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Construct Validation Of A Learning & Talent Development Strategic Alignment Scale

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DEDICATION

For Tony
My favorite teacher who taught me what it is to love and to be loved.

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"What light is to eyes – what air is to lungs – what love is to the heart, liberty is to the soul of man." – Robert Green Ingersoll

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CHAPTER ONE: Introduction

Statement of the problem

To compete, organizational members make ongoing decisions about their appropriate space within their chosen marketplace. These decisions are reflected in strategy, the means to sustain a competitive advantage within their chosen space in the market (Porter, 1996). To sustain this advantage, organizations have something unique and non-imitable to separate them from the competition, as in for example, the skills of people within the organization that may be leveraged to execute critical strategic priorities (Soto-Acosta, Hackney, & Colomo-Palacios, 2009; Ulrich & Brockbank, 2005; Zadeh, 2011; Ramona & Anca, 2013; Anderson, 2008). Organizational members execute strategies that are aimed at an organization's goals- to sustain, grow, or develop its position within the marketplace. Organizations that reach their goals with greater efficiencies and effectiveness, recognize the dynamic realities and the possibilities for synergizing the work, and realize better positioning within the marketplace.

The purpose of a Learning & Talent Development function (LD) is to develop organizational members to execute an organization's chosen strategies (Valle, Martin, Romero, & Dolan, 1999; Chew & Chong, 1999; Wright, 2008; Zadeh, 2011; Jin, Hopkins, Wittmer, 2010; Bahlis, 2006). This charge is strategic and proactive, and as such, LD functions may offer substantial contribution to organizations by providing strategic performance development and feedback. This stance differs from traditional, or transactional, LD functions that are accustomed to fulfilling training orders based on stakeholders' self-diagnosed intervention. The strategic LD function proactively assesses and remedies human performance misalignments between the strategies selected to secure and grow an organization's positioning and a firm's capabilities to execute strategy. The members of the LD function are facilitators and stewards of the execution of organizational strategy through the development of the skills and behaviors of organizational members (Buller & McEvoy, 2012).

These functions drive planned change to an organization's performance variables. It is with this uniqueness of organizational contribution that LD functions must align training and non-training performance solutions to strategic business objectives otherwise, activity is just activity and functional strategic value cannot be fully claimed (Villachica & Stephich, 2010; Anderson, 2008).

LD function members have opportunity, especially in cases of progressing from transactional to transformational functions, to proactively influence the work of the function to meet the strategic priorities of the organization. It is with this perspective and associated energies LD members may gain their seat at the table and be included in key learning decisions that direct the work of their function (Kraiger, McLinden & Casper, 2004). While some LD functions have been successful in achieving alignment, LD alignment is still rare. One consideration for this deficiency may be that little is known about the construct of LD strategic alignment and the underlying items associated with achieving successful LD strategic alignment. In other words, we do not yet know *what* proactively shapes the LD function to meet the current performance needs of its respective organization. To date, there is not a tool available for an LD leader to assess or remedy human performance misalignments. One way LD may approach this challenge is by demonstrating the strategic value of their worthy accomplishments by aligning their efforts to strategic business objectives, measuring their level of fit with these objectives, and uncovering the social and cultural factors that may influence achievement of the function's strategic value goals. As such, this study seeks to contribute to closing this gap by examining the LD strategic alignment construct through development and testing of the items and factors of successful LD strategic alignment.

Research purpose and significance

Industry research estimates that U.S. organizations spent approximately $156.2 billion on employee learning in 2011 alone (ASTD, 2012). The recent recession in the United States

prompted business leaders to clarify their understanding of the strategic value realized from this level of spending. In many cases, LD functions that could not demonstrate how their accomplishments contributed to strategic priorities were downsized, minimized, or all together disbanded (Ulrich & Brockbank, 2009; Impact International, 2011). In SHRM's 2008 study of LD practitioners, 50% of respondents noted their organization made LD function staffing decisions based on the organization's business strategy. LD functions without the ability to demonstrate their strategic value risk being perceived as expenses to the business rather than as a strategically valuable contributor.

Learning & Development functions offer their concern of not having a "seat at the table" with business leaders and, therefore, are left out of the loop in strategic learning decisions (both in planning and execution). LD professionals have tried to mitigate this concern through the use of program (product) evaluation using lagging measures that are predominantly focused on functional efficiencies. This practice has held LD professionals captive to reporting on activity and outputs, rather than on the total strategic value that links such activity to organizational priorities and goals.

The implications to performance are the primary focus of alignment studies in HRM in the last twenty years (Paauwe, 2009). While many cases have demonstrated connections between HRM practices and firm performance, results are approached with caution. Strategic HRM theorists note that our HRM-performance link evidence is viewed as circumstantial at this stage, mainly due to a focus on individual performance, rather than examinations of HRM performance systems (Paauwe, 2009). For example, Huselid and Becker (2000) focus on HRM systems demonstrated one change in the HRM system can translate to a 10%-20% increase in market value. Other studies; however, may focus the attention of the research to how an HRM practice (e.g. training) affects firm performance.

Strategic HRM theorists caution claiming an individual HRM practice connection to firm performance without analysis of and connection throughout the performance system.

A systems approach may be applied to examine LD function performance and its relationship to firm performance. Several studies (Wright & Belcourt, 1995; Bingham, 2009; Christiansen & Higgs, 2008; Barrett & O'Connell, 2001; Jin, Hopkins, Wittmer, 2010; Bird & Beechler, 1994) have demonstrated organizations with strong strategic alignment outperform those with misalignment. For LD performance feedback, this means impact to measures of growth and productivity, but also leading measures in, for example, motivation, turnover, employee engagement, and employee satisfaction, all which ultimately affect an organization's results (Glaveli & Karassavidou, 2011; Sels, et.al, 2006).

Employers are receptive to viewing training as valuable; however, we do not yet have a comprehensive view of the strategic investment of training in organizations and if such investment equates to improvements in firm performance (Collier, Green, Kim, & Peirson, 2011; Kaufman, B., 2012). In an example, LD functions that respond to training requests without aligning to strategic priorities risk overinvestment (in dollars and other resources), affecting the performance of the firm, and consequently, reducing the total strategic value of the function. LD functions that can measurably connect the work they do to the strategic needs of the organization are positioned to demonstrate the work they do is strategically valuable.

Means of demonstrating strategic value are relatively new to the field of LD. This research seeks to contribute to our understanding of the influence of LD on the development and execution of business strategy at the functional unit level by testing a method of establishing whether the Learning function is strategically positioned to enable and drive business strategy.

Many alignment efforts do not start at the corporate level (Kaplan & Norton, 2000), instead organizations often begin at the division or functional unit level to pilot the alignment efforts to gain knowledge, experience, and credibility before extending alignment efforts enterprise-wide. Such an examination will shed light on not only the potential of LD to position itself as more strategic and central to the value of the organization, but can also serve as a leader in promoting strategic alignment among and between other units. Such leadership demonstrates an approach to aligning and reinforcing the value being created to a common value proposition. Even when a common value proposition has been determined at the corporate level, functional level associates can gain an understanding of how their team and individual efforts contribute to the common value proposition with function members as owners of gaining strategic value. Thus, the LD strategic alignment goal is to facilitate an ongoing LD/functional level synergy by examining both how LD is in harmony with the business, and how the business may be in harmony with LD, thereby, facilitating an evolving synergistic relationship in which LD and other business units coordinate their strategies.

Research questions

This study seeks to determine the factors and items that define the construct of strategic alignment in Learning & Talent Development roles through a review of the empirical and conceptual literature. The terminal goal is to develop and validate an instrument to measure the LDSA construct among LD practitioners and academics. The development of the LDSA scale is addressed with the following research questions:

1. What are the dimension and factors to be included in a scale that predicts successful LDSA behaviors?
2. To what extent is the LDSA scale reliable?
3. To what extent is the LDSA valid?

Conceptual framework

To begin the inquiry into LDSA, the construct of LDSA must first be examined to understand how LD may strategically influence the performance needs of organizations. LD is lacking in measurement schemes that address the construct of LD strategic alignment holistically, therefore, this study begins with validating a prototype that explores the LDSA construct holistically, and opportunities for a strand of research to address each part for richer definition of the LDSA construct over time. Giving attention to the development and validation of the LDSA measures exposes a set of indicators that serve both statistical and theoretical criteria of measuring functional LD strategic alignment.

Organizational performance needs

Continuous performance improvement requires accurate and timely performance data to support organizational decision-making (Mehegan & Preziosi, 2000; Guerra-López & Hicks, 2013). To aid decision making, discussion in the literature seeks to know in what ways training may directly or indirectly impact organizational performance (Megehan & Preziosi, 2000; Singh, et. al., 2012). Researchers have focused attention toward those specific practices that serve as levers that may be influenced to improve organizational performance. The direct relationship is measured by direct effects of function practices to organizational outcomes, as for example, reflecting current evaluation trends of program measurement in which training and non-training interventions are evaluated. While useful for specific program feedback, it does not take the integrated, synergistic influence of LD into account and it has been challenging to isolate the effects of the training and its impact to performance (Bingham, 2009). Another measurement approach used to remedy this limitation is the indirect, dynamic approach to measurement. The indirect, dynamic performance relationship is measured through the fit between function practices and organizational strategy. As

an example of an indirect measure, training has been demonstrated to influence outcomes, such as employee turnover, ultimately impacting the organization's financial results (Singh, et. al., 2012; Van Iddekinge, et. al, 2009).

Rummler & Brache (1995) identified the performance elements of all organizations (Table 1). Their model of nine performance variables accounts for the multiple levels and dimensions of performance that exist within systems, all of which are critical to analyzing issues of alignment within organizations and "represent a comprehensive set of improvement levers that can be used by managers at any level." The three levels of performance are identified as: Organization, Process, and Performer. To affect change in organizations, it is necessary to address the impacts of the change (i.e. intervention) to all three levels. For example, a process change, such as implementing change to drive LDSA could mean significant changes to the job responsibilities and the skills of LD members required to execute the SA improvement efforts. A failure to account for these interrelationships may result in failed process implementation. Clear goals, at each level, are required to allow for appropriate alignment to an organization's desired results. Design refers to how the structure is arranged in ways that facilitate achievement of the goals. And, management refers to the various practices performed to ensure goals are being achieved.

Table 1. The Nine Performance Variables.

	Goals	**Design**	**Management**
Organization	Strategy, operating plans, and metrics.	Organization structure and overall business model.	Performance review practices and management culture.
Process	Customer and business requirements.	Process design, systems design, and workspace design.	Process ownership, process management, and continuous improvement.
Performer	Job specifications, performance metrics, and individual	Job roles and responsibilities, skill requirements, procedures,	Performance feedback, consequences, coaching, and support.

	development plans.	tools, and training.	

Adapted from Rummler, G.A. & Brache, A.P. (1995). Improving performance: How to manage the white space on the organizational chart. 2nd Ed. Jossey-Bass: San Francisco, CA. (p. 19).

The proactive charge of the LD function is to drive and develop performance within organizations. To fulfill this charge, the performance dimensions and levels of the Rummler & Brache (1995) may be applied as a lens to guide the focus of LD strategic alignment (LDSA).

Assumptions

The study makes the following assumptions:

- The organization performs strategic planning (short-term, long-term, formal, or informal)
- The LD function is aware of the business strategy
- The organization has personnel that work in specific LD roles
- The organization has personnel that work in specific (other key business unit) positions
- Members of the LD functions have experience(s) with other functional units in the organization.
- The LD function provides learning solutions to other business units within the organization.
- That effective alignment of LD and business strategies can be achieved through strategic LD planning.
- The organization is capable of exploiting the skills, knowledge, and abilities of its workforce. The results of the LDSA scale may reflect strong perceptual evidence of LDSA value, however, if the firm does not appropriately exploit its resources, competitive advantage is reduced (Newbert, 2008).

Limitations

There are several limitations to the study. First, a firm's total competitive position is not likely to be realized from a single function. The aim of the LDSA scale is to provide information to LD functions about their LDSA behaviors, reflecting the strategic alignment of one of many functions

within organizations. While the Learning function may be in close alignment, a firm's competitive advantage is influenced by all functions operating in alignment. Secondly, a firm's strategy is dynamic, continually evolving to reflect adjustments to secure firmer positions within the marketplace. The LDSA scale takes a snapshot in time of where the LD function is today in relation to its total strategic value contribution. Therefore, like other performance variables, LDSA will require ongoing monitoring to keep pace with changing organizational needs. Finally, the literature review captured all potential LDSA factors, resulting in a large number of initial factors. The potential for a low response rate coupled with the large number of initial factors will be addressed by first applying non-response techniques. If these options fail to improve the response rate, the least frequently cited factors will be carefully examined for modification.

Summary

Research has demonstrated a clear benefit from aligning the learning function to the organizational system (Montesino, 2002; Singh, 2003; Marsick & Watkins, 2003) noting strategically oriented functions performed significantly better than firms with lower emphasis on alignment. In an example, Montesino's 2002 study demonstrated the more closely the training program is perceived to be aligned to the strategic direction of the organization, the more likely the training is used on the job and a stronger commitment to organizational strategy, a fruitful avenue for LD to demonstrate its strategic influence to the organization. While many studies have demonstrated the positive results of linking LD strategy to organizational strategy, there is not a line of inquiry into the processes by which LD alignment is achieved (Bird & Beechler, 1995). This study seeks to contribute to closing this gap by exploring the LDSA construct and examining the underlying behaviors LD practitioners engage in to achieve and sustain ongoing alignment.

CHAPTER TWO: Literature Review

Strategic alignment

Creating fit among organizational activities in relationship to its external and internal environments is synonymous with strategic alignment. These are the ways the activities the organization engages in are aligned with the overarching goals of the organization. Successful organizations do not waste time, energy, or money on activities that are unessential to their success. Strategically oriented firms connect action and activity to a value-added purpose that interacts with and reinforces other activities. Such organizations carefully consider their strategy, specifically, how to deploy their resources to the processes that will have the greatest impact on their strategic priorities. These activities that are engaged to create, deliver, produce, and sell products and services are the basic units of competitive advantage (Porter, 1996) and the means by which goals are executed and achieved.

Strategic alignment may be viewed as a process that enables companies and functions to be more effective (Chan, Huff, Barclay, & Copeland, 1997). For LD, alignment studies can yield valuable, predictive information regarding the relationships between LD systems and business performance (Chan, Huff, Barclay, & Copeland, 1997). For example, it may identify the strengths and weaknesses of the utility currently (or not) provided to LD stakeholders. Some have argued achieving strategic alignment does not guarantee improved organizational performance, but rather, organizational leaders may consider alignment as one tool of many that may be used to gain and sustain competitive advantage. Luftman (2000) describes the benefit to organizations lies in its ability to engage in optimized strategic alignment processes. Thus, the goal is not to strive for perfect alignment, but rather to engage in the processes that facilitate ongoing alignment. Some view alignment as an end state and also a process (Baker, Jones, Cao, & Song, 2011) as with this study. Reaching a state of full strategic alignment is an ideal and requires constant pursuit to keep

pace with changes in strategic priorities as shifts in strategic priorities requires different employee skills and behaviors (Wright & Snell, 1998; Wright, 2009). LD strategic alignment may then be viewed as a dynamic process reflecting ongoing changes in the environment with the aim of congruency in design and deployment of strategic plans. LD performance response may then be derived from the degree to which this alignment, or fit, is achieved (Christiansen & Higgs, 2008; Wright, 2008), and ultimately, the strategic value that may be delivered to stakeholders.

Stakeholder Value

The concept of value in organizational settings is variable, but can be understood as something that has potential worth to stakeholders (Harrison & Wicks, 2013; Kaplan & Norton, 2004; Lukac & Frazier, 2012). Perspectives of worth can vary, but also work together synergistically. For example, Glaveli & Karassavidou (2011) demonstrated how a manager may value effectiveness while employees may value job satisfaction, but these values are cohesive and realized in value to customers (e.g. loyalty, perceptions of quality) and to the organizational goals (e.g. profitability). These various value preferences are often based on perception (Barney & Wright, 1998) and derived from the "transactions, relationships and interactions" all which influence perception of value (Harrison & Wicks, 2013). With such variances in how one interprets value, we can better understand how one defines value through the choices made, "We know from the basics of markets that people will tend to make choices that provide them the most value for what value they give up" (Harrison & Wicks, 2013). With this understanding, a reasonable goal for LD is to provide "*a highly positive ratio between the utility received and the value given up"* (Harrison & Wicks, 2013), or greatest value at the lowest cost (Tosti, 2001; Bahlis, 2006).

In this study, stakeholder value is framed as utility that goes beyond the norm (Harrison & Wicks, 2013). Others may take a contrasting approach which Harrison, Bosse, & Phillips (2010)

refer to as “satisficers.” Satisficers take a passive approach to value creation by offering products that are “good enough” or “barely sufficient.” Here, prioritized attention is not given to proactive value creation, and, as such, opportunities for value creation go undetected. LD proactive strategic value creation is then the process of seeking above-minimum requirements for shared value, identifying where those opportunities lie, and where improvement is needed to make ongoing adjustments to evolve strategically valuable and synergistic relationships.

Attending to stakeholders and their interests may serve as the entry point of LD to strengthen their strategic value propositions. In a recent survey of chief learning officers, 80% of respondents said they would be able to “play a moderate or significant role” supporting achievement of their organization’s strategic goals and were also prepared to have an increased focus on “core business priorities” (Anderson, 2013) demonstrating their preparedness and interest in LD strategic alignment achievement.

Constructivist Approach

An organization’s strategy is in a constant state of movement, as it continually adjusts to secure positioning in the marketplace. As such, a constructivist approach is necessary to continually monitor the new, perceived realities as new information becomes available. The emphasis here is for the LD function to balance a proactive approach toward acquiring information about the current organizational realities with feedback about their performance in relationship to these constructed realities. The predominance of measuring stakeholder utility in LD lends itself to a constructivist approach to LD strategic alignment. Constructivism is the view that,

> “…all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context”

(Crotty, 1998, p. 42).

Constructivists take the approach that learning results from an exploration of multiple perspectives and these perspectives are the results of personal interpretations of experiences. Such an approach to strategic alignment honors the various viewpoints of the many stakeholders holding LD accountable for worthy results while remaining responsive to stakeholder needs.

Constructivism proposes "meanings are constructed by human beings as they engage in the world they are interpreting" and this meaning is constructed in a purposeful way (Crotty, 1998, p. 43). For the purposes of alignment, this means alignment is not inherently observable, or even present in organizations, without the purposeful intent for organizational members to interact with it in a proactive way. LD work is reiterative (non-linear) in nature and reflects the context of organizational performance systems. Measuring fit takes a snapshot in time, pointing us toward the level of fit at the time of the study. It does not, however, explicitly inform of the need for LDSA to be flexible, in other words, prospecting changes in an organization's future strategic priority needs. Many have argued the two concepts of fit and flexibility are complementary in nature (Wright & Snell, 1998) defining them as skills an organization possesses, as in the "firm's ability to quickly reconfigure resources and activities in response to environmental demands" therefore, fit and flexibility can exist at the same time (rather than two competing ends of the spectrum). As such, the development of LDSA factors and items included items of both measures of fit and flexibility in successful LD strategic alignment.

LDSA factors and items

Academic and practitioner articles and white papers were reviewed to identify the items associated with successful LD strategic alignment. The behaviors were recorded onto an Excel spreadsheet and then organized into dimensions, or factors of LD strategic alignment behaviors.

From a sample, 69 LD strategic alignment behaviors were identified (See Appendix D) and then organized into 13 factors. Table 2 lists the factors in rank order. Rank order of dimensions was determined by comparing the incidence or frequency of the successful LDSA behavior (Hsieh & Shannon, 2005). A detailed description of the factors and associated items continues below.

Table 2. Empirical and Conceptual Support for LDSA.

Rank	Factor	Empirical Support	Conceptual Support
1	M&E	Anderson, 2008 Gratton, et.al., 1999 Van Riel, 2008	Van Zwieten, 1999 Kraiger, McLinden, & Casper, 2004 Derven, 2012 Hunt, 2012 Bahlis, 2006
2	Collaboration	Anderson, 2008 van Riel, C.B.M. (2008) Gratton, et.al., 1999 Chew & Chong, 1999 Christiansen & Higgs, 2008 SHRM, 2008	Derven, 2012 Kraiger, McLinden, & Casper, 2004 Ulrich, 1986 Ulrich & Brockbank, 2005 Impact International, 2011 Christiansen & Higgs, 2008
3	Communication	Anderson, 2008	Kaplan & Norton, 2004 Ulrich, 1986 Van Zwieten, 1999
4	Business Knowledge	Anderson, 2008 Gratton, et.al., 1999 SHRM, 2008 Christiansen & Higgs, 2008	Ulrich, 1986 Ulrich & Brockbank, 2005 Impact International, 2011
5	Strategic Skills	SHRM, 2008 Christiansen & Higgs, 2008 Gratton, et.al., 1999 Sels, et. al, 2006 Bird & Beechler, 1995	Kaplan & Norton, 2004
6	Content	Burke & Hutchins, 2007	Ulrich, 1986 Impact International, 2011 Carlisle & Henrie, 1993
7	Leadership Support	van Riel, C.B.M., 2008 Chew & Chong, 1999	Kaplan & Norton, 2004 Van Zwieten, 1999 Impact International, 2011
8	Coordination	Christiansen & Higgs, 2008 Chew & Chong, 1999 van Riel, C.B.M. (2008) Anderson, 2008	Hunt, 2012 Van Zwieten, 1999
9	Rewards	van Riel, C.B.M. (2008)	Kaplan & Norton, 2004

		Gratton, et.al., 1999 Chew & Chong, 1999	
10	Accountability	Ulrich, 1986	Kraiger, McLinden, & Casper, 2004 van Riel, C.B.M. (2008)
11	Systemic View	Chakravarthy, 1987 SHRM, 2008	Ulrich & Brockbank, 2005 Derven, 2012 Hunt, 2012
12	Future forecasting	Gratton, et.al., 1999	Van Zwieten, 1999
13	Bundles/ Training & non-Training interventions	Sels, et. al, 2006 Carlisle & Henrie, 1993 Ulrich, 1986	Ulrich, 1986

Monitoring and Evaluation (M&E). Monitoring and evaluation data that is framed as evidence to support decision-making is the top supported strategic LD behavior. Assessing current strategic value contribution of Learning & Development functions provides information needed to forge synergistic relationships with elements and processes of the organizational system (e.g. the key business issues of other functions). Current insight into LD strategic value is predominantly focused on the activity (e.g. number of delivery hours), outputs (e.g. number of training classes held), and perceptions (e.g. learner satisfaction) of the learning function (Phillips & Phillips, 2007; Wright & Belcourt, 1995; Anderson, 2008). Such insight informs about the means, for example, the resources used along the way toward organizational ends, but stop short of informing "…whether these indicators link to valued organizational ends and, in turn, the external needs of clients and consumers" (Guerra-Lopez, 2007). Means serve as tools that are directed toward a goal. To reach these goals, associations or relationships that bring about the desired change are formed along a chain. Without this purposeful link along the chain of impact, current LD measurement tactics will fall short in claiming strategic contribution.

The most common approaches to gain insight into LD value are, in order, Kirkpatrick's Four Levels of Evaluation and Brinkerhoff's Success Case Method (Bingham, 2009; Watkins, et.al.,

1998).

Kirkpatrick's Four Levels of Evaluation offers means for measurement of reaction and satisfaction (level one), learning (level two), behavior change of participants (level three), and results at business level (level four). On occasion (Bingham, 2009), Phillip's ROI methodology (Phillips & Phillips, 2007) is added as a fifth level measuring the return on training investment dollars intended to improve the quality of projects and outcomes, and to improve implementation, management support, and stakeholder satisfaction with the program or project. The first level of Kirkpatrick's methodology, measurement of reaction and satisfaction, represents the most common LD value communicated to stakeholders (Bingham, 2009) leaving little or no potential to connect an intervention to business results in levels four (results) or five (ROI).

Brinkerhoff's Success Case Method (SCM) is the second most popular form of measurement in LD (Bingham, 2009). This methodology is used to communicate success stories as indicators of learning success. The SCM is applied to gather feedback about what is working and what is not working regarding an intervention, and, in particular, how to continuously improve efforts (Brinkerhoff, 1987; 2005). Evidence is found within the interaction of the intervention within the performance system in an iterative quest to improve and develop more efficient program designs. Evaluators actively look for discrepancies between expectations and reality and monitor implementation to learn how outcomes came about so new plans for action are continuously assessed and considered (Brinkerhoff, 1987).

Applying Kirkpatrick's Four Levels of Evaluation, Phillip's ROI Methodology, and Brinkerhoff's SCM for demonstrating LD strategic value contribution are limited in two areas. First, the Kirkpatrick and Phillips methods address a small number of specific questions that may or may not glean information about the strategic value proposition of LD functions. For example, while the

participants may have enjoyed the program (level one), this does not inform the strategic value the program offers other business units or the firm (level four or five). In other words, there is not a link between the work (e.g. the training class) LD does and its relationship strategic value creation. In another example, Phillip's ROI may provide insight into the economic value of the single event, but does not express the strategic value contribution of the LD function as economics is not the only relevant value that can be offered by LD functions. Brinkerhoff's SCM has opportunity to freely develop the most applicable and relevant evaluation questions, however, for purposes of gaining insight into the view of LD strategic value, it is also limited as the method focuses on interventions, the second limitation for seeking insight into strategic value of the LD function. An organization's overall LD system provides the strongest basis for understanding performance, expanded beyond the practice of measuring single LD initiatives (Van Iddekinge, et. al, 2009; Wright, 2009; Bahlis, 2006).

LD practitioners have expressed challenge with using these favored methods to demonstrate a holistic view of the strategic value of the function. In SHRM's 2008 survey of practitioners, 56% of respondents perceived strategic planning as the first critical priority of the functional area; however, only 27% of respondents noted that they engaged in strategic planning in their organizations. In Bingham's 2009 study, only 36.5% of surveyed respondents indicated they *track the factors that enhance or impede business impact*. This same survey demonstrated those LD functions that were evaluating at the higher levels were able to demonstrate their contribution toward organizational goals and better market performance realized.

More recent advancements in LD measurement and evaluation have been introduced and are available to link LD contributions to organizational performance. For example, Guerra-López's (2007a; 2007b) Impact Monitoring and Evaluation Process (IMEP) forms a chain among various

levels of performance results and monitors progress from LD inputs and activities to outputs, outcomes, and ultimately, impact. Inputs are the resources (i.e. staff, money, time) used to carry out LD activities (i.e. facilitating training). Outputs are the products, materials, and services provided to organizational stakeholders (.e.g. training classes; number of employees trained). Outcomes are the direct effects experienced by the stakeholders stemming from the outputs (e.g. improved employee accomplishments; reduced turnover). And, finally, results are the long-term consequences of the outcomes (e.g. sustainable financial performance).

Popular LD measurement tactics often stop at the activity or output level and therefore, do not complete the chain and become limited in their ability to connect the inputs and activities to outputs, outcomes, and ultimately, results. While Bingham's 2009 study highlighted LD practitioners' desire to improve their measurement tactics, respondents cited hesitation toward communicating evaluation findings. Two of the validated strengths (Blake, 2011) of Guerra-López's Impact Monitoring and Evaluation Process are in its utility and accuracy. Utility specifies the alignment of the evaluation to stakeholder needs while accuracy strengthens the soundness of the findings, both features necessary to improve practitioner evaluation skills and in both LD and stakeholder use of and confidence in evaluation findings. Thus, the LDSA scale may serve as a diagnostic assessment of how the LD function is strategically positioned today and the IMEP may serve as the performance management and measurement system that monitors and tracks ongoing progress toward LD's strategic impact.

Collaboration. The second cited LDSA behavior is collaboration (Kraiger, McLinden, & Casper, 2004; Ulrich, 1986; Ulrich & Brockbank, 2005; Impact International, 2011; Derven, 2012; van Riel, 2008). A collaborative approach to LD work is central to changing the expectations and accountabilities of LD functions (Ulrich, 2004). Strategic collaboration involves representatives for

all stakeholders in the planning of training with explicit attention to cross-functional dialogue (van Riel, 2008), in particular with line managers (Gratton, et.al., 1999; Impact International, 2011; Christiansen & Higgs, 2008). Such cross-functional relationship building facilitates a joint effort with line managers with the intention of helping other business units reach their goals (Ulrich, 1986; Chew & Chong, 1999), and thus, improve the utility and perception of LD as a strategically valuable partner.

LD leaders may create processes to engage stakeholders to better understand value creation from their perspective (Harrison & Wicks, 2013; Harrison, Bosse, & Phillips, 2010), as well as expose the potential loss of strategic value. Stakeholders are likely to value different things, and at different times. Therefore, LD must gain command of the specific factors of value creation and then demonstrate how this value contributes to shared success. Further, the act of measuring LD value can be a powerful message to stakeholders about LDs commitment and willingness to seek new information as part of their ongoing evaluation efforts (Harrison & Wicks, 2013; Montesino, 2002). The factors that comprise LD value consider the tangible products (i.e. goods and services provided by the function), but also, the *process and distribution* of that value, acting in synergy with other stakeholder groups, as their strategic alignment value. The measurement of LD must then focus on the sum of LD contribution that is equal to a comprehensive strategic value proposition, in other words, both in *what* LD delivers and *how* LD delivers.

LD practitioners and research predominantly use perceptions of stakeholders to assess value (Bingham, 2009; Anderson, 2008). This preference may also be applied in the assessment of LD strategic alignment by exploring the utility of LD stakeholders (their stakeholders' perceptions of LD value) to understand the ideal strategic alignment value within their respective firms. They may then compare their stakeholders' ideal value to the realized value of their work to measure the

appropriateness of the processes and distributions of LD products.

Communication. In addition to forging synergistic relationships with stakeholders, strategic LD functions provide ongoing communication that describes the business value case for learning activities and how those activities turn into organizational results (Anderson, 2008; Kaplan & Norton, 2004; Ulrich & Brockbank, 2005; Impact International, 2011). Such ongoing communication, in particular with line managers, brings about what the 'hot' issues are and what priorities the organization is addressing now and will be addressing in the near future (Anderson, 2008). Strategic LD functions communicate how the LD strategy is aligned to these priorities and focuses their work to the strategic requirements of the organization, rather than on the functional preferences. Montesino's 2002 study highlighted the insight for training functions (and participant supervisors) is to make a concerted effort to link training programs with the organization's strategic direction that is "explicit, clearly communicated, and evident to the trainees and their respective managers from the outset." The study further demonstrated trainees and managers who are aware of the strategic direction of the organization are more likely to show a high commitment to that strategy.

Strategic LD communication also describes ongoing information provided to employees (e.g. LD practitioners) about how their work contributes to the mission, vision, and core values necessary to execute firm strategy (Kaplan & Norton, 2004). In other words, LD practitioners have a clear line of sight from the work they do to organizational results. LD practitioners have a clear understanding of how their role supports goals and the strategic purpose of LD is clearly understood with practitioners operating under a vivid description of what the company will look like when alignment is achieved (Kaplan & Norton, 2004; Van Zwieten, 1999).

Business Knowledge. The evolving role of LD moves the scope of responsibility beyond

transactions and into a synergistic relationship with stakeholders (Ulrich, 1986). Stakeholders are those that may have transactions with, are in working relationships with, and interact with LD functions and that may impact or be impacted (Guerra-López, 2007a, 2007b; Harrison & Wicks, 2013) by the work of LD. Primary organizational stakeholders (e.g. customers, employees, managers, members, shareholders) act in a complex system for exchanging goods, services, talent, information, influence, and other resources focused on the welfare of the firm (Harrison & Wicks, 2013). The definition of LD performance may, therefore, be considered as the sum of the utility created for each of a firm's legitimate stakeholders (Harrison & Wicks, 2013; Anderson, 2008). The amount of utility a stakeholder receives determines whether and how they engage with the function. Functions that tend to "make their stakeholders better off will be the ones that are able to retain their support and participation and thrive over time" (Harrison & Wicks, 2013).

Strategically aligned LD functions make their stakeholders better off through a focus on the organizational performance system and critical strategic priorities, the issues that are important, and valuable, to stakeholders. To gain such knowledge, LD functions must know the context in which the business operates, must have an understanding of the organization's value chain, and work with other functions to help make the organization successful (SHRM, 2008; Arthur, Bennett, Edens, & Bell, 2003). Gaining business knowledge informs LD with the emerging needs of the business and develops competence in speaking in business language with line managers and other stakeholders (Impact International, 2011). Knowledge of these priorities may be gained outside the formal business planning process, demonstrating the potential for LD strategic alignment behaviors to be reinforcing (i.e. collaboration and communication).

Strategic Skills. In addition to alignment behaviors, LD functions that wish to be strategically aligned must also promote ongoing development of their strategic skills and perceive these skills as

strategic resources (Christiansen & Higgs, 2008). Strategic skills include the specific skill type and level that is necessary to perform the critical, internal strategic processes (Kaplan & Norton, 2004; van Riel, 2008). In SHRM's 2008 study of practitioners, strategic skills were identified as: credible activist, change steward, and strategy architect. Likewise, in 2013, ASTD released its ASTD Competency Model that describes the skills necessary to redefine LD as a means of competitive advantage by identifying integrated talent management as a new competency of the LD professional. Both SHRM and ASTD define strategic skills as those that develop people by engaging in strategically valuable initiatives.

One such strategic skill recommended by ASTD and SHRM is that of strategy architect. This skill may be demonstrated by creating visual diagrams of performance. Performance or strategy mapping is a visual structure designed to outline the path from strategy formulation to execution. These maps are designed to identify all of the relevant performance indicators and may also be used to confirm the interdependencies of performance variables (Guerra-López, 2013). Therefore, rather than analyzing one area of performance, performance mapping allows for synthesis of all relevant performance variables and a visual depiction of their interrelationships. A performance map may offer LD functions a tool to illustrate a clear line of sight from the work they do to strategic priorities, and ultimately, contribution toward organizational goals.

In addition to adopting strategic architect skills, strategically aligned LD functions demonstrate strong analysis skills. In an example, Guerra-López (2003) study investigated the relationships of skills used by performance improvement practitioners. The study used the ADDIE process (a common LD development process) and identified a focus on organizational needs as a leading skill of practitioners. Such analysis creates an understanding of the gap between the capability and business requirements, both of skills of the practitioner and of the organizational learners (Gratton,

et.al., 1999; Sels, et.al., 2006; Bird & Beechler, 1995; Megehan & Preziosi, 2000). Strategic skills are also described as the ability to listen and "the courage to raise difficult issues with senior executives based on what you have learned by listening" (Cascio, 2005). Listening to the business needs and then acting upon them is acting as a strategically valuable partner (Ulrich, 1986, Cascio, 2005). Ongoing development of strategic skills also benefits LD functions as it deters the deployment of resources for non-strategic purposes. For example, a non-aligned LD function may continue to automatically deploy resources to deliver training, perhaps assuming what LD is doing is useful (e.g. train them all you can, something is bound to stick), but, instead, this reaction may be doing more harm than good. With such habitual response, it is possible LD may continue to do things that are not useful, or worse, harmful to the organization and may therefore experience a reduction in LD utility.

Content. The content offered within LD products (e.g. training manual) of strategically aligned LD functions tap into the pulse of the organization, rather than being 'nice to have' or too abstract or theoretical. Strategic content describes just in time learning solutions that harness current business issues (Impact International, 2011) and are in line with organizational and line objectives (Carlisle & Henrie, 1993; Burke & Hutchins, 2007). When learning solutions are perceived to be aligned to organizational priorities, the learner is more likely to transfer the content and more likely to be committed to the strategy (Montesino, 2002). Strategic content specifically aims to address current organizational issues and may be developed through action learning projects that tackle live strategic issues (Impact International, 2011).

Leadership Support. In addition to line manager or supervisor support, strategically aligned LD functions receive support and involvement from senior leadership. LD and non-LD leadership establish the processes and measures progress of LD strategic alignment. Such strategic leadership

creates a culture of leadership and management involvement and transparency in learning solutions - from analysis to evaluation (Impact International, 2011; Chew & Chong, 1999). Supervisors that are involved in training efforts, provide positive feedback to trainees on the job, and ongoing discussions with leadership regarding the value and purposes of training all positively influence transfer of the learning to the job (Burke & Hutchins, 2007). Marsick & Watkins (2003) applied their Dimensions of the Learning Organization Questionnaire (DLOQ) to measure the components of a learning organization and found organizational leaders that "model, champion, and support learning and use learning strategically for business results" was the most significant dimension related to perceived changes in performance. This demonstrates the time for LD to redefine its relationships with the organizational "brokers and buffers, mediating between what human resource developers do and what their clients can implement" (Marsick & Watkins, 2003) by securing executive sponsorship as partners, drivers, and as advocates of the learning function.

Coordination. Strategically aligned LD functions have processes in place that facilitate the coordination of their practices with other business units, as for example, the use of common tools, models, and terminology (Hunt, 2012). Coordinated functions efficiently share talent management data by planning how learning solutions will be worked throughout the organization (Van Zwieten, 1999; Hunt, 2012). For example, strategic LD functions seek opportunities to facilitate cross-functional experiences of learners and of the LD practitioners themselves, thus, creating an internal climate of cooperation where LD can exercise its role in creating and maintaining alignment (Chew & Chong, 1999; Christiansen & Higgs, 2008).

Rewards. Strategic rewards are provided when contribution is made toward strategic priorities (Gratton, et.al., 1999; van Riel, 2008), specifically, those that provide acknowledgement of employee behaviors that meet personal, functional, and organizational targets (Kaplan & Norton,

2004). Strategic rewards support a win-win value creation approach between the organization and its workforce. When performance is managed through the link between organizational goals and the individual performer or team, strategic behavior is reinforced as the line of sight between the daily work and organizational results become clear. Rewarding strategic contribution emphasizes the shared distribution and shared interests among business units (rather than competition for resources – and accolades) and focuses the aims of LD toward the development of synergistic relationships in which all stakeholders benefit over time by collaborating and reinforcing all stakeholder interests (Kraiger, McLinden, & Casper, 2004). Creating win-win scenarios among and between stakeholders therefore, has the potential to optimize LD, employee, stakeholder, and ultimately, firm welfare.

Accountability. In a survey of LD leaders, only 25% felt they are getting the most out of their current evaluation efforts (Bingham, 2009), although only 5% of the LD budget was allocated to measurement activities. Even when accountability from stakeholders may be low (Bingham, 2009; SHRM, 2008), strategically aligned LD functions do not perceive this as a limitation. The cost of not measuring LD accomplishments (Kaufman, 1977) limits means toward traceable and documented evidence that can communicate LD strategic value, in particular, the practice of using measurement to aid LD and organizational decision making (Skyrme, 1994; Bahlis, 2006). Further, organizations spend millions on interventions each year, without knowing if, indeed, that intervention had an impact on employee behavior or organizational results (Terpstra, 1994; Bird & Beechler, 1995; Kraiger, McLinden, & Casper, 2004).

In SHRM's 2008 survey of LD professionals only 49% of respondents had a formal system and process for collecting metrics. In the same survey, 37% of respondents cited management's perception of LD contribution limited their effectiveness. Without sound strategic learning intelligence, LD functions cannot contribute to key learning decisions that affect strategic priorities

(i.e. direct their work), and ultimately, impact to organizational goals (Skyrme, 1994). Creating evidence of strategic value creates an entry point to reach the goal of a LD/Business synergistic relationship in which LD not only proactively supports business strategy, but is an integral part of its development (Wright, 2009). The currently favored measurement processes do not tell us if the activities we engage in are in fact addressing critical business priorities and if we have set up our LD department to be ready to respond to, or drive, dynamic organizational strategy.

With its expanded role and associated accountabilities, LD can aim toward a harmonious, synergistic state of strategic alignment as a worthwhile goal while positioning themselves to deliver strategically valuable work. A strategic approach to LD opens new opportunities for LD to communicate its value to strategic priorities by creating the links, or fit, between the internal and external environment. Strategically aligned LD functions focus on organizational survival and adaptation to changes in the business environment, thus, are aware and committed to the chain of impact that navigates how the work they do is in harmony with the goals of the organization. Appropriately aligned LD systems are designed in harmony with these overarching goals, providing direction for the work of the LD function, as well as fulfilling its purpose of developing employee skills to execute business strategy.

Systemic View. LD strategy is positioned within a systems framework (Kaufman, 2006; Rummler & Brache, 1995) to allow for direction that analyzes all of the strategic variables that may impact or be impacted by the organizational system, therefore, any performance solution delivered must consider the environment in which the learning will live. As such, strategically aligned LD functions use strategic planning systems that are appropriate to the context (Chakravarthy, 1987). The strategic planning system is the "focus, priority, and alignment" to ensure resources are deployed appropriately to the needs of the system (Rummler & Brache, 1995). The interaction and

interrelationships within systems dictate that any adjustments to a system must account for multiple levels and variables of performance (Rummler & Brache, 1995, p. 5; Januszewski & Molenda, 2008, p. 71), thus, improvements to LDSA involves the design of an LD subsystem that not only optimizes the relationship among the elements but also between the LD subsystem and its environment.

LD systems are designed iteratively, continuously adjusting to accommodate the current and future strategic priorities of organizations (Derven, 2012). As such, LD practitioners make modifications to the function in response to the authenticity (or reality) of the system they are charged with supporting. These modifications are continuously evolving through a process of reflection, construction of knowledge, and social interactions with other organizational members. Rather than following a prescribed set of steps to achieve LDSA, this approach subscribes to asking the right questions of organizational stakeholders that seek greater understanding of LDSA within the given context, while addressing the moving target of organizational strategy. A constructivist approach helps to uncover the shared understanding of where an organization is today while maintaining a practice of transparency and visibility in such efforts. The LD leader may then use this information to make decisions regarding the delivery and processes of the LD function most appropriately.

Future Forecasting. LD is called upon to make decisions that support current organizational needs (e.g. just in time training) as well as develop the workforce to be prepared to execute strategies in the future. Sharing responsibility with line managers, LD functions are charged with transforming the skills of the workforce to execute strategy today and prepare for the longer term (Gratton, et.al., 1999; Van Zwieten, 1999).

Organization leaders make decisions regarding training and non-training performance solutions

like any other organizational investment (Phillips & Phillips, 2007) noting learning as a strategically valuable asset (Bingham, 2009; Glaveli & Karassavidou, 2011; SHRM, 2008). Like other investments, current and anticipated strategic value must be considered prior to the commitment of funding and resources; therefore, LD functions must provide credible evidence to those making strategic learning decisions (Wright & Belcourt, 1995; Anderson, 2008) that LD proposed LD work is a sound strategic investment.

LD bundles. Single interventions are insufficient to resolve performance issues within organizations. Strategically aligned LD functions identify development needs and offer alternatives that address multiple performance needs (Ulrich, 1986) by offering human performance solutions offered in 'bundles' of practices, rather than single solutions to address performance issues (Sels, et.al., 2006). In addition to interventions, strategic learning solutions consider other factors that reinforce and support learning long term, such as environmental supports, tools, and communication of expectations, to name a few (Gilbert, 1978). Such functions also recognize learning as a means to high impact LD, rather than as ends in of themselves (Carlisle & Henrie, 1993). Organizations that facilitate strategically aligned LD functions perceive the LD function as a means to building competitive advantage and therefore, a strategically valuable contributor (Ulrich, 1986).

LDSA items link to performance needs

The thirteen factors of LDSA were then applied to Rummler & Brache (1995) nine performance variables to identify the areas in which LDSA may influence organizational performance at multiple levels (See Table 3).

Table 3. Performance influences of LDSA.

Goals	Design	Management
• Measure achievement toward goals (M&E)	• Performance measurement system appropriate to context (M&E)	• Ongoing dialogue with stakeholders (Communication)

• Shared goals (Collaboration; Coordination) • Ongoing dialogue of mutual interest goals (Communication) • Performance rewards have a direct connection to goals (Rewards) • Goals linked to current and desired, future state (Future Forecasting)	• LD designs have a direct application to business context (Business Knowledge; Content) • Just in time learning solutions match business needs (Content) • Cross-functional experiences (Coordination) • Context, barriers, and supports considered for performance design (Systemic view) • Performance improvement intervention coupled with multiple supports (Bundles)	• Strategic skills are actively developed (Strategy skills) • Senior leadership is secured and sustained (Leadership support) • Performance responsibility shared with line managers (Accountability)

Adapted from *Rummler, G.A. & Brache, A.P. (1995). Improving performance: How to manage the white space on the organizational chart. 2nd Ed. Jossey-Bass: San Francisco, CA. (p. 19).*

Clear goals, at each level, are required to allow for appropriate alignment to an organization's desired results. For example, this includes LDSA behaviors such as ongoing measurement toward achievement of goals at multiple levels (M&E) and creating an environment where mutually desirable goals are worked alongside business partners (Collaboration and Coordination). Design refers to how the structure is arranged in ways that facilitate achievement of the goals. Strategically aligned LD functions design their structure and outputs to have a direct application to the context of the business (Business Knowledge and Content) as well as offer just in time learning solutions that harness current 'hot' business issues that are of priority to business

partners. And, management refers to the various practices performed to ensure goals are being achieved. For example, promoting an ongoing dialogue with business partners (Communication) and developing the skills of the LD function to be able to execute strategic priorities (Strategy Skills).

Summary

The field has acknowledged a critical need to connect the alignment between LD function and firm strategy (Buller & McEvoy, 2012) and improve upon its evaluative practices so that valid demonstration of value contribution may be claimed. The connection between LD and business strategy is at the point where LD enables the strategically required business capabilities (Lukac & Frazier, 2012) with demonstration of this connection achieved through measurement and communication. Evaluating the effectiveness of interventions, comparing interventions, or only measuring participant reaction of an intervention is no longer adequate as sources of documented evidence of alignment nor draw the line of sight from LD activity to organizational goals. Processes such as strategy mapping and the identification and monitoring of performance indicators can provide LD functions with a meaningful prescriptive guideline for improving the practices associated with improving or advancing the levels of alignment.

For an LD function, the goals are derived from organizational goals and other customer requirements. The processes that support achievement of these goals is driven by the needs its internal customers and the way to measure function contribution is on the way it meets these customers' needs and the value it ultimately adds to the firm. Only then can the field claim its contribution toward strategic priorities and organizational goals, thus, communicating a holistic view of LDSA. The concept of LDSA has received increased attention from both practitioners and researchers, yet little is known about how to achieve it, how to assess where an LD function

stands today, and information about how to improve LDSA accomplishments. For both practical and theoretical purposes, the dimensions of this concept and its relationships to organizational performance variables are largely unknown. The purpose of this study is to contribute to the growing area of interest and exploration by developing and validating a measure of LDSA.

CHAPTER THREE: Methodology

The purpose of the study was to design, develop, and test a scale of LDSA. The study was guided by the stages of construct development and validation (Cronbach and Meehl, 1955) and the steps in scale development (Hinkin, 1998). Cronbach & Meehl (1955) guided the stages of construct development that "indicate what sorts of evidence can substantiate" an interpretation of construct validity and also direct the interpretation of such evidence. The stages included: a). articulating a set of theoretical concepts and their interrelations, b). measuring the hypothetical constructs proposed by the theory, and, c). empirically testing the hypothesized relationships. Within each of these stages, Hinkin's (1998) steps in scale development were used as guidelines that adhere to psychometric principles. The steps included: 1). item generation, 2). questionnaire administration, 3). initial item reduction, 4). confirmatory factor analysis, 5). convergent/discriminant validity. Step six, Replication, is outside the scope of this study; however, avenues for replication are addressed in Chapter five.

Construct validation

Studies of construct validity seek to answer *does this measure what it is intended to measure*? Cronbach and Meehl (1955) specify the purpose of construct validation studies as the types of "research required in developing tests" that go beyond "conventional views on validation" which may be considered inappropriate or insufficient when performed in isolation. The goal of construct validity is not to produce a test that may be claimed as 'valid,' but, rather, "the task is to state as definitely as possible the degree of validity the test is presumed to have" (Cronbach & Meehl, 1955). To bolster the degree of validity, multiple tests of validity were performed.

Many forms of validity are considered to appropriately address the primary question in construct validity - *does this measure what it is intended to measure?* These forms include:

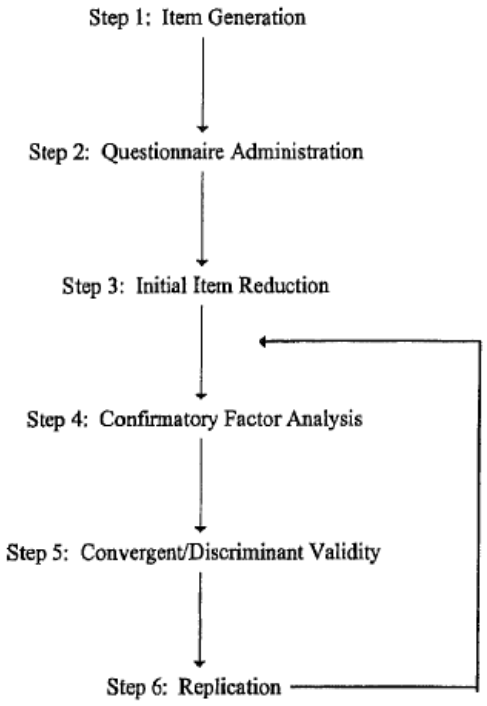
content validity, internal consistency reliabilities, convergent validity, and discriminant validity (Hinkin, 1998; Campbell & Fiske, 1959; Westen & Rosenthal, 2003). This study addresses each of these types of validity in efforts to answer if the proposed LDSA instrument does indeed capture the appropriate factors and items of LDSA. The research questions guiding this study are:

1. What are the factors and items to be included in a scale that predicts successful LDSA behaviors?
2. To what extent is the LDSA scale valid?
3. To what extent is the LDSA scale reliable?

Scale development

Hinkin's 1998 work on scale development was applied to the study design (Figure 1). This well-established framework "provides a conceptual framework and straightforward guide for the development of scales in accordance with established psychometric principles for use in field studies" (Hinkin, 1998). Dr. Hinkin provided permission to use his process in this dissertation study (See Appendix F).

Figure 1. Scale development process.



Hinkin, T. (1998). Scale development process. Used with permission.

Research Procedure

To answer the research questions, a research procedure was developed that applies the steps of Hinkin's scale development process (1998) and describes the major tasks within each step.

Research Question	**Steps**	
What are the factors and items to be included in a scale that predicts successful LDSA behaviors?	1. Item Generation	• Literature Review • Content Analysis
	2. Questionnaire Administration	• Pilot Instrument
	3. Initial Item Reduction	• Data collection • EFA • Scale refinement
To what extent is the LDSA scale valid?	4. Confirmatory Factor Analysis	• CFA • Internal consistency reliability
To what extent is the	5. Convergent/Discriminant	

LDSA scale reliable?	Analysis

Step 1: Item Generation

The exploration of determining what are the factors and items to be included in a scale that predicts successful LDSA behaviors began with generating a pool of items that demonstrate exemplar LDSA behavior in organizations. This exploration also addressed content validity, which is "the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose" (Haynes, Richard, & Kubany, 1995) and for research that focuses on performance (Cronbach & Meehl, 1955). Content validity estimates the degree of relevance and representativeness and measures such judgments. For the LDSA, content validity examines if all identified LDSA behaviors and associated dimensions indeed represent the construct of successful LDSA. Establishing content validity begins by "defining a universe of items and sampling systematically within this universe to establish the test" (Cronbach & Meehl, 1955).

Literature Review. A literature review was performed focusing within the fields of Training and Development (e.g. Human Resource Development, Human Resource Management, Performance Improvement) to seek practitioner conceptual and academic conceptual and empirical support to generate a list of potential LD items that define successful LDSA in organizations. Successful strategic alignment in Learning & Talent Development is defined as the total strategic value contribution of the Learning and Talent Development function. Academic journals (*Performance Improvement Quarterly, Human Resource Development Review, Human Resource Development Quarterly, Human Resource Development Journal, Strategic HR Review, Corporate Reputation Review, Human Resource Planning, Harvard Business Review, Journal of International Business Studies, Small Business Economics*), practitioner articles (*Training and Development, Society for*

Human Resource Management, American Society for Training & Development, HR Magazine, Training Magazine) and white papers on LD strategy were accessed using keywords: strategic alignment, alignment, LD alignment, strategic behaviors, and strategic alignment antecedents, to generate a list of demonstrated and recommended successful LDSA behaviors in organizations. This approach sought to develop well-rounded insight of both the academic and practitioner perceptions of LDSA that would serve as a strong starting point to capture all successful and relevant LDSA items (Hinkin, 1998; Hsieh & Shannon, 2005). Integrating evidence offered from both academic and practitioner points of view provides multiple sources of evidence as well as improves the opportunity for "… *acceptance* of the universe of content as defining the variable to be measured…" (Cronbach & Meehl, 1955, *emphasis in original*).

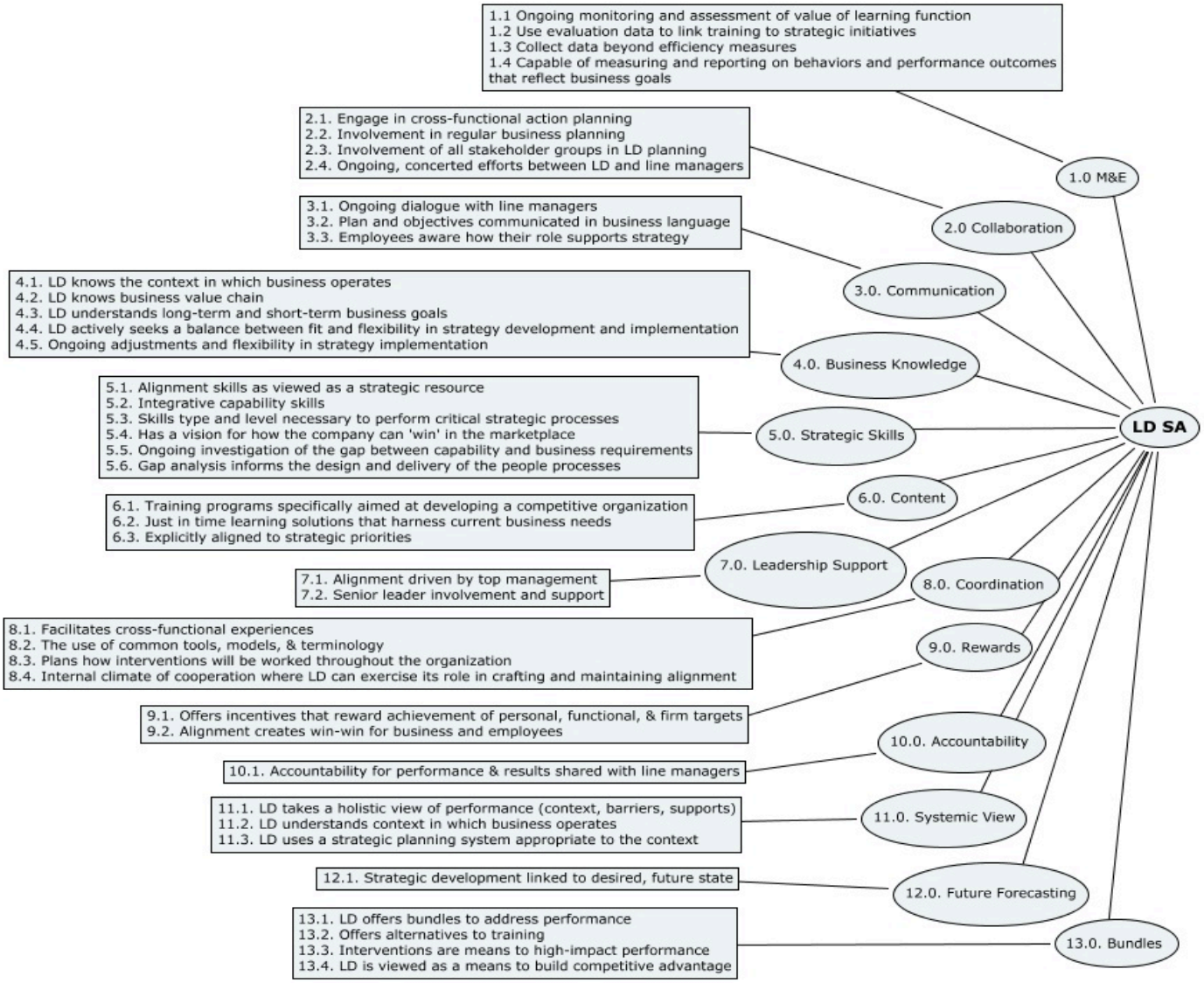
Articles from the last 30 years (1984-2014) were reviewed in two phases. In the first phase, article abstracts were reviewed to determine inclusion or exclusion from sample. For inclusion, the abstract offers reference to one or more behaviors that successfully achieved (or is proposed to achieve) LDSA meeting the definition of LDSA as the total strategic value contribution of the Learning and Development function. In contrast, articles that did not reference specific behavior(s) that may be engaged to facilitate successful LDSA were excluded. All articles deemed appropriate for inclusion were then read in the second phase to extract one or more LDSA successful LDSA behavior(s). All items were first recorded onto an Excel spreadsheet. A content analysis of the 69 captured items was then performed.

Content analysis. Content analysis is useful for analyzing the factors that may predict LDSA behaviors (Cronbach & Meehl, 1955). Qualitative content analysis is a research method "used to analyze text data" that goes beyond counting words to interpreting and categorizing large amounts of text. Analysis is performed systematically by "coding and identifying themes or patterns" (Hsieh

& Shannon, 2005). A directed approach to content analysis was performed, as this approach is useful to validate the newly developed LDSA framework and because it can help to derive coding schemes and relationships (Hsieh & Shannon, 2005; Haynes, Richard, & Kubany, 1995). Additionally, counting identified patterns of LDSA behavior allows, "for interpretation of the context associated with the use of the word of phase" (Hsieh & Shannon, 2005). For example, the LDSA dimension, LD bundles, represents behaviors reported by performance improvement practitioners commenting on the use of multiple interventions and solutions packages. The same behaviors are referred to as bundles in the HRM academic literature.

Patterns of LDSA successful behaviors were then coded according to themes, labeled as factors. Any behavior (i.e. item) that could not be categorized within the initial coding scheme was applied to a new code (i.e. factor). A total of 13 factors were derived from the patterns representing descriptive evidence of exemplar LDSA behaviors. This large number of factors may be due to capturing all possible LDSA behaviors from the sample with the possibility of outliers. I then determined the rank order of the factors by comparing the incidence or frequency of the successful LDSA behavior. Rank ordering provides additional information when interpreting the resulting factors during exploratory factor analysis. For example, a suspect factor may be excluded if it was also low ranking due to low number of items within a factor. A prototype of the LDSA model was developed with all factors represented (See Figure 2 and Appendix E).

Figure 2. Preliminary model of LDSA factors and items.



The language used to describe the items of strategic alignment was tailored to respondents working in the LD function by using training industry terms, as, for example, needs assessment, training evaluation, and instructional design. Each item represented a single issue to avoid 'double-barreled' items (Hinkin, 1998). Attention was given to the balance of coverage of the construct and arguments in favor of shorter scales (Hinkin, 1998). A goal of retaining four to six factors within

each dimension was also considered; however, the final number of dimensions and corresponding factors was determined based on the evidence of the content validity assessment (Hinkin, 1998). To determine the importance of the proposed LDSA behavior according to the perceptions of respondents, a five-point Likert scale indicating *very important, important, moderately important, of little importance, unimportant* was used in all stages of data collection. A code was then applied to each factor and corresponding item (See Table 4) below.

Table 4. Labeling of Factors

Factor	**Items**
Measurement & Evaluation	ME2-ME12
Collaboration	Coll1-Coll12
Communication	Comm1-Comm6
Business Knowledge	BusKn1-BusKn7
Strategic Skills	SS1-SS7
Content	Cont1-Cont3
Leadership Support	LdrSpt1-LdrSpt4
Coordination	Coord1-Coord4
Rewards	Rw1-Rw2
Accountability	Acct1-Acct4
Systemic View	SV1-SV3
Future Forecasting	FF1-FF3
Intervention Bundles	Bnd1-Bnd3

Step 2. Questionnaire Administration

Applying step 2 of Hinkin's (1998) scale development process, the LDSA was administered to three independent samples in multiple stages of data collection: a pilot study in stage one to detect early warnings of potential weaknesses in the instrument and/or study design, and two main studies to determine the factor structure of the instrument and to confirm the factor structure of the instrument.

Pilot Study

A pilot study was conducted to perform a small scale, early run of the instrument so that early warnings of potential weaknesses in the instrument and/or study design may be detected prior to the main studies. Piloting is commonly performed in research studies and in the development of training content with the intention of assessing the efficiency of materials or tools prior to the experiment or study (White & Branch, 2001). Subject matter experts and end users serve as the initial responders of instruments that may provide feedback about the comprehensiveness and interpretability of the instrument wording, check for ambiguities, and verify the time required to sufficiently respond to all survey items. Questions to expert respondents focused on the content, cognition, and usability of the instrument (Fowler, 1995). Specifically, pilot responders were asked to complete the survey as well as offer feedback regarding:

- Content: Are the questions appropriately relevant to strategic alignment behaviors in LD functions? *(Comment space allotted for each item)*
- Cognition: Are the questions understandable for respondents consistently? *(Comment space allotted for each item)*
- Usability: Is the instrument easy to use? And, How much time was required to complete the survey? *(Open-ended question at end of survey)*

Pilot target population and sample procedures. Experts in LDSA were defined as academics of the field of Human Resource Development and Training and Development and practitioners with awarded field experience of strategic Learning and Talent Development. These experts are selected as they represent academics and practitioners that are well informed with the behaviors that they research, that they themselves demonstrated or directed others to demonstrate to achieve LDSA. Experience is determined by achievement of an award for demonstrating strategic alignment behaviors provided by a Learning & Talent Development association (e.g. ASTD, SHRM). Expert reviewers will include HR/LD strategy professors in the United States, winners of Training Top 125, and winners of ASTD BEST award.

HR/LD strategy professors in the United States. The academic point of view of exemplary LDSA behaviors was attained from feedback from professors of Human Resource Management, Human Resource Development, and Training and Development in the United States. The feedback from HRM/LD professors is sought to provide thought leadership on exemplary strategic behaviors in organizations. SHRM (shrm.org) provides a directory of the 55 full-time, graduate HRM/HRD/LD programs in the U.S. on their website that may be accessed free of charge. The website of the identified research institution HR/HRD/LD department was accessed to identify professors for inclusion. Professors that teach strategic HRM, HRD, and LD at the graduate level are included. Professors that do not do not teach strategic HRM, HRD or LD at the graduate level was excluded from the sample.

Training Top 125. The Training Top 125 is an annual award offered by Training Magazine (trainingmag.com). The award recognizes the overall performance of the function, rather than just the results of interventions. Judges of entries are Training Magazine editors and those training teams that have been recognized as a Training Top 125 for four consecutive years.

Criteria for judges includes: demonstrable results, progress of programs, innovation, success factors, training strategically linked to business goals, corporate commitment to training, the potential applicability of best practices companywide. Past winners are announced in an annual issue of the magazine with winning company information provided on the Training Magazine website.

ASTD BEST Award. "The ASTD BEST Awards recognize organizations that demonstrate enterprise-wide success as a result of employee learning and development" (atd.org). The award winning LD functions "use the learning function as a strategic business tool to get results." Criteria for award includes:

- Learning has an enterprise-wide role: involved in the executive team, creating solutions to business issues, and setting organizational strategy.
- Learning has value in the organization's culture: learning opportunities for employees, C-level involvement, learning for growth of the organization, and innovation.
- Learning links to individual and organizational performance: alignment with the business, efficiency, measurement of the effectiveness of learning, and success with non-training solutions for business needs.
- Investment is made in learning and performance initiatives.

A full list of current and past winners was available on the ASTD website (atd.org). Current year winners were also highlighted in an annual issue of T&D Magazine, sponsored by ASTD.

Recruiting. Participants were recruited through personalized, direct contact via Email with an invitation to provide feedback for the LDSA scale prototype. Recruitment methods and number of target participants are noted in Table 5 below.

Table 5. Pilot study expert participants, resources, methods, number of potential expert reviewers.

Expert Participant	Resource	Method	# Potential Respondents
HRM/LD Professors in United States	SHRM list of graduate programs in HRM/LD in United States *http://www.shrm.org/ABOUT/FOUNDATION/HRDEGREEPROGRAMS/GRADUATE/Pages/default.aspx*	Email	55 programs
Training Top 125 (in 2014)	Training Magazine list of top 125 LD functions in 2014 http://www.trainingmag.com/sites/default/files/2014_01_Training_Top_125_1.pdf	Email	125 LD functions
ASTD BEST Award	ASTD list of BEST Award winners from 2005-2013 http://www.astd.org/About/ASTD-Awards/Best-Awards	Email	2005: 29 2006: 39 2007: 42 2008: 30 2009: 39 2010: 31 2011: 32 2012: 30 2013: 28
Total potential expert reviewers **480**			

Sample size. Sample sizes for scale development studies vary according to the purposes of the stage of scale development. For initial scale development pilot study the recommendations ranges from 24-36 respondents. Johanson and Brooks (2010) recommend 30 as a minimum for the initial scale development.

Non-response techniques. With 480 potential respondents and a minimum of 30 expert respondents, the minimum projected response rate is 6%. If the minimum response rate was not achieved, non-response techniques were employed (Schaefer & Dillman, 1998; Sheehan, 2006).

If response was not received from an expert reviewer, a follow-up Email was sent to the prospective reviewer with a second invitation to participate in the pilot study. All expert reviewers were also invited to submit their Email along with a completed survey to receive results of the study.

Administration. Expert reviewers of the LDSA scale were contacted directly through Email. Experts were provided with instructions for responding to the survey in an expert reviewer

packet. The packet (Appendix B) includes instructions for responding to the survey, a preliminary version of the LDSA scale, and contact information should respondents have questions about completing the survey. The survey was available through an online link to Survey Gizmo. Survey Gizmo offers input features compatible with mobile devices, tablets, and desktop computers. The site also applies top security encryption methods (e.g. government agencies) and performs daily monitoring and virus checks to ensure data is secure and protected.

Data management. Confidentiality of collected data was maintained using coded identifiers of respondents. Each study participant was assigned a random, unique identifier. A password-protected master key was maintained by only the researcher to organize identifying information and data. The data will be destroyed at the close of the study.

Data analysis. Pilot data was reviewed for design feedback, specifically, the usability of the instrument, the time required to complete the scale, and clarity regarding the wording of the items and the instructions. Modifications were made regarding the wording of several questions and the directions were clarified to orient the perspective of the respondent. The content validity estimate was also performed to assess the extent to which the items identified on the LDSA scale represent successful strategic alignment facilitators in Learning & Talent Development functions.

Instrument revisions. Feedback from experts in the pilot study were incorporated into the refinement of the LDSA scale and discussed in the results section. Survey responses from pilot participants were not included for exploratory and confirmatory factor analyses.

Step 3. Initial Item Reduction

Determining the factor structure of the LDSA scale began with initial item reduction. Exploratory factor analysis was performed to determine how the proposed LDSA factors and items relate. Confirmatory factor analysis was then performed to confirm the underlying structure of the

LDSA scale.

Data collection

Data collection for the two main studies was performed during October 9 – November 18, 2014 with the collected data split into two independent samples to support exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) calculations. This process addressed determination and then confirmation of the factor structure. EFA calculations considered all of the potential factors and then reduced the initial set of factors and items. CFA calculations then considered the remaining factors and items, thereby, requiring less sample size (i.e. *N:p* improved). Further, splitting the data into two independent samples stabilizes the factors and shows consistently in measuring LDSA, moving toward greater generalizability.

Target population and sample procedures. In effort to determine and confirm the factor structure of the LDSA instrument, the studies sought respondents that have experienced or directed others to engage and foster strategic alignment behaviors within organizations. As such, the target population included members of the International Society for Performance Improvement (ISPI), members of the Society for Human Resource Management (SHRM), members of the Association for Training & Development (ATD), and HRM, HRD, LD practitioner groups on social media.

ISPI. ISPI members are described by ISPI as,

> *The International Society for Performance Improvement (ISPI) and its members use evidence-based performance improvement research and practices to affect sustainable, measurable results, and add value to stakeholders in the private, public, and social sectors. Founded in 1962, ISPI is the leading international association dedicated to improving productivity and competence in the workplace. ISPI represents performance improvement professionals throughout the United States, Canada, and 44 other countries. (ISPI.org).*

Members of ISPI approach their profession with a unified focus on the learning system as

means toward sustainable competitive advantage:

> *An effective human resource system requires a focus on performance aligned with an outstanding learning system. To improve performance, we must manage the human performance improvement system. That system must be the core of an organization's human resource efforts if it is to maintain its competitiveness in the long run. (Adapted from ISPI.org).*

SHRM. SHRM is the world's largest human resource management association. The association supports the development and cooperative of more than 275,000 members in over 160 countries on human resource management and human resource development needs, as in for example: accessibility to practical tools, collaboration outlets for HR topics, publications, and research (shrm.org).

ATD. ATD is the largest talent development association in the world representing thousands of members in more than 120 countries. ATD supports practitioners and academics with resource materials, workshops, and collaboration opportunities. The current focus of the association gives attention to "…link the development of people, learning, and performance to individual and organizational results" (atd.org).

HRM, HRD, LD social media. HRM, HRD, and LD practitioners may or may not possess membership to SHRM or ATD, therefore, social media outlets were also used to capture practitioners that may use social media as an alternative (or along with) SHRM or ATD membership. A search was performed in LinkedIN, the largest online professional network in the world, to identify potential HRM, HRD, and LD groups, as in for example, LinkedIN: HR, Managing the Learning function, and Human Performance Practitioners.

Recruiting. Participants were recruited through direct contact via Email, social media, and in person with an invitation to provide feedback for the LDSA scale. ISPI members were invited using

a variety of sources and methods. Members of the ISPI Michigan chapter were contacted in person through monthly chapter meetings. I introduced the LDSA scale study at the end of another presenter's session in April to about 30 members. I also presented at the ISPI MI practitioner's meeting (the largest chapter meeting of the year) in May. The ISPI MI chapter president offered to distribute my survey to Michigan chapter members through an Email distribution list of 800 Email recipients. ISPI global members were contacted through social media and request for participation of the survey in the Certified Performance Technologist (CPT) newsletter. Members of ISPI may hold membership at the global level or local level, or both. Therefore, I also contacted the ISPI chapter administrator to provide an invitation to the 22 U.S. chapter presidents and their respective memberships to participate in the study. Members of social media groups on LinkedIn (e.g. LinkedIN: HR, Managing the Learning function, Human Performance Practitioners) were notified of the study with frequent postings on the blog page for each group. Similar to ISPI, ASTD membership may be global or local. To capture all potential members, I also emailed personally addressed requests for participation to each ASTD chapter president with a request to circulate the survey to all of its membership. I also posted the survey on the ASTD global LinkedIN page.

Sample size. Sample sizes for EFA and CFA calculations range by total number of recommended respondents by calculation (e.g. more for one than the other) or by ratio of respondent to number of variables (e.g. 1:4 to 1:10). This study addresses each of these recommendations by splitting the sample into two independent samples, with a goal of 200 for EFA and 150 for CFA in effort to increase the "likelihood of attaining statistical significance" of sample sizes in scale development (Hinkin, 1998).

Non-response techniques. When the minimum response rate was not achieved (low *N:p* ratios), non-response techniques were employed (Schaefer & Dillman, 1998; Sheehan, 2006). For example,

when low response was experienced within the first couple of weeks of the study release, a follow-up Email was sent with a second invitation to participate in the study. All reviewers were also invited to submit their Email along with a completed survey to receive results of the study. Chapter presidents were contacted again to assist with the promotion of the invitation to participate (e.g. rerun invitation, social networking). The ISPI global membership director was also contacted to request assistance with promotion of the invitation to participate (e.g. rerun invitation, CPT newsletter, placement of invitation within newsletter to improve visibility).

Administration. Respondents were provided with a practitioner validation packet (Appendix C) that includes instructions for responding to the survey and contact information should any respondents have questions about completing the survey. The studies were administered to practitioners from October 9 – November 18, 2014 with a link to the LDSA scale using Survey Gizmo. Survey Gizmo offers input features compatible with mobile devices, tablets, and desktop computers. The site also applies top security encryption methods (e.g. government agencies) and performs daily monitoring and virus checks to ensure data is secure and protected.

Data management. Confidentiality of collected data was maintained by using coded identifiers of respondents. Each study participant was assigned a random, unique identifier. A password-protected master key was maintained by me and used to organize identifying information and data. The data will be destroyed at the close of the study.

Exploratory factor analysis (EFA). EFA was performed to determine how the LDSA factors relate to all of the items referenced in the literature review. This process showed the amount of variance explained by the entire factor solution and examined the degree to which factors correlated to the LDSA construct. A five-step protocol was applied to refine the LDSA scale and develop the initial factor structure: (a) Determine if the data is suitable for factor analysis, (b) Determine factor

extraction, (c) Establish criteria for determining factor extraction, (d) select rotational method, and, (e) interpretation and labeling of factors (Williams, Onsman, & Brown, 2010). The EFA testing and interpretation is described in Table 6 below. Exploratory factor analysis was performed using IBM SPSS Version 22.

Table 6. Exploratory Factor Analysis testing and interpretation

Step	Test & Interpretation
(a) Determine if data is suitable for factor analysis	• Highest range of item mean ≥ 4 • Meet content validity estimate (I-CVI) ≥ .8 • Singularity of the data (high number of values >.5 and any that were >.9) • # items per subscale (3-5 per subscale)
(b) Determine factor extraction	• Principal axis
(c) Establish criteria for determining factor extraction	• Eigenvalue • Variance • Scree plot "elbow" • Communalities • Cross-loadings
(d) Select rotational method	• Oblique
(e) Interpretation & labeling of factors	• Factor loadings, Themes

Step 4. Confirmatory Factor Analysis

CFA testing was performed to test how well the hypothesized LDSA model fit with the data and to minimize the differences between them. When differences could no longer be reduced, the CFA solution was then determined to converge. This process confirmed the number of factors and the pattern of item-factor loadings. Multiple tests were performed to test the goodness of fit of the quality of the factor structure: (a) Goodness of Fit Index (GFI) (b) Root Mean Squared Error of Approximation (RMSEA) (c) RMSEA 90% confidence interval (d) Chi-square (x^2) (e) Ratio of chi-square to degrees of freedom (x^2/df), and (f) Comparative Fit Index (CFI). The metrics used and rules for interpretation are noted in Table 7 below. IBM SPSS AMOS 22.0 was used for CFA.

Table 7. Confirmatory factor analysis metrics and interpretation

Metric	**Interpretation**
GFI	• Between 0 and 1; Closer to 1 indicate good fit
RMSEA	• < .05 "close approximate fit" • Within .051-.08 "reasonable approximate fit" • > .10 "poor fit"
x^2/df	• < .05 acceptable • Between 1 (good fit) – 2 (acceptable fit)
p	• >.05 "close fit of model"
CFI	• Between 0 to 1; Closest to 1 indicate good fit • ≥ .095 excellent fit

Step 5: Convergent/Discriminant analysis

Convergent and discriminant validity examined the degree to which two measures are related (convergent) or unrelated (discriminant) (Campbell & Fiske, 1959; Westen & Rosenthal, 2003). Specific questions were coded on the LDSA scale, noting their predicted convergence or divergence from strategic alignment in Learning & Talent Development functions. Both forms of validity were examined through transactional and transformational Learning function behaviors. Discriminant validity is directed toward transactional Learning functions whose focus is primarily on administrative functions and respond to training requests without concern for purpose (Carlisle & Henrie, 1993) or connection to the performance system. As such, the primary focus rests with activity, rather than results. Convergent validity is directed toward transformational Learning functions whose focus is on worthy, or strategically valuable, contributions. These functional members adhere to the practice that interventions are means toward desired ends, rather than viewing interventions as ends. Primarily, transformational Learning functions align learning interventions with organizational objectives and focus on the results of such accomplishments. The differences of transactional and transformational are noted in Table 8 below.

Table 8. Transactional v. Transformational HRM/HRD

Factor	**Transactional**	**Transformational**
Measurement & Evaluation	Process-oriented activity; Focus on activity, not results (Ulrich, 1998)	Analyze multiple sources of data (Mothersell, et. al., 2008;)
Collaboration	Process work as it comes to them (Gavino, Wayne, & Erdogan, 2012;	Builds business partnerships (Mothersell, et. al., 2008; Caldwell, 2008; Ulrich, et.al, 1995) Build collaborative win-win relationships (Mothersell, et. al., 2008;)
Communication	Distill employment information (Gavino, Wayne, & Erdogan, 2012;	Negotiation and marketing (Mothersell, et. al., 2008;) Communication and awareness of how to support business strategy (Ulrich, 1998)
Business	Activity meets regulatory and	Customer-driven services (Mothersell, et. al.,

Knowledge	compliance regulations (Gavino, Wayne, & Erdogan, 2012;	2008;) Products & services support business goals (Mothersell, et. al., 2008; (Gavino, Wayne, & Erdogan, 2012; Ulrich, et.al, 1995)
Strategic Skills	Administrative tasks (Mothersell, et. al., 2008; Gavino, Wayne, & Erdogan, 2012; Ulrich, 1998)	Perform gap analysis (Mothersell, et. al., 2008;) Continuous learning (Mothersell, et. al., 2008;)
Content	Off-the-shelf, canned content (Stolovich & Keeps, 2011)	Tailored to business needs (Mothersell, et. al., 2008; Ulrich, et.al, 1995)
Leadership	Perceived as 'police' of policy & procedure (Caldwell, 2008)	Give and receive empowerment (Gavino, Wayne, & Erdogan, 2012)
Coordination	Consult on the implementation of HR policies (Caldwell, 2003)	Consultants with multiple functions on organizational performance issues (Mothersell, et. al., 2008;)
Rewards	Connected to activity (Ulrich & Brockbank, 2005; Huselid, et.al., 1997)	Connected to business goals and results (Ulrich, et.al, 1995)
Accountability	Execute work as directed (non-discretionary) (Gavino, Wayne, & Erdogan, 2012; Ulrich, et.al, 1995)	Proactively seek performance feedback (Mothersell, et. al., 2008;) Takes initiative (Mothersell, et. al., 2008;)
Systemic View	Focus on HR activity only; Little or no connection to organizational system (Ulrich & Beatty, 2001)	Drivers of enterprise-wide performance improvement (Mothersell, et. al., 2008; Ulrich, et.al, 1995) Apply whole system thinking (Mothersell, et. al., 2008; Caldwell, 2008)
Future Forecasting	Lack of involvement in planning or executing future goals (Barney & Wright, 1998)	Design toward development & recruitment of human capital (Gavino, Wayne, & Erdogan, 2012; Predict business partner performance (Caldwell, 2008)
Intervention Bundles	Offer off-the-shelf, canned training (Swanson, 2007)	Multiple intervention supports (Tadic & Pivac, 2014; Ulrich, 1998; Swanson, 2007)

Discriminant and convergent items were added within the appropriate factor and coded into the

LDSA scale. See Table 9 for discriminant and convergent items, factors, and factor codes.

Table 9. Discriminant and convergent items, factors, and factor codes

Factor	**Item**	**Convergent**	**Item**	**Discriminant**
M&E	ME12	The Learning function measures and evaluates its performance, even when not asked.	ME13	The Learning function focuses on processes, not results.
Collaboration	Coll13	The opinions of the Learning function receive serious consideration.	Coll14	The Learning function provides training simply because someone asked for training.
Communication	Comm3	All employees are aware of how their role supports strategy	Comm7	The Learning function communicates activity, not results.
Business Knowledge	BusKn8	Members of the Learning function have opportunities to learn and grow their business knowledge	BusKn9	The Learning function offers ad hoc training that is not connected to the business strategy.
Strategic Skills	SS4	LD members have the skill level(s) necessary to execute critical strategic priorities.	SS8	The skills of the Learning function are easily duplicated.
Content	Cont4	Learners have the opportunity to perform well with challenging content.	Cont5	The Learning function supplies canned, off-the-shelf training programs.
Leadership Support	LdrSpt3	Senior leadership actively supports LD alignment efforts.	LdrSpt5	The Learning function has little or no support from organizational leaders.
Coordination	Coord5	All employees are committed to	Coord6	The quality of the Learning

		doing quality work.		function is not evaluated.
Rewards	Rw3	Members of the organization receive recognition and positive feedback for contributions.	Rw4	The Learning function offers rewards for activity, not results.
Accountability	Acct5	The Learning function receives ongoing feedback about its performance.	Acct6	The Learning function provides results, only when asked to do so.
Systemic View	SV4	The Learning function understands how it efforts are linked to the organization's mission.	SV5	The Learning function operates independently of other departments in the organization.
Future Forecasting	FF3	The Learning function transforms the basic skills and aspirations of the workforce to prepare for competing in the long term.	FF4	The Learning function is not involved in planning for the organization's future.
Intervention Bundles	Bund2	Interventions are perceived as means to achieve high-impact performance.	Bund3	The Learning function offers only training programs.

Step 6: Replication

Study replication of the newly developed LDSA instrument may confirm the testing performed in this study. Retesting the LDSA scale is outside the scope of this study; however, future studies of the newly developed LDSA scale may offer further interpretation of predicting successful LDSA behaviors of practitioners in organizations.

Summary

The purpose of this study is to design, develop, and test a scale of LDSA. The overarching study design was guided by Cronbach & Meehl (1955) construct development stages. Specific steps in scale development were guided by the procedures described by Hinkin, 1998. An expert panel was invited to provide feedback regarding the content, cognition, and usability of the instrument. Feedback from the expert panel was reviewed for revisions to the design of the instrument. Two independent samples of ISPI, ASTD, and HRM and HRD practitioners were

then invited to participate in the study to determine and then confirm the factor structure of the instrument.

CHAPTER FOUR: Findings and Results

The purpose of the study was to develop construct validation of strategic alignment in Learning & Talent development functions according to the perceptions of HRM practitioners and academics, guided by these research questions:

1. What are the factors and items to be included in a scale that predicts successful strategic alignment in Learning & Talent Development functions?
2. To what extent is the LDSA scale valid?
3. To what extent is the LDSA scale reliable?

The study was conducted in multiple phases. The first phase included generating the scale items by performing a literature review to capture all items recommended that facilitate or demonstrate strategic alignment in Learning & Talent Development functions. The initial design of the LDSA scale started with 69 items that were captured through a review of conceptual and empirical literature. About double the number of items were recorded with a plan to reduce the items in future phases (Hinkin, 1998). Data was then collected in one pilot study and two main studies. The pilot study was administered to analyze the content, usability, cognition, and clarity of the instrument. The first main study was administered to explore the factor structure of the LDSA scale, and the second main study was administered to confirm the factor structure of the LDSA scale. An overview of the study design can be found in Appendix G.

Pilot Study

A pilot study was conducted to assess the content validity of the newly developed LDSA scale. A total of 480 pilot participants were recruited through direct contact via Email with an invitation to provide feedback for the LDSA scale prototype. The pilot survey was available to respondents from July 10, 2014 to July 31, 2014. To improve the response rate, I contacted the

chapter president of ISPI MI for assistance with promoting the pilot study. The survey was extended to September 19, 2014. A total of 35 responses were received (0.07 response rate), of those, 26 were complete and 9 incomplete. A total of 26 responses were used for analysis and included HRM/HRD academics (13), ISPI Board members (4), ATD BEST award winners (9).

Design feedback findings

Pilot participants provided design feedback regarding the usability, time required to take the survey, and the clarity of the questions.

Usability. Four of the pilot respondents addressed the question, "*Was this Learning & Talent Development Strategic Alignment scale easy to use?"* If a participant responded no, the participant was then asked to describe why it was not easy to use. All four respondents to this question indicated the survey was easy to use.

Time required. Five of the pilot participants responded to the question, "*How much time did it take you to complete this survey?"* Participants were provided with four drop-down options to choose from: 0-15 minutes, 16-30 minutes, 31-45 minutes, more than 45 minutes. Four out of the five (80%) participants of this question responded as 0-15 minutes to complete the survey and one respondent (20%) indicated 16-30 minutes. While not recorded on the electronic survey, several respondents (and potential respondents) verbally noted the length of the scale as a potential barrier to the anticipated response rate for future versions.

Content clarity*.** Respondents offered feedback from the open-ended question, **"What question(s) could use further clarification or would benefit from rewording and how would you change the question to be clearer*?" Of the 13 factors, nine were adjusted using feedback from survey respondents.

Pilot Content Validity

Lawshe's (1975) content validity ratio was applied to calculate the representativeness of the items identified on the LDSA scale by expert reviewers. A critical values table was used to determine level of appropriateness of each item (≥ .36 - .42) with CVR = [(E - (N / 2)) / (N / 2)]. A summary of the results is noted in Table 10 below.

Table 10. Pilot sample content validity ratio

Item Code	CVR	Item Code	CVR
ME2	.77	BUSKN7	.60
ME3	.92	SS1	.50
ME4	.58	SS2	**.33**
ME5	.75	SS3	.67
ME6	.92	SS4	.50
ME7	.50	SS5	.63
ME8	**.25**	SS6	.67
ME9	.42	SS6	.75
ME10	.57	CONT1	.75
ME11	**.08**	CONT2	.75
ME12	.67	CONT3	1.00
COLL1	.67	LDRSPT1	.75
COLL2	.75	LDRSPT2	.75
COLL3	.65	LDRSPT3	.92
COLL4	.75	LDRSPT4	.83
COLL5	.58	COORD1	.65
COLL6	.83	COORD2	.50
COLL7	.91	COORD3	.44
COLL8	1.00	COORD4	.84
COLL9	.63	RW1	.67
COLL10	.63	RW2	.91
COLL11	.91	ACCT1	.63
COLL12	.74	ACCT2	.67
COMM1	.83	ACCT3	.91
COMM2	.91	ACCT4	.67
COMM3	.55	SV1	.92
COMM4	.57	SV2	.83
COMM5	.74	SV3	.92
COMM6	.65	FF1	.84
BUSKN1	.83	FF2	.83
BUSKN2	.84	FF3	.84
BUSKN3	.74	BUND1	**.17**
BUSKN4	.83	BUND2	.50
BUSKN5	.67	BUND3	.63
BUSKN6	.63		

The four items bolded in Table 10 (ME8, ME11, SS2, BUND1) did not meet the minimum content validity ratio and were excluded from the scale. In other words, the experts rated these four items as unessential for strategic alignment success in Learning & Talent Development functions.

Design Revisions

The LDSA scale was then updated to reflect the rewording of questions using the feedback from pilot study one participants. One respondent also offered feedback regarding the clarity of the survey directions noting, "*…am I supposed to answer these questions based on my perception of their importance or based on how my organization/client organizations prioritize? Those would be two very different data sets and if you have some answering personally and others answering organizationally it could really twist up the data*." As the focus of the study was to derive the practitioner and academic perceptions of Learning & Talent Development strategic alignment behaviors, the directions were altered to emphasize participants responses are to be based on *one's own perception* of the importance of each of the Learning & Talent Development strategic alignment behaviors. A summary of revisions made to the LDSA items is noted in Appendix H.

Study 1

The first main study was then performed to explore the initial factor structure of the LDSA instrument. The focus of this study was to determine an appropriate number of items to represent each factor adequately while being mindful of the potential for survey fatigue. HRM/HRD academics and ATD BEST award winners that had not responded to the pilot survey were re-invited to participate. Chapter presidents of local ATD (110 chapters) and ISPI chapters (1 chapter administrator; 24 chapters estimated) were contacted via Email to request assistance with circulating the LDSA scale to their memberships. Group members of LinkedIN Chief

Learning Officer (26,293), Learning and Talent Development (20,554), and Managing the Learning function (263) were contacted via link to the survey posted on each group announcements page online. A total of 47,244 participants were contacted via Email (chapters) or via LinkedIn posting, with a total of 99 responses received (.002 response rate). Of these, 66 responses were complete. HRM/HRD academics represented 18 responses, and the remaining 48 were practitioners. The link to access the survey was available to respondents from October 9, 2014- October 22, 2014 accessible on SurveyGizmo.

Exploratory Factor Analysis

To perform the exploratory factor analysis (EFA) in efforts to refine the scale and to develop an initial factor structure, a five-step protocol was applied (Williams, Onsman, & Brown, 2010):

Step 1. Determine if data is suitable for factor analysis

Step 2: Determine factor extraction

Step 3: Establish criteria for determining factor extraction

Step 4: Select rotational method

Step 5: Interpretation and labeling of factors

Step 1: Determine if data is suitable for factor analysis

Factor analyses are complex techniques in which sample size recommendations vary widely (Marsh, et al, 1988; MacCallum, et al, 1999; MacCallum et al, 2001) More current sample size adequacy recommendations are those of Comrey and Lee (2013): 100 poor, 200 fair, 300 good, 500 very good, 1000+ excellent. Other references to sample size in factor analyses are assessed by the sample to variable ratio (N:*p*). These rules of thumb range from 3:1 to 10:1 (Hinkin, 1998). Others cite this rule of thumb in sample size for factor analysis as misleading

noting sample sizes for factor analyses can be relatively small depending on high communalities. The number of respondents of the main study and the ratio of sample to variables was low; therefore, additional screening of the items was performed in efforts to improve the sample to variable ratio. The additional inclusion and exclusion criteria included:

Criteria 1. Items that fall within the highest range of item Mean ≥ 4 included

Criteria 2: Item meets content validity estimate (I-CVI) ≥ .8

Criteria 3: Redundancy of items (opportunities for consolidation with other items, double barreled items) are excluded

Criteria 4. Number of items per subscale

Criteria 1: Means. To determine the mean per item and to address the question of what items scored the highest means among respondents, means were arranged into ranges of scores keeping in line with the level of importance scored on the Learning & Talent Development strategic alignment scale (including the most important and most descriptive items).

Level of Importance	**Range**
Very important	4.01 - 5.00
Important	3.01 - 4.00
Moderately important	2.01 – 3.00
Of little importance	1.01 – 2.00
Unimportant	0.00 – 1.00

Two items (ME7, SS2) fell below the very important range of means and were excluded from the scale.

*Criteria 2: Item meets CVI minimum (meets content validity standards)***.** A content validity index minimum of .80 is recommended for new measures (Davis, 1992). Seven items did not meet the

minimum threshold and were excluded from the scale (ME4, ME8, ME10, COLL5, COLL13, SS2, ME7) were excluded.

Study 1 Content validity

The content validity index by item (I-CVI) and by scale (S-CVI) was applied as an index of interrater agreement (Polit & Beck, 2006). As these indices do not take chance into account (e.g. with four judges, a 25% chance of agreement), Lynn's (1986) scale to determine acceptability that addresses this chance for error was applied.

The I-CVI was calculated by dichotomizing the scale into the most important (ratings 4 and 5 per item) and unimportant (ratings 3, 2, 1 per item) and then dividing the number of respondents per item. This calculation demonstrates the proportion of experts that rated each item as representing very important and moderately important to defining strategic alignment in Learning & Talent Development functions. A summary of the results demonstrating the proportion of items that were rated 4 or 5 by the experts are noted in Table 11 below.

Table 11. I-CVI results

Scale	% of total items	Items
≥ .90	50%	ME3; ME5; ME6; COLL4; COLL6; COLL7; COLL8; COLL9; COLL11; COLL12; COMM1; COMM5; COMM6; BUSKN1; BUSKN2; BUSKN3; BUSKN4; SS3; SS6; SS7; CONT2; CONT3; LDRSPT2, LDRSPT3; COORD4; COORD5; RW1; RW2; RW3; ACCT3; ACCT5; SV2; SV3; SV4; FF1; FF2; FF3
.80 - .899	41%	ME2; ME9; ME11; ME12; COLL1; COLL2; COLL3; COLL10; COMM2; COMM3; COMM4; COMM6; BUSKN5; BUSKN6; BUSKN7; SS1; SS4; SS5; CONT1; CONT4; LDRSPT1; LDTSPT4; COORD1; COORD2; COORD3; ACCT1; ACCT2; ACCT3; BUND1; BUND2

.70 - .799	8%	ME4; ME8; ME10; COLL5; COLL13; SS2
≤ .69	1%	ME7

The S-CVI was then calculated to determine the average (i.e. S-CVI/Ave) for all items on the scale (overall scale rating). This is calculated by totaling each item CVI and then dividing that by the total number of items that were rated as 4 or 5 by the experts. The total S-CVI/Ave for the scale was .84 (57.74/69). This total number demonstrates exceeding the threshold considering the sample size (Lynn, 1986) for the total scale agreement average. The seven individual items that were rated less than .80 agreement of very important or moderately important (ME4, ME8, ME10, COLL5, COLL13, SS2, ME7) were excluded from the scale.

The S-CVI was also dichotomized by group for award-winning practitioners in strategic alignment and academics of HRD/HRM and calculated (See Table 12).

Table 12. S-CVI by group role.

Group Role	**# Experts**	**S-CVI**
Award wining practitioner	9	.91
HRD/HRM academic	15	.85

This overall S-CVI score passed minimum thresholds for both award winning practitioners (S-CVI .91) and HRM/HRD academics (S-CVI .85), deeming it acceptable for further analysis.

Criteria 3: Redundancies. All items were reviewed again to seek possible redundancies. As one respondent commented, "…many of the items asked the same questions with different descriptions. This may be intentional, but about a third of the way through, I found myself saying 'I've already answered that question.'" Each question was re-reviewed for content clarity and for

opportunity to consolidate items. For example, the strategic skills dimension included questions: *Learning function members have the skill type(s) necessary to execute critical strategic priorities*, and *Learning function members have the skill level(s) necessary to execute critical strategic priorities*. These two items were consolidated into one item that read, Learning function members have the *skills* necessary to execute critical strategic priorities. Variance was also checked (high number of values >.5 and any that were >.9) to scan for any singularity of the data (i.e. redundancy).

Criteria 4: Number of items per subscale. Hinkin (1998) recommends designing the first draft of the instrument with about double the items that will be required for the instrument to be used in the main study. Keeping in line with this, the first version of the LDSA scale was designed to capture each and every item cited that would serve to define strategic alignment in Learning & Talent Development, while recognizing future opportunities to reduce the items to a manageable pool of items that represent the dimensions. As a general rule of thumb, Hinkin (1998) recommends three items per factor, with four to six items as the ideal. Three subscales were deleted as each included few items (i.e. 3 or 4) prior to testing (Rewards, Future Forecasting, Intervention Bundles). After testing for means and CVI, the three subscales each had 1 or 0 items remaining. As a result of the four above-mentioned criteria, 31 items remained for EFA.

The remaining included items were then tested to establish the appropriateness of applying EFA with a sample to variable ratio 66:31 (or 2:1) . Kaiser-Meer-Olkin Measure of sampling adequacy (KMO) and Bartlett's test of sphericity were run to assess sample size adequacy for factor analyses. The KMO test (.837) demonstrates an adequate sample size (i.e. greater than .5) and Bartlett's test (.000) demonstrated significance indicating the sample is adequate for factor analysis.

Figure 3. KMO and Barlett's test results

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.837
Bartlett's Test of Sphericity	Approx. Chi-Square	1541.074
	df	465
	Sig.	.000

Step 2: Determine factor extraction

Principal axis was applied as the factor extraction method as it demonstrates the variability in the items associated with factors (i.e. some items may not make the cut) reducing the number of variables.

Step 3: Establish criteria for determining factor extraction

No single rule is advised for factor extraction; therefore, multiple criteria were applied:

- Retain factors with eigenvalue of >1 (Kaiser, 1960)
- Factors whose total variance accounts for >50% (Lorenzo-Seva, 2013)
- Scree plot "elbow" (Cattell, 1966)
- Communalities >.30 (>.30 minimal; >.40 important; >.50 practically significant) (Hair, et.al. 1998)
- Inspection of cross-loadings (variables that load onto more than one factor)

Step 4: Select rotational method

Rotation assists with researcher interpretation by deriving the simplest structure and clustering the variables together. An oblique rotation method (oblimin) was selected as it assumes the variables are correlated. The number of high correlations (>.32) confirmed the choice of using

an oblique method as it demonstrated a high correspondence in variance among the factors (Brown, 2009).

Step 5: Interpretation and labeling of factors

Interpretation was performed by examining the factor structure and the variables associated with each proposed factor solution. Each item that loaded onto a factor was carefully reviewed to seek a theme of commonly loaded items.

EFA Results

Initial EFA results (i.e. principal axis factoring with oblique rotation) identified a seven-factor solution representing 65.923% variance; however, three factors contained less than three items, therefore, did not meet Hinkin's (1998) recommendation of three or more items per factor. Visual inspection of the scree plot demonstrated an "elbow" close to a two or three factor solution (See Appendix I). Both a three-factor and two-factor solution was then attempted.

The three factor solution represented 61.801% variance. A visual inspection of the scree plot showed the "elbow" bend at a two-factor solution. Twenty-one items were represented in three factors; however, one of the factors only had one item and that item also loaded onto another factor (See Appendix J).

The two-factor solution represented 58.143% of variance and 19 items loaded onto one of the two factors (Appendix K). Comm1 did not load (<.36), Coll8 double loaded, factor 1 .405 and factor 2 .407 (both above .36 threshold). Nineteen items were retained (12 items factor 1; 7 items factor 2). Each factor was carefully reviewed to seek themes for correlated items. Factor 1 was labeled "Business KSA" representing the business knowledge, skills, and abilities of the Learning & Talent Development practitioner and factor 2 was labeled "Cooperation"

representing the cooperative relationship between Learning & Talent Development practitioners and line managers. Table 13 shows results of the means, standard deviations, factor loadings, communalities, and item-total correlations for the 2-factor oblique model. Figure 4. Two-factor correlation matrix principle axis & direct oblimin rotation.

Factor Correlation Matrix

Factor	1	2
1	1.000	.704
2	.704	1.000

Factor 1: Business KSA

BUSKN3	LD understands the emerging needs of the business
BUSKN2	LD knows the business value chain
BUSKN1	LD knows the context in which the business operates
BUSKN4	LD has confidence to speak in business terms with line executives
COMM2	LD strategic plans are communicated in business language
COLL2	LD is involved in regular business planning activities
CONT3	Training content is explicitly aligned to strategic priorities
SV2	LD understands the context in which the business operates
COLL4	There is an ongoing, concerted effort between LD and line managers to achieve strategic priorities
COMM4	All employees are deeply aware of what is necessary to execute a firm's strategies
SV4	The Learning function understands how its efforts are linked to the organization's mission
COMM6	LD provides ongoing communication of the business case for learning decisions

Factor 2: Cooperation

COLL12	The Learning function works proactively with line managers to develop trust
COLL11	There is an internal climate of cooperation where the Learning function can exercise its role in creating strategic alignment
COLL6	LD receives support from line managers
COORD3	The Learning function plans how interventions will be integrated throughout the organization
CONT2	Just in time learning solutions are offered to address current business needs
COMM1	The Learning function has ongoing dialogue with line managers
SS7	Gap analysis is performed to inform the design and delivery of strategic interventions

Table 13

Exploratory Factor Analysis study using oblique rotation (n=66): Means, Standard Deviations, Factor Loadings, Communalities (h^2), Item-Total Correlations (r) for the LDSA (19 item version)

Item Code	Item	EFA Factor Loadings		h^2	M	SD	r
		1	2				
BUSKN3	LD understands the emerging needs of the business	.98		.8	4.59	.771	.761
BUSKN2	LD knows the business value chain	.97		.77	4.58	.752	.815
BUSKN1	LD knows the context in which the business operates	.91		.70	4.64	.784	.747
BUSKN4	LD has confidence to speak in business terms with line executives	.79		.68	4.47	.835	.789
COMM2	LD strategic plans are communicated in business language	.74		.56	4.34	.840	.700
COLL2	LD is involved in regular business planning activities	.72		.62	4.48	.816	.752
CONT3	Training content is explicitly aligned to strategic priorities	.64		.59	4.56	.588	.740
SV2	LD understands the context in which the business operates	.61		.61	4.67	.668	.746
COLL4	There is an ongoing, concerted effort between LD and line managers to achieve strategic priorities	.56		.60	4.48	.734	.754
COMM4	All employees are deeply aware of what is necessary to execute a firm's strategies	.45		.35	4.23	.850	.575

Item Code	Item	EFA Factor Loadings		h^2	M	SD	r
		1	2				
SV4	The Learning function understands how its efforts are linked to the organization's mission	.44		.54	4.53	.755	.706
COMM6	LD provides ongoing communication of the business case for learning decisions	.41		.52	4.23	.904	.707
COLL12	The Learning function works proactively with line managers to develop trust		.77	.65	4.42	.752	.705
COLL11	There is an internal climate of cooperation where the Learning function can exercise its role in creating strategic alignment		.73	.58	4.34	.761	.673
COLL6	LD receives support from line managers		.73	.59	4.52	.713	.674
COORD3	The Learning function plans how interventions will be integrated throughout the organization		.70	.40	4.25	.735	.501
CONT2	Just in time learning solutions are offered to address current business needs		.63	.37	4.36	.743	.515
COMM1	The Learning function has ongoing dialogue with line managers		.62	.69	4.55	.733	.780
SS7	Gap analysis is performed to inform the design and delivery of strategic interventions		.54	.61	4.52	.756	.749

Discriminant and convergent validity

Transactional (discriminant) and transformational (convergent) human resource development items were included in the LDSA scale in effort to demonstrate the discriminant and convergent validity of the LDSA scale. Measures of a construct that theoretically should be related to one another are convergent; whereas, measures of a construct that theoretically should not be related to one another are discriminant. Both forms of validity were analyzed by a comparison of the means, standard deviations, and I-CVI (Table 14).

Table 14. Discriminant and Convergent Validity Results**.**

Discriminant Items and Results

Item Code	Item	M	SD	I-CVI
ME13	The Learning function focuses on processes, not results	2.46	.884	.62
COLL14	The Learning function provides training simply because someone asked for training	2.17	1.129	.58
COMM7	The Learning function communicates activity, not results	2.21	1.103	.67
BUSKN9	The Learning function offers ad hoc training that is not connected to the business strategy	2.42	1.018	.69
SS8	The skills of the Learning function are easily duplicated	3.08	1.10	.72
CONT5	The Learning function supplies canned, off the shelf training programs	2.19	.920	.60
LDRSPT5	The Learning function has little or no support from organizational leaders	1.83	1.341	.57
COORD6	The quality of the Learning function is not evaluated	2.12	1.493	.59
RW4	The Learning function offers rewards for activity, not results	1.75	1.113	.55
ACCT6	The Learning function provides results, only when asked to do so	1.91	1.197	.58
SV5	The Learning function operates independently of other departments in the organization	1.89	1.214	.57

FF4	The Learning function is not involved in planning for the organization's future	1.71	1.122	.58
BUND3	The Learning function offers only training programs	1.63	.970	.54

Convergent Items and Results

Item Code	Item	M	SD	I-CVI
ME12	The Learning function measures and evaluates its own performance, even when not asked	4.04	.908	.88
COLL13	The opinions of the Learning function receive serious consideration	4.21	1.103	.80
COMM6	LD provides ongoing communication of the business case for learning decisions	4.46	.977	.83
BUSKN8	Members of the Learning function have opportunities to learn and grow their business knowledge	4.50	.933	.84
SS4	LD members have the skill level(s) necessary to execute critical strategic priorities.	4.33	.963	.89
CONT4	Organizational learners have the opportunity to perform well with challenging content	4.44	.735	.89
LDRSPT3	Senior leadership actively supports LD alignment efforts	4.50	.78	.97
COORD5	All employees are committed to doing quality work	4.56	.705	.92
RW3	Members of the organization receive recognition and positive feedback for contributions	4.42	.881	.94
ACCT5	The Learning function receives ongoing feedback about its performance	4.63	.770	.94
SV4	The Learning function understands how its efforts are linked to the organization's mission	4.67	.756	.91
FF3	LD transforms the basic skills and aspirations of the workforce to prepare for competing in the long term	4.50	.885	.92
BUND2	LD offers alternatives to training as performance solutions	4.25	.989	.85

All discriminant and convergent items performed as predicted. All discriminant items fell below the very important and important ranges (5.00-3.01). All convergent items fell within the very important and important ranges (5.00-3.01). Similarly, both discriminant and convergent items fell within predicted I-CVI of ≥.80.

Study 2

The second main study was then performed to confirm the factor structure of the LDSA instrument. The focus of this study was to determine the factor structure goodness of fit quality. HRM, HRD, and performance improvement practitioners were recruited through Email and social media for participation in the study. The ISPI Chapter administrator was contacted to circulate an announcement to all ISPI CPTs (Certified Performance Technologists). An Email was also sent to all ISPI Chapter Presidents to forward the survey link to their respective memberships. A total of 2,074 ISPI members were contacted using these methods. I posted an announcement about the study on LinkedIN group pages ISPI Global, Training Managers group, T&D, ATD Detroit, LinkedIN:HR, and Learning & Development Center of Excellence providing a link to the survey via Survey Gizmo. Low response was received within the first couple of weeks, so I contacted the ISPI MI chapter president for assistance sending an Email blast to the ISPI MI membership. I also received support from the LinkedIN:HR administrator who encouraged group members to actively participate in the research and from the Learning & Development Center of Excellence site owner who urged members to participate noting the importance of bridging the gap between research and practice (the mission of the group). A total of 87 responses were received during a four-week data collection period (October 25 – November 18). Of the 87 responses, 85 were complete and included in the analysis.

Confirmatory Factor Analysis

To test the goodness of fit of the 2-factor structure quality, the following fit indices were applied: (a) Goodness of Fit Index (GFI) (b) Root Mean Squared Error of Approximation (RMSEA) (c) RMSEA 90% confidence interval (d) Chi-square (x^2) (e) Ratio of chi-square to degrees of freedom (x^2/df), and (f) Comparative Fit Index (CFI). IBM SPSS AMOS 22.0 was used for all CFA analysis.

The Goodness-of-Fit statistic (GFI) tests correlations and is noted as sensitive to sample size (Hooper, Coughlan, & Mullen, 2008, p. 54); therefore, the RMSEA is another fit statistic reported. The GFI value ranges from poor fit (0) to perfect fit (1). Values closest to 1 represent stronger fits.

RMSEA is a measure of the goodness of fit of the LDSA two-factor model. Value recommendations range from 0 (perfect fit) to over .10 (poor fit). Values of less than .05 demonstrate a model with a close fit (Chen, et.al., 2008; Hu & Bentler, 1999; Kline, 2005; MacCallum, Browne, & Sugawara, 1996).

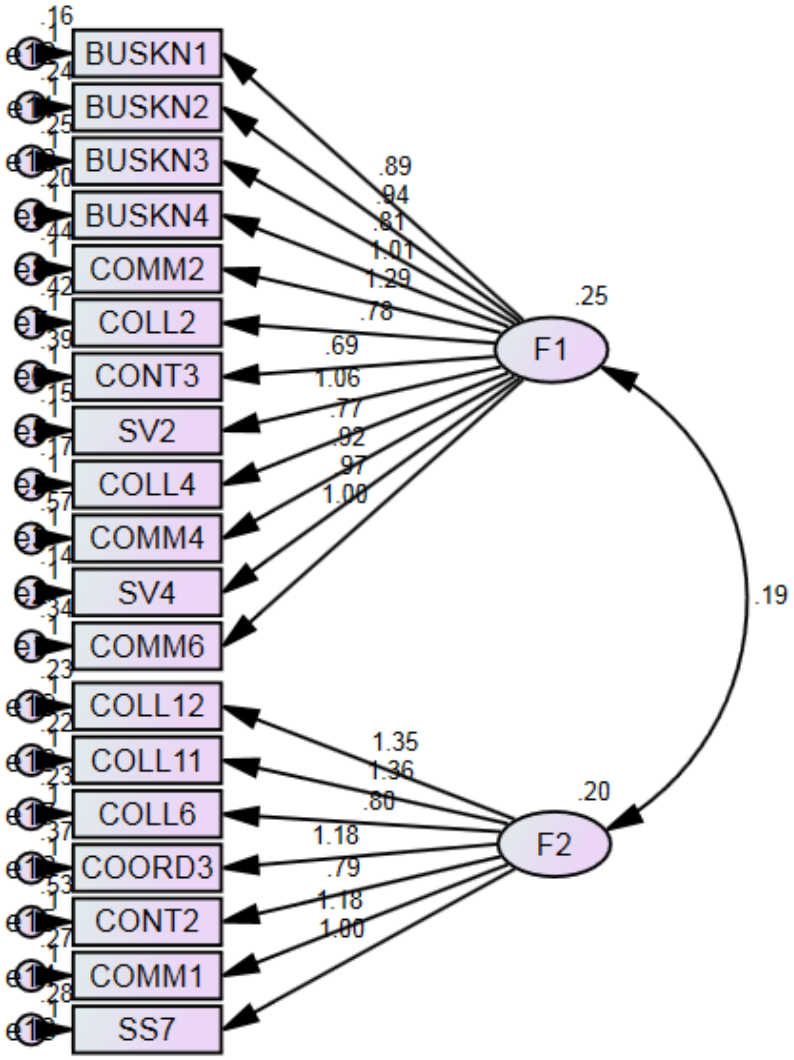
The x^2 value is debated when used for model fit testing due to its sensitivity to sample size. Chi square results are reviewed with caution due to its sensitivity to sample size. In this study, the sample size is small; therefore, the chi square statistic may lack power to assess the goodness of fit (Hooper, Coughlan, & Mullen, 2008, p. 54). Requiring other models to test the model quality, the x^2/df is used an alternative to assess the goodness of fit (Chen, et.al., 2008).

The p value of x^2/df is good if p >.05. The p value represents the RMSEA is not > .05 (indicates nonsignificance, in other words, the RMSEA is not significantly higher than .05)

CFI (Comparative Fit Index) examines improvements for the overall fit of the model. The index ranges between 0 to 1 with values closest to 1 (≥ .095 demonstrating excellent fit) (Hu & Bentler, 1999).

Model 1 Results. The CFA initial sample two-factor model fit the data poorly (GFI= .723, RMSEA= .114, p= .000, x^2=316.589, x^2/df=2.097, CFI= .801). The results from the fit indices did not meet the criteria for goodness of fit (See Figure 5). The modification indices were reviewed for potential improvements to the model. A summary of statistics can be found in Appendix L.

Figure 5. CFA Initial Sample



Model one modifications. The modifications indices were reviewed for potential improvements to model one. Modifications carefully considered factor loadings, errors of covariance (within

factors only), and theory. The modifications for model one excluded BusKn1, *LD knows the context in which the business operates*, from factor 1 as it was similar to SV2, *LD understands the context in which the business operates*. The lowest performers on factor one were excluded: Cont3 (.69), Coll2 (.70), Coll4 (.77) and a second model was then tested.

Model 2: The two-factor model with modifications noted above fit the data interpretation for quality of the goodness of fit (GFI= .859, RMSEA= .048, p= .092, x^2=114.835, x^2/df=1.196, CFI= .970) (See Figure 6). A summary of statistics can be found in Table 15 and Appendix M.

Figure 6. CFA Model 2.

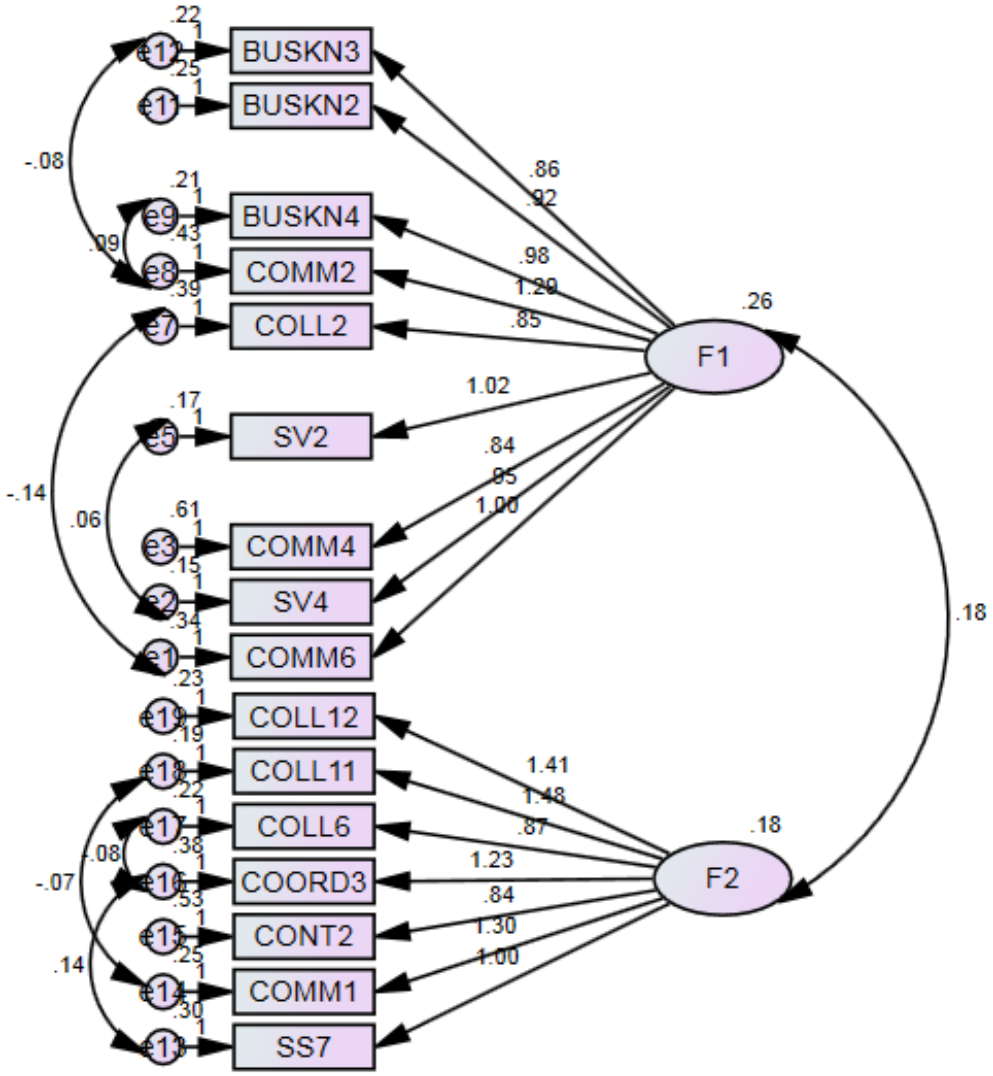


Table 15. Confirmatory Factor Analysis Summary of Fit Indices of LDSA

Model	x^2	*df*	x^2/df	GFI	RMSEA	p	CFI
1	316.589	151	2.097	.723	.114	.000	.805
2	114.835	96	1.196	.859	.048	.092	.970

Note: x^2 Chi-square; *df* Degrees of Freedom; x^2/df Ratio of Chi-square divided by degrees of freedom; GCI Goodness of Fit Index; RMSEA Root Mean Square Residual; p 90% confidence interval; CFI Comparative Fit Index.

CFA Results

The second model met the rules of interpretation for each metric, resulting in a final 2-factor solution for LDSA that included eight items in factor 1 (BUSKN3, BUSKN2, BUSKN4, COMM2, SV2, COMM4, SV4, COMM6) and seven items in factor 2 (COLL12, COLL11, COLL6, COORD3, CONT2, COMM1, SS7) for a 15-item LDSA scale. See below for a summary of the 2-factor solution items.

Factor 1: Business KSA

BUSKN3	LD understands the emerging needs of the business
BUSKN2	LD knows the business value chain
BUSKN4	LD has confidence to speak in business terms with line executives
COMM2	LD strategic plans are communicated in business language
SV2	LD understands the context in which the business operates
COMM4	All employees are deeply aware of what is necessary to execute a firm's strategies
SV4	The Learning function understands how its efforts are linked to the organization's mission
COMM6	LD provides ongoing communication of the business case for learning decisions

Factor 2: Cooperation

COLL12	The Learning function works proactively with line managers to develop trust
COLL11	There is an internal climate of cooperation where the Learning function can exercise its role in creating strategic alignment
COLL6	LD receives support from line managers
COORD3	The Learning function plans how interventions will be integrated throughout the organization
CONT2	Just in time learning solutions are offered to address current business needs
COMM1	The Learning function has ongoing dialogue with line managers
SS7	Gap analysis is performed to inform the design and delivery of strategic interventions

Internal Consistency Reliability

The internal consistency reliability of the two-factor, 15 item LDSA scale was then performed using Cronbach's alpha internal consistency reliability analysis (α=0.913) demonstrated high dimension-total correlations. See Figure 7.

Figure 7. Internal consistency reliability results

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.916	15

The internal consistency of each of the factors was then tested by subscale with factor 1: α=0.869 and factor 2: α=0.843. Both factors demonstrated good internal reliability consistencies ($\alpha > 0.70$). A summary of the internal consistency reliability results is found in Appendix N.

Summary

Three studies were performed to generate a pool of items, explore, and then confirm the factor structure of the LDSA scale. In study one, a pilot study was performed to assess the design of the instrument. Expert reviewers participated in the study and offered recommendations for improvements in design. The second study was performed to explore the factor structure of the instrument. ISPI, ASTD, HRD, and HRM practitioners were recruited to gain insight into the factor structure of the LDSA instrument. Exploratory Factor Analysis using oblique rotation demonstrated a two-factor solution. In study three, an independent sample of ISPI, ASTD, HRD, and HRM practitioners was recruited to confirm the factor structure. Confirmatory factor analysis fit indices metrics and interpretation guidelines were applied to confirm adequate quality of a two-factor, 15 item solution for the LDSA instrument.

CHAPTER FIVE: Discussion

Introduction

The purpose of this study was to develop and test a scale of strategic alignment in Learning & Talent Development functions within organizations. Strategic alignment in the learning and human development fields is a frequently discussed topic in recent literature and the goal of

transformational learning and development functions within organizations. Learning and human resource development functions are highly encouraged to move toward alignment within their respective organizations; however, tests to gauge progress toward this goal are not available. The literature offers many recommendations for moving toward alignment, but it is not known which recommendation or recommendations facilitate the greatest perceived opportunity for alignment. As such, the aim of this study was to develop the LDSA scale, assess the factor structure of the LDSA scale, and confirm the factor structure of the LDSA scale. The following research questions guided the study:

1. What are the factors and items to be included in a scale that predicts successful strategic alignment in Learning & Talent Development functions?
2. To what extent is the LDSA scale valid?
3. To what extent is the LDSA scale reliable?

Research Question 1.

The first research question, *What are the factors and items to be included in a scale that predicts successful strategic alignment in Learning & Talent Development functions*, was addressed by capturing recommendations from academics and practitioners for successful strategic alignment in Learning, Human Resource Development, and Human Resource Management functions and by performing exploratory factor analysis to define the factor structure of the LDSA instrument. Each recommendation was captured on a list and then assigned to a dimension of alignment. If a recommendation (i.e. item) could not be assigned to a dimension, a new dimension was created. A preliminary model design of strategic alignment factors and items was then developed. When developing scales, Hinkin (1998) recommends starting with about double the number of items that capture the construct under question with the

intention of reducing the items in later analyses. A literature review of the last 30 years of HRM, HRD, and LD academic and conceptual articles produced 69 items. A content analysis was performed to identify coding schemes and relationships among the items. These were organized within 13 dimensions and represented the recommendations from both academics and practitioners so each perspective was included. A code was applied to each factor and corresponding items to be used in subsequent exploratory and confirmatory factor analyses. The initial scale was then developed and piloted tested with field experts, namely, HRM, HRD, LD academics and practitioners who won awards for successfully aligning their functions within their respective organizations.

The purpose of the pilot study was to gain feedback regarding the design of the instrument (i.e. content clarity, time required to complete the instrument, and usability of the instrument). A five-point Likert scale was applied for participants to rate the level of importance of each item to successful facilitation of strategic alignment in Learning & Talent Development functions (5= very important, 4= important, 3= moderately important, 2= of little importance, 1=unimportant). Feedback from these pilot participants was applied to incorporate changes to question wording and clarity of the instructions. Reviewers also commented on the length of the scale noting while it took them an average of 15 minutes to complete, a scale of 69 items would likely require more time for future participants and cautioned the potential for survey fatigue.

To address this issue, I established multiple criteria for inclusion or exclusion from the scale to reduce the number of items. All items were then reviewed for interpretation, resulting in a 33-item scale. The LDSA scale was then administered for study one with a goal of identifying a factor solution.

Exploratory factor analysis derived a two-factor solution to the LDSA scale with 58.143% total variance explained. Factor one was labeled "Business KSA" representing the business knowledge, skills, and abilities of the LD practitioner with 52.77% of the total variance explained for the two-factor solution. The second factor was labeled as "Cooperation" representing the relationship of LD practitioners with line managers with 5.4% of the total variance explained. To test the goodness of fit of the proposed two factor solution a confirmatory factor analysis was performed. Six tests were performed to confirm a two-factor solution, namely: Goodness of Fit Index (GFI=.859), Root Mean Squared Error of Approximation (RMSEA=.048), RMSEA 90% confidence interval (.092), Chi-square ($x^2=114.835$), Ratio of chi-square to degrees of freedom (x^2/df= 1.196), and Comparative Fit Index (CFI=.970). The results from these tests provided reasonable confirmation of good quality of the two-factor solution for the LDSA scale.

Research Question 2.

The second research question, *To what extent is the LDSA scale valid*, was addressed using content validity ratios (Lawshe, 1975), content validity estimates (Lynn, 1986), and convergent validity and discriminant validity testing.

Content validity ratios (CVR) describe how essential an item is to the intended construct according to the ratings of experts in the field of Learning & Talent Development. Lawshe (1975) provides a table that describes minimum CVRs according to the number of respondents in the pilot study. The CVR of included items ranged from 0.42-1.00 and four items were excluded whose CVR range was 0.08 – 0.33.

Content validity estimates (CVI) were performed with the main study participants to assess the level of importance of each of the scale items to the construct of strategic alignment in

Learning & Talent Development functions. Estimates of content validity were performed on each item (I-CVI) and on the scale (S-CVI). I-CVI was determined by dichotomizing the scale into the items rated in top importance (i.e. very important or important) by the number of respondents per item. Results showed 50% of the items on the scale demonstrated I-CVI ≥ .90, 41% fell within the range of .80 - .899, 8% in the range of .70 - .799, and 1% of the items were ≤ .69. Items falling below .70 (7 items) were excluded from the scale. The overall scale S-CVI was .84. The overall scale S-CVI was also dichotomized by expert group with award winning practitioners (S-CVI= .91) and HRD, HRM, and LD academics (S-CVI=.85) demonstrating adequate representation of the important items for LDSA by item, group, and scale.

Convergent and discriminant validity was addressed by exploring ratings of importance to convergent and discriminant items coded on the LDSA scale and tested by means, standard deviations, and I-CVI. Convergent and discriminant items were added to each subscale to represent transformational (convergent) and transactional (divergent) items for analyses. The means of convergent items ranged from 4.04 to 4.67, above the minimum of 4.00 for representativeness of the LDSA scale items. The I-CVI for convergent items ranged from .80 to .97, adequately representing items similar to the construct of strategic alignment in Learning & Talent Development functions. The means of discriminant items ranged from 1.63 to 3.08, well below the 4.00 minimum for deeming an item important to successful strategic alignment in Learning & Talent Development functions. I-CVI for discriminant items ranged from .54 to .62, thus, did not meet the minimum required I-CVI of .70 for representativeness of successful alignment.

Research Question 3.

The third research question, *To what extent is the LDSA scale reliable*, was addressed testing the internal consistency reliabilities, Cronbach's alpha for the scale and subscales. The results of the internal consistency reliability of the two-factor, 15 item LDSA scale met the minimum $\alpha > 0.70$ demonstrating $\alpha=0.913$ for the scale. Each subscale was also tested demonstrating $\alpha=0.869$ for factor one and $\alpha=0.843$ for factor 2.

Review of the findings and results

Factor one, *Business KSA*, demonstrates LD's business knowledge, business skills, and business abilities and accounted for 52.768% of the total variance explained, out of a total two-factor solution with 58.143% total variance explained. Strategic alignment of a Learning & Talent Development function is demonstrated by LD's perceived understanding of the business and its needs. Strategically aligned LD practitioners are perceived to have a firm grasp on what the emerging needs of the business are and can communicate how their decisions for solutions meet these needs. They communicate this message confidently using business language, both in written and verbal communications with stakeholders. Strategically aligned LD practitioners are perceived to know the value chain of the business and how their work connects and demonstrates value to the business.

Business knowledge is represented as the LD practitioner's knowledge of the business value chain, the emerging needs of the business, and the context of the business. This is an LD practitioner who knows the business well, knows how things work, and can get things done through key relationships, in particular with line managers. The LD practitioner must also possess communication skills that enable the practitioner to speak confidently with line managers about the emerging business needs and discussions of how to best meet that business need, effectively and efficiently. Business skills also play a role in how the LD strategy is

communicated. The LD strategic plan is written in business language and offers strong evidence for the business case for learning decisions. Members of the LD function must also have the ability to perform gap analysis and the ability to synthesize results from gap analysis to form connections at the tactical, operational, and strategic levels of the organization.

Making these connections throughout the performance system is the key for a strategically aligned Learning & Talent Development function. LD must strike a balance of value to be delivered to its internal customers and external stakeholders (Rummler & Brache, 2010). When considering making value connections to the organizational performance system, LD must begin with the value to be delivered to the external customer and then consider the value to be delivered to the internal stakeholder. This is where the links start – outward, then inside the organization. The focus shifts the attention away from short-term gains that may be delivered to internal stakeholders (at the expense of other parts of the system, for example, external customers). LD must move its attention away from functional preferences, ad hoc requests, or silo approaches to work to experience true connections beyond the activity or output levels.

As such, LD functions should be shaped according to organizational needs (Bird & Beechler, 1995) rather than shaped according to LD needs. For example, LD practitioners must have the skill type and level necessary to perform the critical, internal strategic processes (Kaplan & Norton, 2004; van Riel, 2008) as in for example, skilled in performing gap analyses so that the LD function has the current pulse of the organization's gap in results (Kaufman & Guerra-Lopez, 2013). This places the LD practitioner in the position of having a current and working knowledge of the emerging needs of the business (Impact International, 2011). With this knowledge, LD has a grasp on the value chain of the business and can then form a theory of impact, in other words, reverse engineer value from the external view of the customer and work inward from impact,

outcomes, outputs, and activities. Rummler & Brache (2010) describe this approach as a necessity to "think differently about the contribution of work." In other words, LD must plan the design and management of the function toward the value creation system with effective and efficient use of resources (Ulrich, 1986).

The communication of how LD approaches its work is also an essential ingredient in the perception of LD's strategic alignment. LD has opportunity to share their value creation opportunities and successes in verbal and written forms of communication. Strategically aligned LD has the skill and ability to speak confidently in business terms with line executives and managers about business issues, for example, the gap between the capabilities of employees and the requirements to meet strategic priorities. Where are we now? Where do we want to be? These LD functions are on top of what the 'hot' issues are, the current priorities of the organization, and the future, desired state of the organization (Anderson, 2008). Strategically aligned LD can describe this gap in results and offer solutions that make sense for the business. They demonstrate an awareness of what it will take to execute strategies and offer vivid descriptions of what the company will look like once the priorities are carried out (van Zwieten, 1999).

Strategically aligned LD functions proactively seize opportunities to provide ongoing communication about the business case for their decisions. They recognize these decisions are investments in the organization, and like any other company investment that requires a commitment of funding and resources, can offer credible evidence of the soundness of the decision (Wright & Belcourt, 1995; Anderson, 2008).

Factor two, *Cooperation*, demonstrates the relationship between LD and line managers, accounting for 5.4% of the total variance explained of the two-factor solution. A cooperative relationship specifies that (a) The Learning function is proactive and purposeful when developing

trusting relationships with line managers, (b) An internal climate of cooperation is present so that LD can exercise its role in creating strategic alignment within the organization, (c) LD receives support from line managers, (d) The Learning function purposefully plans for how learning solutions will be integrated throughout the organization, (e) The Learning function provides just in time learning solutions aimed at current business needs, (f) There is an ongoing dialogue among line managers and LD, and (g) LD performs gap analysis to inform the design and delivery of strategic learning solutions.

The cooperation factor describes the type of relationship our internal customers require to perceive the LD function as aligned to the business and also addresses how LD members that have a desire to be strategically aligned can proactively design and manage the relationship to gain cooperative work environments in which LD can exercise its role in creating alignment (Christiansen & Higgs, 2008). Strategically aligned LD functions take the lead in the relationship to develop trust and to identify what measures the stakeholder uses to determine value. Through this, LD can establish the value expectations of internal stakeholders and offer solutions that meet those expectations. These LD functions work closely with line managers to establish collaborative and cooperative relationships. The line manager is looking for quick learning solutions that are well integrated throughout the organization. With a collaborative relationship, the line manager will work with LD to perform gap analysis at the functional level. In other words, line managers will participate with LD in gathering the data required for method-means analysis. Line managers will then support LD's learning solution decisions. This cooperative relationship also denotes a shared accountability between LD and line managers. Line manager involvement in gap analysis and solution selection fosters an ongoing dialogue and shared accountability for results. And with LD's focus on integrated talent management, a shared results

chain may be collaboratively created, managed, and evaluated. This practice will assist LD challenges of evaluation by reframing the purposes of evaluation to one of proof to one of evidence (Kraiger, McLinden, & Casper, 2004).

Significant findings of the study

This study describes the two factors that account for 58.143% of the total variance explained for a LD function perceived as strategically aligned to the business. Specifically, the factors denote the importance of LD's business knowledge, skills, and abilities (52.768%), and their cooperative relationships with line managers (5.4%).

While the two factors specify the business knowledge, skills, and abilities and relationships with line managers, there is a strong undercurrent of measurement and evaluation, particularly at factor one. For example, a critical item for strategically aligned LD functions is the understanding of the emerging needs of the business. This requires the LD professional to gather business requirements and then validate those requirements. When gathering requirements, LD practitioners gain an understanding of the value proposition of its internal customers. Rather than stopping here and moving forward with the design and delivery of a learning solution, the strategically aligned LD function validates the requirements as the next step. Verifying the performance requirements may inform LD what the customer *wants*, validation tells LD what the business *needs*. Requirements validation is a process of gathering evidence for the business case for the decision (i.e. learning solution) and may even include a map of how the decision affects the business at multiple levels within the value chain. With a focus on the desired outcomes and impact, there is a direct line of sight that connects the work of the LD function to the value chain and the ability of the LD function to prove their valuable contributions. The ability to support the business case for these learning decisions is found in LD's measurement and evaluation

practices. Measurement and evaluation is framed as evidence to support decisions, rather than as means of proving or blaming. Further, evidence is gathered about the performance system, rather than products, or output of the LD function. LD functions that are strategically aligned do so proactively. There are not waiting for someone to ask them to demonstrate their value, instead, these functional members seek opportunities to communicate connections between their work and the impact to the performance system of the business and they do so often and with confidence. Using evidence to support decision-making communicates LD's understanding of how the organization can win in the marketplace and what it will take to get there (Kaufman & Guerra-Lopez, 2013).

Limitations

There are two interrelated limitations to this study. In the first, the sample size did not reach the desired numbers; therefore, an additional set of decision rules were imposed prior to exploratory factor analysis. While the factor analyses passed tests for sample size, this was due in part to the reduction of items in efforts to improve the population to item ratios. In the second, the remaining number of items was described in a two-factor solution that accounted for just below the desired 60% of total variance (i.e. 58.143%). While close to the desired number, a higher sample size may have allowed for additional items to account for greater than 60% of total variance providing additional insight into the items that facilitate successful strategic alignment in LD functions.

In a third limitation, assessing the total strategic value contribution of one function does not account for the total alignment of the performance system. LD is one function, although the data demonstrates it is within the control of the LD function to proactively seek these opportunities for alignment. As champions of human performance within organizations,

strategically aligned LD functions take a proactive stance and lead the alignment efforts of the performance system.

Recommendations for future research

In 2014, ATD, the leading association for training and talent development professionals, released its updated competency profile. This profile identifies the recommended competencies of today's LD professional. The model specifies both foundational competencies and areas of expertise, meaning, all LD professionals possess the foundational competencies and then may specialize in one or more particular area of expertise. This study supports the foundational competencies of business skills, interpersonal skills, industry knowledge, and global mindset and integrated talent management, evaluating learning impact, and performance improvement as areas of expertise. These new skills and competencies, supported by this study, confirm the need for today's LD professional to grow alignment skills and competencies. Therefore, a study that establishes and confirms the metrics for measuring these skills and competencies supports an LD development plan complete with a monitoring and evaluation plan to track progress and allows for the flexibility of en route modifications.

Other critical skills of today's LD professional are gap analysis and needs assessment. With low volumes of needs assessment and gap analysis being performed in organizations (Bingham, 2009) support is needed for LD professionals to increase these practices to be in positions of alignment within their respective organizations. Guerra-López (2003) study supports this focus on organizational needs as the leading skill required of performance improvement practitioners. Such analysis creates an understanding of gaps in results, rather than gaps in preferences or wants.

As with other projects in organizations, the bulk of the work is (or should be) performed at the front end. For example, Information Technology departments, also moving away from ad hoc requests and experiencing growth in their alignment efforts, specify the need to perform both a verification of requirements and a validation of business requirements. This practice moves away from responding to internal customer requests, for example, in the order that they are received, to one of selecting projects based on impact to the business. This ensures a more effective and efficient use of resources that drive the business results, in other words, address gaps in results. The LD function can learn from the growth challenges of Information Technology given our same desire for increased input into the creation and implementation of strategic priorities.

Implications for professional practice

A human performance system perspective is applied to discuss the implications of this study to professional practice. To improve perceptions of strategic alignment, LD must proactively evaluate its own performance by examining the performance of the learning system within the organization. Thus, its evaluation of its own performance must extend outside the parameters of the Learning function. In other words, LD cannot evaluate at the tactical level and likely be perceived as strategically aligned, even if the evaluation results are positive. The total perceived function contribution represents business perceptions of LD level of alignment, the sum of all of their work, rather than the parts. Key stakeholders are evaluating the impact of the Learning function to organizational human performance, rather than the products independently. The key stakeholders represent those that will impact or be impacted by the evaluation of LD's impact to the organization's human performance system (Guerra-Lopez, 2007): LD practitioners, organizational learners, line managers, leadership, and external customers.

The items that represent a strategically aligned LD function require specific skills and processes that gain business partner perceptions of alignment. The most supportive skills toward developing practitioner alignment skills are within conducting gap analyses. Alternately, performance solutions that are designed without the support of a gap analysis have an increased likelihood of *not* being perceived as aligned to the business. For example, LD may be in the habit of saying yes to a customer to build the relationship, but this practice may be at the expense of LD alignment. LD is left uninformed of the organization's verified performance (results) gaps and may be expending unnecessary resources. Small changes to existing processes may also be made to facilitate alignment. For example, LD may alter its common practice of gaining participant reaction/satisfaction feedback immediately following course delivery. To make connections to the organization's human performance chain, LD may ask in what ways the training content is connected to the work of the participant and how that work impacts the business. Indeed, asking these questions is the start of making connections, LD must then proactively measure and act upon that performance feedback to demonstrate their value.

Agreeing to the purpose of the LD function as one that is in service to develop the skills of the workforce to execute critical strategic priorities, LD must take a proactive position in linking performance data, decisions, and actions. In other words, even if no one is asking for accountability for data-driven decisions, LD must take the role as leader in organizations to seeking performance feedback. With such a position, LD may not only improve perceptions of their strategic value, but also fulfill its purpose of developing human capital by modeling how and why such practices are critical to strategy development and execution in organizations. This data supported human performance evidence is LD's ticket to the table.

When human performance interventions are aligned, organizational learners receive solutions that create win-win opportunities by attending to the learner's development needs while addressing current business needs. Learners have an increased line of sight from individual contributions and how and in what ways their efforts impact the organization. Further, strategically aligned LD functions are more likely to create opportunities for cross-functional experiences, thus, expanding the professional development avenues for organizational learners. With this, a more in-depth view of the professional development needs of the learner brought about through a supportive and insightful LD relationship.

The relationship with line managers and strategically aligned LD function is also more in-depth as LD proactively sustains its working knowledge of the critical business priorities and the ways in which LD may support achievement of manager functional goals. In return, line managers receive effective and efficient support - the right training, rather than the training currently being offered. A trusting relationship is further developed through collaborative method-means analyses between LD and line management. Line managers and LD work together to analyze and select human performance solutions. Together, monitoring and evaluation plans are developed and performance is tracked with en route modifications negotiated. LD strategic plans reflect the perceptions of stakeholder value, address current business issues, and communicate a shared accountability for the impacts of human performance interventions.

The expectations and responses of organizational leadership are key differences in aligned and non-aligned LD performance systems. Those seeking aligned systems expect organizational human performance feedback from Learning & Talent Development functions. This performance data is then used to support decisions regarding organizational learning and talent development strategies aimed specifically at achieving organizational goals. LD offers its

total strategic value contribution by supporting all decision makers (i.e. stakeholders) by developing and testing theories of impact to external customers.

Summary

This study was performed to develop an instrument to assess strategic alignment of Learning & Talent Development functions within organizations. Repeated calls for improved alignment in LD are prominent in the literature, however, there is not currently a tool to assess the current state of LD alignment and to specify the particular areas in which alignment is successful in these departments. This study produced a two-factor solution for LD alignment, specifically LD's business knowledge, business skills, business abilities, and LD's relationship with line managers that accounted for 58.143% of total variance. Interpretation of each of the factors, their implications for practice, and recommendations for future research are offered as avenues for LD functions that desire improvements in the perceptions of their strategic alignment within their organizations.

APPENDIX A – IRB Approval

WAYNE STATE UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://irb.wayne.edu

NOTICE OF EXPEDITED APPROVAL

To: Karen Hicks
Administration & Organization Stud

From: Dr. Deborah Ellis or designee J. Wirth/DB
for Chairperson, Behavioral Institutional Review Board (B3)

Date: August 18, 2014

RE: IRB #: 073314B3E
Protocol Title: Construct Validation of a Learning & Talent Development Strategic Alignment Scale
Funding Source:
Protocol #: 1407013220

Expiration Date: August 17, 2015

Risk Level / Category: Research not involving greater than minimal risk

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The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category (#7)* by the Chairperson/designee *for* the Wayne State University Institutional Review Board (B3) for the period of 08/18/2014 through 08/17/2015. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 8/15/2014)
- Protocol (received in the IRB Office 7/10/2014)
- A waiver of requirement for written documentation of informed consent has been granted according to 45 CFR 46 116(d). This waiver satisfies: 1) the research involves no more than minimal risk to the participants. The data is non-sensitive survey data which poses minimal risk to the participants; 2) the research involves no procedures for which written consent is normally required outside of the research context. Outside of the research context, written consent would not normally be required for this survey; 3) the consent process is appropriate and 4) an information sheet disclosing the required and appropriate additional elements of consent disclosure will be provided to participants.
- Research Information Sheet - Expert (dated 8/15/2014)
- Research Information Sheet - Practitioner (dated 8/15/2014)
- Study Flyers (2) Expert and Practitioner
- Data Collection Tools: Expert Reviewer Survey and Practitioner Survey

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* Federal regulations require that all research be reviewed at least annually. You *may* receive a *"Continuation Renewal Reminder"* approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval ***before*** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.

* All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.

* Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://www.irb.wayne.edu//policies-human-research.php).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.
2. Forms should be downloaded from the IRB website at **each** use.

*Based on the Expedited Review List, revised November 1998

APPENDIX B – Expert Validation Packet

Research Information Sheet
Title of Study: Construct Validation of a Learning & Talent Development Strategic Alignment Scale

Principal Investigator (PI): Karen Hicks
College of Education, Instructional Technology
(517) 896-1044

Purpose:
You are being asked to participate in a research study that will explore the construct of strategic alignment in Learning & Talent Development because you are an experienced member in the field of Learning & Talent Development that has achieved recognition for teaching and/or demonstrating the behaviors associated with successful strategic alignment in Learning & Talent Development functions within organizations. This study is being conducted at Wayne State University.

Study Procedures:
If you agree to take part in this research study, you will be asked to complete one 95-question survey during the fall of 2014. The survey is available electronically via surveygizmo.com and is anticipated to take less than 30 minutes to complete. You will be asked to respond to questions about the importance of behaviors that successfully facilitate strategic alignment in Learning & Talent Development functions. You will also be asked to submit your role within organizations. You have the option to not answer some questions and still remain in the research study. Results of the study will be aggregated and your identity and responses will remain confidential.

Benefits:
As a participant in this research, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks:
There are no known risks at this time to participate in this study.

Study Costs:
Participation in this study will be of no cost to you.

Compensation:
You will not be paid for taking part in this study.

Confidentiality:
All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a code name or number. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State

University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.) may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your identity.

Voluntary Participation/Withdrawal:
Taking part in this study is voluntary. You have the right to choose not to take part in this study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

The data that you provide may be collected and used by SurveyGizmo as per its privacy agreement. Additionally, participation in this research is for residents of the United States over the age of 18; if you are not a resident of the United States and/or under the age of 18, please do not complete this survey.

Questions:
If you have any questions about this study now or in the future, you may contact Karen Hicks or one of her research team members at the following phone number 517-896-1044. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing the survey on SurveyGizmo.com you are agreeing to participate in this research study.

Start Survey (SurveyGizmo link)

Expert Reviewer Survey

Purpose: This survey seeks your expert opinion of the level of importance of each of the proposed behaviors that define successful strategic alignment behaviors for Learning & Talent Development functions.

Directions: Learning and Talent Development strategic alignment is defined as "the total strategic value contribution of the Learning and Talent Development function." Review each behavior and rate the level of importance (5 very important to 1 unimportant) of each behavior that describes successful strategic alignment in Learning & Talent Development functions. For example, rate how important is the first behavior, *ongoing monitoring and assessment of the value of the learning function*, to defining successful strategic alignment for a Learning & Talent Development function.

Please provide any additional feedback regarding the clarity of the identified strategic alignment behaviors of the Learning & Talent Development function in the comments space for each behavior. Space is also provided at the end of the survey to provide feedback regarding the ease of use of the instrument. If you would like to receive a copy of the results of the study, please include your Email at the end of the survey. .

Your role: Pick one that best describes your expert role from drop down menu.

- ASTD BEST Award winner
- Training Top 125 winner
- Professor/Academic

	Very Important 5	Important 4	Moderately Important 3	Of Little Importance 2	Unimportant 1
Measurement & Evaluation (M&E)					
Ongoing monitoring and assessment of the value of the learning function is performed.					
Use of evaluation data to link training to strategic initiatives					
Collecting data beyond efficiency measures					
Capability of measuring and reporting on behaviors that reflect business goals.					
Capability of measuring and reporting on performance outcomes that reflect business goals.					
The ability of the Learning					

function to reduce or eliminate counterclaims of training effectiveness					
LD determines what different stakeholders perceive as meaningful evidence of value					
LD provides a balanced range of measures that are significant to assess the value of LD					
LD reports on measures specific to the organizational context.					
LD integrates talent management data throughout organization					
LD uses measurement to aid decision-making.					
Collaboration					
Cross-functional action planning is performed.					
LD is involved in regular business planning activities.					
All stakeholder groups are involved in the strategic planning of the Learning function					
There is an ongoing, concerted effort between LD and line managers to achieve strategic priorities.					
Explicit attention is given to cross-division dialogue.					
LD receives support from line managers.					
A culture of line manager involvement in training is encouraged.					
Line managers perceive LD practices as helping their business unit reach its goals.					
The Learning function and line managers develop alignment strategies together					
LD and line manager implement alignment together.					
There is an internal climate of cooperation where the Learning function can exercise its role in					

creating strategic alignment					
The Learning function works proactively with line managers to develop trust					
Communication					
The Learning function has ongoing dialogue with line managers					
LD strategic plans are communicated in business language.					
All employees are aware of how their role supports strategy					
All employees are deeply aware of what is necessary to execute a firm's strategies					
Managers communicate high-level strategic objectives in ways that all employees can understand.					
LD provides ongoing communication of the business case for learning decisions					
Business Knowledge					
LD knows the context in which the business operates.					
LD knows the business value chain.					
LD understands the emerging needs of the business					
LD has confidence to speak in business terms with line executives.					
LD actively seeks a balance between fit and flexibility in strategy development.					
LD actively seeks a balance between fit and flexibility in strategy implementation.					
LD performs ongoing adjustments in strategy implementation.					
Strategic Skills					
The organization perceives alignment skills as a strategic asset					
Line managers have highly developed integrative capability					

skills.					
LD members have the skill type(s) necessary to execute critical strategic priorities.					
LD members have the skill level(s) necessary to execute critical strategic priorities.					
LD members have a vision for how the organization can 'win' in the marketplace.					
LD members continuously investigate the gap between workforce capability and business requirements.					
Gap analysis is performed to inform the design and delivery of strategic interventions					
Content					
Training programs are specifically aimed at developing a competitive organization.					
Just in time learning solutions are offered to address current business needs					
Training content is explicitly aligned to strategic priorities.					
Leadership Support					
The Learning function strategic alignment efforts are driven by top management					
Senior leadership is actively involved in LD alignment efforts.					
Senior leadership actively supports LD alignment efforts.					
The Learning function is perceived as a means to build competitive advantage					
Coordination					
LD facilitates cross-functional experiences.					
LD shares common tools, models, and terminology with business partners.					
The Learning function plans how					

interventions will be integrated throughout the organization.					
The organization has an internal climate of support where the Learning function can exercise its role in facilitating its strategic alignment.					
Rewards					
The organization offers incentives that reward achievement of personal, functional, and firm targets.					
Alignment efforts create a win-win between the organization and its employees.					
Accountability					
Accountability for performance is shared among line managers and the Learning function					
Accountability for results is shared among line managers and the Learning function					
LD has sufficient authority to pursue goals.					
LD is held accountable for learning decisions.					
Systemic View					
LD takes a holistic view of performance by considering the context, barriers, and supports.					
LD understands the context in which the business operates.					
LD uses a strategic planning system that is appropriate to the context.					
Future Forecasting					
LD strategic development is linked to the desired, future state of the organization.					
There is a realistic notion of the gap between where the organization is today and where they want to be in the future					
LD transforms the basic skills and aspirations of the workforce to					

prepare for competing in the long term.					
Bundles					
The Learning function offers more than 1 intervention for each performance issue					
LD offers alternatives to training as performance solutions.					
Interventions are perceived as means to achieve high-impact performance.					

Usability of the instrument: *(open-ended questions)*
Was the instrument easy to use?
How much time was required to complete the survey?

Please include your Email address if you would like to receive a copy of the results of the study. A copy will be sent you upon completion of the research study.

Email _____

APPENDIX C – Practitioner Validation Packet

Research Information Sheet
Title of Study: Construct Validation of a Learning & Talent Development Strategic Alignment Scale

Principal Investigator (PI): Karen Hicks
College of Education, Instructional Technology
(517) 896-1044

Purpose:
You are being asked to participate in a research study that will explore the construct of strategic alignment behaviors in Learning & Talent Development because you are an experienced member in the field of Learning & Talent Development. This study is being conducted at Wayne State University.

Study Procedures:
If you agree to take part in this research study, you will be asked to complete one 95-question survey during the fall of 2014. The survey is available electronically via surveygizmo.com and is anticipated to take less than 20 minutes to complete. You will be asked to respond to questions about the importance of behaviors that successfully facilitate strategic alignment in Learning & Talent Development functions. You will also be asked to submit your role within organizations. You have the option to not answer some questions and still remain in the research study. Results of the study will be aggregated and your identity and responses will remain confidential. If you would like to receive a copy of the study results, please provide your Email address at the end of the survey.

Benefits:
As a participant in this research, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks:
There are no known risks at this time to participate in this study.

Study Costs:
Participation in this study will be of no cost to you.

Compensation:
You will not be paid for taking part in this study.

Confidentiality:
All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a code name or number. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug

Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.) may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your identity.

Voluntary Participation/Withdrawal:
Taking part in this study is voluntary. You have the right to choose not to take part in this study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

The data that you provide may be collected and used by SurveyGizmo as per its privacy agreement. Additionally, participation in this research is for residents of the United States over the age of 18; if you are not a resident of the United States and/or under the age of 18, please do not complete this survey.

Questions:
If you have any questions about this study now or in the future, you may contact Karen Hicks or one of her research team members at the following phone number 517-896-1044. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing the survey on SurveyGizmo.com you are agreeing to participate in this research study.

Start Survey (SurveyGizmo link)

Practitioner Survey

Purpose: This survey seeks to identify your opinion of the level of importance of each of the behaviors that define strategic alignment behaviors for Learning & Talent Development functions.

Directions: Review each behavior and rate how important the behavior is to achieving strategic alignment in Learning & Talent Development functions (5 very important to 1 unimportant). Learning and Talent Development strategic alignment is defined as "the total strategic value contribution of the Learning and Talent Development function." For example, rate how important is the first behavior, *ongoing monitoring and assessment of the value of the learning function*, to defining successful strategic alignment for a Learning & Talent Development function.

	Very Important 5	Important 4	Moderately Important 3	Of Little Importance 2	Unimportant 1
Measurement & Evaluation (M&E)					
Ongoing monitoring and assessment of the value of the learning function is performed.					
Evaluation data is used to link training to strategic initiatives.					
Data is collected beyond efficiency measures.					
Capability of measuring and reporting on behaviors that reflect business goals.					
Capability of measuring and reporting on performance outcomes that reflect business goals.					
LD eliminates or reduces counterarguments to claims of training ineffectiveness by isolating the effects of training					
LD determines what different stakeholders perceive as meaningful evidence of value					
LD provides a balanced range of measures that are significant to assess the value of LD					
LD reports on measures specific to the organizational context.					
LD integrates talent management					

data throughout organization					
LD uses measurement to aid decision-making.					
Collaboration					
Cross-functional action planning is performed.					
LD is involved in regular business planning activities.					
All stakeholder groups are involved in LD strategic planning.					
There is an ongoing, concerted effort between LD and line managers to achieve strategic priorities.					
Explicit attention is given to cross-division dialogue.					
LD receives support from line managers.					
A culture of line manager involvement in training is encouraged.					
Line managers perceive LD practices as helping their business unit reach its goals.					
LD and line managers develop alignment together.					
LD and line manager implement alignment together.					
There is an internal climate of cooperation where LD can exercise its role in creating alignment.					
LD works proactively with managers to develop trust in the learning value contribution.					
Communication					
LD conducts ongoing dialogue with line managers.					
LD strategic plans are communicated in business language.					
Employees are aware how their role supports strategy.					

Employees are deeply aware of what is necessary to execute a firm's strategies.					
Managers communicate high-level strategic objectives in ways that all employees can understand.					
LD provides ongoing communication of the business case for learning decisions					
Business Knowledge					
LD knows the context in which the business operates.					
LD knows the business value chain.					
LD understands the emerging needs of the business					
LD has confidence to speak in business terms with line executives.					
LD actively seeks a balance between fit and flexibility in strategy development.					
LD actively seeks a balance between fit and flexibility in strategy implementation.					
LD performs ongoing adjustments in strategy implementation.					
Strategic Skills					
Alignment skills are perceived as a strategic asset.					
Line managers have highly developed integrative capability skills.					
LD members have the skill type(s) necessary to execute critical strategic priorities.					
LD members have the skill level(s) necessary to execute critical strategic priorities.					
LD members have a vision for how the organization can 'win' in the marketplace.					
LD members continuously					

investigate the gap between workforce capability and business requirements.					
Gap analysis informs the design and delivery of strategic interventions.					
Content					
Training programs specifically aimed at developing a competitive organization.					
Just in time learning solutions are offered to harness current business needs.					
Training content is explicitly aligned to strategic priorities.					
Leadership Support					
LD alignment efforts driven by top management.					
Senior leadership is actively involved in LD alignment efforts.					
Senior leadership actively supports LD alignment efforts.					
Coordination					
LD facilitates cross-functional experiences.					
LD shares common tools, models, and terminology with business partners.					
LD plans how interventions will be worked throughout the organization.					
The organization has an internal climate of support where LD can exercise its role in crafting alignment.					
Rewards					
The organization offers incentives that reward achievement of personal, functional, and firm targets.					
Alignment efforts create a win-win between the organization and its employees.					
Accountability					

Accountability for performance is shared with line managers.					
Accountability for results is shared with line managers.					
LD has sufficient authority to pursue goals.					
LD is held accountable for learning decisions.					
Systemic View					
LD takes a holistic view of performance by considering the context, barriers, and supports.					
LD understands the context in which the business operates.					
LD uses a strategic planning system that is appropriate to the context.					
Future Forecasting					
LD strategic development is linked to the desired, future state of the organization.					
There is a realistic notion of the gap between where the organization is today and where they want to be in the future					
LD transforms the basic skills and aspirations of the workforce to prepare for competing in the long term.					
Bundles					
LD offers intervention bundles to address performance issues.					
LD offers alternatives to training as performance solutions.					
Interventions are perceived as means to achieve high-impact performance.					
LD is perceived as a means to build competitive advantage.					

Please include your Email address if you would like to receive a copy of the results of the study. A copy will be sent you upon completion of the research study.

Email ____

APPENDIX D - Preliminary list of empirical and conceptual support for LDSA

#	Item	Proposed Factor	Conceptual Support	Empirical Support
1	Manager actively seeks a balance between fit and flexibility in strategy development and implementation.	Business Knowledge		Christiansen & Higgs, 2008
2	Ongoing adjustments and flexibility in strategy formulation and implementation.	Business Knowledge		Christiansen & Higgs, 2008
3	Cross-functional action planning	Collaboration	Derven, 2012	
4	LD is involved in regular formal business planning and review processes	Collaboration		Anderson, 2008
5	Involve representatives for all stakeholders in the planning of training	Collaboration	Kraiger, McLinden, & Casper, 2004	
6	Joint effort between LD & line managers	Collaboration		van Riel, C.B.M. (2008)
7	Explicit attention for cross-division dialogue	Collaboration		van Riel, C.B.M. (2008)
8	Involve representatives for all stakeholders in the planning of training	Collaboration	Ulrich, 1986	
9	Involve customers in the design of LD practices (to influence the buying habits of external customers "the HR wallet test")	Collaboration; External customers	Ulrich & Brockbank, 2005	
10	Support from line managers	Collaboration; Line managers		Gratton, et.al., 1999
11	Create a culture of line manager involvement in training	Collaboration; Line managers	Impact International, 2011	
12	Line managers perceive LD practices as helping their business unit reach its goals	Collaboration; Line managers	Ulrich, 1986	
13	Joint effort between LD & line managers	Collaboration; Line managers		Chew & Chong, 1999

14	LD and line managers develop and implement alignment together	Collaboration; Line managers		Christiansen & Higgs, 2008
15	The LD professional knows the context in which the business operates; know how the business makes money (value chain); understand the business; how to work with others to help make the business money	Business knowledge; Collaboration		SHRM, 2008
16	LD knowledge of capital markets	Business knowledge	Ulrich & Brockbank, 2005	
17	LD strategic plan uses business rationale and language	Communication; Business knowledge	Ulrich, 1986	
18	Capability to understand the emerging needs of the business, becoming competent and confident to speak in business terms with line executives	Business knowledge	Impact International, 2011	
19	Ongoing communication of business or value case for learning activities to meet priorities that may emerge outside the formal business planning process	Business knowledge; Communication		Anderson, 2008
20	The provision of short-term training capable of supporting the delivery of short-term business goals	Business knowledge; JIT training		Gratton, et.al., 1999
21	Ongoing environmental scanning and interpretation into organization's goals, strategies, structure, and resources	Systemic view	Ulrich & Brockbank, 2005	
22	LD takes a holistic view of performance (i.e. context, barriers, supports)	Systemic view	Derven, 2012	
23	Optimization efforts include leveraging techniques or data from other talent management processes	M&E	Hunt, 2012	
24	Alignment skills are viewed as strategic resources	Skills		Christiansen & Higgs, 2008
25	Line managers have highly developed integrative capacity skills	Line managers; Skills		Christiansen & Higgs, 2008

26	Skill type & level necessary to perform the critical internal, strategic processes	Skills	Kaplan & Norton, 2004	
27	The LD professional is both credible (respected) and active (offers a point of view, takes a position, challenges assumptions)	Skills; Credible activist		SHRM, 2008
28	Recognizes, articulates, and helps shape company culture; develop disciplines to make changes happen throughout the organization	Skills; Change steward		SHRM, 2008
29	Has a vision for how the organization can "win" in the marketplace (now and in the future); plays an active role in the establishment of the overall strategy to deliver on this vision; recognizes business trends and their impact on the business; forecasts potential obstacles; links internal organization to external customer expectations	Skills; Strategy architect		SHRM, 2008
30	Sufficient skills to pursue goals	Skills		van Riel, C.B.M. (2008)
31	Establish accountability for training	Accountability	Kraiger, McLinden, & Casper, 2004	
32	LD strategic plans raise critical questions - so that the responsibility for the plans shifts from LD to the line manager	Accountability; Line managers	Ulrich, 1986	
33	Behavior matches verbal communication	Communication		van Riel, C.B.M. (2008)
34	Interventions are means to high impact LD (not ends in themselves)	Bundles	Carlisle & Henrie, 1993	
35	LD as a means to building competitive advantage	Bundles	Ulrich, 1986	
36	Alignment initiated & orchestrated by top management	Leadership support		van Riel, C.B.M. (2008)
37	Leadership support	Leadership support		Chew & Chong, 1999

38	Leadership that can mobilize the organization toward its strategy	Leadership	Kaplan & Norton, 2004	
39	Senior leadership involvement & support	Leadership support	Van Zwieten, 1999	
40	Executive sponsorship is a driver and advocate of training	Leadership support	Impact International, 2011	
41	Ongoing monitoring alignment activities and progress	M&E	Van Zwieten, 1999	
42	Ongoing monitoring alignment activities and progress	M&E		van Riel, C.B.M. (2008)
43	Use evaluation data to link training to strategic initiatives	M&E	Kraiger, McLinden, & Casper, 2004	
44	Develop a theory of impact	M&E	Kraiger, McLinden, & Casper, 2004	
45	Reframe the point of evaluation from proof to evidence	M&E	Kraiger, McLinden, & Casper, 2004	
46	Isolate the effects of training (eliminate or reduce counterarguments to claims that training is effective)	M&E	Kraiger, McLinden, & Casper, 2004	
47	LD determines what different stakeholders view as meaningful evidence of value	M&E	Derven, 2012	
48	Ongoing measurement and assessment of the value of learning, as perceived by key stakeholders	M&E		Anderson, 2008
49	Identify a balanced range of kpis and benchmark measures that are significant to assess the value of learning for the org in its specific context	M&E		Anderson, 2008
50	M&E practices go beyond measures of efficiency. Measures of return on expectation, rather than ROI, communicate the strategic value of learning (rather than the function's efficiency)	M&E		Anderson, 2008
51	Ongoing measurement and assessment of the value of	M&E		Anderson, 2008

	learning, as perceived by key stakeholders			
52	The ability to create performance metrics capable of measuring and reporting on those behaviors and performance outcomes that reflect the business goals	M&E		Anderson, 2008
53	Efficiency in collection of talent management data	M&E	Hunt, 2012	
54	Identify stakeholder measures of value; Establish value expectations of stakeholders	M&E; Stakeholder expectations		Anderson, 2008
55	Use measurement for decision making	M&E	Bahlis, 2006	
56	Alignment creates win-win between business and employees	Rewards		van Riel, C.B.M. (2008)
57	Sets employee & team objectives aligned to the org strategy	Rewards	Kaplan & Norton, 2004	
58	Business objectives of the overall strategic plan are clearly articulated to the individual performer and transformed into clear individual objectives	Rewards		Gratton, et.al., 1999
59	There is a clear and realistic notion of the gap between where they are now and where they want to be	Future forecasting	Van Zwieten, 1999	
60	Strategic initiatives that are clearly linked to the desired future state	Future forecasting	Van Zwieten, 1999	
61	Transforming the basic skills and aspirations of the workforce to prepare for the longer term	Future forecasting		Gratton, et.al., 1999
62	Establishes incentives that reward employees when they meet personal, departmental, business unit, and corporate targets	Rewards	Kaplan & Norton, 2004	
63	Performance is managed through linkage of organizational goals to individual and team	Rewards		Chew & Chong, 1999
64	Rewards & recognition for contribution in achieving	Rewards		van Riel, C.B.M.

	organizational and personal goals			(2008)
65	The ability to reward performance in line with the business goals	Rewards		Gratton, et.al., 1999
66	Sufficient resources to pursue goals	Resources		van Riel, C.B.M. (2008)
67	Sufficient authority to pursue goals	Accountability		van Riel, C.B.M. (2008)
68	Internal climate of cooperation where LD can exercise its role in creating and maintaining alignment	Cooperation; Accountability		Christiansen & Higgs, 2008
69	Facilitation of cross-functional experience	Coordination		Chew & Chong, 1999
70	The use of common tools, models, and terminology	Coordination	Hunt, 2012	
71	Coordination among cross-functional teams; Plan how the initiatives and goals will be worked throughout the organization	Coordination	Van Zwieten, 1999	
72	Employees are deeply aware of and internalize the mission, vision, and core values necessary to execute the firm's strategies	Communication	Kaplan & Norton, 2004	
73	Employees understand how their role supports the overall strategy	Communication	Kaplan & Norton, 2004	
74	Managers communicate high-level strategic objectives in ways that all employees can understand	Communication	Kaplan & Norton, 2004	
75	LD identifies specific activities which can be used to accomplish strategic goals - Systematically provide decision makers information about what LD practices can be added, deleted, or modified to reach strategic goals	M&E	Ulrich, 1986	

76	A well defined purpose that is understood by everyone	Communication	Van Zwieten, 1999	
77	A vivid description of what the company will look like when goal is achieved (desired future state)	Communication	Van Zwieten, 1999	
78	Ongoing communication of business or value case for learning activities to meet priorities that may emerge outside the formal business planning process	Business knowledge; Communication		Anderson, 2008
79	Ongoing communication with line managers about what the "hot" issues are, what priorities the organization is addressing now & will be addressing in the near future	Communication: Line managers		Anderson, 2008
80	Identify and communicate how the LD strategy is aligned to organization priorities; The focus is on the strategic requirements of the org rather than on the functional preferences of the LD department	Communication		Anderson, 2008
81	Works proactively with senior managers to develop trust in the learning value contribution	Collaboration		Anderson, 2008
82	Able to influence decision makers to undertake learning to meet emergent business issues as they arise	Skills		Anderson, 2008
83	Training programs specifically aimed to help employees acquire skills to build a competitive organization	Content	Ulrich, 1986	
84	Just in time learning solutions that harness current business issues	Content	Impact International, 2011	
85	Can articulate how the intervention links to strategic priorities; Training content is directly connected with live strategic issues (e.g. action learning projects)	Content	Impact International, 2011	
86	Interventions are aligned to organizational and line objectives.	Content	Carlisle & Henrie, 1993	
87	Use a strategic planning system appropriate to context	M&E		Chakravarthy, 1987
88	Create people strategies through performance gap	Skills		Gratton, et.al., 1999

	analysis, which in turn, informs the design and delivery of the people processes			
89	Create an understanding of the gap between capability and business requirements (as expressed in strategy documents)	Skills		Gratton, et.al., 1999
90	Training is based on needs assessment & connected to strategic priorities	Skills		Sels, et. al, 2006
91	Shapes employee skills and abilities to organizational needs	Skills		Bird & Beechler, 1995
92	LD offers bundles of practices (rather than single interventions) to address PI challenges	Bundles		Sels, et. al, 2006
93	LD identifies development needs (in light of strategic needs) and offer alternatives which efficiently and effectively meet those needs	Bundles	Ulrich, 1986	
94	LD strategic plan remains simple to identify the critical elements of the plan, direct so that action follows the plan	Communication	Ulrich, 1986	
95	Create an understanding of the gap between capability and business requirements (as expressed in strategy documents)	Skills		Chakravarthy, 1987

APPENIDX E – Subscales & Items

Measurement & Evaluation (M&E)
41. 42. 48. 51. 54. Ongoing monitoring and assessment of the value of the learning function is performed.
43. 44. 45. Evaluation data is used to link training to strategic initiatives.
50. Data is collected beyond efficiency measures.
52. Capability of measuring and reporting on behaviors that reflect business goals.
52. Capability of measuring and reporting on performance outcomes that reflect business goals.
46. LD eliminates or reduces counterarguments to claims of training ineffectiveness by isolating the effects of training
47. LD determines what different stakeholders perceive as meaningful evidence of value
49. LD provides a balanced range of measures that are significant to assess the value of LD
49. 88. LD reports on measures specific to the organizational context.
23. 53. LD integrates talent management data throughout organization
55. 76. LD uses measurement to aid decision-making.
Collaboration
3. Cross-functional action planning is performed.
4. LD is involved in regular business planning activities.
5, 8, 9. All stakeholder groups are involved in LD strategic planning.
6, 13. There is an ongoing, concerted effort between LD and line managers to achieve strategic priorities.
7. Explicit attention is given to cross-division dialogue.
10. LD receives support from line managers.
11. A culture of line manager involvement in training is encouraged.
12. Line managers perceive LD practices as helping their business unit reach its goals.
14. LD and line managers develop alignment together.
14. LD and line manager implement alignment together.
69. There is an internal climate of cooperation where LD can exercise its role in creating alignment.
82. LD works proactively with managers to develop trust in the learning value contribution.
Communication
80. LD conducts ongoing dialogue with line managers.
17. 95. LD strategic plans are communicated in business language.
74. Employees are aware how their role supports strategy.
73. 77. Employees are deeply aware of what is necessary to execute a firm's strategies.
75. 78. Managers communicate high-level strategic objectives in ways that all employees can understand.
79. 81. LD provides ongoing communication of the business case for learning decisions
Business Knowledge
15.LD knows the context in which the business operates.
16. LD knows the business value chain.
18. 20. LD understands the emerging needs of the business
20. LD has confidence to speak in business terms with line executives.
1. LD actively seeks a balance between fit and flexibility in strategy development.
1. LD actively seeks a balance between fit and flexibility in strategy implementation.
2. LD performs ongoing adjustments in strategy implementation.
Strategic Skills
24. Alignment skills are perceived as a strategic asset.
25. Line managers have highly developed integrative capability skills.

26. 27. 28. 30. 83. LD members have the skill type(s) necessary to execute critical strategic priorities.
26. 27. 28. 30. 83. LD members have the skill level(s) necessary to execute critical strategic priorities.
29. LD members have a vision for how the organization can 'win' in the marketplace.
89. 90. LD members continuously investigate the gap between workforce capability and business requirements.
91. 92. Gap analysis informs the design and delivery of strategic interventions.
Content
84. Training programs specifically aimed at developing a competitive organization.
85. Just in time learning solutions are offered to harness current business needs.
86. 87. Training content is explicitly aligned to strategic priorities.
Leadership Support
36. 37. 38. LD alignment efforts driven by top management.
39. 40. Senior leadership is actively involved in LD alignment efforts.
39. 40. Senior leadership actively supports LD alignment efforts.
Coordination
70. 72. LD facilitates cross-functional experiences.
71. LD shares common tools, models, and terminology with business partners.
LD plans how interventions will be worked throughout the organization.
The organization has an internal climate of support where LD can exercise its role in crafting alignment.
Rewards
57. 62. 63. 65. The organization offers incentives that reward achievement of personal, functional, and firm targets.
56. 58. 64. Alignment efforts create a win-win between the organization and its employees.
Accountability
32. Accountability for performance is shared with line managers.
32. Accountability for results is shared with line managers.
67. LD has sufficient authority to pursue goals.
31. LD is held accountable for learning decisions.
Systemic View
21. 22. LD takes a holistic view of performance by considering the context, barriers, and supports.
21. LD understands the context in which the business operates.
21. LD uses a strategic planning system that is appropriate to the context.
Future Forecasting
60. LD strategic development is linked to the desired, future state of the organization.
59. There is a realistic notion of the gap between where the organization is today and where they want to be in the future
61. LD transforms the basic skills and aspirations of the workforce to prepare for competing in the long term.
Bundles
93. LD offers intervention bundles to address performance issues.
94. LD offers alternatives to training as performance solutions.
34. Interventions are perceived as means to achieve high-impact performance.
35. LD is perceived as a means to build competitive advantage.

APPENDIX F – Permission to Use Scale Development Process

Karen Hicks <karenhicks2820@gmail.com>

RE: Permission to use Scale Development Process (Hinkin, 1998)

Hinkin, Tim <trh2@cornell.edu> Wed, Apr 30, 2014 at 2:31 PM
To: Karen Hicks <dy1149@wayne.edu>

Karen,
Be my guest. This article is used in many doctoral research methods classes. Best of luck!

Timothy R. Hinkin
St. Laurent Professor in Applied Business Management and
Bradley Director of Graduate Studies
Cornell University School of Hotel Administration
540 Statler Hall
607-255-2938

-----Original Message-----
From: Karen Hicks [mailto:dy1149@wayne.edu]
Sent: Wednesday, April 30, 2014 2:09 PM
To: Hinkin, Tim
Subject: Permission to use Scale Development Process (Hinkin, 1998)

Hi Dr. Hinkin,

My name is Karen Hicks. I'm a doctoral candidate in the Design and Performance Systems (formerly Instructional Technology) program at Wayne State University in Detroit, MI. I'm writing to request your permission to use your scale development process in my dissertation research.

For my research, I'm developing a scale to measure strategic alignment in Learning & Talent Development functions and found your process described in your article, A Brief Tutorial on Scale Development, as an excellent methodology to guide this scale development process.

With your permission, I would like to use your process to guide the methodology of my dissertation research, with an estimated completion of May, 2015. The process would be described and followed in my dissertation only, and not reproduced for distribution.

Would you let me know at your earliest convenience if this sounds agreeable to you?

Thank you kindly for considering this request.

Best,
Karen Hicks
Doctoral Candidate
Wayne State University

Wayne State DPS Program Information: http://coe.wayne.edu/aos/it/ More about me: www.linkedin.com/pub

APPENDIX G – Overview of Study Design

Study Phase	**Dates**	**Population**	***n***	**Analysis**	**Protocol/ Decision Rules**	**Scale Modifications**
Item Generation		n/a	n/a	Literature review Content analysis	Code & identify themes/patterns; Rank order; Apply general rules (Hinkin, 1998) Start with double the number of items needed, plan to reduce to about half Three items per factor, four to six items, ideal (theoretical support trumps guide to # of items) 5-point Likert scale (best suited to reliability)	n/a
Pilot Study	July 10 – Sept 19	Academics Award winning practitioners ISPI MI Board members	35 (26 complete; 9 partials)	Usability, Cognition, Clarity Content validity assessment	Design feedback Usability Time required Content clarity Lawshe (1975) CVR table (N=26, CVR ≥ .37)	Question wording Clarity of directions
Study 1	Oct 9 – Oct 22	ATD local chapters ISPI Michigan chapter LinkedIn groups Academics, Award winning practitioners	67 (46 complete; 21 partials)	Item reduction Exploratory factor analysis Extraction Selection Rotation Interpretation	Adequate capture of the sampling domain: Highest mean range (≥ 4) I-CVI ≥ .8 Contribution to internal consistency reliabilities (α ≥ .7) Variation from average (σ ± 1) Redundancy of items Eigenvalue ≥1 Scree plot 'elbow' Cross loadings Communalities >.30 (>.30 minimal; >.40 important; >.50 practically significant # items per factor Total variance explained Theoretical support trumps guide to number of items Overall consideration of survey fatigue	Item reduction Discriminant & Convergent items
Study 2	Oct 25 – Nov 18	ISPI chapters ISPI CPTs LinkedIN groups (SHRM, ATD, LD, HR)	87 (85 complete; 2 partials)	Confirmatory factor analysis Goodness of fit tests	GFI RMSEA (90% confidence interval) x^2/df p CFI	Explore factor structure Confirm factor structure Final LDSA scale

APPENDIX H – Summary of Pilot Changes

Factor	Original Item	Improved Item
M&E	Evaluation data is used to link training to strategic initiatives	Use of evaluation data to link training to strategic initiatives
	Data is collected beyond efficiency measures	Collecting data beyond efficiency measures
	LD eliminates or reduces counterarguments to claims of training ineffectiveness by isolating the effects of training	The ability of the Learning function to reduce or eliminate counterclaims of training effectiveness
Collaboration	All stakeholder groups are involved in LD strategic planning	All stakeholder groups are involved in the strategic planning of the Learning function
	LD and line managers develop alignment together	The Learning function and line managers develop alignment strategies together
	There is an internal climate of cooperation where LD can exercise its role in creating alignment	There is an internal climate of cooperation where the Learning function can exercise its role in creating strategic alignment
	LD works proactively with managers to develop trust in the learning value contribution	The Learning function works proactively with line managers to develop trust
Communication	LD conducts ongoing dialogue with line managers	The Learning function has ongoing dialogue with line managers
	Employees are aware how their role supports strategy	All employees are aware of how their role supports strategy
	Employees are deeply aware of what is necessary to execute a firm's strategies	All employees are deeply aware of what is necessary to execute a firm's strategies
Business Knowledge	No change	No change
Strategic Skills	Alignment skills are perceived as a strategic asset	The organization perceives alignment skills as a strategic asset
	Gap analysis informs the design and delivery of strategic interventions	Gap analysis is performed to inform the design and delivery of strategic interventions
Content	Training programs specifically aimed at developing a competitive organization	Training programs are specifically aimed at developing a competitive organization
	Just in time learning solutions are offered to harness current business needs	Just in time learning solutions are offered to address current business needs
Leadership Support	LD alignment efforts driven by top management	The Learning function strategic alignment efforts are driven by top management
	LD is perceived as a means to build competitive advantage (Bundles category)	The Learning function is perceived as a means to build competitive advantage (Leadership Support category)

Coordination	LD plans how interventions will be worked throughout the organization	The Learning function plans how interventions will be integrated throughout the organization
	The organization has an internal climate of support where LD can exercise its role in crafting alignment	The organization has an internal climate of support where the Learning function can exercise its role in facilitating its strategic alignment
Rewards	No change	No change
Accountability	Accountability for performance is shared with line managers	Accountability for performance is shared among line managers and the Learning function
	Accountability for results is shared with line managers	Accountability for results is shared among line managers and the Learning function
Systemic View	No change	No change
Future Forecasting	No change	No change
Bundles	LD offers intervention bundles to address performance issues	The Learning function offers more than 1 intervention for each performance issue

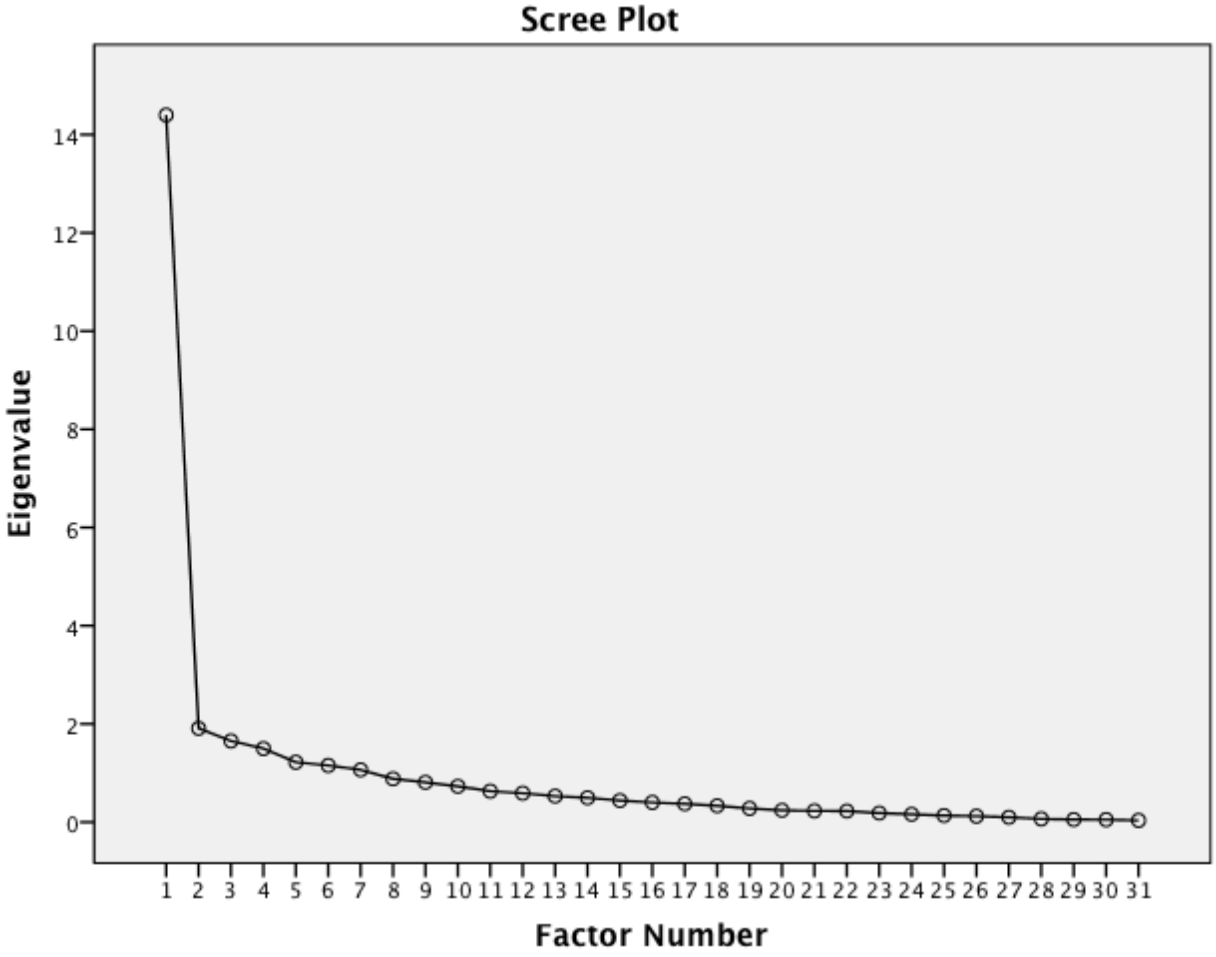
APPENDIX I – EFA Results 7 Factor Solution

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	14.399	46.448	46.448	14.092	45.458	45.458	10.683
2	1.911	6.163	52.611	1.562	5.038	50.496	2.221
3	1.652	5.330	57.941	1.264	4.076	54.572	4.323
4	1.499	4.836	62.777	1.134	3.656	58.229	1.945
5	1.221	3.939	66.716	.875	2.821	61.050	1.258
6	1.154	3.724	70.440	.800	2.580	63.630	9.613
7	1.064	3.433	73.873	.711	2.293	65.923	9.360
8	.882	2.845	76.718				
9	.811	2.616	79.334				
10	.731	2.357	81.691				
11	.631	2.034	83.725				
12	.590	1.902	85.627				
13	.530	1.709	87.336				
14	.497	1.604	88.940				
15	.440	1.421	90.360				
16	.401	1.294	91.654				
17	.373	1.202	92.856				
18	.334	1.077	93.933				
19	.279	.901	94.833				
20	.240	.775	95.608				
21	.230	.741	96.349				
22	.225	.726	97.075				
23	.185	.597	97.671				
24	.160	.517	98.188				
25	.135	.436	98.623				
26	.122	.393	99.017				
27	.100	.321	99.338				
28	.066	.212	99.550				
29	.053	.172	99.722				
30	.050	.162	99.884				

31	.036	.116	100.000				

EFA 7-Factor Solution Scree Plot



EFA 7-Factor Solution Pattern Matrix

Pattern Matrix[a]

	Factor						
	1	2	3	4	5	6	7
SV2	.802						
BUSKN3	.777						
BUSKN1	.777						
BUSKN2	.640						
CONT3	.612						
COLL2	.580						
BUSKN4	.536						
COMM2	.452						
COLL8	.449						
COLL4	.440						
SS6		.492					
COLL9		.478					
ME11			.702				
ME12			.656				
ME5			.496				
ME2				.793			
LDRSPT2							
COORD2					-.429		
CONT4					.428		
CONT2						.664	
COLL6						.658	
COMM1						.623	
COLL11						.592	
COLL12						.557	
SS7						.478	
COORD3						.438	
COMM4							.793
COMM6							.660
COMM3							.608
SV4							.429

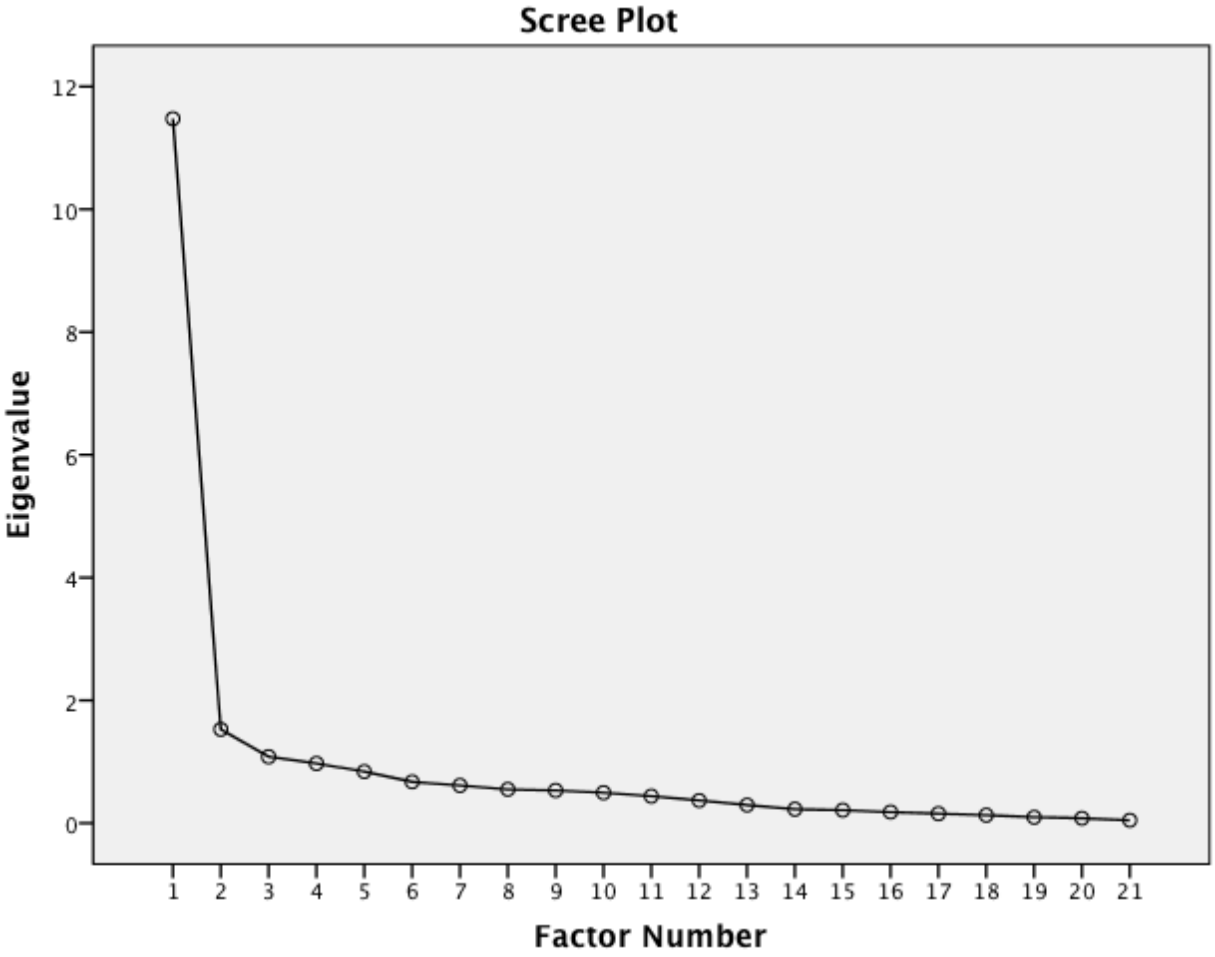
SS3							.405

APPENDIX J – EFA Results 3 Factor Solution

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.477	54.652	54.652	11.119	52.946	52.946	10.126
2	1.529	7.279	61.931	1.142	5.438	58.384	9.007
3	1.083	5.156	67.087	.717	3.417	61.801	.749
4	.972	4.628	71.716				
5	.840	4.001	75.717				
6	.673	3.203	78.920				
7	.614	2.924	81.843				
8	.550	2.619	84.462				
9	.533	2.538	87.000				
10	.496	2.364	89.364				
11	.440	2.095	91.459				
12	.369	1.759	93.218				
13	.296	1.408	94.626				
14	.228	1.085	95.711				
15	.211	1.005	96.717				
16	.180	.856	97.573				
17	.155	.739	98.312				
18	.131	.622	98.934				
19	.097	.462	99.395				
20	.080	.382	99.777				
21	.047	.223	100.000				

EFA 3-Factor Solution Scree Plot



EFA 3-Factor Solution Pattern Matrix

Pattern Matrix[a]

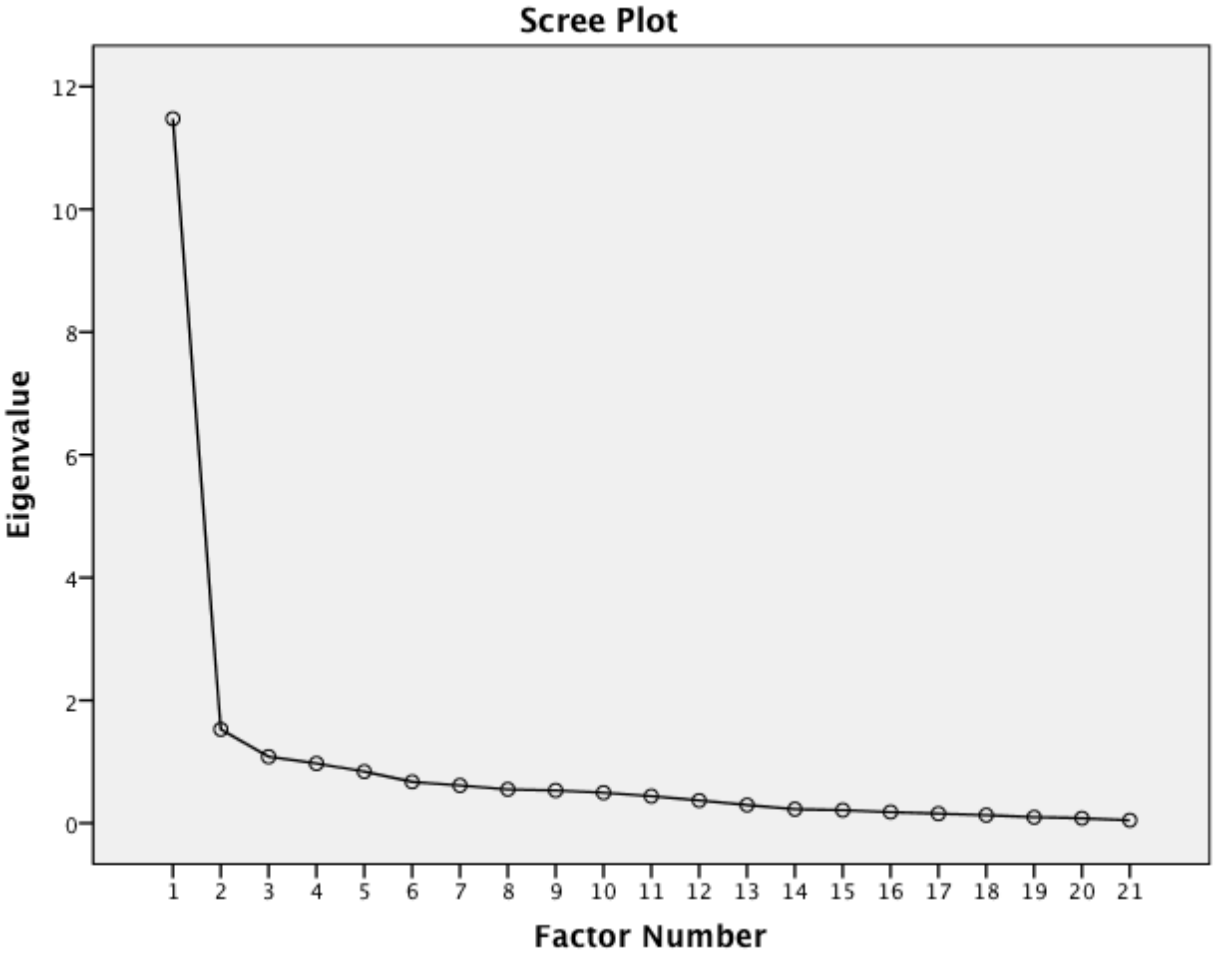
	Factor		
	1	2	3
BUSKN2	.978		
BUSKN3	.922		
BUSKN1	.853		
BUSKN4	.814		
COMM2	.767		
COLL2	.721		
CONT3	.577		
COLL4	.543		
COMM4	.515		
COMM6	.506		
SV4	.420		
COMM3			
COLL12		.775	
COLL11		.748	
COLL6		.741	
COORD3		.723	
CONT2		.592	
COMM1		.574	
SS7		.571	
COLL8		.498	
SV2	.473		-.524

APPENDIX K – EFA Results 2 Factor Solution

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.477	54.652	54.652	11.081	52.768	52.768	10.180
2	1.529	7.279	61.931	1.129	5.375	58.143	8.926
3	1.083	5.156	67.087				
4	.972	4.628	71.716				
5	.840	4.001	75.717				
6	.673	3.203	78.920				
7	.614	2.924	81.843				
8	.550	2.619	84.462				
9	.533	2.538	87.000				
10	.496	2.364	89.364				
11	.440	2.095	91.459				
12	.369	1.759	93.218				
13	.296	1.408	94.626				
14	.228	1.085	95.711				
15	.211	1.005	96.717				
16	.180	.856	97.573				
17	.155	.739	98.312				
18	.131	.622	98.934				
19	.097	.462	99.395				
20	.080	.382	99.777				
21	.047	.223	100.000				

EFA 2-Factor Solution Scree Plot



EFA 2-Factor Solution Pattern Matrix

Pattern Matrix[a]

	Factor	
	1	2
BUSKN3	.983	
BUSKN2	.973	
BUSKN1	.905	
BUSKN4	.791	
COMM2	.743	
COLL2	.721	
CONT3	.638	
SV2	.606	
COLL4	.556	
COMM4	.447	
SV4	.441	
COMM6	.413	
COLL12		.768
COLL11		.729
COLL6		.725
COORD3		.698
CONT2		.630
COMM1		.617
SS7		.543
COLL8	.405	.407
COMM3		

APPENDIX L – CFA Model 1 Summary of Statistics

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default Model	39	316.589	151	.000	2.097
Saturated Model	190	.000	0		
Independence Model	19	1020.348	171	.000	5.967

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default Model	.045	.723	.652	.575
Saturated Model	.000	1.000		
Independence Model	.212	.230	.144	.207

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default Model	.690	.649	.810	.779	.805
Saturated Model	1.000		1.000		1.000
Independence Model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default Model	.883	.609	.711
Saturated Model	.000	.000	.000
Independence Model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default Model	165.589	118.345	220.594
Saturated Model	.000	.000	.000
Independence Model	849.348	752.472	953.713

FMIN

Model	FMIN	F0	LO 90	HI 90
Default Model	3.769	1.971	1.409	2.626
Saturated Model	.000	.000	.000	.000

Independence Model	12.147	10.111	8.958	11.354

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default Model	.114	.097	.132	.000
Independence Model	.243	.229	.258	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default Model	394.589	418.964	489.852	528.852
Saturated Model	380.000	498.750	844.104	1034.104
Independence Model	1058.348	1070.223	1104.759	1123.759

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default Model	4.697	4.135	5.352	4.988
Saturated Model	4.524	4.524	4.524	5.938
Independence Model	12.599	11.446	13.842	12.741

HOELTER

Model	HOELTER .05	HOELTER ,01
Default Model	48	52
Independence Model	17	18

APPENDIX M – CFA Model 2 Summary of Statistics

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default Model	40	114.835	96	.092	1.196
Saturated Model	136	.000	0		
Independence Model	16	752.390	120	.000	6.270

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default Model	.034	.859	.801	.607
Saturated Model	.00	1.000		
Independence Model	.218	.268	.170	.236

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default Model	.847	.809	.971	.963	.970
Saturated Model	1.000		1.000		1.000
Independence Model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default Model	.800	.678	.776
Saturated Model	.000	.000	.000
Independence Model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default Model	18.835	.000	49.897
Saturated Model	.000	.000	.000
Independence Model	632.390	549.535	722.736

FMIN

Model	FMIN	F0	LO 90	HI 90
Default Model	1.367	.224	.000	.594
Saturated Model	.000	.000	.000	.000
Independence Model	8.957	7.528	6.542	8.604

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default Model	.048	.000	.079	.514
Independence Model	.250	.233	.268	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default Model	194.835	215.134	292.541	332.541
Saturated Model	272.000	341.015	604.201	740.201
Independence Model	784.390	792.510	823.473	839.473

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default Model	2.319	2.095	2.689	2.561
Saturated Model	3.238	3.238	3.238	4.060
Independence Model	9.338	8.352	10.414	9.435

HOELTER

Model	HOELTER .05	HOELTER ,01
Default Model	88	96
Independence Model	17	18

APPENDIX N - Internal Consistency Reliability Results

Internal Consistency Reliability Full Scale Results

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.916	15

Item Statistics

	Mean	Std. Deviation	N
COLL6	4.60	.602	85
COLL11	4.31	.772	85
COLL12	4.40	.775	85
COMM1	4.45	.748	85
COMM2	4.28	.934	85
COMM4	4.15	.893	85
COMM6	4.18	.774	85
BUSKN2	4.48	.683	85
BUSKN3	4.46	.646	85
BUSKN4	4.60	.676	85
SS7	4.53	.700	85
CONT2	4.16	.814	85
COORD3	4.16	.814	85
SV2	4.54	.665	85
SV4	4.58	.624	85

Inter-Item Correlation Matrix

	COLL6	COLL11	COLL12	COMM1	COMM2	COMM4	COMM6	BUSKN2
COLL6	1.000	.523	.475	.429	.394	.315	.230	.272
COLL11	.523	1.000	.629	.482	.424	.363	.387	.371
COLL12	.475	.629	1.000	.592	.484	.392	.496	.486
COMM1	.429	.482	.592	1.000	.567	.306	.540	.481
COMM2	.394	.424	.484	.567	1.000	.319	.490	.530
COMM4	.315	.363	.392	.306	.319	1.000	.339	.287
COMM6	.230	.387	.496	.540	.490	.339	1.000	.422
BUSKN2	.272	.371	.486	.481	.530	.287	.422	1.000
BUSKN3	.324	.455	.366	.383	.335	.392	.360	.463
BUSKN4	.451	.397	.536	.546	.671	.300	.591	.551
SS7	.396	.578	.439	.452	.388	.345	.309	.206
CONT2	.282	.336	.310	.347	.361	.341	.369	.219
COORD3	.233	.582	.479	.444	.408	.374	.312	.326
SV2	.429	.602	.546	.489	.518	.400	.506	.546
SV4	.463	.544	.527	.410	.473	.352	.501	.540

Inter-Item Correlation Matrix

	BUSKN3	BUSKN4	SS7	CONT2	COORD3	SV2	SV4
COLL6	.324	.451	.396	.282	.233	.429	.463
COLL11	.455	.397	.578	.336	.582	.602	.544
COLL12	.366	.536	.439	.310	.479	.546	.527
COMM1	.383	.546	.452	.347	.444	.489	.410
COMM2	.335	.671	.388	.361	.408	.518	.473
COMM4	.392	.300	.345	.341	.374	.400	.352
COMM6	.360	.591	.309	.369	.312	.506	.501
BUSKN2	.463	.551	.206	.219	.326	.546	.540
BUSKN3	1.000	.452	.220	.352	.488	.523	.605
BUSKN4	.452	1.000	.226	.294	.229	.540	.581
SS7	.220	.226	1.000	.284	.639	.324	.301
CONT2	.352	.294	.284	1.000	.264	.207	.232
COORD3	.488	.229	.639	.264	1.000	.427	.373
SV2	.523	.540	.324	.207	.427	1.000	.760
SV4	.605	.581	.301	.232	.373	.760	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.392	4.153	4.600	.447	1.108	.029	15

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
COLL6	61.28	51.538	.542	.465	.909
COLL11	61.58	48.438	.703	.633	.904
COLL12	61.48	48.276	.716	.588	.903
COMM1	61.44	48.844	.686	.552	.905
COMM2	61.60	47.124	.670	.595	.905
COMM4	61.73	49.485	.501	.307	.912
COMM6	61.71	49.282	.616	.516	.907
BUSKN2	61.40	50.338	.596	.474	.908
BUSKN3	61.42	50.676	.596	.569	.908
BUSKN4	61.28	49.729	.671	.661	.905
SS7	61.35	50.683	.542	.567	.909
CONT2	61.72	50.824	.439	.308	.913
COORD3	61.72	49.205	.588	.626	.908
SV2	61.34	49.442	.717	.679	.904
SV4	61.31	50.048	.695	.690	.905

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
65.88	56.581	7.522	15

Internal Consistency Reliability Factor 1: Business KSA Results

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.869	.879	8

Item Statistics

	Mean	Std. Deviation	N
BUSKN3	4.46	.646	85
BUSKN2	4.48	.683	85
BUSKN4	4.60	.676	85
COMM2	4.28	.934	85
SV2	4.54	.665	85
COMM4	4.15	.893	85
SV4	4.58	.624	85
COMM6	4.18	.774	85

Inter-Item Correlation Matrix

	BUSKN3	BUSKN2	BUSKN4	COMM2	SV2	COMM4	SV4	COMM6
BUSKN3	1.000	.463	.452	.335	.523	.392	.605	.360
BUSKN2	.463	1.000	.551	.530	.546	.287	.540	.422
BUSKN4	.452	.551	1.000	.671	.540	.300	.581	.591
COMM2	.335	.530	.671	1.000	.518	.319	.473	.490
SV2	.523	.546	.540	.518	1.000	.400	.760	.506
COMM4	.392	.287	.300	.319	.400	1.000	.352	.339
SV4	.605	.540	.581	.473	.760	.352	1.000	.501

COMM6	.360	.422	.591	.490	.506	.339	.501	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.409	4.153	4.600	.447	1.108	.032	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BUSKN3	30.81	15.178	.588	.431	.857
BUSKN2	30.79	14.740	.638	.439	.852
BUSKN4	30.67	14.390	.723	.600	.844
COMM2	30.99	13.321	.640	.517	.854
SV2	30.73	14.414	.733	.636	.843
COMM4	31.12	14.724	.443	.233	.878
SV4	30.69	14.667	.732	.664	.844
COMM6	31.09	14.348	.615	.419	.854

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
35.27	18.557	4.308	8

Internal Consistency Reliability Factor 2: Collaboration Results

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.843	.845	7

Item Statistics

	Mean	Std. Deviation	N
COLL11	4.31	.772	85
COLL12	4.40	.775	85
COLL6	4.60	.602	85
COORD3	4.16	.814	85
CONT2	4.16	.814	85
COMM1	4.45	.748	85
SS7	4.53	.700	85

Inter-Item Correlation Matrix

	COLL11	COLL12	COLL6	COORD 3	CONT2	COMM1	SS7
COLL11	1.000	.629	.523	.582	.336	.482	.578
COLL12	.629	1.000	.475	.479	.310	.592	.439
COLL6	.523	.475	1.000	.233	.282	.429	.396
COORD3	.582	.479	.233	1.000	.264	.444	.639
CONT2	.336	.310	.282	.264	1.000	.347	.284
COMM1	.482	.592	.429	.444	.347	1.000	.452
SS7	.578	.439	.396	.639	.284	.452	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.373	4.165	4.600	.435	1.105	.029	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
COLL11	26.31	10.001	.732	.581	.799
COLL12	26.21	10.217	.677	.522	.808
COLL6	26.01	11.655	.524	.373	.832
COORD3	26.45	10.322	.609	.520	.820
CONT2	26.45	11.322	.399	.168	.853
COMM1	26.16	10.544	.631	.434	.816
SS7	26.08	10.719	.646	.503	.815

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.61	14.169	3.764	7

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ABSTRACT

CONSTRUCT VALIDATION OF A LEARNING & TALENT DEVELOPMENT STRATEGIC ALIGNMENT SCALE

by

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The purpose of a Learning & Talent Development (LTD) function in organizations is to develop the skills of the workforce to execute strategic priorities. The authority for the decisions involving the development of workforce skills is a challenge LTD may face when fulfilling this purpose. The perceived lack of authority, whether within or outside the LTD function, may position LTD as executor of human performance strategic decisions, rather than as strategic planner or formulator. A strategically aligned LTD function is perceived as a business partner and as an asset to the business. This study addresses this LTD challenge by identifying and testing the construct of strategic alignment in LTD functions.

The study design followed a psychometrically validated scale development process with the goal of confirming a valid and reliable measure of strategic alignment in LTD functions. Three studies were performed to (1) generate and test the initial pool of items, (2) explore the factor structure, and (3) confirm the factor structure. To generate the initial pool of items, a review of the last 30 years of HRM, HRD, and LD conceptual and empirical literature was performed and produced 69 initial items that represented successful strategic alignment in LTD. These items were

then pilot tested with expert reviewers and included those that teach HRM, HRD, or LD at the graduate level in the U.S. and those in the field that have won awards for achieving strategic alignment in their work. Expert reviewer feedback (n=26) was used to make design and item modifications. The next study (n=67) was performed to explore the factor structure of the remaining items. HRM, HRD, and LD practitioners were recruited through associations (i.e. ATD, ISPI, SHRM) and social media outlets. Results demonstrated a 2-factor, 19-item structure representing 58.143% total explained variance. Each factor was carefully reviewed to seek themes for correlated items. Factor 1 was labeled "Business KSA" representing the business knowledge, skills, and abilities of the Learning & Talent Development practitioner and factor 2 was labeled "Cooperation" representing the cooperative relationship between Learning & Talent Development practitioners and line managers. The third study was performed to confirm the factor structure. The two-factor model with modifications fit the data interpretation for quality of the goodness of fit (GFI= .859, RMSEA= .048, p= .092, x^2=114.835, x^2/df=1.196, CFI= .970). The results of the studies produced a two-factor, 15-item factor structure for the LSDA scale.

Implications of this study affect the expectations of and within strategically aligned LTD functions and impact those in roles within and outside the LTD function. The first factor, Business KSA, accounts for 52.768% of the total variance explained demonstrating the prominence in the expectation of LTD to demonstrate its understanding of the business and its needs. The business partners of strategically aligned LTD functions expect actionable information that is data-informed. Aligned LTD functions conduct gap analyses to make connections throughout the performance system and achieve a balance of value delivered to internal and external stakeholders as demonstration of strategic decision-making skills regarding matters of the business and its needs.

The results of the study describe the type of relationship internal customers require to perceive the LTD function as aligned to the business and also addresses how LTD members that have a desire to be strategically aligned can proactively design and manage the relationship to gain cooperative work environments in which LTD can exercise its role in creating and modeling alignment. Strategically aligned LTD functions take the lead in the relationship to develop trust and to identify what measures the stakeholder uses to determine value. Through this, LTD can establish the value expectations of internal stakeholders and improve their ability to offer strategically aligned solutions that meet those expectations.

AUTOBIOGRAPHICAL STATEMENT

Karen Hicks has over 15 years experience in training & development strategy and implementation. She has led and managed the transition of learning functions from traditional to transformational strategic contributors. Karen has published academic and practitioner articles in *Performance Improvement*, *Journal of Business and Technology*, and *Evaluation and Program Planning*. She has received various awards and is an active member and contributor of the International Society for Performance Improvement. She has presented her work at ISPI, ASTD, and MCUL international, national, and local conferences.

Her research is centered about helping organizations build measurement & evaluation and talent development capabilities. Her current work is focused on demonstrating the strategic value of learning functions through strategic alignment assessment and improvement.