

Job-Related Training and Employee Intellectual Capital

What is the Role of Organizational Culture and Strategy?

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Abstract

Aim: To investigate the impact and role of organizational culture and strategy on the relationship between job-related training and the formation of employee intellectual capital. Employee intellectual capital (EIC) consists of embedded stores of codified and tacit knowledge, skills, routines, relationships and competencies that are possessed by employees, and available for use by an organization. *Background:* Job-related training (JRT) is work-centered training that is received both on and off the worksite and used primarily to instruct employees how to improve the effectiveness of their existing jobs. It is believed that JRT contributes to an organization's store of intellectual capital because it enhances employee performance on the job as well it makes them more effective at handling new work-related challenges. However, the means by which this form of training enhances EIC formation is not well-understood. The role of organizational culture and strategy may be considered important contributory factors in explaining how JRT enhances the formation of EIC—ostensibly when the contribution of culture and strategy are supportive of the purpose, means and intent of the employee training that is received. When organizations pursue a strategy that emphasizes the seminal contributions that employees make to the success of their enterprise, they will be more likely to use, and benefit from, employee JRT. When an organization's culture stresses participatory decision making for all its employees, it is able to better utilize the many benefits of JRT. It is hypothesized that employee JRT will enhance the accumulation of EIC, but will do so only when its corporate strategy emphasizes a seminal role of its people, and when its corporate culture embraces and values employee empowerment and participatory decision-making. *Method and Analysis:* A survey questionnaire was sent to the chief nursing officers of 2208 hospitals and long-term care facilities in every province and territory of Canada, yielding valid responses from 705 establishments. Using nurse intellectual capital as the dependent variable and a measure of JRT as our independent variable, the analysis featured a step-wise Ordinary Least Squares (OLS) regression model that independently and concurrently assessed the contribution made by a strategy emphasizing employee development and by a corporate culture that stresses employee participation in decision making. *Results:* After controlling for establishment characteristics, health care organizations with extensive nurse JRT are positively associated with nurse EIC formation ($p < .001$), yet the independent contribution of JRT to EIC formation is quite modest. Health care organizations which adopt a strategy that values employee development, and organizations which strongly value employee participation are shown to markedly enhance nurse

intellectual capital formation in our study establishments through the use of JRT. Pursuing a strategy that emphasizes the seminal role of employee development is found to *fully mediate* the relationship between JRT and EIC, while a corporate culture emphasizing employee participation in decision making is found to *partially mediate* this relationship. *Implications and Conclusions:* Organizations which want to enhance EIC through the use of JRT need to consider the key contribution of their corporate strategy and culture. Organizations that extensively utilize job-related training, when used in combination with a corporate strategy that emphasizes employee development, and an organizational culture that values employee participatory decision making, are able to markedly increase the store of employee intellectual capital.

Keywords: Intellectual capital, Job-related training, Employee development strategy, Participatory culture, Nurses

Introduction

In the past few years, employees have begun to be widely recognized as a valuable resource [1]. In the mainstream management literature, there is growing interest in the concept of intellectual capital and the strategic leadership needed to create and nurture it. It is the actions of human resource management to facilitate or degrade the accumulation of organization-level intellectual capital. Since intellectual capital is pivotal to an organization's enduring success, its formation and propagation are of major concerns for top managers. Given the role of intellectual capital as a potential source of competitive advantage, its proper management is of considerable importance as a source of competitive advantage. Therefore the human resource management system of attracting, selecting, deploying, retaining and transforming valuable human resources is emerging as critical in the process of creating, accumulating, and recreating intellectual capital [2].

There is abundant evidence from research that suggests that human resource management practices have the potential to impact the creation of human and intellectual capital [3,4]. However the means by which human resource management practices do so remains unclear. Drawing on a resource-based perspective, there is increasing evidence to suggest a pivotal role organizational strategy and organizational in intellectual capital creation [5,6].

An important human resources management practice that has the potential to add to an organization's store of human capital is employee job-related training. When organizations 'invest' in their people, through extensive use of employee training, they do so in the hope that they are able to create, accumulate and extend employee intellectual capital. A resource-based view of the firm suggests that the potential of any particular human resource management practice to lead to enhanced organizational performance is achieved only when its corporate strategy and culture supports, aligns with, is consistent with, the use of the human resource management practice. The objective of the research study is to investigate the application of job-related training in the formation of employee intellectual capital and to explore what role that having a "supportive" strategy and culture play in this relationship. A mediational effect of strategy and culture on employee job-related training and intellectual capital relationship is proposed.

Review of the Literature

Many organizations engage in extensive employee training and development efforts as a means of enhancing their stores of intellectual capital. One of the most common training approaches is job-related training (JRT) in which an employee (trainee) received formal instruction and training from a supervisor or experienced trainer [7]. JRT involves the use of both unstructured (on-the-job) as well as structured (off-the-job) approaches. Employee training is one of the most important ways that organizational performance can be improved. Saks and Haccoun [7] refer to JRT as the “acquisition of knowledge, skills, and abilities to improve performance in one’s current job” (p.7).

Organizations that invest in employee training and development benefit in many ways. Job-related training helps organizations to achieve their goals. By linking training to an organization’s strategy, training becomes a value-adding activity that operates in tandem with the delivery of its programs and services. In addition, there is a significant economic benefit to be realized by training employees. Trained employees can do more and better work, make fewer errors, require less supervision, and will have greater job satisfaction and lower rates of attrition. Job training can be used by organizations to increase the attractiveness to prospective employees and helps them retain their current employees [8].

Job-related training also provides direct benefits to employees [9]. Employees who are trained benefit by acquiring greater knowledge and skill that enables them to do their jobs better. Employees also develop greater confidence and self-efficacy in their ability to perform their job. Trained employees also have a more positive attitude toward their job and organization. Employees also gain extrinsically from job-related training. Employees have the potential to earn more income as a result of enhanced skills and knowledge, enjoy improved marketability, greater security of employment, as well as greater opportunities for advancement and promotion.

Given the many benefits, it is perhaps surprising that employee training is not considered a high priority in many Canadian organizations. Indeed, Canadian organizations invest less than those in other developed countries. Canadian organizations spend less on training and development than organizations in other developed countries. A 2005 *Conference Board of Canada* study ranks Canada at 20th out of 60 countries in its ranking of employee training [10]. Canadian organizations also lag when it comes to the amount spent on training per employee. In 2004, the total average direct investment in training per employee was CAN\$914, which represents an average investment in training as a percentage of payroll in Canada at around 1.75 percent, as compared with 2.34 percent in the U.S. [10].

Employee training is considered to add to an organization’s store of intellectual capital. Intellectual capital refers to the knowledge, information, experiences, core techniques, routines, intellectual property, and to employee and customer relationships [2]. Edvinsson and Malone [11] contend that intellectual capital is somewhat intangible because it reflects the gap between an organization’s market value and its book value. Most conceptualizations of intellectual capital propose that it is composed of three distinct (yet interrelated) parts: *human capital* (knowledge, skills, and competencies), *relational capital* (knowledge derived from the network of relationships between employees, customers, and suppliers), and *organizational capital* (codified experiences stored in databases, manuals, patents, routines, and structures) [12]. *Employee intellectual capital* (EIC) refers to a more narrowly understood formulation comprising only its human and relational capital components.

Organizations invest in their human capital accumulations primarily through employee training and development [13]. Human capital theorists suggest that firms should invest in their

employees to develop their unique, 'firm-specific' skills through extensive training initiatives, while resource-based theorists propose that core employee skills should be developed as a means for the organization to achieve its performance objectives. In a knowledge economy where its human capital provides firms with significant competitive advantage, making extensive investments in employee training and development is a rational decision.

Under a resource-based perspective, performance gains realized from employee job-related training only comes about when there is an alignment of a supportive strategy and culture [14]. Strategy is one of the most important factors influencing the size of training budgets. Indeed, training can help an organization achieve its valued objectives and gain a competitive advantage, when it is properly aligned with the organization's strategy. Whether an organization has a strategy for innovation, customer service, or quality, training must be designed to reinforce and support the strategy. By linking training to business strategy, training becomes systematic and strategic rather than as an isolated and independent activity. When the corporate strategy is based on the seminal role of its people for its execution, training becomes the means by which its strategy is fully operationalized.

Organizational culture also plays an important role in this regard. The culture of an organization refers to the 'shared beliefs, values, and assumptions' that exist in an organization [15]. An organization's culture is important because it determines the norms that exist in an organization and expected employee behaviors. Culture is a significant component of intellectual capital [16]. By linking training to corporate culture, the benefits realized through employee training are better able to be put to use. When the corporate culture values full employee participation and engagement in daily decision making, organizations are better able to utilize the new skills and competencies (human capital) that arise from employee training.

Research Model and Hypothesis

It is proposed that job-related training has the potential to enhance an organization's store of employee intellectual capital. Furthermore, the potential of this employee job-related training to do so requires a supportive corporate strategy and culture. A supportive corporate strategy is a strategy that stresses the seminal role of its people in its realization, while a supportive corporate culture promotes the full engagement of its people in the work enterprise. Indeed, it is proposed that the value of employee training on the formation employee intellectual capital is sorely missing if its strategy and culture does not require the essential input of its people for its full articulation.

In order to more adequately specify the role that strategy and culture plays with respect to employee training and intellectual capital, two research hypotheses are examined:

Hypothesis #1: Corporate strategy mediates the relationship between employee job-related training and employee intellectual capital.

Hypothesis #2: Workplace culture mediates the relationship between employee job-related training and employee intellectual capital.

Method

Survey respondents and procedure:

Data for this study was collected through a mail questionnaire that was sent to 2208 acute care, chronic care and rehabilitation hospitals, and long-term care facilities operating in all 10

provinces and three Canadian territories. The study population consisted of all facilities with 25 or more approved beds. Institutional review board (IRB) approval for this study was secured from the University of Alberta Health Research Ethics Board. Identifying information on each establishment was found in the *Guide to Canadian Healthcare Facilities, 2001-2002* [17]. The survey questionnaire and cover letter were sent to the site administrator with instructions to forward the questionnaire to the individual responsible for the nursing function at that facility. Participants were informed about the objective of the study and that their participation was confidential and voluntary. Six weeks after the initial mail-out, the questionnaire was resent to the establishments that had not responded to the earlier request for participation. In total, 713 questionnaires were returned. After subtracting those questionnaires that were refused or returned as undeliverable, a response rate of 32.2 percent was realized—which included 232 hospitals and 473 long-term care (LTC) facilities. Non-response bias was tested for by comparing early and late responders according to establishment size and location. Late responders (2nd wave responders) were not found to show statistically significant differences with respect to either location or facility size with early responders (1st wave responders).

Study Measures:

Study variables constructed scales measuring areas of job-related training (10-items, $\alpha=.74$); employee intellectual capital score (10-items, $\alpha=.95$); employee development strategy score (5-items, $\alpha=.94$) and employee participatory culture score (8-items, $\alpha=.90$).

Dependent Variable:

Employee intellectual capital (EIC) score was determined using a ten-item construct that assesses elements of human capital (5-items) and relational capital (5-item) for the nursing staff in our study facilities, adapted from the measure proposed by Subramaniam and Youndt [18]. Using a scale where 1=strongly disagree to 7=strongly agree, nurse managers in each participating establishment were asked to indicate their level of agreement with the statements: “our nurses are experts in their particular jobs and functions” (an item assessing human capital), and “our nurses effectively collaborate with other groups in our establishment to develop solutions” (an item assessing relational capital).

Independent Variable:

An *job-related training (JRT) score* is a composite measure of ten traditional employee training area (see Table 1). Participating establishments were asked to estimate the percentage of their nursing staff that has received training in each JRT area (coded as ‘0’ if no nursing staff has received training in this area to ‘3’ if 100% of nursing staff have received training in this area). A global JRT score for all ten training areas is calculated for each participating establishment.

Mediator Variables:

An *employee development strategy (EDS) score* was constructed using a 5-items, 7-point scale where 1=strongly disagree to 7=strongly agree. Sample questions in the scale include: “this establishment spends a lot on training and development of its nursing personnel” and “this establishment believes that investing in the training and development of its nursing personnel is consistent with its corporate strategy.”

An *employee participatory culture (EPC) score* was constructed using 8-items, 7-point scale where 1=strongly disagree to 7=strongly agree, and follows from the work of Goll [19]. Sample questions for this scale are: “this establishment empowers its people to make decisions

without having to seek approval first” and “nurses at all levels in this establishment actively participate in decisions that affect them.”

Control Variables:

Three structural control variables were included in our analysis: establishment type, establishment size, and establishment location. *Establishment type* (1=hospital and 2=nursing home) is controlled in the analysis because the nursing work environment in acute care hospitals is quite dissimilar with that of long-term care organizations. *Establishment size* (natural log of the number of establishment beds) and *establishment location* (1=rural to 5=urban metropolitan) are controlled because establishment size and location may predict the amount of job-related training that is provided to the nursing personnel. Larger organizations, often located in urban areas, may have more funds available to train nursing staff.

Analysis

In statistics, a mediational model is one that seeks to identify and explicate the mechanism that underlies an observed relationship between an independent work variable (employee intellectual capital) and a dependent variable (job-related training) via the inclusion of a third explanatory variable (here we are evaluating the explanatory potential of two potentially mediating variables—employee development strategy and employee participatory culture). Rather than hypothesizing a direct causal relationship between the independent and dependent variable, a mediational model tests the potential that the independent variable ‘causes’ the mediator variable, which in turn ‘causes’ the dependent variable[20].

In order to assess the ability of having an employee development strategy and the ability of having an employee participatory culture to mediate the relationship between job-related training and the accumulation of employee intellectual capital, hierarchical regression analysis was performed using SPSS for Windows (SPSS Inc., Chicago, IL, version 7.0). Under this procedure [21] (see Cohen et. al., 2003), four ordinary least square (OLS) regressions were performed. Our base model tests the contribution of our independent variable (JRT) and our establishment control variables to our dependent variable (EIC). In the second analysis (Model A), we examined the separate mediating effect of having an employee development strategy, while in the third analysis (Model B), we examined the separate mediating effect of having an employee participatory culture. Our fourth analysis (Model C), we investigated the combined effect of having both an employee development strategy and an employee participatory culture.

Results

The demographic characteristics of the hospitals and nursing homes in this study are shown in Table 1. Approximately two-thirds of the establishments in our sample can be classified as nursing homes. Long-term care establishments (nursing homes) in our sample operate with fewer beds than hospitals (111 beds versus 219 beds). Employee intellectual capital scores are not statistically different in either type of facility.

Table 1 Healthcare Organization Characteristics (by Institution type)

	Hospital Mean value	LTC Facility Mean value
<i>Establishment Characteristics</i>		
Number of establishments	232	473
Establishment size (#beds)	219.3	111.0
Establishment location (as valid percentage)		
Rural (<1000 residents)	3.9	13.0
Town (1,000 to 10,000 residents)	35.7	29.0
Small city (10,000 to 100,000 residents)	28.3	24.8
Large city (100,000 to 500,000 residents)	13.0	18.1
Metropolitan (>500,000 residents)	19.1	15.1
Employee Intellectual capital score (1=low to 7=high)	5.04	5.01
Job-related training (% of nursing workforce/establishment receiving training)		
Workplace safety training	85.1	86.6
Clinical skills training	74.4	72.5
Quality improvement tools training	54.8	58.3
Personal computer training	54.2	50.2
Team effectiveness training	37.9	40.2
Management skills training	27.7	29.3
Customer service training	25.6	29.3
Diversity sensitivity training	20.9	20.4
Cross-training/multi-skilling	24.2	19.7
Literacy training	3.6	2.9
Employee development strategy score (1=low to 7=high)	5.20	5.03
Participative decision-making culture score (1=low to 7=high)	4.91	5.34

The zero-order correlation matrix for the study variables is presented in Table 2. Establishments with higher employee intellectual capital for their nursing staff are more likely to provide more job-related training ($p<.001$), to have a strategy that stresses employee development ($p<.001$), and a culture that values employee participation and employee empowerment ($p<.001$). Establishments with more JRT are more likely to be larger and located in urban areas ($p<.001$), and are more likely have an employee development strategy and participatory culture ($p<.001$). Not unexpectedly, establishments with an employee development strategy are much more likely to characterize their decision making culture as participatory ($p<.001$), be larger in size ($p<.001$) and located in urban places ($p<.01$), while those with a participatory decision-making culture more likely found in nursing homes than hospitals ($p<.001$).

Table 2 Bi-variate Analysis

	1	2	3	4	5	6	7
1. Intellectual capital	1.00	.20**	.39**	.57**	.03	-.04	-.09
2. Job-related training		1.00	.48**	.24**	-.03	.15**	.17**
3. Employee development strategy			1.00	.44**	-.07	.15**	.13*
4. Participatory decision-making culture				1.00	.23**	.01	.01
5. Institution type^a					1.00	-.13*	-.05
6. Establishment size (ln #beds)						1.00	.58**
7. Establishment location^b							1.00
*p<.01; **p<.001							
^a 1=hospital; 2=LTC organization ^b 1=rural to 5=metropolitan urban							

To examine the potential mediation effects of our strategy and culture variables on employee on-the-job training and intellectual capital, a four-stage hierarchical OLS regression analysis was performed (Table 3). Using EIC as our dependent variable, the three establishment control variables (establishment size, location, type) are entered into our ‘base model’ along with independent variable, employee JRT. Results show that job-related training is a strong predictor of employee intellectual capital ($p < .001$), but when taken together with our establishment control variable explains only a modest amount of variance (4.5%) in employee intellectual capital. When the employment development strategy score is independently entered (Model A), a ‘full’ mediation effect is observed ($p < .001$) on our dependent variable, JRT. Taken together with our control and independent variable (JRT), having an employee development strategy, explains an additional 12.1% of variance in our dependent variable, EIC. When the participatory decision making culture variable is entered (Model B), a ‘partial’ mediation effect is observed ($p < .05$) on JRT. The independent contribution of having a strong employee participation culture explains 29.2% of the variance in our dependent variable, EIC, confirming the seminal importance of having an employee participation culture in employee intellectual capital formation. We are also interested in examining the combined impact of strategy and culture as mediating forces on JRT (see Model C). When the strategy and culture variables are entered together, a strong and ‘full’ mediation effect can be observed.

Table 3 Ordinary Least Squares (OLS) Regression for Employee Intellectual Capital

	Base	Model A	Model B	Model C
<i>Independent Variable</i>				
Job-related training	.352*** (.065)	.037 (.068)	.119* (.056)	.014 (.061)
<i>Control Variables</i>				
Institution type ^a	.085 (.074)	.114 (.069)	-.178** (.064)	-.136* (.064)
Establishment size (ln #beds)	-.020 (.050)	-.046 (.047)	.000 (.042)	-.012 (.042)
Establishment location ^b	-.077* (.035)	-.077* (.033)	-.084** (.029)	-.083** (.029)
<i>Mediating Variables</i>				
Employee development strategy		.294*** (.030)		.123*** (.029)
Participatory decision making culture			.586*** (.034)	.518*** (.037)
Constant	4.81*** (.246)	3.79*** (.252)	2.42*** (.248)	2.27*** (.248)
R-square (adjusted)	.045	.166	.337	.353
Δ R-square	---	.121	.292	.308
F-statistic	8.86***	27.59***	68.67***	61.70***

Regression coefficient with standard errors in parenthesis *p<.05; **p<.01; ***p<.001

^a1=hospital; 2=LTC organization ^b1=rural to 5=metropolitan urban

Discussion

The results reported here suggest that the adoption of job-related training is associated with a real, positive yet have a modest impact on employee intellectual capital. For our study establishments relying on an employee development strategy, a strong mediating impact is demonstrated; yet having a participatory culture can be observed to weakly or partially

mediate the impact of JRT on EIC. From this result, it is possible to conclude that when organizations rely solely on their employee job-related training initiatives as a means to add to intellectual capital stores, without articulating or possessing a 'supportive' strategy and culture, they gain little. Indeed, when organizations adopt a corporate strategy that stresses the seminal role of their employees in goal attainment, and when they promote a strong employee participatory decision making culture, they greatly add to EIC stores. The powerful and full mediation effect that is observed when such a culture and strategy are combined, suggests that the impact of aligning culture with strategy is a powerful force for generating valuable employee intellectual capital. These results are consistent with our study hypotheses and suggest that organizations which implement extensive JRT will not share in the significant gains to EIC unless they 'recognize' the seminal value of their people, nor share in significant gains to EIC unless they fully 'enable and engage' their people in daily decision making.

Study Limitations

The results of this study seem to provide some support for our research hypotheses. Nevertheless, there are some limitations in this research that require some elaboration. First, the data collected reflects the subjective opinions of nurse managers. Because dataset for each establishment is assembled from a single source, common method variance has the potential to confound any definite conclusions one might advance. Second our measure of on job-related training reflects an arbitrary bundle of ten common areas of employee training. Because nurse manager respondents were asked to estimate the extent to which a particular JRT area was 'embedded' in their establishment (obtained by asking each to estimate the percentage of their nursing workforce that was exposed to such training), a rough measure of establishment JRT was obtained. Indeed, our measure does not adequately assess the degree of employee application at the worksite of such training activities, nor does it evaluate the quality of the training that is received. Third, the conceptualization and measurement of our strategy and culture variable is prescriptive in nature and rather narrow and 'one-dimensional' in its characterization. Fourth, our measure of employee intellectual capital reflects the subjective assessments of nurse managers reporting on their nursing personnel. In this way, it is perhaps more appropriate to state that our measure of employee intellectual capital reflects merely nurse manager's assessment of it rather than the more objective assessment that would come from the nurses themselves. Fifth, there may be other important study variables that we have inadvertently left uncontrolled in our analysis, which may confound our results in unspecified ways. Finally, the results reported here reflect findings from Canadian healthcare organizations and workplaces—albeit from a large number of hospitals as well as nursing homes. We are thus unable to firmly generalize our findings to organizations in other jurisdictions, industries, and settings.

Conclusion

Although tentative and preliminary, our results suggest that employee job-related training has a real, positive, but quite modest role in employee intellectual capital formation. Our results are consistent with a resource-based, contingency perspective—a view that advances the notion that organizational practice must 'fit with' or be 'congruent with' the strategy and with culture in order to be effective. Indeed, it would appear from our examination of the mediating effect of such factors, that organizational practices such as JRT are less important to the creation of EIC. If this

mediation effect is indeed real, future research should aim to elucidate more clearly the exact mechanism by which this mediation process actually occurs.

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