In this paper, we conducted a meta-analysis of a subset of published empirical research papers that measure the learning organization construct and link it to organizational performance outcomes. We examine both financial and non-financial performance outcomes. The findings show that there is support for a positive relationship between organizational learning capability and performance outcomes. However, the results are stronger for non-financial than for financial performance outcomes. We discuss the implications of these results for research and raise some methodological issues that can impact on the interpretation of this meta-analysis.

**Introduction**

Over the last 15 years, the field of organizational learning and the learning organization has amassed an extensive body of literature; and the proliferation of research shows no signs of abating (Bapuji and Crossan, 2004). Various authors have referred to the growth as “exponential” (Crossan and Guatto, 1996), “phenomenal” (Bapuji and Crossan, 2004) and “volcanic” (Easterby-Smith et al., 2000). Despite widespread interest in the topic, organizational learning or the learning organization remains elusive from a conceptual and practical standpoint. Commonly cited reasons include: lack of a clear, agreed-upon definition, theoretical and paradigmatic diversity, an absence of cumulative and integrative research, a paucity of empirical studies, and an inability to translate the concept into a measurable construct (Bapuji and Crossan, 2004; Templeton, Morris, Snyder, & Lewis, 2004; Friedman, Lipshitz, & Popper, 2005).

Bapuji and Crossan (2004), in reviewing the status of empirical research, have observed a significant increase in studies of this nature and contend that this work has been influential: while empirical research was “hardly visible in early 1990’s”, the proportion of empirical papers increased in the late 1990’s “as did their impact” (p. 400). In this paper we will examine the body of research on the learning organization more closely, to determine whether there is significant empirical evidence of the link between the learning organization and performance. We will further discuss and explore the potential for future research and development in the learning organization literature to foster the development of a more cohesive body of knowledge in the field.
Background Literature: The Prescriptive/Normative Perspective

As stated earlier, the study of organizational learning has gained increasing momentum over the last two decades. This vast body of literature is, as Shipton (2006) puts it, “is no longer in its infancy”. But the problem remains that there is little common agreement on what it means; and an increasing diversity of views has led to further confusion. There have been many excellent reviews of the literature, (Bapuji & Crossan, 2004; Freidman et al., 2005; Ortenblad, 2002; Shipton, 2006), and the purpose of this discussion is not to reiterate or attempt to resolve this ongoing debate; rather, it is to examine a distinct “slice” of the empirical literature that has emerged - the link between learning organization capability and organizational performance.

This is an important body of literature as it attempts to answer the question that has both conceptual and practical considerations. Does developing a learning organization lead to increased organizational performance and effectiveness? This is the fundamental issue that has made this concept so appealing (Senge, 1990); and yet, there is a scarcity of research that has seriously examined this relationship. While academics, managers, and consultants alike have presumed that positive benefits and performance outcomes accrue from building an organization’s capacity to learn, there is little convincing evidence to quantify this link. This is precisely the body of empirical literature that will be examined in this meta-analysis – those studies which measure the relationship between organizational learning capacity and organizational performance. Our objective is to understand the nature of this relationship and to provide an overall summary of the field.

In order to situate this literature we have adopted the most recent review of the literature by Shipton (2006). In her paper Shipton attempts to examine the similarities and differences between approaches in the literature and develops a typology of organizational learning research. In this typology, Shipton (2006) places the literature on two axes. The vertical axis represents a prescriptive/normative focus on one end of the continuum and an explanatory/descriptive focus on the other. The horizontal axis represents individual learning within the organizational context at one end and organizational level studies at the other. Shipton admits that the typology is not meant to be a neat categorization of all the published research but to allow for comparing and understanding the similarities and and differences in the approaches taken. The resulting typology is a four quadrant map which positions the literature on these two key dimensions – the researcher’s approach or perspective and the unit of analysis (see Figure 1 below).

Based on her typology, the literature to be covered in this review would fall into both quadrant one and two. Most of the studies have an organizational level focus with a normative and prescriptive stance. The focus of these studies is on “an empirical investigation of whether or not measures and practices that have been designed to promote learning are associated with increased organizational effectiveness and performance. Also the literature attempts to capture what are the dimensions and outcomes that one can expect where organizational learning is working well and to develop robust scales to capture these dimensions” (Shipton, 2006, pp. 237). Therefore the empirical research covered in this meta-analysis can be said to be in the learning organization literature. There is also significant acceptance that there are these two bodies of literature - one focused on organizational learning which is more at the individual level with an explanatory/descriptive focus and the other the learning organization literature, which has a more organizational level focus with a normative/prescriptive approach (Tsang, 1997; Easterby-Smith, Burgoyne & Araujo, 1999; Yeo, 2005).
Therefore, the basic premise of this research literature is that there is a positive relationship between learning capability and performance. The argument is that through the implementation of processes, mechanisms and structures that promote learning, the organization will become more competitive and are more effective as a result. Shipton (2006) sees similarities between research in these two quadrants, as both are “concerned with measuring outcomes and depicting relationships between measures designed to promote learning and organizational level performance” (Shipton, 2006, pg.241).

Performance Outcomes Associated with the Learning Organization

Studies on the learning organization and its link to performance typically have developed measures, mostly survey type instruments, to capture learning capability. This is then linked to a set of performance outcomes. Earlier work on this issue by Goh and Ryan (2002) showed that there was no relationship between a perceptual measure of learning capability measured by the learning organization survey (Goh & Richards, 1997) and objective financial performance, but there was a significant and positive relationship to job satisfaction in a sample of Canadian companies. However, another study by
Yang, Watkins and Marsick (2004) showed a positive relationship between a measure of learning capability called the DLOQ and financial performance in a sample of US firms. These initial empirical studies were not conclusive in establishing that there is a positive relationship between learning capability and financial performance.

A group of studies with a marketing perspective have also examined this relationship (Baker & Sinkula, 1999; Keskin, 2006; Calantone et al, 2002; Hanvanich et al, 2006, Hult et al, 2003). They suggest that a combination of market orientation and learning orientation can lead to improved overall performance of an organization. However, the dependent variable frequently utilized was not purely financial but variables such as market share, innovation and sales growth. These studies generally show a positive link between learning orientation and the various performance measures just described.

There are also a number of international studies using organizations from India, Spain and Taiwan that have studied this relationship (Lopez, Peon & Ordas, 2005; Chen 2007; Jashapara, 2003; Khandekar & Sharma, 2006). Additional studies have focused on learning capability and performance in small manufacturing organizations (Spicer & Sadler-Smith, 2006), small businesses (Ruiz-Mercader et al, 2006) and in interfirm relationships (Wu & Cavusgil, 2006). Most of these authors report finding a positive relationship between learning capability and various measures of performance as well. From this discussion it can be argued that there is increasing empirical evidence of a positive relationship between learning capability and performance.

One issue in this literature is the diversity of methods used for measuring the dependent variable. There appears to be no clear consensus on an appropriate or consistent measure of organizational performance or effectiveness as it relates to organizational learning capacity. A variety of measures are employed in the literature including actual financial measures such as return on investment (ROI) and return on assets (ROA) and other measures such as profitability, productivity, flexibility/adaptability, competitiveness and innovation. There also seems to be a mix of financial and non-financial measures that have been used. Furthermore, most of the performance measures are perceptual in nature and not objective measures of organizational performance such as financial performance (from market performance data or from accounting financial statements).

In response to the issue of relying on perceptual data, it has been argued that this approach has been supported by the organizational performance and strategic management literature. Several authors have contended that there is a strong correlation between actual (objective) and perceptual measures of financial performance (Covin, Slevin & Schulz, 1994; Dawes, 1999; Dess & Robinson, 1984). There has also been an argument that the financial performance of a firm needs to be measured on a longitudinal basis and both market and accounting performance need to be included (Goh & Ryan, 2008). Learning organization practices and building a learning organization take time; therefore, the effects may be determined by the length of time that the organization may have been engaged in this process (since the impact on learning capacity may not be felt immediately). In addition, a purely financial measure such as financial ratios may not be the best indicator of performance as the overall financial performance of a company may be dependent on a host of other factors. Despite these contentions, financial performance remains a very relevant and important performance outcome measure for any organization (Goh & Ryan, 2008). However, it does suggest that organizational learning capacity may not have as strong or as direct a relationship to financial performance outcomes as may be originally expected. Notwithstanding these measurement challenges, establishing a link to organizational learning capacity is clearly an important question for empirical research.

Another perspective on performance measurement is that having a strong learning capability actually influences more immediate non-financial outcomes such as innovation capacity, efficiency, and job satisfaction of employees as well as the overall competitiveness of the organization. These are
considered to be non-financial performance measures. One of the most frequently mentioned outcomes is innovation or innovativeness (Hurley & Hult, 1998; Mavondo et al, 2005; Garcia-Morales et al, 2006; Aragon-Correa et al, 2007; Kontoghiorghes et al, 2005; Llorens-Montes et al, 2005; Tanriverdi & Zehir, 2006). There has been research to suggest that a firm’s learning capability influences non-financial performance such as innovativeness more immediately; then, in the longer term, this leads to improved financial performance. This argument suggests that organizational learning capacity may have a stronger relationship to non-financial than purely financial measures. In many of the empirical studies included in this meta-analysis, performance is measured using non-financial outcomes.

There is clearly a significant body of literature that has recently been published testing this relationship and amenable to a meta-analytic study. The studies, although using different measures of dependent and independent variables, pose two questions – whether there is a significant positive relationship between learning capability and organizational performance and if so, what is the overall strength of this relationship.

Based on the above discussion we propose the following hypotheses to be tested in this meta-analytic study based on 21 empirical studies that link learning capability with performance.

H1: There will be a positive relationship between learning organization capability and financial and non-financial performance; and

H2: This positive relationship will be stronger for non-financial than for financial performance measures.

Method

Literature Search

We used several procedures to identify articles on organizational learning, measurement and performance which could be included in the meta-analysis. As a starting point, we searched the on-line ABI/Inform Global database to identify articles from 1998 – July 2008 using the words organizational/organizational learning, learning organization/organisation, and measurement or performance. We were confident that this ten-year period would yield the majority of the studies for two reasons: this body of research literature is relatively recent; and based on our initial reviews, we were able to identify very few empirical studies that examined the relationship between learning capability and performance before 1998. Our next step was to thoroughly review this first set of articles and check the reference list of each article to identify additional citations which were not captured in the initial search. These were retrieved and the full set of articles was then reviewed to determine whether they met our criteria for inclusion. Authors were also contacted for additional information, when possible.

Criteria for Inclusion

To be included in the meta-analysis, studies were required to meet the following criteria: they must be published in an academic, peer-reviewed journal; they must quantitatively measure the relationship between organizational performance and organizational learning or the learning organization. They must report the sample size and provide Pearson correlation coefficients for the variables of interest - learning capacity and performance. We included articles that used either objective measures and/or perceptual measures of organizational performance. The former included financial measures such as profitability or growth (e.g., return on income (ROI), return on equity (ROE), or sales growth), and the
latter included participant ratings of organizational performance—both financial and non-financial (e.g., overall growth, innovation, market share, operational excellence, job satisfaction). A total of 21 papers meeting our criteria were selected for inclusion in this meta-analysis. Some studies could not be considered because of insufficient information (i.e., only regression or other multivariate statistics were reported); however, when possible, these authors were contacted to determine whether usable statistics could be obtained. We also excluded articles that measured only single components of organizational learning such as training, education, team building, leadership, knowledge transfer, or human resource practices.

Coding of studies

For each study, the following variables were recorded: the organizational learning/learning organization variable name(s), the sample size, the number of Pearson correlation coefficients, the value of the correlation coefficient and mean, and the value of the organizational performance measure(s). With respect to the LO variables, some studies reported the data as a global variable whereas others reported it as an individual facet variable. In keeping with other meta-analyses, (e.g., Dirks & Ferrin, 2002), for studies that reported the Pearson Correlation for component variables, we calculated the mean of all the correlations between these components and performance (Hunter & Schmidt, 1990). We then categorized all of the organizational performance variables as either: 1) Non Financial Performance (NFP); 2) Financial Performance – Objective (FPO); or 3) Financial Performance – Perceptual (FPP). A descriptor was also assigned (e.g., NFP – Job Satisfaction). Once all of the organizational performance variables were coded, the descriptors were reviewed and grouped according to similarity. The result was six overall types of organizational performance variables (FPO and FPP were combined into FP). To ensure reliability, the studies were coded independently by two authors and the descriptors were discussed before final assignments were made.

Statistical Procedures

Following Allen, Eby, Poteet, Lentz, and Lima (2004), we employed what Hunter and Schmidt (2004) referred to as a “bare bones” meta-analysis, where only artifacts due to sampling error were corrected. Using the Hunter and Schmidt meta-analysis software, we calculated the sample-weighted mean (M\textsubscript{sr}), the standard deviation of the sample-weighted correlations (SD\textsubscript{sr}), the standard deviation of the correlations corrected for sampling error (SD\textsubscript{p}), the percentage of variance due to sampling error, and the 10\textsuperscript{th} percentile of the estimated correlations, which is called the lower bound of the 80% credibility interval. In addition, we calculated the mean correlation (M\textsubscript{r}) and the standard error of the mean correlations corrected for sampling error (SE\textsubscript{p}), from which we derived the 95% confidence interval (CI) for the true mean correlation. Finally, k is the number of studies with a correlation or a mean correlation with the type of performance measure and N is the total sample size of these studies. Following Allen et al (2004), we also calculated the number of studies averaging null results that would result in reducing the weighted mean correlation to .01 (the fail-safe k).

Variables Included in the Analysis

Learning organization capability. As discussed earlier, there is a lack of consensus on the definition of a learning organization. In all of the empirical studies that we reviewed for this study most of the researchers developed their own measures to capture these learning practices. Some of these dimensions include knowledge transfer, an experimenting culture, a learning orientation, knowledge acquisition and sharing, teamwork and group-problem solving, shared vision, and leadership that supports learning and open-mindedness. This has clearly been considered as a multidimensional construct. An observation is that these measures, (although developed by different researchers), have significant
overlaps with each other which we will discuss later. In essence these measures capture a range of management structures and practices that have been argued to influence or promote the learning capability of an organization. The term learning capability then suggests that implementation of these practices or structures will increase the capability of the organization to learn; and for this reason, “learning capability” is term that we will use throughout this remainder of this study (Goh, 2003).

Organizational performance. Financial measures of performance - reported as the dependent variable by these studies - tended to be perceptual. There was only one study that used objective accounting financial information such as ROA or ROI. Most of the financial items were very general in nature. For example, surveys were typically sent to senior officers, (CEO/President, VP’s, Senior Managers), asking for a rating of financial performance relative to others in the industry or competitors. Other survey questions related to subjective ratings of growth in profits or sales, market share, return on capital and overall profitability. The justification for using perceptual measures rather than objective financial data was that the latter was difficult to obtain from respondents due to confidentiality or unavailability (e.g., the firms were not publicly traded corporations). However, the most frequently cited reason was that there is evidence of is a strong correlation between perceptual and actual measures of financial performance. That is, perceptual measures were considered to be a valid proxy measure for actual financial performance.

We classified financial performance measures that had ratings of profitability, profit growth, sales growth, ROI, ROA as “financial performance measures”. We further classified a category of financial performance under “competitiveness”. Those considered to be “competitiveness” measures included studies that measured performance based on ratings of relative performance against competitors.

We also had four categories of non-financial performance measures as variables. They are: innovation, efficiency, job satisfaction and other. Studies that clearly stated that one of the dependent measures was “innovation” or “innovativeness” or “innovation capacity” were classified in the first category. Those studies that reported a dependent variable called “operational efficiency” or “cost reduction” we classified as “efficiency”. Job satisfaction measures were usually clearly stated as such. The “other” category included dependent measures that did not seem to fit the other three variables.

Results

We stated in Hypothesis 1 that there will be a positive relationship between learning capability and financial and non-financial performance. Table 1 shows the results for overall financial performance (weighted mean \( r = .33 \)), as well as for its components of financial performance (weighted mean \( r = .31 \)) and of competitiveness (weighted mean \( r = .31 \)). The only study that used objective measures of financial performance reported a mean correlation of .27 based on 157 responses. This shows that the studies all show a significant positive relationship between learning capability and overall financial performance. In the case of overall non-financial performance the results show that there is also a positive relationship between learning capability and non-financial performance (weighted mean \( r = .47 \)). We therefore conclude that there is overall support for Hypothesis 1.

In Hypothesis 2 we stated that there will be a stronger relationship between learning capability and non-financial performance when compared with financial performance. The results show this to be true (financial, weighted mean \( r = .33 \), versus non-financial, weighted mean \( r = .47 \)). The non-overlapping 95% confidence intervals for the true correlations are (.29, .37) for financial measures and (.40, .53) for the non-financial measures; this shows strong evidence of a statistically significant difference. For the subcategories the differences are also in the predicted direction. For example, even the primarily perceptual measures of financial performance (weighted mean \( r = .31 \)) are lower than the
non-financial performance categories, innovation (weighted mean r = .46), job satisfaction (weighted mean r = .46) and efficiency (weighted mean r = .38). The difference in correlations using financial performance and innovation as the dependent variables is statistically significant because of their 95% confidence intervals which do not overlap--(.25, .37) versus (.37, .54), but the smaller number of studies which measured efficiency and job satisfaction yield correlations that cannot be shown to be statistically significantly different from the correlation with financial performance. Overall, there is clear support for Hypothesis 2.

### Table 1

**Meta-Analysis of the Relationship between Learning Organization Practices and Financial and Non-Financial Performance**

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>k</th>
<th>N</th>
<th>M_r</th>
<th>M_wr</th>
<th>SD_wr</th>
<th>SD_p</th>
<th>SE_p</th>
<th>% variance sampling</th>
<th>95% CI</th>
<th>Lower 90% CV</th>
<th>Fail-safe k</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Financial performance</td>
<td>19</td>
<td>5317</td>
<td>.330</td>
<td>.33</td>
<td>.095</td>
<td>.079</td>
<td>.022</td>
<td>31.4</td>
<td>(.29, .37)</td>
<td>.23</td>
<td>608</td>
</tr>
<tr>
<td>-Competitiveness</td>
<td></td>
<td>1816</td>
<td>.337</td>
<td>.309</td>
<td>.116</td>
<td>.109</td>
<td>.031</td>
<td>19.7</td>
<td>(.25, .37)</td>
<td>.17</td>
<td>478</td>
</tr>
<tr>
<td><strong>Non-Financial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Innovation</td>
<td>16</td>
<td>5129</td>
<td>.438</td>
<td>.467</td>
<td>.137</td>
<td>.130</td>
<td>.034</td>
<td>10.2</td>
<td>(.40, .53)</td>
<td>.30</td>
<td>731</td>
</tr>
<tr>
<td>-Efficiency</td>
<td></td>
<td>3152</td>
<td>.466</td>
<td>.456</td>
<td>.131</td>
<td>.123</td>
<td>.041</td>
<td>11.7</td>
<td>(.37, .54)</td>
<td>.30</td>
<td>446</td>
</tr>
<tr>
<td>-Job satisfaction</td>
<td></td>
<td>1191</td>
<td>.450</td>
<td>.456</td>
<td>.210</td>
<td>.207</td>
<td>.148</td>
<td>2.4</td>
<td>(.16, .75)</td>
<td>.19</td>
<td>89</td>
</tr>
<tr>
<td>-Other</td>
<td></td>
<td>1921</td>
<td>.337</td>
<td>.345</td>
<td>.125</td>
<td>.117</td>
<td>.056</td>
<td>13.0</td>
<td>(.24, .45)</td>
<td>.20</td>
<td>168</td>
</tr>
</tbody>
</table>

Note: k = number of correlations; N = total sample size for studies combined; M_r = mean unweighted correlations; M_wr = sample-weighted mean correlations; SD_wr = standard deviation of the sample-weighted correlations; SD_p = standard deviation of correlations corrected for sampling error; SE_p = asymptotic standard error of the mean correlations corrected for sampling error; % variance sampling = percentage of variance because of sampling error; CI = confidence interval; CV = credibility value; fail-safe k = the number of studies averaging null results that would be needed to reduce the sample-weighted mean r to .01.

**Discussion**

One of the major claims made by the learning organization literature is that building a learning capability can result in improved organizational performance. In some cases, this has been an unstated assumption or underlying premise. In others, it has been more clearly stated. Nonetheless, this has been the promise that has led to a continuing interest in this literature. The purpose of this study was therefore to uncover this claim and to gain a better understanding of its base of support. By conducting a meta-analysis, we hoped to provide a succinct summary of the existing data on the relationship between learning capability and performance - both financial and non-financial. The results show that empirical research is generally supportive of this claim and that there is a positive relationship. Therefore, having a learning capability has positive payoffs and outcomes with respect to a number of desired performance outcomes for an organization.

As we hypothesized, the results show that there is evidence that there is a positive relationship between learning capability and financial performance outcomes both objective and perceptual. The results need to be qualified in one respect: only one of the studies reported objective financial data (which
we combined with the perceptual financial data). In essence, the financial performance data is based on perceptual information. The results also show that the relationship between learning capability and competitiveness is equally strong, suggesting that the two variables may be highly correlated.

In the case of the non-financial data, both innovation and job satisfaction had the highest effect size with learning capability. This may suggest that learning capability can translate significantly into an enhanced innovation capability by emphasizing or encouraging experimentation and knowledge transfer among employees. Not surprisingly, learning organization practices seem to have a positive impact on employee attitudes towards their work and job satisfaction.

**Limitations and future research**

The differences in the strength of the relationship (between financial and non-financial variables and learning capability) may suggest that non-financial performance is an antecedent for longer term effectiveness of an organization. That is, an improvement in non-financial outcomes is later reflected in the organization’s overall financial performance. It could be argued that innovation capacity or non-financial performance may be an important moderating or intervening variable between learning capability and financial performance. This relationship is presented in Figure 2 below.

**Figure 2**

The Relationship between Learning Capability, Financial and Non-financial Performance

Future research in this area may be to test whether this model is supported. This will begin with a more complex multi-variable and time-dependent theory of the effects of having a strong learning capability and its impact on performance outcomes, both financial and non-financial.

The effect sizes reported in this meta-analysis are reasonably promising and suggest that there is a link between learning capability and organizational performance. But the problem remains that the learning capability construct, as an independent variable, has many definitions and measures. All the researchers indicate that the measures are well grounded in the extant literature. Assuming that this is true, then it can be argued that the measured constructs are not that different in each study.

In reviewing the dimensions reported in each study, there are clear overlaps between all of these measures. The most prominent ones that we detected are knowledge transfer and sharing, emphasis on group decision-making, collaboration and teamwork, clarity and understanding of a shared vision of the organization, an experimenting culture and open-mindedness, and a strong learning orientation and commitment to continuous learning (Goh, Quon & Cousins, 2007).

Future research may want to use these five variables as a starting point in measuring learning capability in order to develop a more convincing body of literature that is consistent and comparable.
across different studies. These can become the key factors for developing a learning capability in an organization. We can then begin to develop a cohesive theory of a learning organization and its consequences or correlates.

Some limitations are worth noting. Due to methodological considerations, we have excluded a significant number of studies that report links between learning capability and performance; as a result, the effect sizes may have been impacted. However, the excluded studies all report significant positive relationships between learning capability and financial or non-financial performance but not in the format required for this study (Pearson correlation coefficients). Many used structural equation modeling (SEM) or other statistical techniques. Therefore, the excluded literature could be seen to add strength to the argument of a positive relationship between learning capability and organizational performance.

There is also the possibility of researcher error in classifying the dependent measures. This would have inflated or reduced the effect sizes reported in the analysis. However, to improve reliability, at least two of the researchers in this study independently identified and categorized the dependent performance measures. Only when there was agreement among the two assessments were the results aggregated into a distinct performance category.

As indicated earlier, the studies included in this meta-analysis were limited to those in the normative/prescriptive and organizational level studies literature. We realize that the concept of the learning organization is very complex and multi-faceted and we have therefore only captured a limited view. However, such was the purpose of this study – to look at one specific aspect. Hopefully, this discussion has provided some insights about building a learning capability and its consequences for organizational performance.

We are encouraged by the results of this meta-analytic study. Our review indicates that there is a growing empirical research that addresses both the measurement of the learning capability construct and its link to performance outcomes. Unfortunately, as we mentioned earlier, because there is a large variability between the measures used, it is unclear whether all authors are measuring the same construct. As well, there has been an over-reliance on questionnaire data in the research we studied; and from a methodological viewpoint, this could be problematic. Correlations of learning capability and performance outcomes could be spurious due to common method variance, as both measures are perceptual.

In the future, the field of organizational learning would benefit from research of a collaborative nature. Agreement on a more universal measurement scale and common understanding of the construct would help to further advance the field. This could be achieved through a consolidation of the existing measures to develop a more robust, parsimonious, and consistent measure that captures learning capability as we have suggested in the discussion.

Finally, longitudinal studies are needed. These studies were all cross-sectional in nature, conducted in a particular organization, industry or occupation at a particular point in time. Generalizability is therefore limited and causality cannot be established. As learning capability is built over time, the results of building a learning capability may not be immediate. Field studies would therefore be helpful in this regard, to study changes in learning capability which occur over a period of time. By measuring learning capability prior to an intervention, then again afterwards, the causality issue could better be studied (Goh, 2003).

**Conclusion**

The findings of this meta-analytic study support the notion that further empirical work is warranted to understand this construct better as it has significant effect sizes as it relates to organizational
performance. This meta-analysis, however, is not an attempt to over-simplify the research in the learning organization into a two variable study of learning capability and performance. Rather, what we had hoped to achieve was a more collective, focused look at a relationship of prime interest. Through this meta-analytic review, we hoped to add fuel to the debate about the learning organization – by better understanding its various components and related performance outcomes. Furthermore, we hoped to identify areas for further research. These might include a further exploration of the relationship between the two dependent variables of performance - both financial and non-financial. They might also include further research into the relationship of all of these variables, to establish a more complex nomological network of relationships in this area of research.
References


