EXAMINING THE IMPACT OF TEAM BASED LEARNING ON PERSONALITY, COMMUNICATION, ITS MANAGERIAL IMPLICATIONS AND OUTCOMES

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ABSTRACT

There have been innumerable researches linking personality traits to jobs and job outcomes. However, little has been talked about in terms of linking innovative teaching pedagogy and its impact on personality, with specific reference to managerial students, keeping in mind their future job profiles. This research aims to empirically study the impact of Team Based Learning (TBL) on personality and the changes in proficiency levels of management-school students, post a Business-Communication Course. For this research, Descriptive Cross-sectional Research Design was employed. The data was collected using a close ended questionnaire as the survey instrument. Furthermore, the data was analysed using multivariate data analysis tools like EFA, Cluster Analysis and Regression Analysis. Results indicate that there is a definite impact on two aspects of the personality which are: Functional and Social/Outward. Further, the research indicates that in males, TBL points towards an outward development, whereas in females, the results are more towards inner development. Furthermore, on the basis of cluster analysis, three clusters are proposed which are; protean, enterprising and affable. Each cluster has distinctive traits which are specified in the study. So, TBL aids future mangers to think about an issue from various angles and helps reduce gloss phobia. Further, findings are suggestive that since Protean, enterprising and affable personalities are approximately equal in number, future academic planning can adopt this new conceptualization.

Keywords: Personality, Team Based Learning, multivariate analysis, functional aspects, social and outward aspects, communication skills.

INTRODUCTION

A recent study by Rachel Williamson Smith and Michael M. DeNunzio (2020), has integrated the theory of purposeful work behavior and the job demands-resources model, while taking into account the distinctive interactions between the individual personality and job characteristics. The research further examined job resources and challenging job demands as moderators, and eventually perceived a mixed support for their hypotheses across the two studies.

The current research examines the impact of Team Based Learning (TBL) on the personality of managerial students, while keeping their future job profiles in mind. Prior to understanding the current trends in management pedagogy and its impact on personality, it would be interesting to note that the year 1958 witnessed a change in management teaching pedagogy. That is to say, pedagogy was inclined towards being more research based rather than vocational (Schlossman et al., 1998). Thereafter, the 70's reported dearth of relevance with reference to topics under research. In addition to this, the course content was highly quantitative, and it was marked with an absence in terms of readiness for entrepreneurial careers (Schlossman et al., 1998).

As a result of these findings, business schools modified courses to include topics related to teamwork, organizational behavior and entrepreneurial tracks. The pedagogy used was faculty driven and focused primarily on knowledge creation and assimilation. It was only in 1998, after the introduction of rankings for business schools through media, that management schools became proactive

towards making changes in pedagogy (Schmotter, 1998; Segev et al., 1999).

Quite clearly, major changes occurred because of the advent of technology and its usage in the current scenario. As a result, the concept of conventional classrooms and teaching in an orthodox fashion faded into the oblivion. There has been a drastic revamping of the conformist classroom; it has been transformed to a network learning milieu where knowledge routing and achievement-based outcomes are some of the main elements of education (Dolence and Norris, 1995; Leavitt, 2000).

The new model of teaching requires educators to consider new meanings and methods of learning along with teaching models that are suitable for a society of the Information age (Konyu-Fogel, 2009; Kalliath and Laiken, 2006).

In the latest scenario, knowledge is built by combined inputs of faculty and students, unlike the earlier model wherein it was a one-way traffic of faculty passing on knowledge to students mainly through lecture pedagogy (Boyatzis and Kram, 1999). Students have become active constructors and discoverers of knowledge, while faculty has donned the cap of facilitators. The aim of instructors today is to build and tap key competencies in students. Relationship building among students and faculty is a vital component in nurturing cooperative learning and teamwork.

Resultantly, in the current educational scenario, with specific reference to management institutions, there is an emphasis on Active Learning (AL). This is specifically because active learning impacts students' learning in a positive manner (Beghetto and Kaufman, 2009; Chu and Libby, 2010; Hermanson, 1994). This comprises of the act of learning by doing rather than passively listening to the instructor (Paulson and Faust, 2014). There are various means in which students can be actively engaged in the learning process. These techniques include simulations, case-studies, team-based learning, problem solving, role plays, group discussions and presentations to name a few.

Team-based learning (TBL) is a relatively new teaching approach that makes extensive use of intensive interactive team activities in the classroom to deepen learning (Chace, 2014). TBL is one of the components of Active Learning and one of the reasons for an increase in Active Learning is that students nowadays are wary of the old-age pedagogy of simply listening to the instructor (Grauer et al., 2008).

Today, the idea is to learn through the act of doing. In addition to this, recruiters in today's day and age place a major emphasis on effective communication, the ability to work in teams, the skills of problem-solving, increasing content knowledge and the ability to be an independent thinker.

Business Communication courses in management schools are designed in a manner wherein students practice and learn through team-based learning amongst various other pedagogical tools. One of the prime reasons for promoting team-based learning is that it increases efficiency of students by developing their teamwork skills (Chen et al., 2004). Team-based learning provides a platform where there is a free exchange of knowledge, a flow of ideas and interaction of different minds. While working in teams, individuals become aware of the thought processes of others in their peer group, there is a critical examination of facts and figures while working on specific problems and there is a dynamic interaction amongst team members. This eventually sheds inhibitions of students and tends to increase their professional communication skills. Resultantly, students are able to express their views in a more coherent and concise manner (Hwang et al., 2008). Similarly, it has been found that students' attitudes and satisfaction with reference to team-based learning changes with the duration of time, is positive, and students recognize its benefits, especially in the development of team-work skills (Reinig et al., 2011).

Management schools nowadays practice imparting knowledge on the Outcome Based Education (OBE) framework (Anderson and Krathwohl, 2001). The entire idea is to design course modules in a manner wherein the progress of students can be mapped. Sharples et al. (2016) have talked about ways and means to innovate during teaching and have

also stated the importance of teachers as policy makers of innovation.

Team-based learning is one such practice wherein the changes in students can be measured in an evident fashion. One of the vital facts about team-based learning is that it has been listed as one of the key skills that should be taught to students pursuing undergraduate degrees (Plice and Reinig, 2009).

Research on team-based learning has talked about a range of issues in the productive use of student teams which are inclusive of virtual teams, dialogic communication, collaborative learning designs and team leadership (Kalliath and Laiken, 2006). However, there is not much thrust upon the perspective of the student and their views when it comes to team-based learning (Jassawalla et al., 2009). Therefore, there are research gaps in terms of self-perception of management students with respect to team-based learning and its usefulness therein.

The paper specifically focusses on ten statements related to team based learning and its perceived impact on students, as stated by them. It aims at probing whether students find learning in teams beneficial, if TBL has increased the student's existing vocabulary, whether working in teams gives a deeper understanding on topics discussed, if confidence has increased as a result of team based learning, whether their fear of public speaking has decreased because of working in teams and if students have become more sociable as a result of team based learning.

The self-perception also reflects whether or not TBL has increased the student's ability to think out of the box, if students have become more assertive in expressing their views because of working in teams, their comfort while working in teams and finally whether TBL has increased students' managerial skills. The respondents of this research are management students from five management schools in Lucknow, India. This paper focuses on the self-perception of management students with respect to team-based learning and its impact on personality. Various parameters of communication skills have been taken into account and students have rated themselves after the delivery of the course.

The respondents of this research are management students from various management colleges in Lucknow, India.

LITERATURE REVIEW

Team Based Learning is an instructional strategy where students work in small groups to enhance/deepen learning (Michaelsen et al., 1997). In it, student teams can give individuals insights and understanding that cannot be achieved alone (Johnson and Johnson, 1998). According to Michaelsen and Sweet (2009), "the four essential elements of TBL consist of: (1) appropriately created and managed teams, (2) students held accountable for the quantity and quality of their individual and team work, (3) regular and timely feedback, and (4) team assignments that promote learning and team development."

When the four essential elements of TBL are successfully implemented, cohesive learning communities can evolve. TBL may provide an opportunity for students to develop problem solving skills that are aided by regular feedback from the instructor and team members. Problem solving occurs in team settings where "individuals share tasks and contribute to resolving problems that are not well defined" (Hunt et al., 2003).

TBL provides opportunities for students to recognize gaps in one's knowledge. These gaps are exposed during team discussions and reporting, which can become a strong motivator for continued learning. The instructor needs to monitor how the groups are being formed to make sure that the group will succeed and become cohesive. In order to monitor TBL, it is essential that students should be in the same group for the entire semester. Students must be accountable to both their faculty and their group. Individual learning, group development, and group cohesiveness are limited when there is a lack of preparation (Michaelsen and Sweet, 2008). A grading system that is best for a TBL course is one that provides incentives for group and individual work.

Although team-based learning can be effective, there are challenges as well. Some of the challenges are cultural differences, technical challenges, and participation challenges. According to Miller (2009) "cultural differences can become a challenge

when the differences are not realized and for which no preparation has been taken." To overcome cultural differences students should talk about their culture at the beginning of the class and openly discuss any cultural factors that may influence the way they learn and participate in the class. The instructor should instruct students to be sensitive to other students so they do not offend anyone. Technical problems can be a challenge in any online class. In some cases, the technical support is not adequate. In addition to this, participation problems are obvious in team-based learning. No matter how much an instructor stresses upon the importance of participation, there are still going to be some who do not participate. Working in online groups can be extremely frustrating when group members fall behind or do not complete tasks they were assigned by the group. Students must identify and discover specific roles to allow the group to operate effectively. Students must be able to trust the members of the group or success might be limited to one person doing all the work, or not completing the assignment at all. Developing a sense of trust has been found to be related to group success (Morgan et al., 2009). In addition to this, immediate feedback helps individuals retain the material.

The last essential element of TBL is assignment design. First and foremost, instructors have to make sure that the assignments are focused on learning, and secondly, that the assignments concentrate on further development of the teams. Thompson and Ku (2010) note that teams that collaborate more during their online classes "initiated more interactions among team members, generated more new ideas through discussions, and solved problems more independently with less guidance from the instructor, and ultimately retrieved better learning results." This indicates that TBL in online learning can help students generate ideas, improve independent thinking, and solve problems. In addition, TBL could assist passive learners to become active participants in online discussions. For example, in most online classes, students are required to participate in weekly discussions by posting responses to topical questions and responding to other classmates' posts (Konyu-Fogel, 2009). To complete these tasks, students need to understand and apply the concepts learned so they can have a productive

discussion in the class. This is different from a face-to-face class where some students tend to hide and don't engage in classroom discussions (Gomez et al., 2009). Teaching an online class can be very difficult for some teachers to accomplish. Faculty need to make sure the students feel connected and part of the class. Faculty should oversee the discussions and help students focus on the topic by encouraging student participation and an ongoing exchange of ideas. "Communicating with students and building relationships with them are among the hardest but most important parts of online teaching (Ash, 2011)." Developing an online course is a long process which includes extensive planning and organization. Faculty should provide as much detail as possible about discussions and assignments so expectations are clear. Teamwork assignments must be nurtured by faculty to assure member participation and effectiveness of accomplishing tasks. The use of teamwork deepens the learning experience and promotes active learning. Doing this in the classroom extends the business world practice of working in teams to the students who will need to develop these skills in order to be successful (Gomez et al., 2010). As the business world continues to expand globally, team-based virtual teams have become an increasingly important factor that schools must consider when designing online classes. Research shows that the success of online classes depends on two main factors: course design and student interaction and collaboration (Grezda et al., 2008). According to Kearsley (1998), "the single most important element of successful online education is interaction among participants." If you are developing an online course, being able to incorporate meaningful and appropriate interactions must be a major goal. One way to get students interact with each other is through group projects and team based activities. To assure that students understand the importance of collaboration and have motivation to participate in online groups, there are specific strategies that instructors may use.

For example: making sure that students know the expectations for participation; are clear on what they are supposed to do; the assignments have relevance to the real world; student groups are formed early so there is an

opportunity to develop cohesiveness; monitoring the groups and giving feedback; and allowing sufficient time to complete the tasks. The social interaction between students is critical in the success of the team meeting its goal. In the online setting, the social interaction of virtual groups highlights the importance of a sense of community (Grzeda et al., 2008). Conrad (2005) defined community as of "a sense of connection, belonging, and comfort that develop over time among members of a group who share a common goal." Learning community has been linked to a sense of safety, trust, and sharing. Trust is especially important, as team members must be able to rely on others to do their part. The difficulty of this is magnified in an online environment due to the lack of interaction between members. Trust has been identified as being the most critical factor of effective team process and performance on a project (Liu et al., 2008). To alleviate some of these difficulties in online courses, we recommend the use of rubrics.

There have been various researches conducted on how students from different areas respond to various AL methodologies. Some of these researches discuss a range of issues that crop up while using student-learning teams or groups in management education (Kalliath and Laiken, 2006). Nevertheless, there is a major chunk missing when it comes to the perception of students when it comes to team-based learning (Jassawalla et al., 2009).

When talking about team-based learning, Haak et al. (2001) state there is an unequal benefit to students of a lecture-free format involving quizzes on pre-class readings and significant informal teamwork in the class when compared to a lecture-intensive class. A major reason behind this could be that students are at ease while asking questions because of the informal learning environment. Another explanation could be that the collaborative and independent nature of learning permits students to learn at their own speed. On the other hand, there are arguments against AL which state that disadvantaged groups lag behind further in classrooms where AL is actively used because of pre-existing achievement differences, differences in style of learning and cultural differences amongst students (Petrilli, 2013).

This paper highlights the perceptions of students with specific reference to communication skills after a series of team-based learning activities. The benefits of AL depend on the particularities of the student population because of cultural context and various other factors (Brownell et al. 2013). For example, Asian-American students learn less when they are expected to describe problems out loudly as compared to when they work on them silently (Kim, 2002). Another research finds differences based on language reporting that low-achieving students benefit more from talking through problems, whereas high-achieving students benefit from writing about them (Rivard, 2004). There are three factors related to AL's impact on student performance (Eddy and Hogan, 2014). Firstly, it leads students to devote more time on the course on a weekly basis. Secondly, it inspires students to view the class as a community of learners and thirdly, it upturns the apparent value of the course (Haidet et al., 2014). Other research on TBL has given insights into how it has aided students develop an appreciation for teamwork and team collaboration while strengthening and readying them for jobs (Betta, 2016).

Carrie et al. (2017) have demonstrated the strategic benefits of TBL along with challenges of large-scale implementation. Furthermore, their study has successfully integrated content, graduate capabilities and transitional goals in undergraduate courses.

OBJECTIVE OF THE RESEARCH
The purpose of this paper is to add to the existing Constructivist theory of Communication proposed by Jesse G. Delia (1977). The existing theory gives a cognitive account for communication competence in individuals. Constructivism in itself aims at exploring individual differences in the ability communicate skillfully in social situations (Delia, 1977). The idea of constructivism is to explore the development of social, cognitive and behavioural skills, in addition to studying its impact on interpersonal relations. The aim of this research is to conduct and establish empirically, results on the self-assessment of management students with specific reference to Team Based Learning and comprehend its contribution to Constructivism.

The idea is to gain an understanding of an individual's proficiency levels related to various parameters when working in teams post a Business Communication Course and gauge its applicability in all courses with specific reference to Outcome Based Education. These parameters include vocabulary, level of understanding of topics, confidence, ability to speak in public, sociability, knack of thinking out of the box, assertiveness, comfort level and managerial skills. The results may be used primarily to build upon curriculum in management institutes which focus on leveraging TBL and adding value to 'Outcome Based Education'.

Here, the proposed hypotheses are:

H1: There exists underlying perceptual dimensions in the concept of 'Team-Based Learning'.

H2: There exists segments among the students vis-à-vis perceptions related to the 'Team-Based Learning'.

H3: The Team Based Learning is perceived to be useful and contribute to Constructivism.

RESEARCH METHODOLOGY
This paper aims at exploring the impact of Team Based Learning among students who are studying in different management courses, at various managerial institutes. Furthermore, the results are based with specific reference to a Business Communication Course. In order to analyse the impact of TBL, various activities related to TBL were conducted during the course. These activities included project making and role-plays.

Each team comprised of six students and as a part of summative evaluation, each team was to complete a field project which comprised of student groups studying any business e.g. NGO or Retail store or a business enterprise, according to their choice (Annexure 1). Thereafter, students had to identify gaps in communication, impart training and submit a report along with a transcript of training.

On the other hand, the formative assessment comprised of role plays wherein students had to build a play on persuasive ad-making (Annexure 2). Both projects were to be completed during the duration of the trimester under the Business Communication Course.

Towards the end of the trimester and the completion of the course, students were given questionnaires which were linked to TBL. A Descriptive Cross-sectional Research Design was employed for the research-study with a close-ended questionnaire as the survey-instrument. The questionnaire comprised of 10 statements which were meant to evaluate various skills related to TBL. Of these, the first statement evaluates whether the students found learning in teams beneficial. Other nine statements analysed students' proficiency in vocabulary, comprehension, confidence, public-speaking, social skills, ability to think out of the box, assertiveness, comfort level and managerial skills.

The respondents had to self-assess their communication skills on a five-point Likert scale. These questions were based on self-perception and had been finalized after applying Exploratory Research Design, which consists of Literature-Review, in-depth interviews with educationists, faculty members and Focus Group Discussions with faculty-members and management students. A pilot survey was also conducted to check the validity of the proposed questionnaire.

In this research, 202 postgraduate students of different management institutes/colleges were selected using Stratified Random Sampling. They were given questionnaires after the completion of their managerial program. Institutes were selected based on the year in which they commenced management education. Resultantly, five of oldest management institutes were selected for the study. Apart from age, their occupancy ratio was also taken into consideration and all selected institutes had a history of 100% filled seats as per their allocation by the concerned authorities/agency. Within these institutes, 20-25 students were selected on the basis of their interest and willingness for participation in the study. The students were briefed about the research and its objective.

DATA ANALYSIS AND INTERPRETATIONS
The demographic profile of the respondents has been mention in Table 1.

Table 1. Demographic profiles of respondents

Item	Category	Number	Percentage
Gender	Male	116	57.43
	Female	86	42.57
Place of Residence	Tier I City	61	30.20
	Tier II City	76	37.62
	Tier III City	65	32.18
Parent's Monthly Income (in '000Rs)	<50	32	15.84
	50-100	61	30.20
	100-150	68	33.66
	>150	41	20.30
Graduation Subject Stream	Humanities	25	12.38
	Commerce	92	45.54
	Science	31	15.35
	Professional	54	26.73
Total		202	100.00

Author's Calculations

Exploratory Factor Analysis (EFA) was performed to examine the underlying dimensions inherent in the perceptual variables related to 'Team-Based Learning' (TBL). Principal Component Analysis (PCA) was performed using Varimax Rotation with Kaiser Normalization. The data was found to be appropriate for the Factor Analysis, as suggested by the significant value of Bartlett's Test of Sphericity (sig. = 0.00<0.05) and high value of KMO Measure of Sampling Adequacy (0.698) as per Table 2.1.

Table 2.1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	473.713
	df	28
	Sig.	.000

Author's Calculations

Table 2.3: Rotated Component Matrix[a]

	Component	
	1	2
Increased vocabulary	0.673	0.041
Deeper understanding of topics	0.846	-0.077
Confidence increased	0.728	0.13
Fear of public speaking decreased	0.115	0.758
More sociable	0.02	0.783
Increased out of the box thinking	0.676	0.274
More assertive in expressing	0.109	0.745
Increased managerial skills	0.68	0.142
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. [A]		
a. Rotation converged in 3 iterations.		

Author's Calculations

Further, two factors were extracted from amongst eight perceptual variables (Table 2.2). Here, 56.31% of the variation extracted.

Rotated Component Matrix (Table 2.3) suggest two underlying factors which are as follows;
Factor 1: This consists of perceptual variables like: Increased Vocabulary, Deeper Understanding of Topics, Increased Confidence, Increased Out –of-the-Box Thinking and Increased Managerial Skills. Therefore, evidently this factor may be thought of representing the functional part of the Team-Based Learnings converting into Functional aspect.

Factor 2: The second factor consists of perceptual variables like decreased Fear of Public Speaking, More Sociable, More Assertive in Expressing. This dimension may be taken as representation of the Social and Outward aspect of Team-Based Learning.

Table 2.2: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.292	41.146	41.146	3.292	41.146	41.146	2.643	33.033	33.033
2	1.213	15.161	56.308	1.213	15.161	56.308	1.862	23.274	56.308
3	.944	11.795	68.102						
4	.782	9.775	77.877						
5	.602	7.530	85.408						
6	.541	6.760	92.168						
7	.372	4.656	96.823						
8	.254	3.177	100.000						
Extraction Method: Principal Component Analysis.									

Author's Calculations

After exploring the underlying dimensions inherent in the data, Cluster Analysis has been employed to examine the segments present among the students vis-à-vis perceptual variables related to the 'Team-Based Learning'. The objective was to ascertain presence of 'internally homogenous' and 'externally heterogeneous' group of learners with respect to their perception and behaviours with respect to different facets of 'team based learning'. The cluster analysis has been employed in two steps. In the first step Hierarchal Clustering was used with agglomeration algorithm using average linkage concept with the distance measure as Squared Euclidean Distance. Here, optimum stopping rule suggested that we are having three clusters in the data (Table 3.1)

Thereafter, Non-Hierarchical Clustering in the form of k-mean clustering was attempted to profile the three clusters as obtained by the Hierarchal Clustering algorithm. Here, optimizing partition method was employed for the said objective. Table 3.2 suggested that 'more sociable (F= 83.921) and 'more assertive in expressing' (F= 53.547) have been found to be the most important clustering variables, followed by 'confidence increased' (F= 53.547) and 'increased managerial skills' (F = 47.298) and so on. These variables are mainly responsible for creating clusters (internally homogeneous and externally heterogeneous groups of learners)

In order to profile the three clusters, 'Final Cluster Centres' (Table 3.3) have been interpreted as per the cluster means of different clustering variables for the three clusters. Accordingly, the three clusters may be defined as:

Table 3.3: Final Cluster Centres

	Cluster		
	1	2	3
Increased vocabulary	4	3	1
Deeper understanding of topics	4	4	2
Confidence increased	4	2	4
Fear of public speaking decreased	4	2	4
More sociable	4	1	3
Increased out of the box thinking	4	4	1
More assertive in expressing	4	1	4
Increased managerial skills	4	4	2

Author's Calculations

Cluster 1 consists of such students who have high score on all the clustering variables i.e. that perceive and perform good on all the aspects of TBL. The cluster may be termed as "*Protean*"

The second cluster consists of such learners who have high score on variables like: 'increased vocabulary', 'deeper understanding of topics', 'increased out of the box thinking'

Table 3.1: Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	185	202	.000	0	0	18
2	183	201	.000	0	0	20
197	1	57	19.838	196	181	200
198	2	27	19.876	195	0	199
199	2	4	21.171	198	184	200
200	1	2	34.768	197	199	201
201	1	25	62.279	200	0	0

Author's Calculations

Table 3.2: ANOVA

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Increased vocabulary	32.746	2	1.011	199	32.390	.000
Deeper understanding of topics	19.912	2	.579	199	34.417	.000
Confidence increased	27.436	2	.512	199	53.547	.000
Fear of public speaking decreased	32.174	2	.839	199	38.353	.000
More sociable	47.376	2	.565	199	83.921	.000
Increased out of the box thinking	21.453	2	.623	199	34.444	.000
More assertive in expressing	36.620	2	.553	199	66.186	.000
Increased managerial skills	20.739	2	.438	199	47.298	.000

and 'increased managerial skills' while these students perform not so good on other clustering variables. So, this cluster consists of such management students who are good in the functional aspects of the TBL. Hence, this cluster may be named as "*Enterprising*"

The third cluster shows the opposite characteristics from the second cluster. It consists of such students who are good in the social and personality aspects of TBL i.e. they have high perception and performance on clustering variables: 'confidence increased', 'decreased fear of public speaking', 'more sociable' and 'more assertive in expressing'. But they are not so good on the other set of variables i.e. academic and skill based variables. Accordingly, this cluster may be classified as "*Affable*".

Further, the division of the sample among the three clusters have been presented in the table 3.4. The number of students in the three clusters are 77, 65 and 60 respectively. So, it may be inferred that there is insignificant difference in the size of these clusters so there is approximately equal presence of these three clusters among students of a typical b-school.

Table 3.4: Number of Cases in each Cluster

Cluster	1	77.000
	2	65.000
	3	60.000
Valid		202.000
Missing		.000

Author's Calculations

Regression Analysis has been attempted to examine the impact of the perceptual variables upon the perceived usefulness of the team-based learning i.e. upon 'learning in the team beneficial'. Results from the ANOVA Table

(Table 4.1) show that there exists significant relationship between perceptual variables and perceived usefulness of team based learning i.e. these considered perceptual variables may have beneficial results in students' learning. Value of Adj. R-Square (0.265) suggests the moderate relationship between dependent variable and the considered predictors (Table 4.2).

Table 4.1: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.037	8	4.630	10.054	.000[b]
	Residual	88.869	193	.460		
	Total	125.906	201			
a. Dependent Variable: Learning in teams beneficial						

Author's Calculations

Furthermore, the results from the table 4.3 suggest that the predictors 'Confidence increased' (sig.= 0.027 <0.05), 'Increased out of the box thinking' (sig.= 0.006 <0.05) and 'Increased managerial skills' (sig.= 0.006 <0.05) were found to be significant at 5% level of significance. Therefore, these three predictors have a significant impact on perceived usefulness of the team-based learning.

Durbin-Watson Statistics (1.848) and Collinearity Statistics (Tolerance & VIF) suggest that there is no issue of Autocorrelation and Multicollinearity (Table 4.2 and 4.3).

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.542[a]	.294	.265	.679	1.848

Author's Calculations

Regression Analysis was also replicated for the gender-wise subsamples to examine the moderating effect of "gender". The results from Table 5.1 and 6.1 reflect that the

Table 4.3: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.393	.316		4.407	.000		
Increased vocabulary	.066	.049	.096	1.350	.179	.726	1.378
Deeper understanding of topics	.091	.079	.101	1.156	.249	.476	2.100
Confidence increased	.164	.074	.161	2.216	.027	.533	1.876
Fear of public speaking decreased	-.033	.054	-.044	-.603	.547	.674	1.484
More sociable	-.037	.065	-.047	-.567	.571	.530	1.888
Increased out of the box thinking	.194	.069	.223	2.801	.006	.578	1.731
More assertive in expressing	.050	.062	.060	.794	.428	.643	1.555
Increased managerial skills	.170	.075	.172	2.262	.025	.632	1.583

Author's Calculations

proposed regression model is significant for both the genders (sig. = 0.000<0.05 and 0.00<0.05). In addition to this, the value of Adj. R-square is 0.346 and 0.336 for males and Author's Calculations

females respectively. Hence, it can be inferred that there is no substantial difference in the significance and the strength of the proposed regression model for males and females.

Table 5.1: ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.927	8	2.741	8.616	.000[c]
	Residual	34.039	107	.318		
	Total	55.966	115			
a. Dependent Variable: Learning in teams beneficial. b. Selecting only cases for which Gender = Male						

Author's Calculations

Table 5.2: Model Summary

R		R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson Statistic	
Gender = Male (Selected)	Gender ~= Male (Unselected)				Gender = Male (Selected)	Gender ~= Male (Unselected)
.626[a]	.366	.392	.346	.564	2.019	1.109

a. Unless noted otherwise, statistics are based only on cases for which Gender = Male.
b. Author's Calculations

Table 5.3: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.646	.368		4.468	.000		
Increased vocabulary	.101	.057	.170	1.765	.080	.616	1.624
Deeper understanding of topics	-.023	.087	-.027	-.264	.793	.535	1.869
Confidence increased	.076	.089	.090	.859	.392	.523	1.913
Fear of public speaking decreased	-.030	.060	-.046	-.502	.617	.685	1.460
More sociable	-.064	.075	-.093	-.852	.396	.474	2.110
Increased out of the box thinking	.183	.071	.255	2.565	.012	.576	1.737
More assertive in expressing	.275	.070	.362	3.917	.000	.667	1.500
Increased managerial skills	.119	.079	.144	1.504	.136	.620	1.613
a. Dependent Variable: Learning in teams beneficial. b. Selecting only cases for which Gender = Male.							

Author's Calculations

Table 6.1: ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.620	8	3.327	6.369	.000
	Residual	40.229	77	.522		
	Total	66.849	85			
a. Dependent Variable: Learning in teams beneficial. b. Selecting only cases for which Gender = Female						

Author's Calculations

Table 6.2: Model Summary

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson Statistic	
	Gender = Female (Selected)	Gender ~= Female (Unselected)				Gender = Female (Selected)	Gender ~= Female (Unselected)
1	.631[a]	.314	.398	.336	.723	1.600	1.652

a. Unless noted otherwise, statistics are based only on cases for which Gender = Female.
Author's Calculations

Table 6.3: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.321	.523		2.528	.014		
Increased vocabulary	-.049	.088	-.062	-.561	.576	.641	1.561
Deeper understanding of topics	.421	.154	.447	2.736	.008	.293	3.417
Confidence increased	.269	.133	.289	2.031	.046	.386	2.592
Fear of public speaking decreased	-.146	.099	-.178	-1.472	.145	.533	1.875
More sociable	-.031	.112	-.035	-.276	.783	.484	2.066
Increased out of the box thinking	.082	.152	.076	.540	.591	.391	2.560
More assertive in expressing	-.057	.123	-.062	-.461	.646	.436	2.296
Increased managerial skills	.090	.148	.076	.612	.542	.512	1.953

a. Dependent Variable: Learning in teams beneficial. b. Selecting only cases for which Gender = Female
Author's Calculations

The predictors 'More assertive in expressing' (sig. 0.000 < 0.05, Beta =0.362) and 'Increased out of the box thinking' (sig. 0.012< 0.05, Beta =0.255) were found to be significant for the "male sub-group" whereas the predictors 'Deeper understanding of topics' (sig. 0.008< 0.05, Beta =0.447) and 'Confidence increased' (sig. 0.046< 0.05, Beta =0.289) were found to be significant for the "female sub-group". This shows that have been differences in the types of the predictors impacting the perceived benefits of team-based learning. That is, for 'males', the outward development has been more important while for 'females', inner development has been more important.

Thereafter, Regression Analysis was applied once again to explore the relationship between the perceptual variables and the other impact variable being 'Comfortable working in teams'. Here again, significant relationship (Sig = 0.000 <0.05) exists as per the results from ANOVA table (Table 7.1). Value of Adj. R-square = 0.294, shows that the considered predictors have been able to explain around 30% of the variation in the dependent variable 'Comfortable working in teams' (Table 7.2). Only one predictor, that is, 'Increased managerial skills' was found to be significantly affecting (sig. 0.000< 0.05) the dependent variable representing perceived comfort in working in teams (Table 7.3).

Table 7.1: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.108	8	6.263	11.450	.000[b]
	Residual	105.575	193	.547		
	Total	155.683	201			
a. Dependent Variable: Comfortable working in teams						

Author's Calculations

Table 7.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.567[a]	.322	.294	.740	1.974

Author's Calculations

Table 7.3: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.980	.344		2.845	.005		
Increased vocabulary	-.062	.053	-.082	-1.175	.241	.726	1.378
Deeper understanding of topics	.119	.086	.119	1.385	.168	.476	2.100
Confidence increased	.071	.081	.071	.876	.382	.533	1.876
Fear of public speaking decreased	.072	.059	.088	1.214	.226	.674	1.484
More sociable	.118	.071	.137	1.676	.095	.530	1.888
Increased out of the box thinking	-.001	.075	-.001	-.009	.993	.578	1.731
More assertive in expressing	-.053	.068	-.057	-.775	.439	.643	1.555
Increased managerial skills	.466	.082	.424	5.682	.000	.632	1.583
a. Dependent Variable: Comfortable working in teams							

Author's Calculations

To examine the moderating effect of "gender" on the relationship between perceptual variables and the impact variable 'Comfortable working in teams', regression modelling has been attempted for both the genders and results being compared.

For both the genders, regression models have been found to be significant (Sig. = 0.000 < 0.05 and Sig. = 0.000 < 0.05 respectively) as evident from Table 8.1 and Table 9.1. There has been substantial difference in the values of Adj R-square (0.464 for 'male' sub-group vs. 0.293 for the 'female' sub-group). This signifies that the proposed regression model holds better in the 'male' sub-group (Table 8.2 and 9.2).

For the 'male' sub-group, 'Deeper understanding of topics' (sig. = 0.038 < 0.05), 'More assertive in expressing' (sig. = 0.006 < 0.05) and 'Increased managerial skills' (sig. = 0.000 < 0.05) have been found to be significant predictors (Table 8.3). Among these three significant predictors, 'Increased managerial skills' (beta = 0.456) was found to be the most important in affecting the dependent variable followed by 'More assertive in expressing' (beta =0.235) and 'Deeper understanding of topics' (beta =0.197) (Table 7.3).

Furthermore, for the 'female' sub-group, the corresponding significant predictors affecting the dependent variable 'Comfortable working in teams', were found to be 'More assertive in expressing' (sig. = 0.006 < 0.05) and 'Increased managerial skills' (sig. = 0.009 < 0.05) (Table 9.3). Here, the predictor 'More assertive in expressing' (beta = -0.387) was found to be more important than the other significant predictor in impacting the 'Comfortable working in teams' but the beta coefficient was found to be negative indicating the less assertion on the part of female students gives them more comfort in working in team (Table 9.3).

Table 8.1: ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.595	8	5.699	13.433	.000[c]
	Residual	45.397	107	.424		
	Total	90.991	115			

a. Dependent Variable: Comfortable working in teams. b. Selecting only cases for which Gender = Male
Author's Calculations

Table 8.2: Model Summary

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson Statistic	
	Gender = Male (Selected)	Gender ~= Male (Unselected)				Gender = Male (Selected)	Gender ~= Male (Unselected)
1	.708[a]	.249	.501	.464	.651	2.134	1.775

a. Unless noted otherwise, statistics are based only on cases for which Gender = Male.
Author's Calculations

Table 8.3: Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.234	.425		.551	.583		
Increased vocabulary	-.099	.066	-.131	-1.500	.137	.616	1.624
Deeper understanding of topics	.211	.100	.197	2.105	.038	.535	1.869
Confidence increased	-.056	.103	-.051	-.545	.587	.523	1.913
Fear of public speaking decreased	.001	.069	.001	.015	.988	.685	1.460
More sociable	.163	.086	.187	1.883	.062	.474	2.110
Increased out of the box thinking	.023	.082	.025	.283	.778	.576	1.737
More assertive in expressing	.228	.081	.235	2.814	.006	.667	1.500
Increased managerial skills	.482	.092	.456	5.260	.000	.620	1.613

a. Dependent Variable: Comfortable working in teams. b. Selecting only cases for which Gender = Male
Author's Calculations

Table 9.1: ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.191	8	2.899	5.413	.000[c]
	Residual	41.239	77	.536		
	Total	64.430	85			

a. Dependent Variable: Comfortable working in teams. b. Selecting only cases for which Gender = Female
Author's Calculations

Table 9.2: Model Summary

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson Statistic	
	Gender = Female (Selected)	Gender ~= Female (Unselected)				Gender = Female (Selected)	Gender ~= Female (Unselected)
1	.600[a]	.332	.360	.293	.732	1.753	2.189

a. Unless noted otherwise, statistics are based only on cases for which Gender = Female.
Author's Calculations

Table 9.3: Coefficient [a,b]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.960	.529		3.705	.000		
Increased vocabulary	.017	.089	.022	.191	.849	.641	1.561
Deeper understanding of topics	.050	.156	.055	.324	.747	.293	3.417
Confidence increased	.142	.134	.155	1.054	.295	.386	2.592
Fear of public speaking decreased	.172	.100	.215	1.719	.090	.533	1.875
More sociable	.103	.113	.120	.916	.362	.484	2.066
Increased out of the box thinking	-.056	.153	-.054	-.367	.715	.391	2.560
More assertive in expressing	-.349	.124	-.387	-2.805	.006	.436	2.296
Increased managerial skills	.399	.149	.340	2.670	.009	.512	1.953

a. Dependent Variable: Comfortable working in teams. b. Selecting only cases for which Gender = Female
Author's Calculations

CONCLUSION

While drawing the conclusion and making sense of it as a whole, it is imperative that results be discussed on the basis of tests conducted. First and foremost, results from Factor Analysis suggest that perceptual outcomes of TBL may be divided into two aspects of the personality which are; a) Functional and b) Social and Outward. It is evident that the functional aspect takes into account perceptual variables like increased vocabulary, a deeper understanding of topics, increased confidence, increased out –of-the-box thinking and increased managerial skills.

On the other hand, the second factor, that is, Social and Outward aspect of TBL consists of perceptual variables like decreased fear of p public speaking, being more sociable and more assertive in expressing.

The second stage of the study, which comprises of cluster analysis, depicts three main clusters which are; a) *Protean*, b) *Enterprising* and c) *Affable*.

An individual who falls under the "*Protean*" category is multi-faceted and multi-talented. These are individuals, who in simple terms, are all-rounders. They happen to surpass in both the Functional Aspects and Social and Outward aspects of the personality, which is why they tend to be exceptional in all spheres. The Protean have a flair for being adaptive to changes and are highly flexible. Another trait of people who fall under this category is that they tend to reflect on past experiences and use them to respond to future events. In short, they are what is termed as "wilful eclectic." These individuals tend to be liked by all but may be misread as people pleasers at times.

On the other hand, individuals who happen to fall under the "*Enterprising*" cluster tend to fair well as far as the functional aspects of TBL are concerned. These are individuals who are promising and have high score on 'increased vocabulary', 'deeper understanding of topics', 'increased out of the box thinking' and 'increased managerial skills.' They showcase the fact that they are willing to learn more and explore more. Hence, they are "enterprising." When talking about this specific personality, they have the characteristics of being gifted when it comes to organizing, leading and managing. In addition to this, they are confident, assertive and they tend to take risks while solving a problem since they rely on their intuition.

The final cluster, that is, those who are termed "*Affable*," comprises of individuals who are good in the social and personality aspects of but somewhat lack in academic and skill based variables. These are individuals who are enthusiastic, approachable, friendly, sociable and amicable. They might not ace in whatever they do, but they are definitely liked by all.

It should be noted that the sizes of these clusters are approximately equal. This implies that there is an equal presence of these three clusters among students of a typical B-school.

Thereafter, the study conducted regression analysis to examine the impact of the perceptual variables upon the perceived usefulness of the team-based learning. This showed a significant relationship. The study replicated regression analysis for gender-wise subsamples and it was found to be significant for both the genders. The purpose of considering "gender" as a moderating variable is that gender can be an important differentiator in imparting education and learning, and other related issues in the developing societies like India. The proposed model infers no substantial difference in the significance and the strength of the proposed regression model for males and females. However, the prominent predictors in the male sub-group were that they were 'more assertive in expressing' and depicted an 'increased out of the box thinking.' On the other hand, the prominent predictors of the female sub-group were 'deeper understanding of topics' and 'confidence increased.' Simply put, while males find outward development

more important, it is the inner development which matters most in the case of females.

On applying regression analysis to explore the relationship between the perceptual variables and the other impact variable being 'Comfortable working in teams,' the relationship was found to be significant. Only one predictor, that is, 'Increased managerial skills' was found to be significantly affecting the dependent variable, representing perceived comfort in working in teams. On comparing regression modelling for both the genders, it has been found that that although the variable 'comfortable working in teams' is significant in both genders, the model holds better in the male sub-group.

In addition to this, while 'Deeper understanding of topics,' 'More assertive in expressing' and 'Increased managerial skills' have been found to be significant predictors in the male sub-group, the predictor, 'Increased managerial skills' was found to be the most important in affecting the dependent variable followed by 'More assertive in expressing' and 'Deeper understanding of topics.'

On the other hand, for the female sub-group, the corresponding significant predictors affecting the dependent variable 'Comfortable working in teams', were found to be 'More assertive in expressing' and 'Increased managerial skills.' Here, the predictor 'More assertive in expressing' was found to be more important than the other significant predictor. Quite clearly, the order of priority for both male and female sub-groups is different. That is to say, while the male sub-group holds 'Increased managerial skill' as the most important, the female sub-group prioritizes 'More assertive in speaking.'

The regression results point towards a significant relationship between perceptual variables and their perceived usefulness. This further implies and strengthens the fact that learning in teams is beneficial.

Furthermore, **t**here is a moderating effect upon gender which is significant. That is to say, the overall effect of TBL on males is that they are more assertive while expressing their views and there is an increase in their out-of-the-box thinking. Therefore, there is greater

outward development in males. On the other hand, for females, there has been a significant increase in deeper understanding of topics and their confidence. Resultantly, for them, inner development is more vital. It can therefore, be concluded that TBL has a significant impact upon both genders with respect to their personality. That is to say, while in males, the results point towards an outward development, in females, the results are more towards inner development. Nevertheless, in both cases, the significance is one that can be perceived and measured.

Based on results and its analysis, it is evident that TBL has had a positive effect on functional aspects as well as social and outward aspects of personality. There is a significant relationship between perceptual variables and perceived usefulness of team based learning.

This further suggests that TBL aids in exchange of ideas through peer learning and peer discussions. Resultantly, students tend to be more expressive since open discussions lead to an increase in confidence. The numerous ideas tabled in teams help students to be more creative and think out-of-the-box. TBL, therefore, is an activity which aids future mangers to think about an issue from various angles, be receptive to views of others and become more confident about themselves by shedding their inhibitions. It may be concluded that there is a reduction in gloss phobia because of open and frequent discussions within teams.

Although the results are formulated on the self-perception of managerial students on TBL, they may act are forerunners for facilitators and faculty of communication to aid and design curriculum, which further aids in building personalities of both genders. Findings are suggestive that since Protean, enterprising and affable personalities are approximately equal in number, for TBL in forthcoming semesters/ trimesters (as the case might be), groups may be formed keeping earlier assessments in mind so that each Team has an equal number of personalities. It would be interesting to note performance parameters of each student post personality identification and regrouping.

LIMITATIONS & FUTURE DIRECTION FOR RESEARCH

This study is based on management colleges of the Northern India only. The study should be extended to other socio-geographical locations to map performance of students and applicability of TBL across the globe. Furthermore, with reference to global societies, results may vary because of difference in culture. Therefore, one of the future implications could be to conduct the study in various geographies to validate the results and explore new possibilities.

In addition to this, since this research was based with specific reference to a Business Communication course, the scope of TBL may be explored in various other areas or domains to measure its impact. Based on extended research, new avenues may be explored to design curriculum in a manner that facilitates TBL for enhancing existing skill sets in students.

Lastly, in the present study, Cross-sectional research design, one-time descriptive research, has been used to study pedagogical impact of TBL. As a result of various technological and pedagogical changes in the education sector, it would be worthwhile to conduct a panel study (that is, a combination of longitudinal and cross-sectional research designs) for studying the impact of team-based learning (TBL) on various aspects of students learning.

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Annexure 1: Businesses Studied for Field Project

1. Ma Annapurna Chinese Centre
2. Gulab Tea Stall
3. K.M Store
4. Spicy Momos
5. Fruit Vendor: Mr. Mohammed Shaheed
6. Chola Bhatura Stall- Mr. Kamlesh Gupta
7. Hari Om Juice Corner
8. Subhash Chinese Corner
9. Moradabad Biryani Corner
10. Tunday Kebabi
11. Mr. Brown Bakery
12. Vegetable Vendor: Mr. Mohan Lal
13. Nainital Momos
14. Singh Chat Corner
15. King's Bakery
16. Twisted Food Store: Cineplos Mall
17. Royal Bites

Annexure 2

Role Play: Persuasive Ad- Making: Students were to build ads based on products they planned to market.

1. Insurance Policy
2. Chat-pat Cola
3. Dry Shampoo
4. Language Translator Spectacles
5. Security Camera
6. Accidental Perfume
7. Flavored Curd
8. Safety watches
9. Jewellery Store
10. PDP-DVD
11. Product Finder
12. Hairfall Product
13. Tropico
14. Pro-weight gainer
15. Health Policy
16. Kent Travel Plus
17. Mixed Language Translator
18. Mouth freshener
19. Get-chocolates