates and provides assistance to others to contribute to the project.	Successful	4.03	26.0	62.1	11.4	0	0	0.60
	Unsuccessful	1.80	0	0	11.1	59.1	29.7	0.41
5. Responds to conflict: An address conflict directly, helps in resolving conflict, and strengthens overall cohesiveness and effectiveness in solutions, presentations and substantiations.	Successful	3.97	18.8	62.4	17.1	1.8	0	0.65
	Unsuccessful	2.31	6.1	11.7	8.6	56.6	17.1	0.36

Table 1: Faculty Assessment of Teams' Performance:

These dimensions were scored by faculty using scores ranging from 1 to 5 (5=Superior, 3= Benchmark, 1= Minimal) and the analysis of the data is presented in Table 1. Assessment carried out indicated that there were four teams comprising of six members each that excelled in team projects. These successful teams scored high on the five dimensions of the learning outcome 1G. These teams scored high on member contribution to teams during the ideation phase (p=86.5%, m = 4.07). These teams also served high on member contributions during the synthesizing phase (p=88.9%, m = 4.12). These teams were also characterized by their ability to complete assigned tasks on time and helping one another in an effort to achieve excellence (p=89.0%, m=4.14). Members of these teams also exhibited a high ability (p=88.1%, m=4.03) in motivating one another and bolstering team morale. Members of these teams also scored high (p=81.2%, m=3.97) on their ability to resolve conflict, strengthening team cohesiveness and improving team effectiveness in presenting solutions. These four teams were classified as successful teams to begin with.Six other teams (each comprising of six members) scored low on all the five dimensions of the learning outcome and therefore were classified as unsuccessful teams to begin with. Faculty-mentors (panel of two faculty) reported low score for these six teams on members' ability to contribute during ideation phase (p=14.2%, m=2.28) and the synthesizing phase (p=14.0%, m=2.21) of team development. Members of these teams also scored low on their ability to meet deadlines and help one another in achieving excellence (p=15.3%, m=2.40).

Members of these six teams also did not do enough to stay motivated and barely provided assistance to fellow members to facilitate contribution (p=0%, m=1.80). Members belonging to these six teams scored low (p=17.8%, m=2.31) on their ability to address conflict, strengthen cohesiveness and improve effectiveness in their solutions. The next phase of the analysis was to determine if this classification of successful and unsuccessful teams could be corroborated with feedback/inputs taken from student teams and also from the client organizations.

Table 2: Team Feedback – Results for Successful Teams

Team Learning:	Mean	SA	A	U	DA	SDA	SD
We have been able to complement each other and learn better as a team.	3.72	7.5	60.4	28.3	3.8	0	0.66
Data and Analysis:							
Each of us participates to thrash out differences and arrive on a consensus.	4.25	30.2	64.2	5.7	0	0	0.55
I stay open to criticism and new ideas.	4.25	32.1	60.4	7.5	0	0	0.59
Commitment:							
Teamwork has got us more involved with goals	4.19	30.2	58.5	11.3	0	0	0.62
I feel a sense of obligation to perform for my team.	4.08	24.5	62.3	11.3	0	1.9	0.73
Shared Goals:							
We share a strong common purpose	3.91	18.9	56.6	20.8	3.8	0	0.74
Our task keeps us motivated.	3.74	7.5	62.3	26.4	3.8	0	0.65
Interpersonal skills:							
Our team members interact in an open environment	3.68	17	41.5	34.0	7.5	0	0.85
We are able to organize and coordinate better	4.13	26.4	62.3	9.4	1.9	0	0.65
Skill Acquisition:							
I am able to apply what I learn at School in practical situations.	4.13	24.5	67.9	3.8	3.8	0	0.65
The project has enabled me to improve my ability to analyze, synthesize and evaluate problem scenarios.	4.02	20.8	64.2	11.3	0	0	0.69
Autonomy:							
I have been able to exercise my discretion in approaching the project	4.15	26.4	62.3	11.3	0	0	0.60
The team task and learning have made me feel empowered.	4.08	18.9	69.8	11.3	0	0	0.55
Cohesiveness:							
Opportunities to learn have kept us together as a unit.	4.04	22.6	62.3	11.3	3.8	0	0.71
Together we perform and achieve better results than as individuals.	3.98	18.9	62.3	17.0	1.9	0	0.66
Supervision:							
I have the complete support of my faculty-mentor.	3.94	17.0	62.3	18.9	1.9	0	0.66
We have had very constructive feedback from our mentor	3.89	18.9	56.6	20.8	1.9	1.9	0.80

Data from surveys done for teams that were classified as successful is summarized under Table 2. Team Learning: It can be observed that team learning enabled them to learn better benefitting from complementary skills of members (m=6.72, p=62.3%).

Conflict Resolution: They reported better participation (m=4.25, p=94.3%) and were open to criticism and new ideas during team projects (m=4.25, p=92.5%).Commitment: Members of these teams experienced greater involvement and higher sense of obligation towards the team (m=4.19, m=4.08). They were never weaned away from the task at hand and stayed focused on goal accomplishment.

Shared Goals: Student members of these teams shared a common purpose (m=3.91, p=75.5%) and stayed very motivated (m=3.74, p=69.8%).Interpersonal skills: These teams also were characterized with strong interactions (m=3.68, p=67.6%) and were able to organize their work and coordinate work.Skill Acquisition: From the survey, 88.7% of students reported very good opportunities to apply theory learnt in practical situations (m=4.13). A number of students from these teams reported opportunities to improve their skills (m=4.02, p=84.9%).Autonomy: Most students (p=88.7%) reported greater freedom while working in these teams (m=4.15). The students also (p=88.4%) reported greater empowerment, sense of feeling adequate and responsible (m=4.08).

Cohesiveness: Members of these teams showed an inclination to stay together for the benefit of learning (m=4.04, p=84.9%) and support their performance (m=3.98, p=81.1%).

Supervision: Members of these successful teams also attributed their performance to the support of their faculty mentor (m=3.94, p=77.3%) and that the feedback received periodically was very constructive (m=3.89, p= 73.5%). The members of these teams appreciated the quality time that the mentor invested in ensuring cordial team relationships, inputs in training and supporting team efforts.

Table 3: Client's feedback – Successful Teams

Problem Identification:	Mean	SA	A	U	DA	SDA	SD
1. The Team member was active during the problem identification phase.	3.94	24.5	52.8	15.1	7.5	0	0.84
2. This member had the ability to ascertain problem attributes.	3.83	26.4	47.2	15.1	5.7	5.7	0.62
Analysis:							
1. The member contributed in the analysis of problem attributes.	3.77	15.1	58.5	18.9	3.8	3.8	0.89
2. Elements of data to be gathered were systematically decided.	3.75	24.5	43.4	17.0	13.2	1.9	0.65
3. Analysis of data was a shared responsibility.	3.75	20.8	47.2	20.8	9.4	1.9	0.55
Solutions/Recommendations:							
1. The member had a significant influence/skill input into team recommendation of solutions.	3.72	28.3	34	22.6	11.3	3.8	0.54
2. The quality of solution was impacted by the team member	3.72	20.8	43.4	22.6	13.2	0	0.75
Reflections/Presentations:							
1. The member contributed to the draft for the project.	3.66	11.3	54.7	24.5	7.5	1.9	0.85
2. The member contributed during team reflections.	3.60	18.9	45.3	20.8	7.5	7.5	0.45
3. The member's ability to present findings and substantiation of recommendations was good.	3.51	13.2	41.5	32.1	9.4	3.8	0.37
Teamwork:							
1. This team member participated actively in all phases of the project.	3.51	17	37.7	30.2	9.4	5.7	0.33
Innovation:							
1. Each member exhibited willingness to learn and explore.	3.36	9.4	35.8	41.5	7.5	5.7	0.65
2. The member contributed innovative ideas.	3.34	7.5	35.8	39.6	17	0	0.56

The second construct for data analysis was from feedback received from the Executive - liaison person from the client organization. The executive's feedback was taken on each of the team member who was integral to the successful teams (data tabulated under Table 3).

Problem Identification: Clients reported a high percentage of team members (p=77.4%), that were active during problem identification phase (m=3.94) and members (p=73.6%) exhibited ability to ascertain the right problem attributes (m=3.83).

Analysis: Clients also reported that 73.6% of the members contributed in analysis of problem attributes (m=3.77). Also these members (p=67.9%, m=3.75) showed their ability to decide on elements of data needed for analysis. The same percentage of members (p=67.9%) shared in the responsibility for data analysis (m=3.75).

Table 4: Team Feedback – Results for Unsuccessful Teams

Team Learning:	Mean	SA	A	U	DA	SDA	SD
1. We have been able to complement each other and learn better as a team.	2.41	8.6	18.6	7.5	50.2	15.1	0.43
Data and Analysis:							
1. Each of us participates to thrash out differences and arrive on a consensus.	2.35	6.4	12.0	8.9	55.7	17.0	0.54
2. I stay open to criticism and new ideas.	2.29	5.1	9.1	9.7	62.1	14.0	0.47
Commitment:							
1. Teamwork has got us more involved with goals	2.28	5.0	8.8	10.1	61.6	14.5	0.67
2. I feel a sense of obligation to perform for my team.	2.32	6.0	11.6	8.7	56.7	17.0	0.48
Shared Goals:							
1. We share a strong common purpose	2.56	9.1	18.1	8.0	49.5	15.3	0.34
2. Our task keeps us motivated.	2.25	4.5	9.3	9.6	61.1	14.5	0.63
Interpersonal skills:							
1. Our team members interact in an open environment	2.36	3.0	14.7	10.7	59.2	12.4	0.41
2. We are able to organize and coordinate better	2.43	2.7	12.1	16.4	63.7	5.1	0.48
Skill Acquisition:							
1. I am able to apply what I learn at School in practical situations.	2.25	2.9	12.0	9.1	60.0	16.0	0.56
2. The project has enabled me to improve my ability to analyze, synthesize and	2.22	2.8	11.2	8.4	58.8	18.8	0.53

evaluate problem scenarios.							
Autonomy:							
1. I have been able to exercise my discretion in approaching the project	2.31	5.6	5.6	16.8	58.8	13.2	0.61
2. The team task and learning have made me feel empowered.	1.81	0	0	11.2	59	29.8	0.52
Cohesiveness:							
1. Opportunities to learn have kept us together as a unit.	1.84	0	2.8	8.4	59	29.8	0.44
2. Together we perform and achieve better results than as individuals.	2.41	3	12.1	16.4	60.9	7.6	0.47
Supervision:							
1. I have the complete support of my faculty-mentor.	2.29	2.8	12.1	10.1	63.7	11.3	0.47
2. We have had very constructive feedback from our mentor	2.38	2.8	14.7	16.4	49.5	16.6	0.45

Solutions / Recommendations: Members (p=62.3%, m=3.72) had contributed significant inputs into the solutions recommended to client organizations. Team members (p=64.2%, m=3.72) had a significant impact on the quality of solutions recommended.

Reflections / Presentations: Client Organizations reported that members (p=66.6, m=3.66) contributed actively during the draft thesis of project. Members (p=64.2%, m=3.60) were active during team reflection meetings. Clients reported that members (p=54.7%, m=3.50) exhibited good abilities during presentation of project research findings and substantiation of recommendations.

Teamwork: Clients reported that team members (p=56.4%, m=3.51) participated actively during all phases of the project. Innovation: Members (p=45.3%, m=3.36) were willing to learn and explore various possibilities in approaching client problems. Members (p=43.4%, m= 3.34) showed innovative ways of solving client problems and suggesting solutions.

Analysis for Unsuccessful Teams:

An analysis was carried out for teams having low means on various dimensions considered for the project. The feedback collected from Student Teams that were initially classified by Faculty assessment as 'Unsuccessful' is tabulated under Table 4. Team Learning: Only a few members (p=27.2%, m= 2.41) reported beneficial team learning.

Conflict Resolution: These teams were characterized by lower levels of participation and difficulties in ironing out differences (p=18.40%, m=2.35) and lower tolerance for criticism (p=14.2%, m=2.29). One reason that members of these teams cited was their inability to get along well with each other.

Commitment: Reported teamwork in order to achieve team goals was low among these teams (p=13.8%, m= 2.28) and experienced a low sense of obligation to perform for the team's cause (p=17.60%, m=2.32).Shared Goals: These teams did not share goals with any measure of common purpose for the team (p=27.2%, m=2.56) and reported little motivation to work towards achieving them (p=13.8%, m=2.25).Interpersonal skills: Members reported low levels interaction (p=17.70%, m=2.36) and their inability to organize their tasks (p=14.8%, m=2.43). Members often complained of lack of trust, inadequate efforts from each member a feeling of inadequacy.

Skill Acquisition: Members of these unsuccessful teams also reported to few or no opportunities on the project in utilizing their skills (p=14.9%, m=2.25) or to improve their skills sets (p=14.0%, m=2.22).

Autonomy: Members reported low levels of discretion / freedom (p=11.2%, m= 2.31) and experienced little learning (p=0%, m=1.31). Some of the members of these teams mentioned that autonomy connoted to being permitted to stay laid back.

Table 5: Client's feedback – Unsuccessful Teams

Problem Identification:	Mean	SA	A	U	DA	SDA	SD
1. The Team member was active during the problem identification phase.	1.77	0	0	11.08	55.5	33.36	0.35
2. This member had the ability to ascertain problem attributes.	2.16	2.77	8.31	13.85	52.7	22.29	0.42
Analysis:							
1. The member contributed in the analysis of problem attributes.	2.19	2.77	5.54	16.62	58.32	16.75	0.65
2. Elements of data to be gathered were systematically decided.	2.05	0	5.54	13.85	61.09	19.52	0.52
3. Analysis of data was a shared responsibility.	2.1	0	2.77	19.39	63.86	13.97	0.59
Solutions/Recommendations:							
1. The member had a significant influence/skill input into team recommendation of solutions.	2.06	5.54	2.77	11.08	52.78	27.79	0.64
2. The quality of solution was impacted by the team member	2.28	5.5	8.37	13.85	53.75	18.5	0.53
Reflections/Presentations:							
1. The member contributed to the draft for the project.	1.99	0	0	19.39	61.09	19.52	0.54
2. The member contributed during team reflections.	2.52	2.77	13.85	22.16	55.5	6.0	0.59
3. The member's ability to present findings and substantiation of recommendations was good.	2.71	11.08	13.85	16.62	52.78	5.67	0.61
Teamwork:							
1. This team member participated actively in all phases of the project.	1.88	0	0	11.07	66.63	22.2	0.63
Innovation:							
1. Each member exhibited willingness to learn and explore.	2.27	0	8.37	22.16	58.32	11.15	0.61
2. The member contributed innovative ideas.	2.29	0	13.87	16.62	53.75	15.76	0.59

Cohesiveness: Members of these unsuccessful teams experience great difficulty in keeping together (p=2.8%, m=1.84) and in working as a concerted unit (p=15.1%, m=2.41).Supervision:

Unsuccessful teams also reported to very low perceived support from their faculty mentor (p=14.9%, m=2.29) and no constructive feedback that could help their performance (p=17.5%, m=2.38). These teams often mentioned excessive control on the faculty part did not go down well with members.

Analysis for unsuccessful teams:

Feedback on those unsuccessful teams from client organization is presented in Table 5. Problem identification: Clients reported a very low percentage of members (p=0%, m= 1.77) who were active during problem identification phase and a low percentage of members (p=8.25%, m=2.19) who exhibited the ability to ascertain the right problem attributes.

Analysis: Clients reported a low percentage of members (p=8.25%, m=2.19) that contributed during analysis of problem attributes. Members (p=5.54%, m=2.05) contributed little in deciding on elements needed for analysis. Clients also reported that these teams were low (p=2.77%, m= 2.10) in members' willingness to share responsibilities for data analysis.

Solutions / Recommendations: Members (p=8.25%, m= 2.06) contributed little to the solutions recommended and their impact on quality of solutions was low (=13.9%, m=2.28).Reflections / Presentations: Clients also reported that members of these teams (p=0%, m=1.99) did little to have a substantial draft readied, participated rarely (p=16.6%, m=2.52) during team reflections and were not up to the mark during presentations (p=25.03%, m=2.71) with inadequate substantiation of their recommendations.

Teamwork: Client feedback on members of these teams indicated poor participation during all phases of the project (m=1.88).Innovation: Very few of the team members (p=8.37%, m=2.27) were willing to learn and explore different approaches to problem solving. Further, only a few members (p=13.87%, m=2.29) exhibited innovative ways of solving client problems.

Conclusions

The study results showed consistency in faculty assessment of student team performances and the feedback from the team members and client feedback. Teams that did not perform well on faculty assessment also reported low scores for team learning, poor levels of participation, and low commitment. These unsuccessful teams also were low on motivation, did not share a strong purpose, were not cohesive, and did not perceive positively faculty support and autonomy that was given.

These teams had poor scores from client feedback surveys reporting low levels of involvement in various stages of problem identification, analysis, presentation of recommendations. They also had low scores on team work and innovation during the project. Teams that did well on faculty assessment of their performances also scored high on team members' feedback on team learning, participation, and commitment to team goals.

These teams also had strong team goals, interacted often, enjoyed working in teams, utilized their skills and learnt through team effort. These teams also stayed cohesive, felt empowered, and perceived faculty mentors' advice as positive. These teams also scored on client feedback surveys, with high levels of participation in problem identification, analysis, presentation stages of the project. Clients also scored these teams high on team work and on team members being innovative in their approach to solving client problems.

The attributes listed in this study is not an exhaustive list and variables like skill inventories of members, personality types, organizational influences, power and authority influences and politics could be considered in future studies. What was also not done during the course of this study is the assessment of strategies and their effectiveness in the constuctivist design itself. Mentors were afforded with freedom to experiment with different approaches to achieve desired results. However, mentoring capabilities could have differed amongst faculty members.

This possible shortcoming was probably offset to a great extent with mentors supporting each other in their efforts. These experiments require concerted efforts over extended periods of time and are demanding on the faculty. Mentors would end up shouldering far greater work and in the process hinder their academic and research work. This notion inhibits the chance to modify the constructivist design and run the experiment iteratively. The interest in these non-traditional forms of learning is always going to stay popular given the nature of work that today's employees are required to be involved with and the demands of working in cross-cultural environments of transnational organizations.

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