Intergenerational sharing of knowledge as means of deepening the organisational learning culture in schools

Joseph Klein & Orly Shapira-Lishchinsky

To cite this article: Joseph Klein & Orly Shapira-Lishchinsky (2016): Intergenerational sharing of knowledge as means of deepening the organisational learning culture in schools, School Leadership & Management, DOI: 10.1080/13632434.2016.1196172

To link to this article: http://dx.doi.org/10.1080/13632434.2016.1196172

Published online: 21 Jun 2016.

Article views: 8
Intergenerational sharing of knowledge as means of.

Joseph Klein and Orly Shapira-Lishchinsky
School of Education, Bar-Ilan University, Ramat-Gan, Israel

ABSTRACT
Learning organisations promote the transfer of insights to new personnel (vertical dimension) and the development of shared team knowledge (horizontal dimension). Educational research focuses mainly on the horizontal dimension. This study examined a theoretical framework combining both dimensions and its contribution to teachers’ work. Three hundred and eighty-nine teachers and personnel completed questionnaires about horizontal learning (organisational learning culture (OLC)) and vertical (knowledge continuity management (KCM)) organisational knowledge transfer. A theoretical model was validated clarifying reciprocal relations between study variables. OLC contributes directly, but minimally, to the performance of new personnel or veterans in new posts. KCM mediation contributes to adjustment. Paradoxically, school managements limit KCM.

ARTICLE HISTORY
Received 7 March 2013
Accepted 19 April 2016

KEYWORDS
Leadership; management; school improvement

The effort to enhance human insights through sharing of current information and collaborative thinking has attracted the attention of researchers from many disciplines. Organisational learning culture (OLC) constitutes a theoretical and applicative platform for meeting this challenge in organisations in a manner that can be adapted to the patterns of activity unique to each institution (Englehard and Simmons 2002).

Sharing of information and cooperative expansion of the knowledge base within a group may be accomplished horizontally by daily contact between colleagues and in staff meetings. Vertical transfer of knowledge refers to guidance by an employee leaving a position to his/her successor. In recent years attention has been focused on the added contribution of the vertical element to work effectiveness (Nayir and Uzunçasili 2008).

This study was conducted to examine the relative contributions of horizontal and vertical transfer of knowledge to the adjustment of a staff member taking over a new job within the same institution. A pronounced feature in educational institutions is mobility of employees. Staff members take on new positions within their school and are replaced by colleagues unfamiliar with some or most aspects of the specific new field. Before we relate to the subject of information sharing in education, it behoves us to become familiar with the concepts on which it is based.
Organisational learning culture

The OLC has developed gradually from the aspects of pooling of knowledge and mutual assistance. The advantages of collaboration as a means of improving work processes, increasingly evident in the first half of the twentieth century, became an important tool in organisational activity (Argote 2005). Its implementation gained momentum as the universal norms of democracy and employee involvement in decision-making became more prevalent (Jackson 1983; Locke, Schweiger, and Latham 1986). Further impetus for the process came from a growing awareness among organisation heads that involving employees in decision-making enhanced their sense of belonging as well as their identification with and commitment to their place of work (Ramsay 1980).

Eventually, it became evident that organisational activity based on team collaboration could be made more efficacious if a systematic theory could be formulated from which synergetic and methodological actions could be derived (Crossan, Lane, and White 1999). While workers producing specific products or offering services operate according to predefined procedures, those who work with knowledge, such as researchers, engineers, consultants, managers, teachers, etc., engage in non-routine problem-solving activities with the aid of knowledge acquired through education and learning, individual work and sharing (Teng and Song 2011).

Learning in an organisation is a mélange of experience tinged with personal and group meaning, values, context-based information and the insights of experts, which together form a structured basis for evaluating and integrating new experiences and new information (Davenport and Prusak 2000). Lankau and Scandura (2002) used Bandura’s (1977) social learning theory to explain how people learn from their interactions with others in organisational learning.

Collaborative organisational efforts became a framework for new aims, such as developing a learning professional community and making the learning culture an integral part of the organisation’s overall strategy (Fauske and Raybould 2005; Schechter 2008). Popper and Lipshitz (2000) define organisational learning as an institutionalised, planned, cooperative and ongoing process of developing mutual insights, by collecting, investigating, understanding, integrating and disseminating internal and external information.

When organisational learning is well integrated and becomes part of the work culture, it is no longer dependent on the support of a particular employee and thus can endure even in the face of employee turnover (Argyris and Schon 1996; Englehardt and Simmons 2002; Schein 1990). The principles of organisational learning have been implemented in many schools (Darling-Hammond and McLaughlin 1995; Silins, Mulford, and Zarins 2002). Information and knowledge sharing has focused primarily on the horizontal aspect, with less attention to the vertical component involving guidance of staff members assuming a new task by their predecessors (Kalkan 2006).

From horizontal to vertical learning pattern

The purview of knowledge continuity management (KCM) is the vertical dimension of knowledge transfer from employees leaving their posts to their replacements and it complements the horizontal dimension of knowledge sharing among colleagues working together (Beazley, Boenisch, and Harden 2003; Kalkan 2006). KCM can be seen in action
when an employee leaves a place of work and is replaced by another, or when an employee is appointed to a new position in the organisation and transfers the previous task to another employee. The fact that no one ‘owns’ the lost knowledge limits initiatives to deal with it (Levy 2011). It should be mentioned that with the growing interest in KCM, the term OLC is frequently used to denote only the horizontal aspect rather than the whole learning culture issue (Beazley, Boenisch, and Harden 2003).

KCM has increased in importance in recent decades, a high-tech age characterised by high employee mobility and a decrease in tenured workers. The need for KCM increases dramatically when one considers that a significant part of professional learning occurs at work, from interaction with the local human and physical system, and that a good professional background is often insufficient for excelling at work (Massingham 2008; Parise, Cross, and Davenport 2006). The knowledge that must be transmitted to the replacement pertains to formal and informal aspects of the position, areas of responsibility, interaction with essential liaisons, typical problems inherent in the position and ways of dealing with them. With such information, successors can manifest greater self-confidence in their new positions, make informed and more accurate decisions, and manifest a good grasp of work demands and familiarity with agents connected to the new position (Beazley, Boenisch, and Harden 2002; Levy 2003).

The KCM process is intended to establish the mechanisms for conveying information from those leaving positions to their substitutes by means of documentation and preservation of the employees’ cumulative experience so that the new position-holders will be able to learn their tasks more easily. The process is described in various levels of detail. Levy (2011) enumerates three main stages: defining scope, documenting (planning and implementation) and integrating knowledge back into the organisation.

DeLong (2004) notes that the first step is to identify which overt and covert knowledge is essential for transfer from the person leaving to the replacement and which potential obstacles may hinder its transmission (Fricke and Faust 2006). In the next stages, interpersonal meetings are held to document the material, and action files are prepared for each person (Bryant 2005). Finally, the information is disseminated to all relevant agents. Beazley, Boenisch, and Harden (2003) enumerate even more stages: (1) create a KCM assessment to determine the state of existing knowledge continuity; (2) determine the objectives and scope of the KCM programme; (3) establish management and coordinative responsibility for implementing the KCM programme; (4) plan KCM activities and prepare a budget; (5) create methods to harvest, catalogue and transfer critical operational knowledge and (6) pass on the knowledge as needed.

**KCM in schools**

*Relationship between OLC and KCM*

The literature has dealt at length with knowledge sharing and horizontal thinking among peers teaching in the same school but has had little to say about the vertical sharing of knowledge between teachers moving to different positions. The professional careers of teachers have also been discussed extensively, from induction to retirement (Goldhaber, Gross, and Player 2011; Oplatka 2007). Less attention has been directed to more time-restricted segments of the career cycle, which begin with a teacher’s appointment to a
new position and conclude when the individual is assigned to another position in the same or a different institution. The question that arises is to what degree the horizontal OLC promotes transmission of essential information from teachers leaving posts to their successors.

The products of vertical and horizontal knowledge differ. Horizontal knowledge contributes to an improvement of pupils’ learning (Collinson, Cook, and Conley 2006), teachers’ self-efficacy, collective feelings of competency (Schechter and Qadach 2012) and to their level of organisational citizenship behaviour (Kurland, Peretz, and Hertz-Lazarowitz 2010). It also promotes heightened professional identity, organisational commitment and organisational climate (Austin and Harkins 2008) and moderates the extent of the predisposition of teachers to leave their place of work (Shapira-Lishchinsky and Even-Zohar 2011).

In contrast, the products of the transfer of vertical knowledge pertain to the adjustment of employees to a new position and their ability to fill the previous position holder’s shoes. It enables them to reach a similar level of performance within a short time, without having to rely on a ‘hundred days of grace’ for adjustment to the job, during which organisational output is usually impaired. The fact that school personnel are constantly mobile (Oplatka and Tubin 2008) underscores the need to include KCM throughout their professional careers. The differences in emphases in the exchanges of horizontal and vertical knowledge raise the hypothesis that any correlation between them will be limited at best. In other words, a higher level of OLC will be found to be only partially linked to the KCM level. This will be examined as the first hypothesis of this study.

The contribution of KCM to the adjustment of staff members taking on new tasks

The extent to which teachers need their predecessors’ assistance depends on the similarities and differences between their new task and the ones in which they have experience. Many school principals encourage turnover of subject teachers between classes so that pupils can be exposed to different models (Klein 2005). The same content is presented, but to groups of learners with whom the teachers have not worked before. This requires them to learn each new pupil’s unique style as well as the group climate of the specific class. Previous success in class management is no guarantee of success in the future, a fact that is anchored in situational leadership theory (Vecchio 1987; Vroom and Jago 2007). Obtaining class information from the previous year’s teacher, especially about important matters such as pupils with special needs, may help to shorten the teacher’s learning curve with regard to the class. Obviously it should be kept in mind that the information being transmitted is far from objective and may include biases.

A somewhat more complex transition between school tasks occurs in countries in which homeroom teachers are appointed to each class. Their role is to nurture educational, value-oriented and social aspects of development of the pupils. During the intensive time they spend with their pupils, homeroom teachers receive extensive information from them about personal, social, behavioural and scholastic matters as well as relations with their parents (Bakshy Brosh 2005). Whether the teachers are reassigned each year or every two or three years, it is done in order to expose pupils to new educational models (Klein 2005). Turnover requires a continual transfer of information between homeroom teachers, because of the great amount of time required to become more deeply acquainted with the pupils. The limited hours allotted to each homeroom teacher are not sufficient for visiting every pupil’s home every year and to engage in intensive investigative activities about
each of the pupils. Therefore homeroom teachers must be assisted, if only partially, by the information and knowledge accumulated by their predecessors.

Turnover in personnel positions that requires even greater preparation occurs when a teacher accepts a post as a mid-level institutional coordinator, responsible for coordination of grade levels, subjects or school schedules, all of which involve system-wide information (Adey 2000; Harris, Busher, and Wise 1999). Mobility in these positions is explained by the desire of some teachers to ascend the hierarchical ladder, exert greater influence over the staff, improve their status and earn more money. In certain countries, experience in mid-level positions is a prerequisite for candidacy for management positions. However, these tasks are characterised by large workloads and relatively rapid burnout. The fact that these positions do not entail tenure also explains their high turnover (Hyles 2008). To learn the ropes, new position holders must obtain extensive information from their predecessors, and lack of coordination between them may make adjustment to the new post much more difficult for the new employees.

The issue of cumulative knowledge raises a second hypothesis, namely that the more information is transferred from predecessors to their replacements, especially in complex tasks, the better the substitute will grasp the demands of the position, gain familiarity with personnel involved in the new post, feel greater self-confidence and be more effective in solving problems associated with the new situation. The question of the contribution of school management to transferring intergenerational information also requires clarification and the lack of reference to it in the literature leaves it as an open question.

The aim of this study is to examine the reciprocal relations between the various dimensions of OLC and KCM. In light of the literature that links organisational role effectiveness to situational variables (Levy 2003; Powell, Butterfield, and Parent 2002; Raaijmakers et al. 2011), the study will control for variables such as the level of the school in which the study is conducted and the participants’ years of experience in their positions as a measure of their educational work experience. Gender will also be included in the control variables, in light of the literature that describes gender differences in domains that have implications for team work and information sharing. Women tend more to a morality of care than do men. In contrast, men tend more to a morality of justice, based on formal aspects, standards and work procedures (Derry 1989; Ford and Lowery 1986). In groups with a female majority, more manifestations were found of courtesy and egalitarianism than in groups with a male majority (Dufwenberg and Muren 2006). It was also found that the effect of altruism on information sharing is stronger among women than among men (Lin 2008). Another gender difference was observed in the willingness to take risks. Most laboratory and field studies indicate that women are more averse to risk-taking than are men (Blais and Weber 2001; Karakowsky and Elangovan 2001). Overall, the findings about gender raise the hypothesis that differences will be found in the functioning of women and men in OLC and KCM characterised by team work. The issue will be examined in this study.

Method

Tools

Two questionnaires were used:
1. The Organisational Learning Questionnaire (Schechter 2008). Very slight adaptations were made to the formulation of several statements in the questionnaire, to make them suitable for elementary schools as well. The dimensions remained identical to the original version. Reliability was $\alpha = .92$.

2. A questionnaire pertaining to the intergenerational transfer of information in schools was composed for the study, based on the KCM literature (see Appendix). Participants were asked, for instance, whether regular meetings took place between them and their predecessors, the extent to which the contact offered a good understanding of the job requirements, if it is accepted practice in the school for those leaving a post to guide their replacements and whether they regard the transgenerational information flow as useful.

In the first stage of assessing content validity of the questionnaire, the researchers examined its correspondence to the central components of intergenerational transfer of information mentioned in the literature. Afterwards, the questionnaire was submitted to three experts in information management who confirmed that it properly reflected and represented the domain being measured.

The second stage of examining questionnaire validity entailed the testing of the factorial structure of the questionnaire by means of exploratory factor analysis. The processing results elicited the following four dimensions (eigenvalue $\geq 1$):

- Factor 1: Extent of transfer of information from employees leaving their posts to replacements, $\alpha = .93$.
- Factor 2: Extent of support from school management, $\alpha = .93$.
- Factor 3: Attitudes of new employees towards receiving information from previous employees, $\alpha = .81$.
- Factor 4: The benefit new employees derive in their work from transmitted information, $\alpha = .91$.

In order to ascertain how well this structure actually expresses the data, confirmatory factor analysis was performed by means of structural equation modelling (SEM), as described below.

**Participants**

Three hundred and eighty-nine teachers and school personnel were chosen. Their selection was carried out systematically so as to examine the habits of transgenerational transfer of information in various districts of the Ministry of Education around the country and in schools serving different age groups. Teachers from 64 schools were sampled.

The schools were chosen from the three largest districts of the country. About one quarter of them ($N = 16$) were from the northern district of the country, about half ($N = 31$) were from the centre and about one quarter ($N = 17$) from the southern district of the country. This distribution is similar to the dispersion of the population in schools around the country.

The project included 20 elementary schools (31.25%), 24 junior high schools (37.52%) and 20 high schools (31.25%).

The sample represented educational institutions in cities and small settlements in a wide variety of geographic areas, and it encompassed the entire range of socio-economic strata. The student population in each school ranged from 800 to 1400.
Within each school, about six teachers were chosen at random. However, the threshold condition for inclusion in the study sample was having worked in the same educational institution for at least four years and having experienced at least one transfer of position within the school during the period of employment. The number of participants was limited by the SEM data processing procedure which is suitable to sample sizes of 200–400 persons.

All of the participants were subject teachers. Of these, 109 (28.02%) worked only in their specific fields, whereas 121 (31.10%) were also homeroom teachers and 159 (40.87%) had added responsibilities such as subject coordination. The sample included 283 female teachers (72.75%) and 106 males (27.75%). This corresponds well with the gender distribution among educators in the public school systems. The average seniority in teaching of the participants was 14.54 years.

Procedure: Participants completed the two questionnaires sequentially. If they were employed in the school in several different capacities, they were asked to relate to their main job. In the KCM questionnaire, most of the respondents stated that in their present post they had replaced a teacher who had been assigned to another position in the same institution. Only a few received information from an employee who had left work in that school.

Findings

In order to examine the contribution of the participants’ background and of horizontal and vertical organisational learning to the manner in which the employees functioned as they entered their new position, a channel analysis was conducted using SEM in the Amos 7.0 software (Arbuckle and Wothke 1999). In the present study, the overall model fit was good, where $\chi^2 = 60.04$, df = 48 ($p > .05$); RMSEA = .025; NFI = .96; CFI = .99; and IFI = .99 (Table 1).

The explained variance of the dependent variable: ‘The benefit that the new position holder derives from organisational information’ is 53%. The model is presented in Figure 1. The model has four parts. The left section of the figure indicates background variables, followed by OLC (a combination of collection, analysis, preservation and distribution of information), KCM, and at the right the dependent variable describing the benefit to the new position holder.

The background variables are not directly correlated to the benefit in performance that new position holders derive from the organisational information provided, but rather via OLC and KCM. ‘Experience in education’ and ‘gender of replacement teacher’ render their effects via OLC constituents. The position of the teacher in school’, that is, whether he/she is a full-time teacher or the new job involves higher level functioning, the ‘school level’ and the ‘gender of the teacher leaving the position’ are related to KCM constituents.

The benefit of OLC to the new position holder rises significantly when it is combined with KCM activity. The OLC alone provides 20% of the explained variance of the benefit.

| Table 1. Means and SD for components of OLC and KCM. |
|---------------------------------|---------|---------------------------------|---------|
| OLC: Collecting information | 3.15    | OLC: Analysis                  | 2.52    |
| OLC: Preserving information | 3.30    | Principal’s support of KCM     | 2.84    |
| OLC: Distributing information| 3.54    | Attitudes towards KCM          | 2.26    |
| Attitude towards KCM        | 2.26    | Extent of KCM                  | 2.59    |
| Extent of KCM                | 2.59    | Note: Mean, 1: low value; 5: high value. |

SCHOOL LEADERSHIP & MANAGEMENT
whereas a combination of OLC and KCM results in a considerably higher explained percentage. Management support for KCM constitutes a limiting factor, both in relation to the extent of KCM activity and to the benefit new employees derive from the organisational knowledge they receive at the initiation of their work. The higher the school level (from elementary to junior and senior high school), the more management limits its support for KCM. As to the attitudes of the teachers, the more weight they attribute to the uniqueness of each teacher’s approach, the less importance they ascribe to the necessity of transferring intergenerational knowledge, and vice versa.

**Testing alternative models**

The underlying premise of the model on which the results shown in this paper are based is that some of the links between the background variables with OLC and KCM are indirect. The alternative model that was examined contained direct correlations between background variables and all of the constituents of OLC and KCM. The fit of this alternative model, $\chi^2 = 98.78$, df = 51, $p < .001$; RMSEA = .05; NFI = .93; CFI = .96; and IFI = .96, GFI = .96, was not as good as the fit of our proposed model. The $\Delta \chi^2$ difference test

![Figure 1. Theoretical model of significant reciprocal relations between OLC and KCM variables. Key: The numbers on the arrows represent the significant Beta values and each cell of the KCM variables details the explained variance ($R^2$).](image-url)
between our proposed model and the alternative model showed that model fit decrease was significant, \( \Delta \chi^2 (53, N = 389) = 38.75, p < .001. \)

In sum, a comparison between the proposed model and alternative models in terms of the significant paths and fit indexes suggests that the proposed model provides a better depiction of mediation.

**Discussion**

Knowledge is an essential resource in all advanced companies (Hashim 2008; Martins and Meyer 2012). Therefore, managing organisation knowledge by unifying, sharing, preserving and renewing its use has become more relevant for most companies today (Lindner and Wald 2011; Urbancová and Linhartová 2011). OLC represents a theoretical and practical platform for meeting this challenge, one that can be adapted to each institution’s unique modes of operation (Englehardt and Simmons 2002). The cornerstone of this approach is group learning (Crossan, Lane, and White 1999) which in recent decades has been directed into concrete channels for developing a learning professional community and an OLC (Schechter 2008). As in individual learning, which entails being exposed to, examining and extracting insights from new information, organisational learning contains a group process of gathering, examining and understanding internal and external information and eliciting the insights from it which are then integrated into and disseminated throughout the organisational culture (Popper and Lipshitz 2000).

Until recently, OLC in the education system was investigated mainly in its horizontal dimension, that is, in the development of group insights by staff members serving in different positions at the same time. Less attention was directed to the vertical learning of personnel in new positions from peers leaving those positions. Awareness of the need to establish procedures for new personnel to learn from their predecessors in the position has increased of late, as a result of the accelerated ageing of the work force and the retirement of experienced veteran employees, which has led to a loss of knowledge (Martins and Meyer 2012; Nicholson 2008). The fact, based on our findings, that the horizontal and vertical dimensions of organisational learning are only partially linked requires that they be given different names. This is a classic case of the terminology of dynamic professional language undergoing a process of generalisation, focusing and differentiation as a result of the development of knowledge.

In terms of organisational knowledge that is gained, the horizontal dimension is of limited value to new position holders as they first take up their new posts, and this value is mediated by the KCM variable, which contributes greatly to its empowerment. These findings can be explained through cognitive theories, according to which learning becomes meaningful when it enables its users to transfer and project from the specific domain in which it was acquired to additional domains. The more similar and relevant these domains are to the knowledge that acquired, the greater is the transfer potential (Kaniel 2009). Vertical learning focuses on insights regarding positions being transferred from individuals who are leaving to their replacements and therefore it is reasonable to assume that the newcomers will wish to be assisted by these insights as they take their first steps. The insights that are formulated in horizontal learning are less relevant to the new position and therefore offer lower transferability potential. It should be noted that the term ‘transfer’ is also relevant in group learning (Schwarz and Glassner 2003).
The reason that only partial transfer from OLC to KCM is created in many schools requires additional clarification. The puzzlement is even greater in light of the paradox that is created: teachers steadfastly and logically instruct their pupils to persevere in learning throughout life. The relevant knowledge for guidance of successors by their predecessors in a school is available at no extra endogenous or exogenous budgetary investment. Yet when KCM is supposed to affect job effectivity, teachers generally avoid implementing their own dictum. Most of the study participants were assigned to positions previously held by colleagues who continued to work with them in other posts in the same school. Therefore, it is doubtful that the minimal transfer of vertical knowledge evident in this study can be attributed to resistance on the part of those leaving to imparting knowledge to their successors. Bryant (2003) found that in organisations with a culture of innovation, creativity, challenge-seeking behaviours and a learning orientation, more examples can be found of efforts to promote the continuity of knowledge. In contrast, cultures marked by little innovation manifest considerably less intergenerational transfer of knowledge. A study should examine whether a culture of innovation in organisations contributes to a greater transfer from horizontal learning to KCM.

The partial transfer from horizontal OLC to KCM and the attitudes of different educators towards KCM seem to stem from a number of considerations. Among them:

**Collaboration and unilaterality:** School staffs intensify OLC through interactive collaborative thinking at staff meetings and in daily dialogue. Together they process individual information and imbue it with a new collective meaning (Schechter 2008). The authority of each member is influenced by his or her contribution to the development of group thinking, active involvement, and ability to translate insights that evolve during group discourse into practical terms.

In KCM, in contrast, information is transferred unidirectionally from those who assume other duties to their replacements. Those on their way out believe, in light of their experience, that their knowledge is absolutely accurate. They view the very transfer of this knowledge as a voluntary act, as long as such activity is not defined as a structured part of their post. However, the fact that staff members cooperate well in horizontal learning does not guarantee that they will devote much time to train their successors. The extent of their investment in the transfer is limited and they strive to conclude it as quickly as possible. This might be at least partially motivated by the need to concentrate on learning the demands of their own new positions.

Their replacements, in contrast, need time to absorb the information. They are cautious and sceptical, and are not always interested in adopting it as is. They see the benefit of conducting discourse with their predecessors in order to gain deeper understanding and to examine a variety of options, some of which will differ from those recommended by the persons leaving the posts. The different perceptions held by the two parties – those on their way out and those on their way in – regarding the essence of the transfer of knowledge, as well as their divergent interests, create fertile ground for potential overt or covert conflicts.

**Motives for learning:** Learning is motivated by challenges, successes and failures. Positive feedback from staff cooperation stimulates greater horizontal organisational learning. However, failure of transmission of knowledge from a predecessor to a successor results in delayed adjustment to the new demands. This has been demonstrated in industrial organisations in which loss of intergenerational knowledge is a proven cause of damage.
(Massingham 2008). Measures of the quality of educational work processes are less accurate, making it difficult to assess the harm caused by the non-transfer of information from personnel leaving to their replacements. Thus there has been little motivation to spur the development of a KCM mechanism. Empirical findings confirm the contention that schools engage in limited KCM activity. When teachers are properly advised by their predecessors, they become aware of the benefit of such action and report more effective functioning as they enter their new posts.

Learning mechanisms: In horizontal organisational learning, individuals are constantly directed to empower themselves professionally. Staff meetings are planned for the collaborative processing of knowledge, its encoding and preservation in databases and its dissemination. Vertical learning entails different mechanisms for developing work files for each subject; their main purpose is to provide assistance during times of personnel changes. Because they are not used on a regular basis, motivation to invest time in their development is limited, especially when heavy daily workloads are taken into consideration.

The number of participants in the exchange of knowledge: Horizontal organisational learning takes place in teams, both small and large. In KCM, the transfer of information is carried out in a small forum, usually one-on-one meetings between the reassigned staff member and the successor. Learning methods and climate differ in small and large groups. Thus the skills and experience sharpened in one type of learning do not guarantee success in the other (Hinsz, Tindale, and Vollrath 1997; Triest 1999).

Attitudes towards KCM: People’s attitudes affect their behaviour (Terry, Hogg, and McKimmie 2000). Employee support for the intergenerational transfer of knowledge cannot be taken for granted. It is affected by individual and collaborative work styles and by the quality of mutual relations between the individuals leaving a position, and their superiors and the employees slated to replace them. Participants who expressed the attitude that each teacher has his or her own unique work style were of the opinion that intergenerational vertical knowledge is of only limited benefit. Those who ascribed attributed more importance to the shared components than to the unique approach of each teacher considered the guidance of their predecessors more helpful. In horizontal organisational learning, employees whose work style is individualistic and therefore tend to cooperate very little with their colleagues engender limited damage to organisational learning; other staff members with a more collaborative style contribute sufficiently to the development of organisational insights.

The gender issue: Opinions in the literature are divided regarding the extent of gender differences in various aspects of management. Eagly and Johannesen-Schmidt (2001) summarised about 50 studies from 1985 to 2001, and found that women, more than men, use design management. In contrast, men scored higher in the transactional passive management by exception style, the transformational active management by exception style and the laissez-faire style. Chai, Das, and Rao (2012) report gender differences in the manner of managing information. For example, women tend more than men to give and receive positive responses in informational communications (Thelwall, Wilkinson, and Uppal 2010). Our study shows that the gender difference is also reflected in OLC and KCM. Female teachers, more than their male counterparts, exhibit support in KCM which requires interpersonal interaction between those leaving and their replacements. This is in consonance with their tendency to interpersonal courtesy and cooperation.
and information sharing in team work (Lin 2008) and in their morality of care (Derry 1989; Ford and Lowery 1986). Their tendency to be more averse to risk-taking than men (Blais and Weber 2001) may also explain their support for the orderly transfer of information from retiring employees to their replacements, as this transfer contributes to the uninterrupted success of organisational activity, without hindrances, as personnel occupying official positions are replaced.

In the domain of OLC, male teachers ascribe greater importance to information gathering than do female teachers. This can be explained by the greater tendency of males to a morality of justice (Derry 1989; Ford and Lowery 1986). Judgmental activity that strives for justice begins with the collection of information and an understanding of the factual basis of the situation. The support of male teachers for the collection of organisational information, as part of their ongoing work, does not contradict their willingness to take risks in their work more than women (Karakowsky and Elangovan 2001). On the contrary, mastery of organisational information allows them to take more calculated risks than when information is lacking. Our findings give greater depth to the expression of gender differences in work domains.

It should be noted that no other background variables were found to be connected to the scope of KCM. Thus, for example, no differences in scope were found between schools in different districts and no differences were evident between urban and rural schools and between institutions with different socio-economic levels. It appears that the central factor connected to KCM is local organisational culture. This connection between KCM and organisational culture should be examined in a follow-up study.

In an age of public transparency and increasing competition between educational institutions, new personnel are expected to function effectively from the moment they enter their position. They are not given time for adjustment to the new demands. Thus, it is necessary to establish permanent mechanisms for transferring information from previous position holders to their successors so that the transition is as effective as a well-run relay race, in which the person passing the baton, and the one receiving it, do their best to complete the transfer without reducing the rate of activity. The baton recipient begins his sprint in parallel to the predecessor several metres before the transfer point, so that when the transfer is made, it will be completed at almost full speed. The proficiency of the transfer to the new runner is of utmost importance to the one completing his segment because his success is measured by that of the team and not by the specific speed of each sprinter. From a purely formal viewpoint, it is possible to devise job requirements that include the obligation of personnel leaving their posts to transfer relevant information to their successors as fully as they can and in an orderly manner. Compensation benefits to employees leaving posts can be made conditional to completion of the demand for proper training of their successors. It is also possible to include KCM mechanisms in measures evaluating organisational functioning. To implement this procedure, organisational heads would have to allocate time to those leaving to enable them to prepare their successors fully for their new positions during the running-in-period and to schedule follow-up consultations during the initial period of work (Klein 2005), especially in light of the accelerated ageing of the work force, which intensifies mobility in work places (Nicholson 2008). An orderly transfer of information between those leaving and those entering a position cannot be expected in all cases. This disconnect is often the result of a lack of trust between those leaving and those entering or of
individuals being dismissed against their will and not wishing to cooperate. Such cases highlight the advantage of ongoing documentation in real time (as much as is possible) so as not to depend on transfer only at the concluding stages of replacement.

Deepening organisational learning, including the establishment of communication networks among position holders, will facilitate mutual learning and familiarity of the tasks that each one is involved in, which may ease inter-post mobility. For example, a forum of subject teachers in which members can ask questions and share their deliberations and insights may make teachers more familiar with the work of others so that when they take over responsibility for managing a class that a colleague taught in the past, they will already be aware of various aspects that will require their attention to be effective. Transparency in the work of subject coordinators with the teachers under them will, in time, enable one of the teachers to take over the task of coordination when the veteran coordinator is reassigned or retires.

School principals are expected to play a central role in promoting the horizontal and vertical OLC (Nir 2003). The model that this study verified exposes the other side of the coin, the potentially moderating effect principals may have on organisational learning processes. Principals limited both the transfer of specific information to their replacements and the benefit that new position holders could gain from it. This is more evident in turnover in senior institutional positions than in the lower organisational ranks. Participants who were interviewed and asked to explain the findings that were obtained noted that some principals hold ambivalent attitudes towards the transfer of information from senior personnel to their replacements. They want new employees to have relevant information but at the same time they fear that those leaving may have amassed too much knowledge about the administration’s strong and weak points and may manipulate that knowledge to the institution’s detriment. Such managers do not want such intergenerational communication and prefer that new position holders begin their tasks tabula rasa, relying only on them, the managers, for necessary information. Thus, merely recommending that managers encourage KCM will not necessarily promote it. It is necessary to map informal intra-organisational ties, pinpoint the agents and factors that hinder the guidance of successors by their predecessors, and plan actions to help create supportive attitudes and a willingness to transmit intergenerational knowledge.

The intense debate about horizontal and vertical expressions of ‘Wisdom of the Crowds’ may create the impression that this is the only ultimate option for promoting organisational insights. Philosophically and empirically, doubts arise as to the legitimacy and practical benefit of basing overall organisational activity on group thinking. Granting limited freedom to position holders to act differently from their colleagues and predecessors, in consonance with their own unique personality style and taking core organisational issues into consideration, may yield maximal personal output (Fenwick 2008). A balance is needed between group and individual activity, in horizontal organisational learning as well. Despite the well-developed explanation of its necessity, individuals entering new positions must also be given the latitude to promote areas that were not emphasised by their predecessors, and to be true to their own personal style.

Excessive adherence to external information is destructive, just as ignoring it completely is pretentious and debilitating. Individuals have opportunities for individual and group thinking, retrospectively, currently, creatively and in perspective. They must use these opportunities intelligently, flexibly and dynamically, keeping in mind their own
unique characteristics, personal traits and the environmental features in which they operate, and accordingly they must formulate their own effective situational style of functioning.

Disclosure statement
No potential conflict of interest was reported by the authors.

Notes on contributors
Joseph Klein is a senior lecturer in the Division of Educational Leadership and Administration in the School of Education Bar Ilan University, Israel. His research includes the study of staff empowerment and improving educational decision making processes among teachers and principals.

Orly Shapira-Lishchinsky is a senior lecturer in the Department of Educational Administration, Leadership and Policy, School of Education, at Bar-Ilan University, Israel. Her research areas include: organizational ethics, teachers’ withdrawal behaviors (lateness, absenteeism and intent to leave) and mentoring through Team-based-Simulation.

ORCID
Joseph Klein http://orcid.org/0000-0002-7982-8665

References


Appendix

**KCM questionnaire**

Background information:

1. Present position in school: __________________ (e.g. subject coordinator).
2. Number of years of experience in your present school position ________.
3. Total number of years of experience in the educational system ______ (years).
4. Type of school you work in (circle one): a. Elementary b. Junior high c. Senior high.
5. Your gender: Female/Male.
6. Gender of the person you replaced in the post: Female/Male.

In the following questions: 5-To a very great extent, 4-To a great extent, 3-So some extent, 2-To a small extent 1-Not at all.

<table>
<thead>
<tr>
<th>Question</th>
<th>To a very great extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 When you were appointed to your present post, regular instructional meetings were held between you and the person leaving the post</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>8 The person leaving the post updated you with his knowledge during work hours, without regular meetings</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>* The person leaving the post gave you:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Job profile/job description</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>10 Areas of responsibility</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>11 Protocols from discussions/meetings</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>12 Details about essential liaisons</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>13 Reports about problems that arose and ways of solving them</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>14 Main lessons (cumulative experience)</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>* The information you received from your predecessor in the post gave you:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Self-confidence</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>16 The ability to solve problems</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>17 A good understanding of the job requirements</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>18 Familiarity with the agents/factors connected to the new post inside and outside the school</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>19 There was a running-in period for you to work together with the preceding position holder</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>20 Overt or covert competition between you and the outgoing position holder limited the transfer of information between you</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>21 Management took an interest in the change of personnel between you and your predecessor</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>22 The management informed those agents connected to the post about the change of personnel</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>23 The school supervisor was involved in the change of personnel</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
Continued.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>To a very great extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>It is accepted practice in your school that a person leaving his post instructs and guides the replacement</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Your school has a clear <strong>procedure</strong> for the outgoing position holder to instruct his/her successor</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>I think that transferring information and advice from one position holder to another is a matter of individual choice</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Each person’s work style is affected by his own experience and personality, therefore transferring advice from one position holder to another is useless</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Every employee should learn the post by himself and there is no great benefit in advice given by the previous position holder</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>An employee leaving his job wants to leave his unique imprint over time. Therefore it is reasonable that he will avoid giving the new position holder information about the special projects he developed</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>It is necessary to have a formal binding procedure for outgoing position holders to instruct new position holders</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>An institutional procedure for transferring information from a person leaving the job to the new employee will not change the actions of an employee who is opposed to transferring information.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>