

**Conversations as Core to Team Experiences: A JIT measurement and mapping system to facilitate team directed learning and development.**

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Abstract

As conversations become increasingly significant in organizational and team research, the Team Learning and Development Inventory (TLI) is presented as an empirically valid group level model and method (ICCs: .2 to .4;  $r_{wgS}$ : .76 to .96) that measures and maps out a team's complex experience along four major dimensions. The study also highlights the importance of a team's Openness Space as a relevant and significant construct. Analysis from the sample (541 individuals in 101 teams) show that a team's conversational space has strong and significant effects on Group Effectiveness ( $\beta = .65$ ,  $p < .000$ ), Member Satisfaction ( $\beta = .79$ ,  $p < .000$ ) and Psychological Safety ( $\beta = .76$ ,  $p < .000$ ). Its managerial/practical significance is also discussed.

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## **Introduction**

Effort to understand the increasingly uncertain and complex nature of today's organizational environment has resulted in a budding focus on conversations as central to the organizing process. Researchers have defined organizations as conversations (Ford, 1999) a network of conversations (Broekstra, 1998) and proposed that conversational spaces are central to understanding the complexity of the team experience (Baker, Jensen, & Kolb, 2002). With the increasing need to be flexible and deal with such uncertainty in the today's environment, most organizations have begun to depend on teams within and across all levels – from top management teams to Kaizen teams on the front lines. Although a team's experience is unique and important for its success, most research and practice focus on how to direct teams to perform in ways that align with the goal or strategic objectives of the organization – an approach that treats teams and team members as the “hands and legs” for managers – without creating the need to understand an individual team's experience (including needs and desires). Most managers and researchers consider tangible outcomes as related to team effectiveness without giving due regard to how individuals within the team perceive their own effectiveness, satisfaction and safety. Such a lack of focus is perhaps due to the absence of an empirically validated method to capture the complex nature of team experiences in a simple way to provide Just-in-time (JIT) feedback and facilitate team learning and development.

To date, only a handful of theoretical models (McGrath, 1991; Bales, 1949; 1979; Gemmill & Wynkoop, 1991; and Salazar, 1995) have delved into the complexity of team interaction in terms of group dynamics, time, task, and communication. Even fewer (e.g., Baker, Jensen, & Kolb, 2002 and Lingham, 2004) have empirically dealt with the complexity of the team experience. In these empirical studies, it is proposed that the fog around this complex interaction space – involving social, relational, task, political and learning aspects – can be lifted when framed as dimensions of a team's conversational space.

It is in such spaces that experiences are generated, reified or changed. As researchers, educators and practitioners, we also hear continuously that members would have liked to have had different or better experiences in teams and frame them as complaints (usually to unfortunate spouses, friends and even animals that happen to provide a listening ear) or defer this dissatisfaction to supervisors, and educators to help their team perform or work better. Although team members know that they would like to be able to create more “ideal interactions” they may not have the language, knowledge or skills to do so. In this paper, the Team Learning and Development Inventory (TLI) is presented as a measuring and mapping system that captures a team’s Real and Ideal conversational spaces. It is proposed that providing teams with a method to measure and map out their Real (experienced) and Ideal (would like to experience) conversational spaces – along four major dimensions incorporating 10 detailed aspects – would not only help provide teams with a common language but also increase knowledge of the team experience and skills to deal with what is important (and unique) for the team. With this, teams can engage in “team-directed learning” – one involving identification of deviations between their own Real and Ideal conversational spaces and creation of concrete action steps to develop towards important aspects of the Ideal spaces as determined by the team itself at that point in time. Such a method would therefore be useful for a team’s continuous learning and development.

While conversations have been framed as the context within which humans engage in social interaction (Giddens, 1984; Poole & Desanctis, 1990), numerous researchers have positioned conversations as an important aspect of organizational change efforts (Beckhard & Pritchard, 1992; Beer, Eisenhart, & Spector, 1990; Ford & Backoff, 1988) and espouse that they have the power to create organizational culture (Ford & Ford, 1995), construct people’s realities (Giddens, 1984; Berger & Luckmann, 1966; Whitehead, 1941; Winograd & Flores, 1987; Maturana & Varela, 1987) or to create memes (Dawkins, 1989; Lynch, 1996; Brodie, 1996). Conversations have also

been identified as critical to management education (Shaw & Weber, 1991; Ford & Ford, 1995), and learning (Newman & Holzman, 1997; Baker, Jensen, & Kolb, 2002). Therefore, whether or not the conversations are meaningful and effective is critical to individual, group, and organizational learning and performance. In one leadership training programme,<sup>1</sup> managers and supervisors frequently asked how to have meaningful conversations with their employees so as to create a better work environment. Participants expressed feelings of inadequacy regarding their ability to initiate simple but meaningful conversations with their direct reports as a team to generate high participation and create high performing teams. In fact, participants felt that most of their conversations occurred primarily around performance appraisals and when they need to correct employee behaviour or to clarify misunderstandings.

Based on the emergent interest and trend in group and organizational research, the overarching research question that drives this study is: Are conversational spaces central to understanding a team's experience? More specifically, two questions guide its design: 1. Can an empirically validated group-level measure be developed to capture the dimensions of such a complex space, and 2. how do conversational spaces affect a team's assessment of its own performance, its members' satisfaction, and its psychological safety?

An overview of the emergence of the significance of conversations in organizational and team research is first discussed followed by a succinct presentation of the theory of Conversational Learning (Baker, Jensen, & Kolb, 2002) as an integrative model. The development and testing of the TLI is then discussed and its use as an appropriate model and methodology to help teams understand the complexity of their experience in terms of social, relational, task, political and learning

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<sup>1</sup> I functioned as a discussant for a leadership training programme for employees at a Midwestern university in the US. The training programme had six modules with each module conducted once every two weeks so that the participants could practice what they learned. A discussion period was held at the end of each session for participants to give feedback and key learnings.

aspects. To demonstrate the managerial and practical significance of this stream of research, the measuring and mapping system proposed that captures a team's actual and ideal experiences (in relation to both process and outcomes) is demonstrated across educational and organizational settings.

## **Conceptual Background and Hypotheses**

*Conversational Spaces in Organizational Life.* Although research and theories that focus on the importance of conversations in everyday life (Harkins, 1990; Harrison & Thomas, 1991; Sawyer, 2001; Shotter, 1993), relationships (Patterson, Grenny, McMillan, & Switzler, 2002; Scott, 2002; Kahn, 1995) and groups (McNiff, 2003; Hazelwood, 1998), is becoming more prevalent, such experiences created by such interactions have not been researched in enough detail. In organizational research, conversation has been identified as a core business process (Brown & Issacs, 1996); organizational change as shifting conversations Cox (2004); as identifying the need for organizational change agents to use communication and sense making to carryout change in both the formal and informal organizations within organizations (Zaplin's (2003) review of Caluwe & Vermaak, 2003); as social processes that underpins sense making (Weick, 1979; 1995) in organizations remain under examined (Maitlis' (2005) citation of Eden, 1992); and as discourse in organizational change towards the construction of fairness through the change process (Watson, 2003).

Other researchers suggest that this interaction space is vital to organizations: Ogbonna and Harris (2003) highlighted "groovy community centres;" Kahn's (2004) suggested the concept of holding environments; and Bryant and Cox (2004) proposed the idea of constructing conversion stories. What is proposed in this paper aligns with this emergent trend in organizational research while also highlighting the importance of understanding the complex internal

context in teams as vital to organization growth and development. In this study, it is proposed that conversational spaces represent the integrative context within which a group exists and that a team's experience based on such spaces is tangible, measurable and testable.

*Conversational Spaces and Team Research.* The growing number of corporations moving toward employing teams across all levels is creating a critical need for managers to increase their knowledge about teams. Further, in addition to learning how to be a team member, managers now need to develop the skills required to lead, create and support teams. Therefore, as organizations evolve to become more team oriented, research on teams continues to become more important. In a recent review on team research, Cohen and Bailey (1997) focused on 54 studies that were done between 1990 and 1996. In this review, the authors presented four types of teams (i.e., work, parallel, project, and management) that have been studied to surface the factors that contribute to team effectiveness.<sup>2</sup> Such empirical studies, however, have been bifurcated. On the one hand, researchers argue that team life is complex and can best be understood by zooming in on specific aspects. This approach resulted in generating vast amounts of knowledge on teams such as decision making (Wageman, 1995; Brown, Tumeo, Larey, & Paulus, 1998), psychosocial traits (Gully, Devine, & Whitney, 1995; Wech, Mossholder, Steel, & Bennet, 1998; Langfred, 1998), T-groups (Lewin, 1951), team learning (Brooks, 1994; Edmondson, 1996; 1999; Kasl, Marsick, & Dechant, 1997), the effect of time on teams (Gersick, 1989), group dynamics (Zander, 1982); leadership in teams (Hackman, 1990; 2002), team development (Tuckman, 1965), group emotional intelligence (Druskat & Wolf, 2001) and group design (Steiner, 1972; Hackman, 1987; Campion, Medsker, & Higgs, 1993). On the other hand, researchers have also presented the importance of understanding teams as a whole. Such integrative perspectives, though less popular since the 1950s, have

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<sup>2</sup> Cohen and Bailey (1997) define effectiveness as encompassing three areas: performance effectiveness, member attitudes and behavioral outcomes. In developing the TDI, we used all three aspects as our dependent variables.

been steadily growing in recent years. Some examples are McGrath's Time, Interaction and Performance (TIP) model (1991); Bales' Interaction Process Analysis (IPA) (1949) and his System for the Multiple Level Observation of Groups (SYMLOG) (1979); change processes in groups (Gemmill & Wynkoop, 1991) and group communication (Salazar, 1995). Other integrative models have included cognitive, affective, and behavioral aspects (Wheelan, 1994; Thompson & Fine, 1999) but not the temporal facet as proposed by McGrath (1991).

Despite this bifurcation in team research, the team experience is a highly complex one involving learning, social, political, relational and task aspects. A unique theoretical model that provides the beginnings of such an integrative method is Conversational Learning (Baker, Jensen & Kolb, 2002) that has its roots in Experiential Learning Theory (Kolb, 1984). As much as Experiential Learning Theory has been the most influential work for managerial learning and development (Vince, 1998), when extrapolated to the team level, it has also been used to understand the interaction of different learning styles in a team. However, teams engage in a process that is far more complex than just the interaction of learning styles. Because Conversational Learning looks at the experience of team interaction and communication as the central construct, it is both suitable and appropriate as the theoretical foundation for understanding the complexity of group interaction.

*Theoretical Framework of Conversational Learning.* Although the phenomenon "conversation" has been researched as communication patterns (Haney, 1960) or networks (Shaw, 1964), linguistic patterns that generate meaning (Osgood, Suchi, & Tannenbaum, 1957), and interaction patterns (Bales, 1949), the role of conversation has been studied in organizations as occurring in the context of organizational change (Ford & Ford, 1994; 1995); as the space within which groups exist (Frey, 2002); as a function of creating the right conditions for effective leadership in work teams (Hackman, 2002); and as a part of

the team learning process (Edmondson, 1996; Dixon, 1994). The construct “conversational space” has only been recently studied as the context within which learning can occur as well. The anatomy of the space itself has been theoretically derived from Experiential Learning Theory (Kolb, 1984) and tested qualitatively in four major studies (A. Y. Kolb, 2002; Baker, 1995; Jensen, 1995; and Wyss-Flamm, 2002).

Grounded in the theory and practice of Experiential Learning, Conversational Learning is a process whereby individuals construct meaning and transform experiences into knowledge conversations (Kolb, Baker, & Jensen, 2002). As a construct, the authors define Conversational Learning as one that occurs in a space bounded by the five dialectics. Kolb and his colleagues mention that such a space would serve to emphasize the interpersonal experience among group members and weave multiple voices into an interconnected whole. In this space, individuals can not only learn, but also help develop others.

The roots of the research in Conversational Learning go back to the works of Dewey (1938, 1964), Lewin (1951), Piaget (1965), James (1977), Vygotsky (1978), and Freire (1992) (Baker, Jensen, & Kolb, 2002). Baker, Wyss-Flamm, Kolb, and Jensen (2002) mention that the precursors to conversational learning were drawn largely from the literature in group research – especially research on group dynamics (Lewin, 1951; Bales, 1949, 1979; Bion, 1959; Schutz, 1966); group growth and development (Mills, 1967; Schein, 1993; Star, 1989; Engstrom & Middleton, 1996); acceptance and trust (Rogers, 1970); and communities of practice to create or generate knowledge (Brown & Duguid, 1991, 2000; Nonaka, 1994; and Wenger, 1998). Philosophical works such as Habermas’ emancipation through ideas speech situations (1984), and Gadamer’s ontological definition of conversation (1994) as a process of coming to an understanding, were instrumental in the development of the theory of Conversational Learning.



The model employed for this study is a space where the meaning making process occurs through the interplay of five sets of opposites and contradictions. Baker, Jensen, and Kolb (2002) propose that a good conversational learning space has creative tension in both poles of each set of dialectics. In the theory of Conversational Learning (Baker, Jensen, & Kolb, 2002) conversational spaces of teams are bounded by ten dimensions in five pairs of dialectics. These ten dimensions are: Apprehension (involvement and open-mindedness), Comprehension (analysis and understanding), Intension (listening to ideas and perspectives), Extension (trying things out), Individuality (accepting members as unique individuals), Relationality (connecting, relating and caring for each other), Status (leadership), Solidarity (collective mindedness, members as peers), Discursive (focus on tasks or agendas), and Recursive (safety and freedom of expression). These five set of dialectics circumscribing the phenomenon “conversational space” are: 1. Apprehension (APP)↔ Comprehension (COM); 2. Intension (INT)↔ Extension (EXT); 3. Individuality (IND)↔ Relationality (REL); 4. Status (STA)↔ Solidarity (SOL); and 5. Discursive (DIS)↔ Recursive (REC).

*Development of the TLI and to Establish it as a Group Level Construct.* The TLI was developed and the constructs defined based on the established theoretical framework of Conversational Learning. Five items were then developed for each dialectical pole creating a total of 50 items. The instrument was sent to experts and colleagues for an initial assessment and finally tested in a pilot study on a representative sample of the intended population (Spector 1992; Netemeyer, Bearden & Sharma, 2003; DeVellis, 2003). After removing influential and problematic items, the TLI items were analyzed from the 118 respondents from four classes of MBA students<sup>3</sup> from a Midwestern university in the US. Based on the correlation and reliability studies the items were further refined over four months to obtain better face and content validity. The final set of

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<sup>3</sup> These MBA students were in the same groups for more than a month and engaged in numerous learning activities as a team.

the revised 50 questions was administered to the research sample (n=344).<sup>4</sup> Each item using a 5-point response scale<sup>5</sup> ranging from “Not at All” to “Very Frequent” for the Real Space and “Strongly Disagree” to “Strongly Agree” for the Ideal Space. An “I Don’t Know” option was provided to identify problematic items. The data was first cleaned and cases with more than 7 missing items were removed. The remaining sample was checked for normality and influential and/or outliers. This sample was used to create the TLI and test it for dimensionality and if a team’s conversational space is a group level construct.

Due to the sample size and in order to maintain high standards of rigor, 120 permuted Exploratory Factor Analyses using Principal Axis Factoring<sup>6</sup> and Promax Rotation (Pedhazur & Schmelkin, 1991; Harman, 1976; Kim & Mueller, 1978) were conducted on the entire data set for all 10 dimensions<sup>7</sup> of the Real Spaces. Thirty five items were robust embedded in four factors. I also ran four other sets of EFA permutations for the four sets of groups (Educational, Work, MBA, and Non-MBA) to see if the results were robust. Thirty-five items were robust across the groups. The final four-factor -35 item model was used to develop the hypotheses. Factor 1 (comprising of APP, INT, IND, REL, and SOL items) explained 40% of the variance, Factor 2 (comprising COM, EXT, and DIS items) 20%, Factor 3 (comprising only REC items) 9% and Factor 4 (comprising only STA

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<sup>4</sup> In the research sample, I had MBA, Non-MBA and Work Groups. A total of 344 (91.3% of 377) participants took the TLI, of which 185 were males, 192 were females. Forty-eight groups were represented with group sizes ranging from 5-26. The sample had an average of 7.54 members (3.7 males and 3.84 females). The data was checked for normality, outliers using Mahalanobis Distance, Cook’s D, and Df Betas. The results were acceptable.

<sup>5</sup> Peterson (1994) found no significant difference between having 5-point and 7-point responses. As respondents had 50 items to respond to, it was decided that a 5-point scale would be appropriate.

<sup>6</sup> I did not use Principal Components (Dunteman, 1989; Jackson, 1991) as the theoretical model proposed by Baker, Jensen & Kolb (2002) does not treat the dimensions as orthogonal.

<sup>7</sup> Due to the sample size the 120 permutations of EFA required using only 30 items at a time (i.e. three dimensions) was computed using  ${}^nC_3 = \frac{10P_3}{3!} = 120$ .

items) 5% of the variance. The factors, their loadings and correlations are shown in Table 1.

Conversational spaces have characteristics of composition models outlined by Schneider, Salvaggio and Subirats (2002:220) where a construct operationalized at one level of analysis is related to another form of that construct at a different level of analysis. As a newly proposed construct, it is critical to identify the appropriate composition model that would guide the operationalization and empirical support needed in research on conversational spaces (Chan (1998: 236).<sup>8</sup> The most appropriate model for this study is the Direct Consensus Model as the within-group agreement represents the shared perceptual agreement of the conversational space in the team.

Using criteria spelt out by Chan (1998), Kenny and LaVoie (1985) and Shrout & Fleiss (1979), I used Intraclass correlations to determine if there would be convergence at the group level so as to verify conversational spaces as a group level construct.<sup>9</sup> Intraclass correlations (ICCs) were computed from ANOVA studies using the Haggard's (1958) formula for unequal groups<sup>10</sup> (i.e. using the harmonic mean for the number of raters instead of the mean). The ICCs are also shown in Table 1 for each dimension, all of which are significant at  $p < .000$ . The ICCs for the dimensions ranged from .2 to .5. These ICC values indicate that the dimensions are a group level construct (Edmondson, 1999).

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<sup>8</sup> Chan (1998) proposes four types of composition models, how they are operationalized and what empirical support would be needed for each of these models. He summarizes this in Table 1 on page 236.

<sup>9</sup> I used only teams that had greater than 50% participation. One group with 40% response was removed leaving 48 groups.

<sup>10</sup>  $ICC = \frac{(MS_{between} - MS_{within})}{MS_{between} + (1 - k')MS_{within}}$ , where  $k'$  is the harmonic mean. The harmonic mean

is computed as  $k' = \left(\frac{1}{[n-1]}\right)\left(\sum k - \left[\frac{\sum k^2}{\sum k}\right]\right)$ , using  $k$  as the total number of respondents

and  $n$  is the total number of groups.

This is further verified using within-group agreement ( $r_{wg}$ ) (James, Demaree, & Wolf, 1984; 1993). The results ranged from 0.76 – 0.96 (see last column in Table 1) which indicate that the individual responses to each of the factors have strong within-group agreement as well. The 35-item Conversational Space Inventory has high reliability (Cronbach  $\alpha = .92$ ). The alphas for each dimension are also shown in Table 1 and ranges from .75 to .94, which are well within the accepted range (Nunally, 1978). These results show that Conversational Spaces, as a construct, is a group level phenomenon.

**Table 1**  
**Exploratory Factor Analysis, Reliabilities, Intraclass Correlations and  $r_{wg}$  for Individual Items and Factors (n= 341)**

ITEMS	Exploratory Factor Analysis Factors and Loadings				F	ICC for Items	Factors	Cronbach's $\alpha$ for Factors	ICC for Factors <sup>a</sup> ( $r_{wg}$ <sup>c</sup> )
	← 1	2	3	→ 4					
APP3	0.76				2.62	0.2***			
APP4	0.92		-0.21		5.05	0.4***			
APP5	0.43		0.28		2.37	0.2***			
INT1	0.70				4.92	0.4***			
INT3	0.67				2.68	0.2***			
INT5	0.87		-0.21		4.36	0.4***			
IND1	0.74				4.98	0.4***			
IND3	0.71				5.12	0.4***	Divergent	0.94	0.4*** (0.96)
IND5	0.57				3.64	0.3***			
REL1	0.73				3.67	0.3***			
REL4	0.77				4.42	0.4***			
REL5	0.75				1.92	0.2**			
SOL1	0.54			-0.25	3.27	0.3***			
SOL2	0.42		0.22	-0.20	3.59	0.3***			
SOL4	0.77				3.95	0.3***			
SOL5	0.48	0.31		-0.23	4.42	0.4***			
COM1	0.20	0.59			2.23	0.2***			
COM2		0.66			2.52	0.2***			
COM3		0.48			2.55	0.2***			
COM5	0.21	0.49			1.71	0.1**			
EXT2		0.87			3.88	0.3**	Convergent	0.90	0.2*** (0.95)
EXT4		0.60			3.17	0.3***			
EXT5		0.69			3.69	0.3***			
DIS1		0.73			3.53	0.3***			
DIS2		0.83			3.46	0.3***			
DIS4		0.83			2.95	0.3***			
STA1				0.63	2.49	0.2***			
STA2				0.75	4.07	0.4***	Status	0.75	0.4*** (0.76)
STA3				0.64	1.91	0.2**			
STA5				0.63	5.16	0.4***			
REC1			0.60		1.56	0.1*			
REC2			0.76		1.98	0.2***			
REC3			0.71		2.43	0.2***	Recursive	0.82	0.3*** (0.90)
REC4			0.67		2.49	0.2***			
REC5	0.25		0.63		3.15	0.3***			
	← Correlations →								
Convergent	0.46								
Status	0.65	0.27							
Recursive	-0.42	-0.07	-0.13						

<sup>a</sup>The Mean Squares, Fs, and df are not shown in this table for the factors. For simplicity, I have included the ICCs for factors as part of this table.

<sup>b</sup>The Reliabilities shown here are those for each factor. The overall  $\alpha = .92$ .

<sup>c</sup>IRRs were computed using the formula for multiple items (James, Damaree, & Wolf, 1984; 1993). The authors label this estimate as " $r_{wg}$ ."

\*\*\*significant at  $p < .000$ , \*\*significant at  $p < .005$ , \*significant at  $p < .02$

Note: As constructs, the ICCs ( $R_{wg}$ ) for Group Effectiveness was 0.3 at  $p < .000$  (0.97); Member Satisfaction was 0.4 at  $p < .000$  (0.86); and Psychological Safety was 0.5 at  $p < .000$  (0.82).

*Hypotheses.* Since the four-dimensional model of conversational space is established in this study – one that melds both theory and empirical findings – each of these four dimensions (factors) will be tested for its effect on the dependent variables. The dependent variables used are Group Effectiveness (Druskat & Kayes, 2000),<sup>11</sup> Member Satisfaction (Oetzel, 2001),<sup>12</sup> and Psychological Safety (Edmondson, 1999),<sup>13</sup> which represent aspects that have been used extensively group research (Cohen & Bailey, 1997).

In re-theorizing the factors, the theoretical framework of Conversational Learning (Baker, Jensen, & Kolb, 2002) will be the primary guide with the methodological aspects as secondary (Carmines & Zeller, 1979). Factor 1 captured the Apprehension, Intension, Individuality, Relationality and Solidarity items. I re-theorized this factor as a team’s “Divergent Space.” Based on wording of the items, I further refined the aspects in the Divergent Space as Involvement, Consideration, Individuality and Relationality to develop labels that are accurate and easily understood. A team’s “Divergent Space” is defined as the extent to which a team is engaged in valuing one another, connecting with one another and where team members have the freedom to be individuals and relate to each other. Although this space is not task-focused, such a space can influence a team’s performance, member satisfaction and psychological safety. Hence,

**Hypothesis 1a:** *A team’s Divergent Space is positively and significantly related to Group Effectiveness.*

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<sup>11</sup> The items were developed based on the definition of a team’s performance dimension (Hackman, 1987). All five items were used in this study with rating on a 7-point scale.

<sup>12</sup> Oetzel’s (2001) measurement of satisfaction as a relational outcome was used as the second dependent variable. As this variable has implications for cohesiveness and group climate, Oetzel (2001) articulates that effective group communication appears to lead to higher levels of member satisfaction. Only items that were of relevance to the study were used resulting in four of the eight items. The response rating system was kept at a 5-point scale.

<sup>13</sup> A Team’s psychological safety is defined as the shared belief that the team is safe for interpersonal risk taking (Edmondson, 1999). Although largely tacit in nature, Edmondson (1999) states that making psychological safety explicit does not alter the essence of this phenomenon. Psychological safety was established as a group level construct (ICC = .39) for the scale at  $p < .001$ . All seven items were used in this study. As Edmondson’s (1999) study supports the notion that a team’s psychological safety affects that team’s learning, it is acceptable to use this measure as a dependent variable in this study.

**Hypothesis 1b:** *A team's Divergent Space is positively and significantly related to Member Satisfaction.*

**Hypothesis 1c:** *A team's Divergent Space is positively and significantly related to Psychological Safety.*

However, it is expected that there will be a stronger effect on Member Satisfaction and Psychological Safety.

Factor 2 captured the Comprehension, Extension and Discursive dimensions of Conversational Learning. I re-theorized this factor as a team's "Convergent Space." Based on the wording of the items, I relabelled the aspects of this space as Understanding, Action, and Task-Orientation. The Understanding aspect is related to the need to understand the task at hand and to have clear direction. The Action aspect is related to desire to try things out or to get things done in relation to the task. Finally, Task-Orientation is the focus on completing what is given or to follow an ascribed procedure or agenda. Therefore, a team's Convergent Space is defined as the extent to which the team engages in decisions and is driven by agendas or directions that are related to the task or purpose. As these three aspects related to the Convergent Space affects a team's performance, member satisfaction and psychological safety, it is hypothesized that:

**Hypothesis 2a:** *A team's Convergent Space is positively and significantly related to Group Effectiveness.*

**Hypothesis 2b:** *A team's Convergent Space is positively and significantly related to Member Satisfaction.*

**Hypothesis 2c:** *A team's Convergent Space is positively and significantly related to Psychological Safety.*

It also expected that a team's Convergent Space would have a strongest effect on Group Effectiveness (performance).

Factor 3 captured only the Status items. Based on the wording of the items, I re-theorized this space as a team's "Leadership Space." However, based on the initial study, the negative coefficients and correlations for this dimension, and that the definition involves dependence on a strong leader, I reverse coded these items and

labelled this dimension a team's "Shared Leadership" Space. This space is defined as the extent to which there is shared leadership of the team is shared by all members and not having dependence on a single strong leader in the team. Leadership is shared by all members to guide, decide and help others learn. Therefore,

**Hypothesis 3a:** *A team's Shared Leadership Space positively and significantly affects Group Effectiveness.*

**Hypothesis 3b:** *A team's Shared Leadership Space positively and significantly affects Member Satisfaction.*

**Hypothesis 3c:** *A team's Shared Leadership Space positively and significantly affects Psychological Safety.*

Factor 4 captured the only the Recursive items. Based on the wording of the items, I re-theorized this space as a team's "Openness Space". This space is defined as the ability and freedom to return to previously discussed issues, to stay with issues, or to discuss issues or matters that are important to any member (even if it leads to tangential discussions) – the recursive or cyclic temporal nature of this space. This space focuses on the freedom of individuals to voice opinions, views or issues that are important to them without being ridiculed, brushed away as insignificant or unimportant or irrelevant, judged or evaluated. Thus it is the extent to which members focus on issues or ideas that are of interest or concern to individual members or the group as a whole. Such a space would promote member satisfaction, psychological safety and group performance. Hence,

**Hypothesis 4a:** *A team's Openness Space is positively and significantly related to Group Effectiveness.*

**Hypothesis 4b:** *A team's Openness Space is positively and significantly related to Member Satisfaction.*

**Hypothesis 4c:** *A team's Openness Space is positively and significantly related to Psychological Safety.*

It is also expected that a team's Openness Space would have stronger effects on Member Satisfaction and Psychological Safety.



Apart from the hypothesized effect of each of the four dimensions on each dependent variable, as a whole, the impact of a group’s “Conversational Space” as a construct incorporating these four types of spaces should have a positive and strong effect on the same dependent variables. Therefore as a phenomenon,

**Hypothesis 5a:** *The Conversational Space of a team is positively and significantly related to Group Effectiveness.*

**Hypothesis 5b:** *The Conversational Space of a team is positively and significantly related to Member Satisfaction.*

**Hypothesis 5c:** *The Conversational Space of a team is positively and significantly related to psychological safety.*

The proposed model and the hypotheses are shown in Figure 1 below:

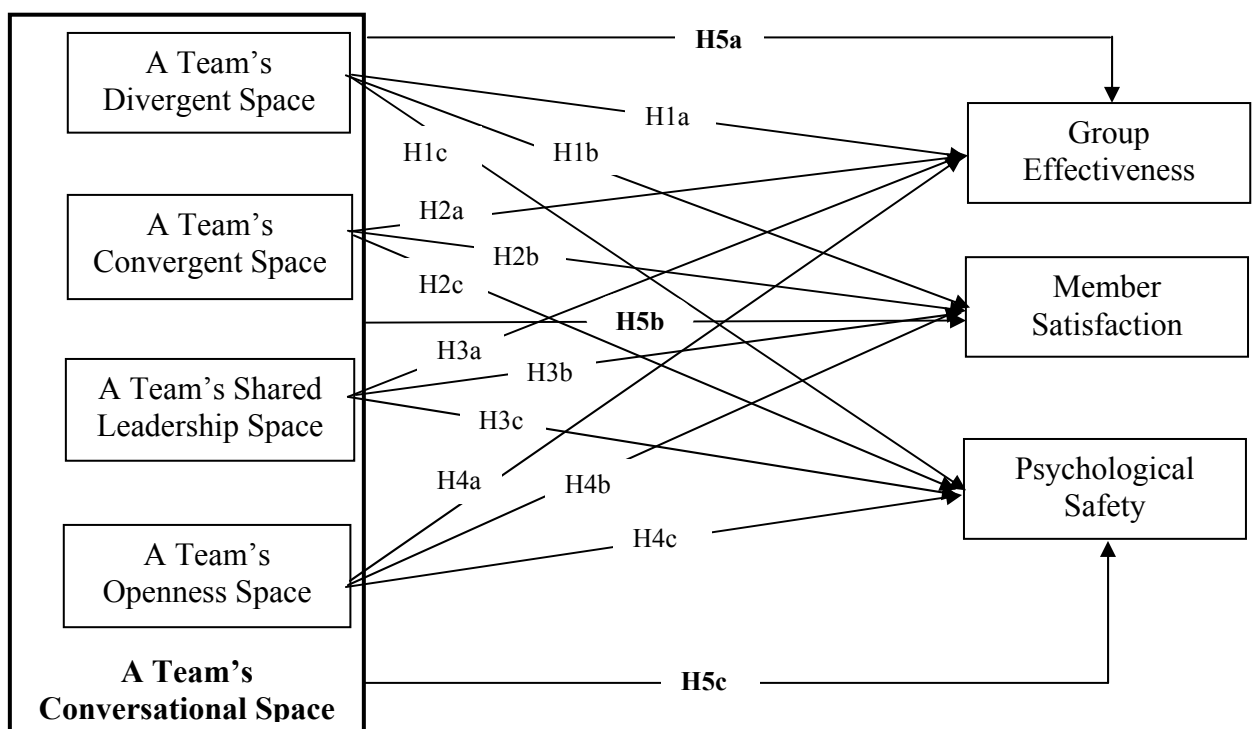


Figure 1. Proposed Model Showing all Five Sets of Hypotheses

As a mapping system, the TLI can be used to show both the four major types of spaces (i.e., Factors 1 to 4) and their respective aspects (e.g., for Factor 1, the aspects included are Involvement, Consideration, Individuality, Relationality and Solidarity). Figure 2 shows the mapping system.

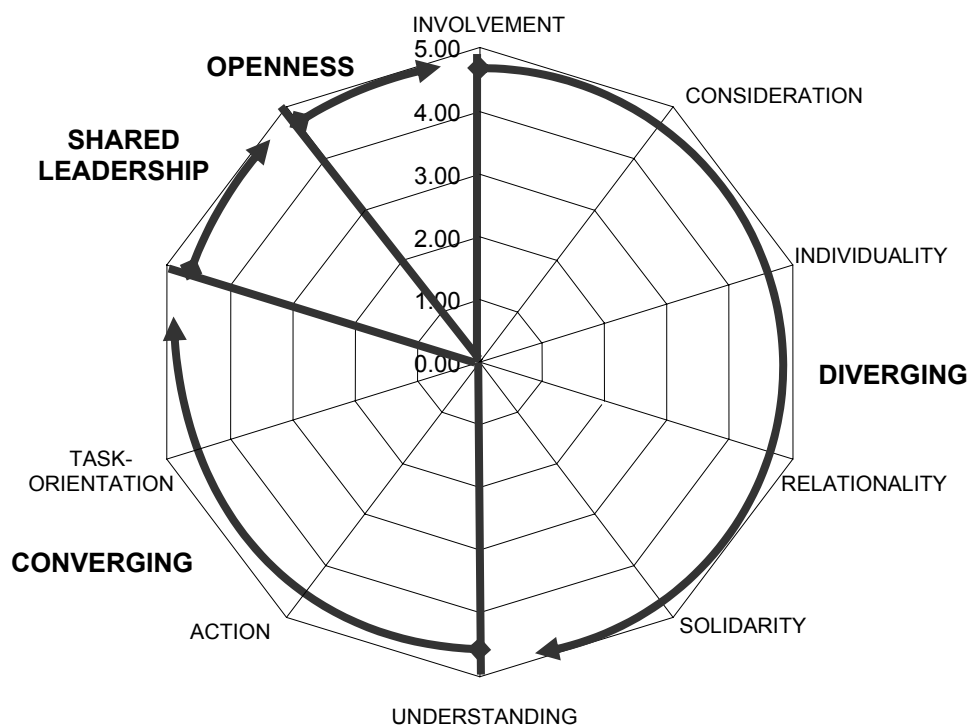


Figure 2. Mapping System for Conversational Spaces in Teams

## Method

### *Sample and Data Collection*

Teams that filled out the TLI were from the US and Europe and have worked together for at least a month. Participation was voluntary: Teams that participated were provided with an information session on conversational spaces in teams and given the mappings to help them engage in the process of team directed learning. The demographics and response rates for the entire sample are shown in Table 2. A total of 547<sup>14</sup> (83.9% of 652) participants took the TLI, of which 364 were males, 288 were females. One hundred and one teams were represented with group sizes ranging from 5-26. The sample had an average of 6.46 members (3.6 males and 2.89 females), with six groups comprising entirely of men and ten groups comprising entirely of women. Non-respondent bias was not a problem as the subjects that

<sup>14</sup> I combined the initial research sample with others I have collected over two years so as to have a sample size greater than 500 to further test the four-factor (35-item) model.

did not fill out the TLI had similar demographical data (including educational level), and level in the organization (primarily work groups). Four cases were removed due to excessive missing values, and two cases were removed that contained more than 3 outliers when running normality tests.<sup>15</sup> The remaining 541 cases were acceptable for further analysis. Details of the demographics of the sample are presented in Table 2.

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<sup>15</sup> I ran normality tests using Q-Q plots, residuals, Mahalanobis distances, Cook's Ds and Df betas. The results were well within the accepted ranges. The two cases removed did not contain influentials but outliers in four of the items.

**Table 2**  
**Demographics of Entire Sample with Response Rates (n=541)<sup>a</sup>**

Teams	Size	No. of MEN	No. of WOMEN	Number of Respondents	%
Educational <sup>b</sup>	6	5	1	5	83.33
Educational	5	2	3	5	100.00
Educational	5	4	1	4	80.00
Educational	5	3	2	5	100.00
Educational	5	4	1	5	100.00
Educational	5	3	2	5	100.00
Educational	6	4	2	6	100.00
Educational	6	5	1	6	100.00
Educational	6	3	3	6	100.00
Educational	6	5	1	6	100.00
Educational	6	4	2	6	100.00
Educational	6	4	2	6	100.00
Educational	6	4	2	6	100.00
Educational	6	4	2	6	100.00
Educational	6	4	2	5	83.33
Educational	6	4	2	6	100.00
Educational	6	6	0	6	100.00
Educational	6	3	3	6	100.00
Educational	6	4	2	5	83.33
Educational	7	5	2	4	57.14
Educational	7	5	2	4	57.14
Educational	5	3	2	5	100.00
Educational	7	4	3	5	71.43
Educational	6	4	2	6	100.00
Educational	6	3	3	5	83.33
Educational	6	5	1	6	100.00
Educational	8	5	3	8	100.00
Educational	7	5	2	7	100.00
Educational	7	6	1	6	85.71
Educational	7	5	2	6	85.71
Educational	7	5	2	6	85.71
Educational	8	5	3	8	100.00
Educational	11	6	5	11	100.00
Educational	12	2	10	9	75.00
Educational	9	4	5	9	100.00
Educational	8	3	5	8	100.00
Educational	9	5	4	9	100.00
Educational	9	4	5	9	100.00
Educational	8	3	5	6	75.00
Educational	9	5	4	9	100.00
Educational	5	3	2	2	40.00
Educational	6	5	1	5	83.33
Educational	6	6	0	6	100.00
Educational	6	6	0	4	66.67
Educational	5	4	1	5	100.00
Educational	6	5	1	3	50.00
Educational	5	5	0	5	100.00
Educational	5	4	1	5	100.00
Educational	6	4	2	4	66.67
Educational	6	4	2	6	100.00
Educational	5	4	1	5	100.00
Educational	6	4	2	4	66.67
Educational	6	4	2	6	100.00
Educational	6	5	1	6	100.00
Educational	6	4	2	4	66.67
Educational	7	6	1	5	71.43

Educational	7	6	1	5	71.43
Educational	7	6	1	6	85.71
Educational	7	4	3	5	71.43
Educational	6	4	2	4	66.67
Educational	7	6	1	4	57.14
Educational	6	6	0	4	66.67
Educational	7	5	2	5	71.43
Educational	7	6	1	5	71.43
Educational	7	5	2	5	71.43
Educational	7	6	1	5	71.43
Educational	7	4	3	5	71.43
Educational	8	6	2	6	75.00
Educational	7	6	1	6	85.71
Educational	7	6	1	4	57.14
Educational	8	7	1	8	100.00
Work <sup>c</sup>	26	3	23	24	92.31
Work	8	0	8	7	87.50
Work	11	1	10	11	100.00
Work	4	1	3	3	75.00
Work	7	2	5	6	85.71
Work	13	3	10	11	84.62
Work	5	1	4	5	100.00
Work	23	5	18	19	82.61
Work	6	0	6	5	83.33
Work	5	2	3	2	40.00
Work	5	2	3	4	80.00
Work	4	0	4	4	100.00
Work	3	1	2	2	66.67
Work	3	0	3	2	66.67
Work	3	0	3	2	66.67
Work	4	0	4	4	100.00
Work	6	2	4	2	33.33
Work	3	3	0	2	66.67
Work	4	0	4	2	50.00
Work	4	0	4	2	50.00
Work	3	3	0	3	100.00
Work	4	1	3	2	50.00
Work	5	4	1	3	60.00
Work	3	1	2	2	66.67
Work	3	2	1	2	66.67
Work	3	0	3	2	66.67
Work	3	2	1	2	66.67
Work	3	0	3	2	66.67
Work	4	1	3	3	75.00
Work	5	1	4	4	80.00
	<b>652</b>	<b>364</b>	<b>288</b>	<b>547</b>	<b>83.90</b>

<sup>a</sup>After removing problematic responses and significant outliers, 541 cases remain to be used for subsequent analysis.

<sup>b</sup>Educational Teams include Undergraduate; MBA (Full Time and Part Time); Masters in Organizational Development; and PhD Learning Teams.

<sup>c</sup>Work Teams include Departmental, Project, and Work Improvement Teams.

## Results

### *Dimensionality and Item Refinement*

The four factor model was tested using EFA (Principal Axis Factoring with Promax Rotation) and it yielded the same four factors (scree-plots). However, after reviewing the items that had some cross loadings against the original theoretical model and the initial study I removed another five items that had loadings less than .4 or had cross-loadings greater than .25. The 30 items that remain are robust and much cleaner than the initial 35 items. As the four factors were shown in Table 1 earlier, I present the final 30 items within the four dimensions in Table 3. The overall reliability (using Cronbach's  $\alpha$ ) of the scale is .89.

**Table 3**  
**The 30 items used in the TDI showing all Ten Dimensions within the Four Major Spaces.**

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**DIVERGING SPACE ITEMS**

**Involvement**

Members are open to new experiences.  
Members are receptive and open minded.

**Consideration**

Members listen carefully to each other.  
Members consider all sides of an issue before acting on it.  
Members take their time to listen before talking.

**Individuality**

Members are able to share their own unique viewpoints.  
Members emphasize that each person in the team is unique.

**Relationality**

Members try to connect with others through common experiences.  
Members care for, and are concerned about each other.  
Members emphasize that everyone is part of the team.

**Solidarity**

All members are treated as peers.  
Members support each other.

**CONVERGING SPACE ITEMS**

**Understanding**

Members are focused on ideas and logic.  
We employ logic and reason things out.  
Members are focused on developing logical theories.

**Action**

Members want to get things done.  
Members are focused on being practical.  
Members are focused on seeing results from our work.

**Task-Orientation**

We are focused on achieving goals.  
We are focused on moving forward with the task.  
Members are focused on completing the task efficiently.

**SHARED LEADERSHIP SPACE ITEMS (Reverse-coded)**

Someone takes the role of team leader.  
There is a clear status hierarchy in the team.  
The team looks for guidance from one member.  
One member makes final decisions for the team.

**OPENNESS SPACE ITEMS**

Members return to previously discussed issues that are important to them.  
We are focused on discussing issues that are important to individual members.  
Our conversations are shaped by issues that concern team members.  
We revisit earlier issues that are important to individual team members.  
We make time for issues that are important to team members.

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### *Testing of Hypotheses*

I ran a path analysis using AMOS 5.0 (Arbuckle, 2003) for each of the factors (and their individual items) on the dependent variables (and their individual items). Table 4 shows the effect of the four factors for the entire dataset on each of the dependent variables.

Based on these results, Hypotheses **1a-c**, **2a-c**, **3a-c**, and **4a-c** were all supported. Although a team's Divergent Space affects all three dependent variables positively and significantly, it affects Psychological Safety ( $\beta = .86$ ,  $p < .000$ ) and Member Satisfaction ( $\beta = .84$ ,  $p < .000$ ) in a team more than Group Effectiveness ( $\beta = .75$ ,  $p < .000$ ). A team's Convergent Space also affects all three dependent variables positively and significantly. However, it has a much stronger effect on Group Effectiveness ( $\beta = .57$ ,  $p < .000$ ) and Member Satisfaction ( $\beta = .46$ ,  $p < .000$ ) than on Psychological Safety ( $\beta = .28$ ,  $p < .000$ ). It is also apparent that although a team's Convergent Space has positive and significant impact on the three dependent variables, it has the least effect on these three dependent variables when compared to the other three spaces. A team's Shared Leadership Space also has positive and significant impact on all three dependent variables. It also has the strongest impact on Group Effectiveness ( $\beta = .88$ ,  $p < .000$ ) and Member Satisfaction ( $\beta = .98$ ,  $p < .000$ ). Finally, a team's Openness Space, which is a unique construct not empirically studied in research on teams, not only strongly influences both Member Satisfaction ( $\beta = .91$ ,  $p < .000$ ) and Psychological Safety ( $\beta = .83$ ,  $p < .000$ ), but has a strong effect on Group Effectiveness ( $\beta = .87$ ,  $p < .000$ ) as well. When looking across all four spaces and their effects on the three dependent variables, it can be seen that a team's Divergent Space affects its Psychological Safety most; Shared Leadership affects its Effectiveness and Members' Satisfaction most; with a team's Openness Space affecting all three dependent variables almost equally. A team's Convergent Space, however, has lower effects (although still positive and significant at  $p < .000$ ) on the three dependent variables.



**Table 4**  
**Unstandardized Coefficients (B) with standard errors and Standardized Coefficients ( $\beta$ ) for Each Factor on the Three Dependent Variables (n=541)**

	<b>Divergent</b>		<b>Convergent</b>		<b>Shared Leadership</b>		<b>Openness</b>	
Dependent Variables	<b>B (s.e.)</b>	<b><math>\beta</math></b>	<b>B (s.e.)</b>	<b><math>\beta</math></b>	<b>B (s.e.)</b>	<b><math>\beta</math></b>	<b>B (s.e.)</b>	<b><math>\beta</math></b>
Group Effectiveness	0.77(.061)	0.75	0.64(.063)	0.57	2.28(.382)	0.88	2.00(.313)	0.87
Member Satisfaction	0.99(.065)	0.84	0.57(.063)	0.46	2.96(.485)	0.98	2.48(.373)	0.91
Psychological Safety	0.75(.063)	0.86	0.30(.057)	0.28	1.74(.305)	0.80	1.60(.262)	0.83

Note: All coefficients are significant at  $p < .000$ .

### *Nomological Validity*

The nomological validity (Netemeyer, Bearden, & Sharma, 2003) of this construct (i.e. conversational space) is tested through demonstration of its effects on Group Effectiveness, Member Satisfaction and Psychological Safety employing Structural Equation Modelling. I ran the structural model using conversational space as a construct of the four factors (composites). To account for other factors that may influence the dependent variables, I allowed the disturbances for each dependent variable to be correlated (the Initial Model) and ran it to determine its fit indexes and the effect on Conversational Space as a construct on the three dependent variables. Based on Modification Indices, I correlated the error terms and one of the error terms to the disturbance related to Group Effectiveness and ran the model (Model 1) to compare if it were a better model. The results of both models are shown in Table 5.

**Table 5**  
**Final Structural Model for Conversational Spaces (n=541)**

<b>FIT INDEX<sup>a</sup></b>	<b>Initial Model</b>		<b>Model 1</b>	
$\chi^2$ (df)	122.732 (11)***		54.434(10)***	
NFI	0.928		0.968	
IFI	0.934		0.974	
CFI	0.93		0.973	
SRMR	0.0683		0.036	
RSMEA	0.137		0.091	
(90% CI)	.116-.160		.068-.115	
<b>Regression Weights (standard error) and Standardized Weights of Conversational Space on Dependent Variables</b>				
<b>Dependent Variables</b>	<b>Conversational Space</b>		<b>Conversational Space</b>	
	<b>B (s.e.)</b>	<b><math>\beta</math></b>	<b>B (s.e.)</b>	<b><math>\beta</math></b>
<b>Group Effectiveness</b>	1.05 (.089)***	0.61***	1.09(.096)***	0.65***
<b>Member Satisfaction</b>	1.28 (.094)***	0.74***	1.33(.096)***	0.79***
<b>Psychological Safety</b>	1.23 (.093)***	0.72***	1.29(.095)***	0.76***

\*\*\* significant at  $p < .000$

Model 1 is a much better model as demonstrated by the statistically significant change in  $\chi^2$  ( $\Delta \chi^2_{(1)} = 68.298$ ) and better fit indexes. The initial structural model yielded an overall  $\chi^2_{(11)}$  of 112.732, with NFI = .928, IFI = .934, CFI = .93, SRMR = .0683 and RMSEA = .137 (C.I. = .116-.160) whereas Model 1 yielded an overall  $\chi^2_{(10)}$  of 54.434, with NFI = .968, IFI = .974, CFI = .973, SRMR of .036; and RMSEA = .091 (C.I. = .068-.115). The parameter estimates for both models show that conversational spaces have a strong and significant effect on Group Effectiveness ( $\beta = .65$ ,  $p < .000$ ), member satisfaction ( $\beta = .79$ ,  $p < .000$ ) and psychological safety ( $\beta = .76$ ,  $p < .000$ ). This supports Hypotheses 5a-c. The final overall model (Model 1) with the parameter estimates is shown in Figure 2. As can be seen in Figure 2, a team's Conversational Space affects all three dependent variables almost equally (with a slightly stronger effect on Member Satisfaction and Psychological Safety).

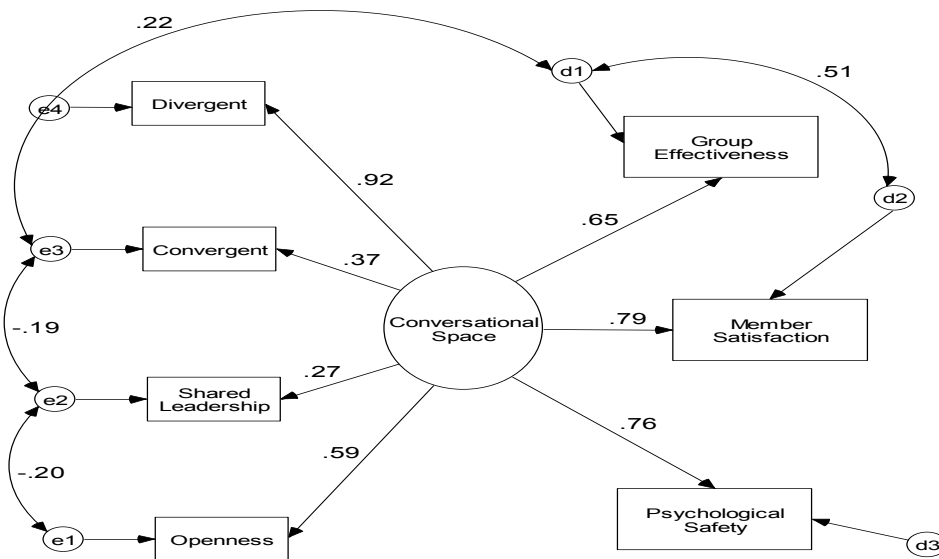


Figure 3. Final Overall Structural Model with Parameter Estimates N=541 (\*\*\*) p<.000

## Discussion

With the emergence of more integrated models to understand teams, these findings suggest that such a methodology would provide researchers and practitioners with a measure that is both theoretically based and empirically valid. As shown in the results, conversational spaces is validated as a group construct with four major types of spaces that can be measured using 30 robust items. The complex nature of a team’s experience can be captured by measuring and mapping its conversational space that involves Divergent, Convergent, Shared Leadership and Openness Spaces. The study also highlights the importance of a team’s Openness Space as one that affects team effectiveness, member satisfaction and psychological safety almost equally. Although it may appear as psychological safety, a team’s Openness Space is separate construct ( $r = .416, p < .01$  (two-tailed)) as it focuses on the ability for team members to discuss, stay or return to issues that are important to team members – highlighting recursive or cyclic time in the team experience – and also to have the freedom to

voice issues or matters that are important to them even if they lead to tangential discussions. It also focuses on how such a space is experienced in a team and not treated as an outcome of a team. As demonstrated by its significant effect on the three dependent variables, a team's Openness Space is therefore not only an important aspect of a team's experience but also one that should be included in future team research.

The Team Directed Learning and Development Inventory (TLI) is introduced as a model and a method that extends both theory and practice to better understand the complexity of team experiences and to provide: 1) a method to measure and map these experiences in an easily understandable way; 2) a common language to enhance member communication in order to relate to the complexity of team work; 3) immediate (or JIT feedback) of the team's present and desired future state (i.e., Real and Ideal conversational spaces respectively); and 4) to generate knowledge and skills for teams to engage in team-directed learning and development (i.e., the identification of important aspects that could be translated into concrete action steps to improve their overall satisfaction, psychological safety and effectiveness).

Such a method not only aligns with new approaches to organizational, group and management research that focus on conversations as a core business process (Brown & Isaacs, 1996) but also one that bridges the bifurcated nature of team research. Using the perspective of conversational spaces as the nexus of group experiences, team researchers can expand beyond team learning as action and reflection (Edmonson, 1999) or as a combination of individual learning styles but one that integrates team learning, group dynamics and task represented by the ten aspects in the four major spaces presented in this research.

### ***Team Directed Learning and Development***

A major contribution of this paper is the possibility for teams to use such a method to engage in "Team Directed Learning and Development." This process is made possible by the provision of a

team's Real (actual) and Ideal mappings of conversational spaces. Such a process allows a team to develop "team level awareness." At the individual level, self-directed learning involves being aware of one's Real and Ideal Selves and to understand the process of change (e.g., Boyatzis, 1995) or learning models (e.g. Kolb, 1984). To date, there are no empirically tested and validated team level Real and Ideal constructs that could lead to team awareness and generate team directed learning. The TLI provides the beginning of such a research stream for teams to engage in team directed learning and development. Teams are able to realize their Real and Ideal mappings, own it (as it is based on their members' ratings), identify what aspects are critical for the team (a discussion and decision making process involving all members of the team), and generating concrete action steps as part of the team development plan.

As teams may undergo changes to its structure (e.g., change in membership) function or purpose and team leadership; and since a team's Real conversational space is indicative of the team as it is at the time the TLI is administered; and that the concrete action steps in the development plan of a team is aimed at moving towards its Ideal conversational space at that point in time, an ongoing process is possible every time the team fills out the TLI. This creates the possibility for a team to assess its Real and Ideal Spaces whenever there are changes to the team (see Figure 4 for a simplified version of this process). Although the TLI is developed using a sound theoretical framework and empirically tested through quantitative methods, its power is presented in the use of the instrument in educational institutions and organizations. What follows are examples that demonstrate managerial and practical significance of this research stream.

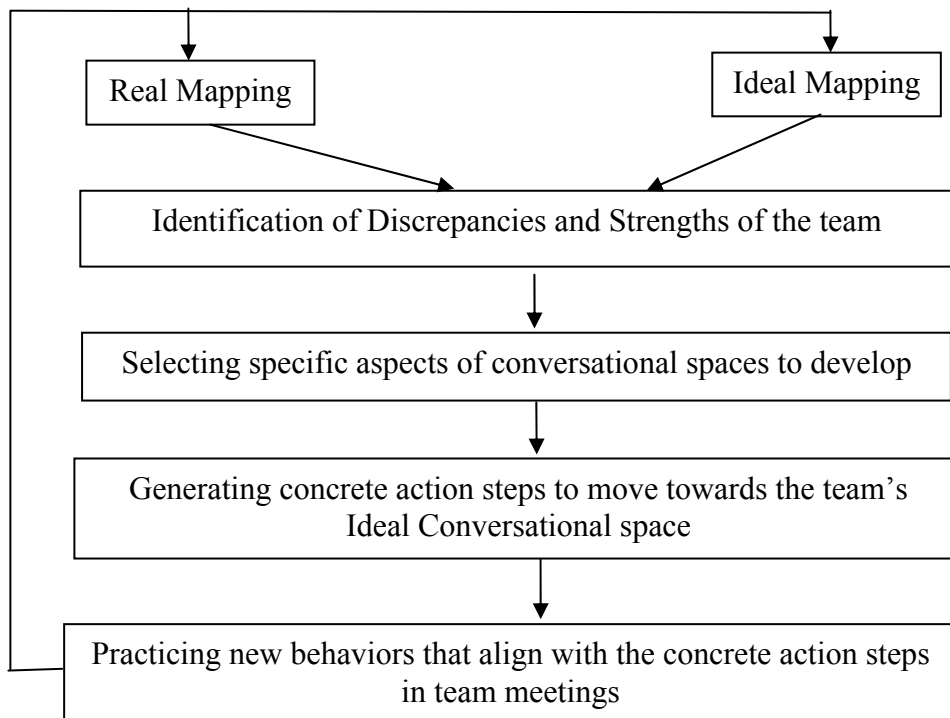


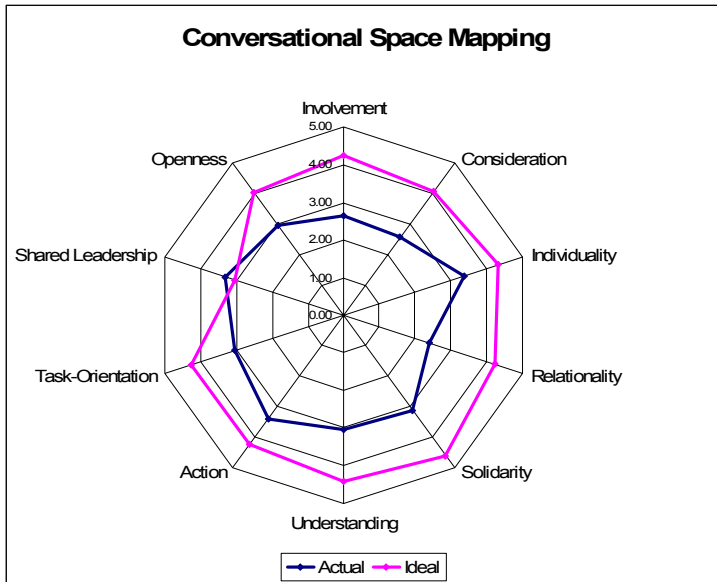
Figure 4. A Simplified Framework of the Team Directed Learning Process

### ***Managerial and Practical Significance***

The TLI has been administered to teams in educational institutions (undergraduate, graduate and PhD levels) and also in organizations. A brief description of some of the comments and feedback from participants after administering the TLI is discussed.

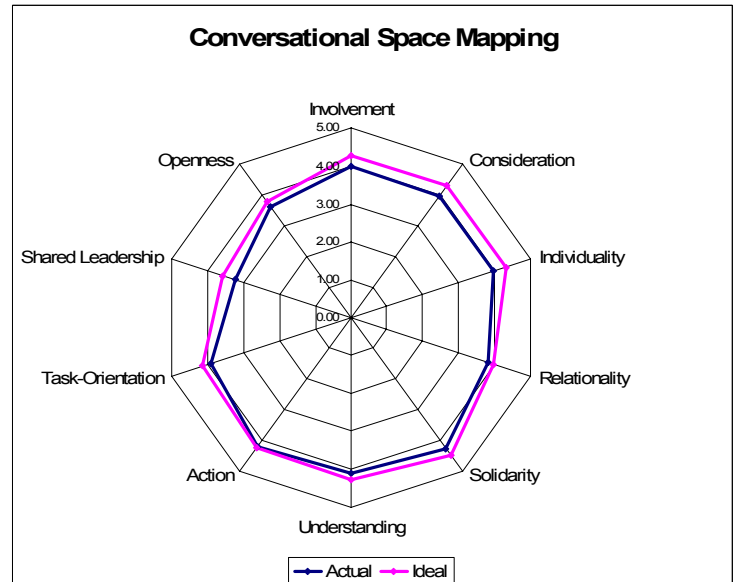
*Educational Intuitions:* MBA Teams in a Group Decision Making Exercise. Over the past two years, the TLI has been administered after the exercise to help students understand their conversational spaces during a team decision making exercise where the task is to decide to keep three of six employees in a fictitious consulting firm. Figure 5 shows an example of two teams (TEAM 1) that have very different Real and Ideal Spaces and another (TEAM 2) with a closer mapping of both spaces together with their ratings of performance, member satisfaction and psychological safety.

## TEAM 1



<u>Outcome Measures:</u>	
Performance	: 4.24/7.00
Member Satisfaction	: 2.45/5.00
Psychological Safety	: 3.83/7.00

## TEAM 2



<u>Outcome Measures:</u>	
Performance	: 6.27/7.00
Member Satisfaction	: 4.70/5.00
Psychological Safety	: 5.93/7.00

**Figure 5. Conversational Space Mapping of Two MBA Teams and their Corresponding Ratings of Three Outcome Measures**

In these two cases, members of Team 1 knew they had problems in their team but did not have the knowledge or the language to describe their problems and therefore found it convenient to attribute it to personality and cultural problems in the team. Upon receiving the TLI mapping, the team members were not shocked but were relieved because they were all concerned about the team and could now articulate what was important to them (as a team) and members agreed to both coach one another to help their team move toward their ideal space. Meetings that followed this event were much better and the students reported that they had developed a team consciousness. In fact, where there were cross-cultural issues initially, the members found this an opportunity to voices individual and cultural differences and developed concrete action steps to help foster and maintain better understanding, communication and to engage in active listening. The TLI was one of the team’s highpoint in their MBA experience.

Team 2, on the other hand, was a very healthy team from the onset and the members were both pleased and relieved to receive the mapping results. As their Real and Ideal Spaces were almost identical, they could still engage in team-directed learning by choosing to focus on being more conscious of listening actively to one another and to ensure that leadership is rotated.

*Educational Institutions: Sensitivity Training.* The TLI was administered to students enrolled in the Masters of Science in Organizational Development and Analysis (MSODA) Programme who attended a week long sensitivity training (i.e., T-group) session. The students completed the TLI in two time periods: once at the end of the first day of the session (T1) and the second time at the end of the T-Group retreat (T2). The participants did not receive any feedback from the findings before responding to the second at T2. The findings from both T1 and T2 were presented to the students the following month when they came for their next residency.



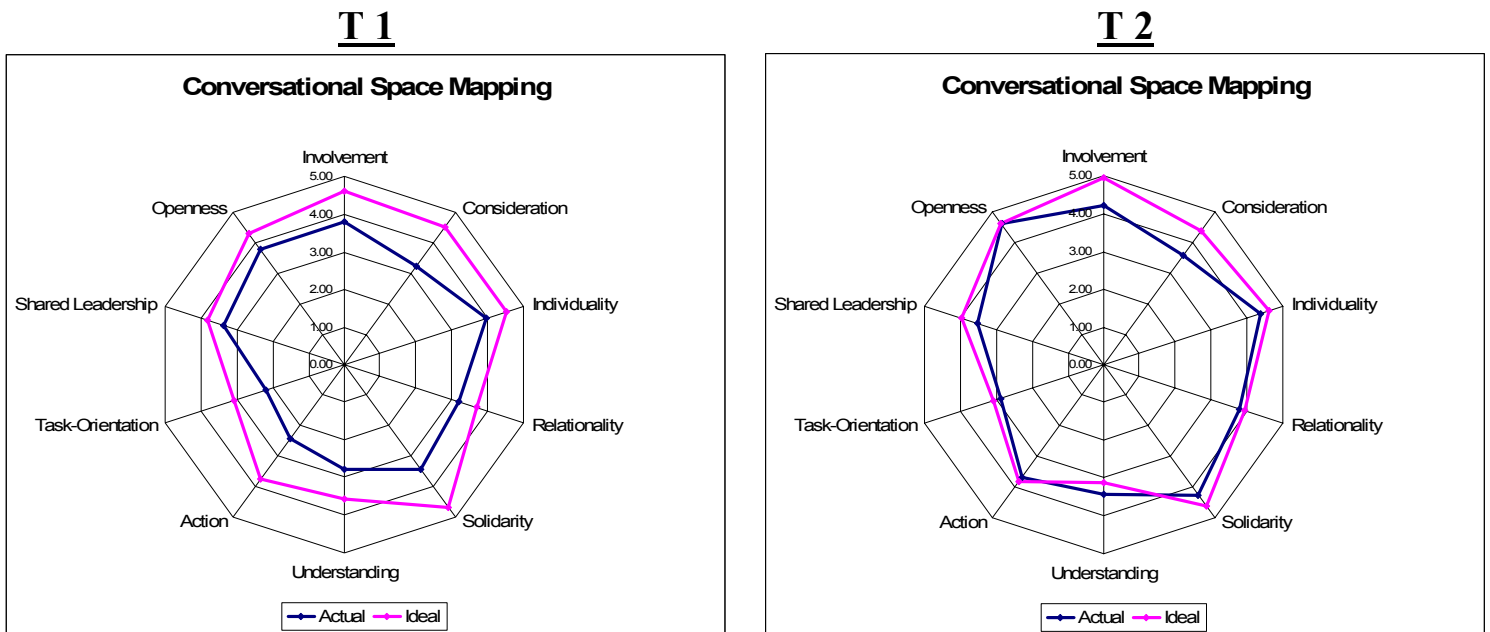


Figure 6. Real and Ideal Conversational Spaces of a T-group over two Time Periods (T1 and T2)

When the students received their feedback packets a month later, they were impressed by how all three groups had a good sense of how their Ideal spaces should be only after the first day of the T-group session. There was unanimous agreement that they could have had better sessions if they had the results from T1 while going through the T-group sessions. One student added that the TLI can help expedite team (group) development as they could discuss and even experiment with ways to create the Ideal context and that perhaps it could have resulted in a much more fruitful and effective T-group retreat.

*Organizations: Organizational Change Efforts.* The TLI was administered to the three teams in a department going through organizational change. When the department head saw the cross-organizational mapping, she was surprised as most of the aspects of the experienced conversational space were rated low (she had also filled out the TLI for this mapping) even for the Shared Leadership Space. She called for a meeting with the staff to discuss the findings and found out that most of them mentioned that during the meetings she had usually given them information about the change to keep them updated but did not ask if they could or would like to be involved in the process. Others pointed out that they did not feel safe to voice out

their own opinions or experiences based on how the change initiative was handled while others mentioned that it was the first time that they had been asked about the change process and felt that the department head was genuinely interested in what they had to say. The department head informed me later on that she had not realized that she was merely disseminating information and that key skills for leaders and managers included the ability to promote collaboration and conversation during such a major change initiative. This insight offered the opportunity to create adhoc teams that members volunteered for and many reported that there had been a good change in the organization with more lively and productive meetings that were safe and where members felt they were really listened to and could also help generate some action steps to help with the change process. In essence, they felt that they were part of the change.

*Organizations: Strategic Planning, Change and Development.* As part of its strategic planning, an international not-for-profit organization decided to include leadership and team development programme for their regional and country directors for Africa and Asia. It was the first time that the African and Asian regional directors, country directors and the country teams met. Moreover, as about half of the members were new to the organization, this workshop was a critical part of their strategic planning, leadership and team development.

In the team development section of the workshop, we used the TLI and had the team members chart their Real and Ideal conversational spaces. The teams then took time to review the experience, and discuss their reflections, analyzed their results, identify key learnings and to come up with concrete actions steps for team development.

A new Regional Director in one of the teams mentioned that the TLI helped him to get to know individual members of his team much better and gave him the opportunity and possibility to discuss the needs of the team. Going through the process increased his team's awareness and provided him good concrete sense of his team. It also was useful for him as a team leader to help with establishing clear norms to help co-create the team's Ideal conversational space. He felt that both he and his team had developed quickly through this process

and that it was very helpful to him as the team leader and as part of the team. His team members mentioned that the TLI gave them both a method and language to identify what they needed and what was important to them. They were also able to establish that they wanted to have more of such safe, concrete and team developmental conversations as one of the action steps for the team.

### ***Limitations and Implications for Future Research***

One of the major limitations of this study is that the independent and dependent variables were collected from the respondents at the same time. Common method bias could have affected the findings in this study. However, on carrying out the two diagnostic tests (Harman's single-factor test and the single method factor approach) suggested by Podsakoff, MacKenzie and Podsakoff (2003), the results show little or no effect.<sup>16</sup> Hence, there were no major problems with common method bias in this study. Although it is perhaps arguable that it is best if the independent and dependent variables were collected at different time periods, to capture the effect of the Real Spaces, it would almost be necessary to collect the related outcome measures during that time period. Based on the little effect on method bias in this study, it can be recommended to collect both TLI mappings and their outcomes at the same time. To capture the evolution of conversational spaces, data can be collected on the team's Real (Experienced) and Ideal Spaces over two or more time periods (as demonstrated by the study involving evolution of T-groups).

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<sup>16</sup> In accordance to Podsakoff, MacKenzie and Podsakoff (2003), two tests could be conducted to determine if there is method bias. In running the *Harman's Single Factor Test*, the scree plot showed the presence of six factors (unrotated) with the first factor explaining only 35.5% of the variance. The EFA study also show that the dependent variables factored out separately as two factors (Effectiveness and Member Satisfaction as one and Psychological Safety as another. The independent variables remained as four distinct factors. Therefore both criteria indicative of method bias were not present. Based on the decision three (Podsakoff, MacKenzie, & Podsakoff, 2003: 898), "Situation 7" was the most appropriate second test (*Single Method Factor Approach*). On conducting this test, there were very little differences in the fit indexes with insignificant change of  $\chi^2$  ( $\Delta \chi^2_{(35)} = 71.2$ ). Therefore there was no concern for method bias in this study. Also, this could be due to the design of the TLI itself: the response anchors for the dependent variables were different from that of the independent variables, the dependent variables were also coloured differently and the dependent variables were placed on a separate page in the instrument.

Although this study supports the hypothesis that the conversational space of a team is a measurable construct significantly affecting psychological safety, member satisfaction and group effectiveness, the majority of the participants (71.9%) are from educational groups.<sup>17</sup> The robustness of the four-dimension model of conversational space across work groups and educational groups provides some evidence that the experience of this phenomenon (Real Spaces) is consistent. Further research using work, parallel, project and management teams (Cohen & Bailey, 1997) would be required to establish the validity of this construct in different types of teams in organizations and perhaps also spanning cross-cultural contexts.

## **Conclusion**

In order to help managers develop the skill and knowledge necessary to work in (and with) teams, a method that would meet this need is one that provides them with an understanding of the actual experiences of team members and the ideal experiences they would like to have in order to function more efficiently and effectively. The TLI offers such a method and opens up a unique opportunity to allow teams to engage in the process of team-directed learning and development where concrete action steps can be taken to move teams towards their ideal – not only in outcomes but in their team process as well. Using such a method would require the need to study teams from a different viewpoint: one that centres on experience of team members based on human interaction and communication – their conversational spaces – especially since conversation is being recognized as a core business process (Brown & Issacs, 1996).

Developing the TLI helped both refine the ten dimensions of Conversational Learning and its theoretical model. Empirical findings and results from the TLI were used to inform and refine the theory. Research using the TLI also showed that the conversational space of a team – with its major types of spaces: Divergent, Convergent, Shared

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<sup>17</sup> A total of 652 participants were used in this study of which 469 were from educational teams (undergraduate, graduate and PhD levels) and 183 were from work teams. A total of 71 educational teams and 30 work teams were used in this study.

Leadership, and Openness – is a group level construct and has strong and significant effect on team performance, member satisfaction and psychological safety.

A team's conversational space is the psychological space bounded by the experience of each team member's interaction and communication within the team to fulfil a purpose or task. This method is unique as it measures aspects of the complex integrative space involving relational, social, political, task, and learning aspects of the actual and ideal experiences of a team based on individual team member's responses and maps them in a way that generates immediate impact and insights for teams to engage in learning and development. The method also permits teams to develop toward their ideal regardless of their maturity as it presents a snap-shot of what is important for their team at the time the TLI was administered and can be used continuously throughout the life span of the team – providing the ability for a team to engage in team directed learning and development. It is proposed that conversational spaces form the nexus around which individuals connect, learn, fulfil and design tasks or projects; and create individual and shared realities. As can be seen, using conversational spaces is a very powerful method to help teams see where they are and where they would like to be (that is unique to their team).

In educational institutions, having students work in teams is very much part of courses and sometimes even a requirement in programmes. Instead of teaching about what is important to teams and just having students experience teams, the TLI pushes this a step further by helping students engage in team-directed learning thereby developing the skills required to both lead, manage and be effective team members. Dealing with the complex nature of the team experience should no longer be farmed out to fringe team programmes but included in educational programmes as part of student and team learning and development.

In today's organizational environment, the increasing need for leaders and managers to develop skills to work with and lead teams are becoming increasingly important. As organizations become more team

oriented, the critical need to understand the complexity of the team experience should not fall by the wayside. The TLI can be used to help leaders and managers of teams understand this complexity and to develop the skills to help their teams developed. On the other hand, as all teams are unique, having the mappings of Real and Ideal Conversational Spaces of all teams in the organization can help organizational or departmental leaders or managers to not only realize the individual needs of each team but also where teams could be very different across the organization regardless of function. For teams themselves, the TLI provides learning in the moment and Just-in-Time feedback permitting the team to see its current state, its ideal state and also how to develop towards the Ideal state. As such, teams can engage in team-directed learning toward the Ideal by crafting team development plans with concrete action steps. When part of a team's identity is that of having discussions, conversations, brainstorming along with fulfilling assigned tasks – such as those found in educational institutions and organizations – the TLI can be a very effective tool to help such teams realize their Real and Ideal Spaces (i.e., that involving human interaction, communication and task aspects) in measurable terms in a way that creates opportunities for the team to develop specific action steps towards becoming a more effective team.

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