



International Journal of Quality and Service Sciences

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Article information:

To cite this document:

Stefan Lagrosen Yvonne Lagrosen , (2014), "Work integrated learning for employee health in schools", International Journal of Quality and Service Sciences, Vol. 6 Iss 4 pp. 387 - 398

Permanent link to this document:

<http://dx.doi.org/10.1108/IJQSS-09-2012-0015>

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Work integrated learning for employee health in schools

Work integrated learning

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Received 5 September 2012
Revised 9 December 2013
Accepted 15 January 2014

Abstract

Purpose – The purpose of this paper is to examine relationships between quality management health dimensions, employee health, flow and work integrated learning in primary schools. Previous research has indicated relationships between quality management and health. In this study, the role that work integrated learning plays in the connection between quality and health is investigated.

Design/methodology/approach – The study object has been a number of schools. A quantitative survey has been carried out. A random sample of 20 primary schools, of which 13 (65 per cent) agreed to participate, was selected. Questionnaires to their 301 employees were delivered and 229 (76 per cent) were returned. The reliability of the items were analysed with Cronbach's alpha test. The statistical relationships between the items were studied with Pearson's correlation test.

Findings – The results show that the items are reliable. Moreover, statistical correlations between work integrated learning on the one hand and employee health, quality management health dimensions and flow on the other hand are found.

Research limitations/implications – One limitation is that the research has only been carried out in schools and the possibilities of generalising the findings to other sectors are uncertain. Research implications are the relationships that have been identified between work integrated learning and the other factors.

Practical implications – The knowledge that has resulted from the study should be useful for organisations in their attempts to improve the health status of the employees.

Originality/value – The relationship between work integrated learning and employee health has not been studied in any other major study.

Keywords Schools, Flow, Quality management, Employee health, Leadership commitment, Work integrated learning

Paper type Research paper

Introduction and purpose

Health is one of the most important aspects of life. Research has shown that most people define quality of life in terms of independence, security, harmonious relationships and good health (Bowling, 2005). Apart from genetic and lifestyle factors, health is also influenced by the work situation. Often, work factors have a negative effect on employee health and a majority of European employees experience at least one health problem related to their work (Daubas-Letourneux and Thébaud-Mony, 2003). Nevertheless, work is not necessarily a factor of ill health. Obviously, this is dependent on the work situation. Several studies have pointed out that quality management is related to good employee health (Lagrosen, 2004; Lagrosen, 2006; Lagrosen *et al.*, 2007). Among the



different aspects of quality management, the values or principles are those that have been found to be most clearly correlated with health. On the other hand, implementing quality management in an organisation, especially those more profound aspects, requires a change in the organisational culture (Atkinson, 1990). Changes of such a deeper nature must constitute a process of learning. Therefore, organisational learning (Argyris, 1999; Senge, 2006) is an important part of organisational development towards quality and health. On the individual level, organisational learning implies a process of work integrated learning. Ideally, work integrated learning should lead to employees experiencing “flow” (Csikszentmihályi, 1990) in their activities.

In the study reported in this paper, the focus has been on schools. In schools, learning constitutes the very *raison d'être*. Therefore, we concluded that this should be a perfect setting for studying relationships between health, learning and quality. Consequently, the purpose for this study is to examine relationships between quality management health dimensions, employee health, flow and work integrated learning in primary schools.

Quality management

Later years have seen the advent of research focusing directly on the relationship between quality management and health. Quality management has been defined as: “the management processes that overarch and tie together quality control and quality assurance activities” (Foster, 2001). Moreover, quality management is a complex phenomenon that contains several different components. Hellsten and Klefsjö (2000) claim that quality management should be seen as a system comprising values, techniques and tools. Lagrosen and Lagrosen (2005) suggest that the components are related to different levels of profundity. The most superficial level contains tools or techniques that have limited effects on the overall functioning of the organisation. The tools can be statistical tools or decision-making aids. They are useful but limited in their scope. The second level includes models or systems like ISO 9000 and award models such as the European Excellence Model (EFQM), which influence organisational functioning in more wide-ranging manner (Heras *et al.*, 2002). They force organisations to critically review their entire functioning. Research by Dahlgaard-Park (2009) has shown that that the EFQM model is a relevant framework for understanding quality-related measurements in organisations. However, many scholars hold that the most basic components of quality management consist of the phenomena that are referred to as values (Hardjono *et al.*, 1997), principles (Dale, 1999) or cornerstones (Bergman and Klefsjö, 1994) of quality management. They may be seen as the most profound level of quality management and they have been found to be strongly related to effective quality management (Lagrosen and Lagrosen, 2005).

A literature review reveals the following six values to be the most commonly mentioned (Bergman and Klefsjö, 2001; Dahlgaard *et al.*, 1998a; Dale, 2003; Hardjono *et al.*, 1997):

- (1) *Customer orientation*: All activities should be aimed satisfying internal and external customers.
- (2) *Leadership commitment*: The primary task of leaders on all levels is to ensure quality of products and processes.

- (3) *Participation of everybody*: All employees should be involved in the quest for higher quality.
- (4) *Continuous improvement*: The entire organisation is characterised by an on-going learning and improvement process.
- (5) *Management by fact*: Decisions should be made based on reliable data.
- (6) *Process orientation*: The customer-oriented processes should be the basis for the organisation.

In addition, the basic principles for the ISO 9001 standard include (ISO, 2012):

- *System approach to management*: Interrelated processes should be identified, understood and managed as a system.
- *Mutually beneficial supplier relationships*: A mutually beneficial relationship between organisations and suppliers enhances the ability of both to create value.

Employee health

Employee health is an important problem in industry. Research has shown that a majority of European employees have at least one health problem that is related to their work (Daubas-Letourneux and Thébaud-Mony, 2003). Work-related health effects are often related to the balance between the demands that employees experience and the control that they can exert over those demands and their work situation in general (Karasek, 1979; Karasek and Theorell, 1990). Furthermore, good health has been found to be related to the individuals' "sense of coherence", a concept that includes the dimensions meaningfulness, manageability and comprehensibility (Antonovsky, 1987). Health has been defined as a combination of self-assessed health, the absence of chronic conditions and absence of subjective health complaints (Machenbach *et al.*, 1994). In line with this definition, Lagrosen (2004) developed a health index containing items on subjective perception of health, absence of sickness and absence of tiredness. Thus, the index focuses on physical health and not mental health. This health index has been tested in several studies (Lagrosen *et al.*, 2007; Lagrosen *et al.*, 2010) and was therefore used in this study. In previous studies, the index has been found to be correlated to quality management values, and its internal consistency measured with Cronbach's alpha has been found to be satisfactory. The health index builds on self-reported health which has been shown to be a valuable predictor of health, as the experienced health of the patients is what matters most for them (Karasek, 1979; Bowling, 2005). Moreover, poor self-reported health has been found to correlate with elevated mortality and objective measures of morbidity (Nyberg *et al.*, 2005).

The relationship between quality management and health

The relationship between quality management and health is starting to emerge as a research field. The rationale is that by bringing in a more humane work situation and higher job satisfaction, quality management practices could actually improve the health status of the employees. For instance, Warrack and Sinha (1999) argue that achieving quality products and services requires the same overarching management system as the organisation of safe and healthy workplaces. In the traditional quality management literature, health is touched on directly or indirectly by several authors. In particular,

Deming (1986) considered excessive medical costs and the mobility of management and manpower to be two of the deadly diseases that he defined.

Studies within medicine have highlighted the health impairing effects of high demands and lack of control (Karasek, 1979; Karasek and Theorell, 1990). Nevertheless, changes in administrative structures which improve the employees' ability to make significant decisions regarding the task structure, influence organisational decisions and control the use of their skills, may improve the health status without sacrificing productivity (Karasek, 1979). Changes of similar nature are often recommended in the quality management literature (Dale, 2003; Oakland, 2001).

A relationship between quality management and health is thus conceptually conceivable. A review of the writings of leading scholars in the field show that satisfaction and growth of employees is one of the main objectives of quality management (Hackman and Wageman, 1995).

Several studies indicate that the more profound values or principles of quality management are related to employee health (Bäckström, 2009; Lagrosen, 2004; Lagrosen, 2006). Particularly, the values "leadership commitment" and "participation of everybody" (see definitions above) have been found to be connected to the health of the employees (Lagrosen *et al.*, 2007). Recently, Lagrosen *et al.* (2010) have studied the underlying dimensions for those two values and found them to be:

- (1) *For leadership commitment*: Empathy, presence and communication, integrity and continuity.
- (2) *For participation of everybody*: Development, influence and being informed.

These dimensions were empirically derived from the data and not from a literature analysis.

Work integrated learning

We have seen that quality management values are related to health. Nevertheless, implementing those values in the organisation must amount to a process of learning. Most authors in the quality management literature emphasise the importance of training (Dahlgaard *et al.*, 1998b; Deming, 2000; Ishikawa, 1985; Juran, 1989). To be effective, the training should take the form of work integrated learning which considers the employees' actual tasks, personal competency and work domain to be relevant (Ley *et al.*, 2008). According to Choy (2009), successful work integrated learning should be organisation-centred. Therefore, it should be beneficial to base work integrated learning on the field of organisational learning in which profound aspects of learning, double-loop learning, are studied (Argyris, 1999; Senge, 2006). Organisational learning could help to build a bridge between learning in the workplace and the performance of organisations (Fuller and Unwin, 2011). This makes it particularly valuable for quality management purposes.

Research has shown that work integrated learning can have a vital role for the performance of small enterprises (Panagiotakopoulos, 2011). In this case, work integrated learning should be related to a wider view of workplace learning in, through and for the workplace which goes beyond mere training for the actual work at hand and thus involves many stakeholders and in particular the employees themselves (Evans *et al.*, 2006). Work integrated learning can take many forms. In this paper, work integrated learning refers to informal processes of learning in

organisations rather than formal education. Regarding learning in organisations, one group of scholars argue that such learning can only take place when the individuals are learning, while others emphasise the social, relational and interactional aspects of learning (Dahlggaard-Park, 2006). Notwithstanding the value of these aspects, this study focuses on organisational learning in the form of individuals learning in an organisational context.

Health protection and promotion are important issues in workplace learning, in particular considering the ageing of the workforce that is taking place in most developed countries (Naegele and Walker, 2011). Workplace learning and health is often discussed related to safety issues (Nuñez and Villanueva, 2011; Lukic *et al.*, 2010). However, learning is also relevant for avoiding health problems such as depression (Johnson and Indvik, 1997).

Organisational learning has been found to provide a helpful template specifically for the development of schools (Johnston and Caldwell, 2001). It has also been shown to be related to health in schools (Lagrosen and Lagrosen, 2012; Rowling and Samdal, 2011) and to leadership and student success (Silins and Mulford, 2002).

In a preparatory study, an index of work integrated learning has been developed based on Theliander *et al.* (2004). The index contains the following three items:

- (1) competence development which leads to increased understanding of the work situation;
- (2) whether management actively promotes learning; and
- (3) frequency of learning in daily work.

The items were tested in a pre-study. The results of the pre-study indicated that the items constitute a reliable index for measuring the level of work integrated learning.

Flow

In later years, the field of positive psychology has begun to form. Its basis is the experience of flow that was discovered by Csikszentmihályi (1990) to be a state of complete immersion in an activity in a way that is maximally effective while at the same time highly enjoyable. There is an obvious relationship between flow and organisational learning. Particularly, the concept *personal mastery* (Senge, 2006) implying, e.g., being part of a larger creative entity and an increased ability of creating the results in life that one truly seeks is clearly related to the experience of flow. Characteristics of the state of flow include:

- immersion in the task to the extent that time and space is forgotten;
- absorption in activities combined with a clear focus; and
- control of the situation and balance between ability level and challenge.

In marketing research, flow has been used as a concept in studying participation in entertainment and shopping activities (Lotz *et al.*, 2010) and in Internet consumer behaviour (O'Cass and Carlson, 2010; Rettie, 2001).

Research questions

Based on the theoretical review and the purpose for the study, the following research questions have been chosen:

RQ1. Is work integrated learning related to the health of school employees?

RQ2. Is work integrated learning among school employees related to those quality management dimensions that have been found to be health-promoting in previous research?

RQ3. Is the experience of flow related to work integrated learning among school employees?

RQ4. Is the experience of flow related to the health of school employees?

Methodology

As the purpose is descriptive in its character, we chose to carry out a quantitative survey. The questions concerned the health-promoting aspects of the quality management values “leadership commitment” and “participation of everybody” that have been identified by [Lagrosen *et al.* \(2010\)](#). For each of these aspects, three-item indices were developed. Three statements, with the precise content of which the dimensions were created, were formed based on earlier research ([Lagrosen *et al.*, 2010](#)). By using this detailed content domain, we should be able to assume that the content validity of the dimensions is satisfactory. In addition, the health index developed by [Lagrosen \(2004\)](#) was used with the same wording as in this study. Furthermore, the work integrated learning index mentioned in the section on work integrated learning above was used to measure the level of work integrated learning. In addition, a new three-item index intended to measure the experience of flow, based on the points in the section above, was included. Thus, the items were not developed specifically for school employees but general to their character, which facilitates comparison with other organisations. All items were measured on seven-level-interval scales ranging from 1 to 7 with the extremities “disagree completely” and “agree completely”. As an example, the index on empathy contained the following three items (translated from Swedish):

- (1) My boss sees and supports me.
- (2) I believe that my boss understands my working situation.
- (3) Our boss acknowledges us when we have performed well at work.

For practical reasons, we chose to administer it in the county where our university is situated. This is the county of Västra Götaland, in south-western Sweden, a rather large county spanning 24,000 km² and with 1.5 million inhabitants. The county contains 732 primary schools. From a list of those schools, 20 were chosen with the aid of a random number generator. They were contacted and 13 (65 per cent) of them agreed to participate. Questionnaires were sent to school managers who delivered them to their employees, collected them and sent them back to us by mail. In total, the 13 schools had 301 employees and 229 (76 per cent) questionnaires were returned.

Of the respondents, 80 per cent were female and 20 per cent were male. Further, demographic data were not collected to preserve the anonymity of the respondents.

Findings and analysis

The first objective was to check the reliability of the indices that the questionnaires were based on. This was done with the help of Cronbach’s alpha analysis. This analysis together with the descriptive data is shown in [Table I](#).

Index	Mean	SD	Cronbach's alpha
Empathy	4.96	1.69	0.92
Presence and communication	4.78	1.42	0.77
Integrity	4.63	1.54	0.88
Continuity	4.84	1.56	0.80
Development	4.62	1.42	0.88
Influence	4.43	1.36	0.69
Being informed	4.15	1.33	0.81
Health	5.11	1.14	0.69
Work integrated learning	4.68	1.20	0.70
Flow	5.04	1.17	0.74

Table I.
The descriptive data and the reliability analysis

According to Hair *et al.* (1998), a Cronbach's α value of more than 0.6 is satisfactory for an index to be reliable. As all the indices included in this study are well over that level, we can conclude that the indices are statistically reliable.

Next step was to examine whether work integrated learning was correlated to health and to those quality management dimensions that have been shown to be health-promoting. With this aim, we tested the correlation between the work integrated learning index and the indices for health and the quality management dimensions with Pearson's correlation. The results are shown in Table II.

The findings show that there is a statistically significant correlation between the work integrated learning index and the health index and between the work integrated learning index and all the health-promoting quality management dimensions. This indicates that there is a relationship between work integrated learning and employee health. In addition, there is a relationship between work integrated learning and all those dimensions of quality management that in earlier research have been found to be related to employee health. It is interesting to note that the highest correlation was found regarding the dimension development and the lowest regarding the dimension influence. This suggests that personal development of the individual employees is strongly influenced by work integrated learning, which seems logical. On the other hand, the possibilities of influencing the work situation is less related to work integrated learning even though the relationship is statistically significant.

Index	Pearson's correlation	Significance
Health	0.373**	0.000
Empathy	0.726**	0.000
Presence and communication	0.724**	0.000
Integrity	0.714**	0.000
Continuity	0.574**	0.000
Development	0.823**	0.000
Influence	0.296**	0.000
Being informed	0.353**	0.000

Table II.
The correlation between the work integrated learning index and the other indices

Note: Significance level: ** $p < 0.01$

Finally, we wanted to investigate the index of flow to examine whether it is related to health and if it is related to work integrated learning. Consequently, we calculated the Pearson's correlation value between the flow index and the indices for work integrated learning and health. The results are shown in [Table III](#).

Consequently, we see that there is a statistically significant relationship between flow and work integrated learning and health. To further examine the causality of the relationships, and in particular, the causes of health, we carried out multiple regression analysis. Thus, we included health as the dependent variable, while the independent variables were work integrated learning (WIL) and flow. Stepwise multiple regression resulted in the following equation:

$$\text{Health} = 0.168\text{WIL} + 0.315\text{Flow} + 2.76$$

The model explains 20 per cent of the variation in the health index ($R^2 = 0.20$). Analysis of variance for the full regression gave an F -ratio of 27.00 with a significance of 0.000. These results show that the health level of the employees depends to a certain level on their experiences of work integrated learning and flow. The regression is statistically significant, although the magnitude is limited.

Discussion

The study indicates a relationship between work integrated learning and health. A limitation in this regard is that work integrated learning is a wide and complex concept, and in this study, it is only measured through the index presented above. This index has been tested in a pre-study, but no simple index can be certain to encompass the complex field of work integrated learning. Moreover, the causality of the relationship remains uncertain. It is quite conceivable that work integrated learning increases employee health, for instance by reducing the amount of depression as suggested by [Johnson and Indvik \(1997\)](#). Nevertheless, a causative relationship in the other direction, i.e. better health leading to improved work integrated learning, is probably equally possible. Alternatively, there may be third factors causing both better health and improved learning. One such factor may be quality management which, in previous research, has been found to correlate with better health ([Bäckström, 2009](#); [Lagrosen, 2004](#); , 2006). Indeed, the quality management dimensions that earlier studies have shown to be related to employee health were found to correlate with work integrated learning in this case. Thus, one possibility is that it is these dimensions which cause both better employee health and improved work integrated learning. Nevertheless, this study has indicated a relationship between work integrated learning and health whether mediated or not by quality management dimensions. The causality could be an interesting avenue for further research.

Table III.

The correlation between the flow index and the indices of work integrated learning and health

Index	Pearson's correlation	Significance
Work integrated learning	0.632**	0.000
Health	0.422**	0.000

Note: Significance level: ** $p < 0.01$

The same uncertainty regarding causality applies for the relationship that was indicated between flow and employee health and work integrated learning, respectively. Nevertheless, this study has indicated that there are relationships between all these factors, which would be valuable to study further.

Conclusions

Referring to the research questions, we can conclude that the study has indicated that:

- Work integrated learning is related to the health of school employees.
- Work integrated learning among school employees is related to those quality management dimensions that have been found to be health promoting in previous research.
- The experience of flow is related to work integrated learning among school employees.
- The experience of flow is related to the health of school employees.

Consequently, the study has indicated the value of promoting work integrated learning in schools.

Implications for practice

The study has shown that there is a relationship between work integrated learning and health and with the dimensions that in earlier research have been found to be correlated to health. Furthermore, the indices used in the study were found to be statistically reliable. Consequently, managers of schools should induce such learning for reasons of employee health and for quality in the educational services. Moreover, the findings of this study strengthen the understanding of the relationship between quality management and health. In addition, the value of work integrated learning for achieving these results is highlighted. This indicates the value of working with quality management principles, and especially the quality management values for improved employee health and for managing quality of school activities.

An extreme form of learning may be achieved when the state of flow is experienced. The study has indicated a relationship between flow and work integrated learning and between flow and health. Using work integrated learning in a way that increases flow should thus be valuable for schools and other organisations. As schools are a vital part of society, all these suggestions also have a substantial societal value.

Implications for research

The relationships that the study has indicated add understanding of the relationships between learning, health and quality management. The findings can also be a vantage point for further research into these areas. The reliability of the indices in the research instrument was confirmed in this study. In combination with other studies that indicate its reliability (Lagrosen *et al.*, 2010), this points to the instrument's usefulness in further research.

Limitations and suggestions for further research

The study was carried out on schools, which is a limitation. For further research, it should be interesting to carry out similar studies in other sectors. In addition, the discussion section above points out the difficulty of assessing the causality of the

relationships that the study has indicated. Further, studies with this aim should therefore be welcome. Probably, in-depth qualitative studies based on interviews and/or participant observation would be most useful to complement this quantitative study.

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