

High Performing Work Teams: Does emotional intelligence matter?

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Abstract

This paper explores the link between emotional intelligence and work team performance. Specifically, the aim this paper is to test the proposition that teams composed of individuals with high emotional intelligence will perform at a higher level than teams composed of individuals with low emotional intelligence. In the study outlined in this paper, longitudinal performance data were gathered from problem based learning teams in the form of weekly qualitative reports. Team performance was measured by assessing the group's goal focus and process effectiveness in completing assigned tasks. The research outlined in this paper then, is an empirical test of claims that emotional intelligence predicts work performance.

Introduction

A number of books have focussed on the contribution of emotional intelligence to management in organizational settings (Cooper & Sawaf, 1997, Goleman, 1998; Weisinger, 1998). An unfortunate consequence of this profusion of work, however, has been a propensity for the authors and consultants involved to make exaggerated claims about the contribution of emotional intelligence to performance and success. Few of these claims have been based on empirical research (Ciarrochi, Chan, & Caputi, 2000). Rather, the claims have been drawn from anecdotal evidence relating to exceptional individuals (Goleman, 1998) or post hoc attribution of emotional intelligence to individuals who have clearly never completed a measure to test their emotional intelligence (Cooper & Sawaf, 1997). In this paper I argue that a more scientific approach is required in emotional intelligence research if the construct is to achieve credibility.

In empirical tests of the link between emotional intelligence and performance, only Schutte et al 1998 purports to use a complete measure of emotional intelligence. Although the measure of emotional intelligence used by Schutte had shortcomings (Petrides & Furnham, 2000), the research did show a link between high emotional intelligence and high academic performance. Schutte and her colleagues argued that academic performance was more than just a measure of

intelligence, because scholastic achievement involves undertaking tasks under stressful conditions. This study however, cannot be generalised to the impact of emotional intelligence on work performance for two reasons. The first reason is that the skills required to achieve high academic performance would primarily relate to intra personal aspects of emotional intelligence (particularly emotional control and emotional knowledge), rather than the interpersonal aspects of emotional intelligence. Secondly, the academic results only demonstrate task performance, a limited measure of performance in a work setting (Borman & Motowidlo, 1993). Schutte's study, therefore, has limited application to work performance.

When performance is measured at the individual level in organizations, two broad factors are generally examined, task performance and contextual performance (Borman & Motowidlo, 1993). As my focus in this paper is on teams, I decided to examine team performance, rather than the individual performance of workers within teams. This reflects modern work practices where teams and measures of team performance are being used increasingly in organizations (Beyerlein, Johnson, & Beyerlein, 1997). While there is general agreement that the introduction of teams has contributed to performance in organisations (Beyerlein, et al.), teamwork is not necessarily a universal antidote for poor performance. Research into teams has addressed a broad range of issues that can impact on their performance including team development (Gersick, 1991); personal attributes (Margerison, McCann & Davies, 1986); and, general competencies (Cannon-Bowers & Salas, 1998). This research generally relates to personality traits and working styles, rather than emotional skills and abilities that contribute team performance.

A question remains, however, over the most appropriate method of analysing team performance. Although both task performance and contextual performance are accepted constructs for measuring individual performance, a literature search suggests that they have not been used as a measure of team performance.

Work group performance

Research into team performance suggests that specific aspects of both team task performance and team contextual performance, contribute to overall team performance. Cohen, Mohrman, and Mohrman (1999), for instance, found that the task performance of teams was directly related to the degree the team developed a shared understanding of the direction they were taking. In achieving this shared understanding goal setting, the ability to measure goals and the specificity of goals all contributed to task performance (Cohen, et al, 1999). It would appear then that goal focus contributes to task performance of teams. The variable I use in this study to measure task performance will therefore be team goal focus. Team goal focus is defined as the extent to which teams are able to clearly articulate a common goal and work towards achieving that goal, even if diverted from the goal.

Research has also found that the quality of processes used by teams directly impacts on contextual antecedents to performance (Druskat, Urch & Kayes, 1999). Process has also been found to have a direct influence on team effectiveness (Cohen & Bailey, 1997). Contextual performance, therefore is directly related to the effectiveness of the processes used by the team because the interpersonal skills of individuals and the ability of team members to cooperate and resolve conflict functionally determine the effectiveness of the team (Borisoff & Victor, 1998). The variable I decided to use to measure team contextual performance then is team process effectiveness. Team process effectiveness is defined as the extent to which a team internally monitors their processes and monitors their interpersonal interactions to ensure the most effective use of their combined skills and abilities.

Work group performance and emotional intelligence Weiss and Cropanzano (1996) argue that emotional factors can have a long-term effect on performance, but are not necessarily immediately apparent. Since the focus of this paper is on the emotional aspects of teamwork, qualitative (long term), rather than quantitative (short term) indicators were more appropriate as measures of performance (Brannick, Salas & Prince, 1997). Team process effectiveness and team goal focus provided effective measures of performance for this study.

The current model of emotional intelligence proposed by Mayer and Salovey (1997) includes the perception, assimilation, understanding, and management of emotions. In their model, perception provides a platform for assimilation, and assimilation in turn provides a foundation for understanding. Finally, understanding contributes to emotional management. Mayer and Salovey (1997)

emphasize that emotional intelligence is a multi-dimensional construct and that these steps are iterative, rather than linear.

I anticipated that team process effectiveness would be influenced by emotional intelligence as the superior interpersonal skills of individuals with high emotional intelligence would contribute to better working relationships in the team. Team process effectiveness also requires that team members are able to deal with their own emotions and control their emotions. At the same time, I considered that team goal focus should be better for high emotional intelligence teams both as a result of improved working relationships inferred by higher contextual performance, but also due to the link between emotional intelligence and problem solving.

Emotional intelligence is correlated with the ability to modify self presentation and the ability to influence others, factors that would be useful in teamwork (Jordan, Askanasy & Hartel, 1997). Emotional intelligence also correlates with an individual's propensity to be in touch with their emotions and to be able to control their emotions. Thus, I expected to find that :

Proposition 1: Teams composed of individuals with high emotional intelligence will use more effective group processes than team composed of individuals with low emotional intelligence.

Individuals with high emotional intelligence also adopt a more creative and intuitive style of problem solving (Jordan et al, 1997). This combined with the ability to control emotions and generate appropriate emotions would contribute to better team outcomes. The findings of Jordan's et al study suggest that individuals who are able to deal with the emotions of other will also be better at obtaining optimal performances from others in the team and consequently have a greater potential to achieve stated goals. I therefore expect to find that

Proposition 2. Teams composed of individuals with high emotional intelligence will have a more effective goal focus than team composed of individuals with low emotional intelligence.

Team Performance Study

Sample

Participants in the team performance study were 448 undergraduate students enrolled in a business communications course. The students worked in 3 to 7 person problem-based learning (Engel, 1993) teams for the duration of a 14-week semester. The mean size of the teams used in this study was 5.12 persons. The teams were randomly selected, that is, the students were assigned to teams, rather than

being allowed to self select their fellow team members. This ensured that the individuals in the teams were, in general, working together for the first time. The teams with few exceptions contained both males and females in varying proportions.

Measures

Emotional Intelligence

Emotional intelligence was measured using the self reporting questionnaire of the Workgroup Emotional Intelligence Profile Version 3 (self WEIP3) (Jordan, et al 1997). The WEIP3 was scored using a 7 point Likert-type response scale, where 1 represents strong disagreement and 7 indicates strong agreement. Jordan and his colleagues report that the self WEIP3 demonstrates acceptable construct validity and reliability. The combined scales of the self WEIP3 returned a Cronbach alpha of .86.

An issue that was encountered during this study was determining the most appropriate method for measuring the emotional intelligence of work teams. Although the method of assessing of an individual's emotional intelligence is controversial (Mayer, Salovey & Caruso, in press), there is wide acceptance of the appropriateness of measuring individual attributes or qualities. The measurement of team attributes, however, is more problematic. Existing studies have shown that group member ability contributes to group performance (Bottger & Yetton, 1987), but no research has clearly delineated how this occurs.

Three alternatives presented themselves for measuring team emotional intelligence. Team emotional intelligence could have been measured by aggregating the emotional intelligence of each team member. Alternatively, the aggregated emotional intelligence of the team could have been reflected in the individual with the highest emotional intelligence or by the emotional intelligence of the leader of the group (Atwater & Yammarino, 1992). Although each of these alternatives were sustainable, I decided to use the first method after exploring research into group decision making. Pate, Watson, and Johnson (1998), for example, have shown that the decision-making ability of a group is generally a better indicator of performance than the best decision-maker in the group. Since most teams in the study rotated the leadership role, the identification of a single group leader was not feasible.

Team emotional intelligence was measured by aggregating the total score from both scales of the self WEIP3 for all team members and then dividing this score by the number of members of the team. This provided a basis for comparison across teams because each of the teams involved in the study consisted of different numbers of team members.

This will be referred to as the team average self WEIP3 score.

Team performance

Existing measures of task performance and contextual performance (Borman & Motowidlo, 1993) were not suitable for the current study. Because the problem based learning teams were self directed and therefore set their own goals, gathering data using existing measures of task performance based on supervisor assessment (Goodman & Svyantek, 1998) would have been difficult as the teams had no supervisor. Self assessment of task performance was also considered as an option, but was rejected. Using a self assessment methodology, teams that set themselves easy goals and achieved them would be given a similar or better task performance rating compared with those groups that set difficult goals and just failed to achieve them. A simple quantitative self assessment measure would not pick up this difference. Richer data were available for task performance by examining qualitative data relating to both the goals that each group set for their work during the session and their ability to pursue those goals. I therefore decided to develop a measure of team goal focus as a broad indicator of performance.

Similarly, quantitative measures of contextual performance were traditionally supervisor scored (Goodman & Svyantek, 1998). Again this method was not appropriate for my study. Although there may have been other methods of measuring organizational citizenship behaviour and helping behaviours in the teams, this may have resulted in a de facto measure of the homogeneity of the group, rather than the effectiveness of processes. Consequently, I decided to develop a short measure of team process effectiveness. Again, by examining qualitative data, rather than using quantitative data, a more meaningful measure could be obtained.

Team performance data were based on weekly reports that the teams submitted over a nine-week assessment period. The team reports were measured against six criteria: three relating to team process effectiveness, and three assessing the team's goal focus. Team process effectiveness criteria reflected quality, understanding, and attention to group processes. A typical item in the team process effectiveness criteria included "How concerned were the group with monitoring its own application of the processes?" Team goal focus criteria dealt with the generation of appropriate goals and the focus the team had on goal attainment. A typical item used for assessing team goal focus included "Does the group remain focussed on the goals in this session? (Do they return to set goals if diverted?)".

Three independent raters were asked to rate the qualitative reports using the measures I had developed. These raters met prior to marking the weekly reports, and each of the criteria were discussed and parameters set for assessment of each criterion. Seven-point Likert-type scales were developed to score the reports. Scores on the team process effectiveness and team goal focus measures were averaged for each week to give two weekly scores for each team. The reliability of the independent markers scoring for each of the teams were checked for each week using Cronbach alpha reliabilities. These averaged 0.74 for team process effectiveness and 0.75 for team goal focus over the 9 weeks of scoring.

Methodology

During the study, the teams explored a specific topic area of managerial communication using problem-based learning techniques (Engel, 1993) during a meeting that lasted a minimum of two hours each week. The format of these meetings and the processes the teams used to explore the topic area were at the discretion of the groups. Essentially, the teams were self directed in setting their goals and devising methods of undertaking the work. The personal relationships and dependencies that emerged from this style of work correspond to a work setting where teams are formed to undertake specific project and achieve specific goals within a specific period of time.

The teams were asked to submit weekly reports of their team meetings for nine weeks of the semester. The written report detailed the goals the team had set for the week and the processes that contributed to their learning. Teams were also asked to detail in the report individual interactions, team processes, and any significant learning or insights the meeting produced.

Results

The team report data were initially screened to determine the extent of missing data. The reports of some teams were not complete for the 9 weeks of reporting and others were unavailable. All of this data was excluded from further analysis resulting in 44 teams being included in the analysis.

Finally, in screening the data the first week of team report data were excluded from the final analysis because this week appeared to be a settling in period for all teams where the requirements of team reporting had not been made clear.

A time-series of the data was developed by charting changes in team performance based on the process effectiveness and the goal focus criteria. A least-squares linear fit was then applied to the time-series

data for each team. This analysis indicated significant trends during the 9 weeks of measurement. Correlation of the slopes of each team's weekly goal focus and process effectiveness scores with the team average self WEIP3 score indicated a significant relationship for goal focus, $r(44) = -0.34, p < 0.05$, but not for process effectiveness, $r(44) = -0.21, ns$.

Table 1
Goal Focus and Process Effectiveness Means, Standard Deviations and Raw Difference Scores for Week 2 and Week 9

	Low Emotional Intelligence Teams		High Emotional Intelligence Teams	
	Mean	S.D.	Mean	S.D.
Week 2 Process Effectiveness	4.64	1.58	5.41	1.47
Week 9 Process Effectiveness	5.75	0.76	6	0.77
Difference Week 2 and 9	1.11	*	0.59	#
Week 2 Goal Focus	4.08	1.55	4.95	1.41
Week 9 Goal Focus	5.46	0.72	5.38	1.06
Difference Week 2 and 9	1.38	*	0.43	#

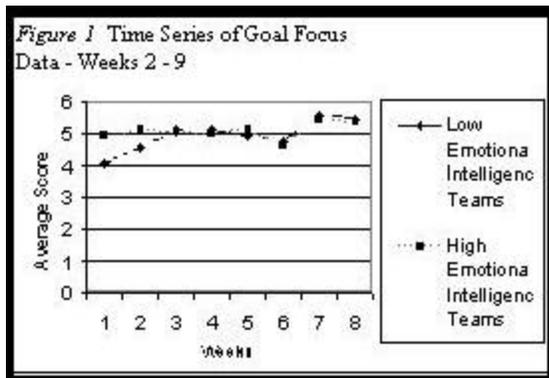
* $p < .01$
$p = \text{not significant}$

To investigate these effects further, I divided the teams into two groups, one containing the 15 highest average emotional intelligence teams, and the other comprising the 15 lowest average emotional intelligence. Table 1 shows mean scores in each group for the team report scores from the first and last weeks of analysis. An analysis of the raw difference scores based on this data indicated that the increase in scores for the low emotional intelligence teams was significant for both process effectiveness, $t(15) = 3.71, p < 0.01$, and goal focus, $t(15) = 3.06, p < 0.01$. The increase in scores for high emotional intelligence teams however was non significant.



For the low emotional intelligence teams, most of the improvement in goal focus was achieved over the first three weeks (Figure 1). In contrast, improvement for process was steady across the entire eight-week period (Figure 2). The change in scores between the first and last weeks was not significant for the high emotional intelligence teams for either process effectiveness or goal focus. Significantly, there was a slight reduction in performance for both high and low emotional

intelligence teams in Week 7 which coincided with assessment being due.



Discussion

This study demonstrates that the self WEIP3 has predictive ability with the aggregated team emotional intelligence predicting initial team performance. That is, high emotional intelligence teams consistently operated at high levels of performance throughout the study period. Low emotional intelligence teams, on the other hand, initially demonstrated a lower level of performance. Significantly, the low emotional intelligence teams equalled the performance of the high emotional intelligence teams by the end of the study period.

An important finding of this study is that low emotional intelligence teams, while not performing initially at a high level in relation to team goal setting or team process effectiveness, can perform as well as high emotional intelligence teams over time. At the beginning of the team reporting period, the low emotional intelligence teams had lower performance than the high emotional intelligence teams for both team process effectiveness and team goal focus. By the end of the reporting period, however, the difference in performance for the high and low emotional intelligence teams had essentially vanished for goal focus and declined by half for process effectiveness. This reduction in the performance gap between the two groups of teams appears to be attributable to the significant improvements made by the low emotional intelligence teams only.

At this stage, I can make no definite conclusions about the reason for this improvement. I can say that the high emotional intelligence teams seemed to have the requisite skills and abilities from the outset to perform well against team goal focus and process effectiveness criteria while low emotional intelligence teams appeared to lack these skills. The longitudinal nature of the study meant that a number of factors may have influenced the change over the

nine weeks. These include training, familiarity with other team members, or dominant team members emerging whose individual skills improved the performance of the team. Future research will explore these possibilities.

Indeed, remembering that self WEIP3 scores were taken at the end of the reporting period, this finding also suggests that the attributes measured by the process effectiveness and goal focus constructs while related to emotional intelligence may be improved independently of emotional intelligence as measured by the self WEIP3. This is because the low emotional intelligence teams eventually improved their performance, but the individuals who make up these teams continued to have lower emotional intelligence. A possible explanation for this is that low emotional intelligence teams were able to compensate over time for their shortcomings in teamwork through trial and error.

Limitations and future research

In particular, it should be noted that the aim of Study Two was to determine if emotional intelligence is a predictor of performance in work groups. It was not an aim of this study to research interventions that may improve emotional intelligence. As a result there are a number of limitations in this study. These include the use of student teams, the need to address the moderating effects of training and group dynamics, and the impact of leadership.

The first and most obvious limitation of the present study is that participants were undergraduate students. Although almost all of the respondents did have some work experience, they clearly were artificial teams in the true meaning of the term "work teams". I expect, nonetheless, that these results should replicate in ad hoc teams created in the work place for specific short-term projects. While this finding would hold true for these short-term teams, it appears likely that for long-term teams, it may only be the initial performance that will be effected. The current research needs to be extended from student workgroups to teams in the workplace.

A second limitation concerns the moderating effects of training and group dynamics on the self WEIP3 scores. Training improves group performance (Firestien & McCowan, 1988, Stout, Salas & Fowlkes, 1997). All teams in this study received the same level of training, so that the training received by the participants was a consistent moderating variable. The current research design however, did not allow me to determine whether learning influenced the emotional intelligence of team members, because measures were not taken prior to the beginning of training. Future studies will include pre- and post-measures of emotional

intelligence to see if training or awareness raising does influence the emotional intelligence of individuals.

Furthermore, the effects of the internal structure of the groups, such as the emotional intelligence of the leader and the homogeneity and heterogeneity of the teams, were not analysed. From the performance data alone, it is not possible to determine whether the improvements of the low emotional intelligence teams were attributable to the increased interpersonal familiarity team members gained over the duration of the study. Studies on the effects of the emotional intelligence of team leaders may also be of interest.

Implications and conclusions

A particularly interesting finding of the present study was that work teams with lower average emotional intelligence initially performed at a lower level than high emotional intelligence teams. This has implications for managers, suggesting that organizations could profit by identification of high and low emotional intelligence work teams. Teams with low average emotional intelligence may require some assistance in team work and in identifying effective team processes to achieve optimum performance quickly. Additionally, these teams may require a longer lead-time for the team to reach optimal performance.

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