Organisational Learning Questionnaire - Quality Evidence

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ABSTRACT: This article forms part of a movement to improve the methods and rigour of investigations in education and related areas such as educational administration. Outlined are the steps taken by the authors to construct a questionnaire investigating the nature of organisational learning in the process of identifying the characteristics and processes that define a school as a learning organisation. Validity, reliability and generalisability were found for a survey with the four factors: trusting and collaborative climate, shared and monitored mission, taking initiatives and risks, and ongoing, relevant professional development.

Introduction

This article forms part of a movement to improve the methods and rigour of investigations in education and related areas such as educational administration. Too often research in these areas is open to methodological criticisms. A number of studies reported in this literature are of poor design and lack empirical rigour making assertions based on opinion or theoretical discussion. Another related limitation is the use of methods and measures without addressing the issues of reliability and validity. (see Wallace & Paulson, 2003, for additional material on reading critically in educational leadership.)

Educational administration studies frequently use instruments such as interviews and questionnaires to collect data from discrete populations such as principals, teachers or students. The instruments employed to collect such information may be bought from American distributors where concepts and norms are specific to the North American culture and school system and not justifiably generalisable. Otherwise, more often than not, researchers construct instruments that are purported to represent concepts without establishing reliability and validity of such instruments. And furthermore, the results of employing these instruments produce assertions that account for...
effects obtained more broadly then can be justified by the items used to define their concepts.

Deficiencies in educational research design have led to the of lack empirical rigour. When searching for quality research, problems can be found to exist on a number of levels including: absence of theoretical frameworks to inform research investigations; lack of valid and reliable measures used in analysis; and, poor application of research methodologies generally.

As a case study, we offer in this article the steps taken by the authors to construct a questionnaire investigating the nature of organisational learning in the process of identifying the characteristics and processes that define a school as a learning organisation.

The Area of Concern: Organisational Learning

The traditional approach to change is to look for the problem, do a diagnosis, and find a solution… Appreciative inquiry suggests that we look for what works in an organisation. The tangible result of the inquiry process is a series of statements that describe where the organisation wants to be, based on the high moments of where they have been. (Hammond, 1998, pp.6-7)

What are the high moments in an organisation such as a school? What are the elements that make up these high moments? In other words, how do we find out what works? Good decisions about what should be done in an organisation are evidence based. Collecting quality evidence is not straightforward. To obtain quality evidence, quality methods of information gathering must be used.

Our notion of a school as a learning organisation was very much one of a school that managed the pressures of change and renewal to its continuing benefit. We were interested in knowing what characterised schools that could be identified as learning organisations because they succeeded in the eyes of their staff and students. At the time of construction, there was no single generally accepted definition of a learning organisation, especially as applied to schools.

In the field in general, Senge’s (1990) model of the five disciplines of a learning organisation is well known. These five disciplines are systems thinking, personal mastery, mental models, team learning, and shared vision. Keating’s (1995) writings helped us summarise the most commonly mentioned elements of a learning organisation as: coordinated group effort towards commonly shared goals; active commitment to continuous improvement and to the diffusion of best practices throughout the organisation; horizontal networks of information flow to help bring together expertise as well as links with the external world; and, the ability to understand, analyse, and use the dynamic system within which they are functioning.

In the specific field of education, Leithwood and Aitken (1995, p. 63) defined a learning organisation as “a group of people pursuing common purposes (individual purposes as well) with a collective commitment to regularly weighing the value of those purposes, modifying them when that makes sense, and continuously developing more effective and efficient ways of accomplishing those purposes”. Research that operationalises organisational learning in schools has identified a number of characteristics. For example, Sackney et al. (1995) identified engaging in collaborative processes, a willingness to engage in professional learning and growth and to reflect on and experiment with ongoing practices, and ability to align activities with the school’s mission. Leithwood et al. (1998) listed a school’s vision, culture, structure, strategies and policy and
resources. Marks et al. (2000) used school structure, participative decision making grounded in teacher empowerment, shared commitment and collaborative activity, knowledge and skills, leadership, and feedback and accountability.

One of the first steps in constructing a questionnaire is to clearly identify what is required of this instrument and from whom. In the first instance, we wanted to identify the characteristics and processes that define a school as a learning organisation and to draw this information from fellow researchers in the area, principals and their staff. Any instrument must draw information from the appropriate sample to tell us what is considered as desirable, possible and worthy and the instrument itself must be constructed using the knowledge base of the researchers and practitioners in the area of interest.

**Knowledge Base**

Literature recognising the advantages of reconceptualising schools as learning organisations and advocating organisational learning has been accumulating (for example, additional writings can be found in the work of: Cousins, 1996; Diggins, 1997; Fullan, 1993; Isaacs & Bambug, 1992; Louis, 1994; Mulford, 1998, O'Sullivan, 1997; Stoll & Fink, 1996). In Australia Johnston (1998), using the Senge (1990) work as a framework of analysis, conducted an investigation of Victorian secondary schools to discover to what extent they were developing as learning organisations. Four key characteristics were identified as being significant in the growth of schools as learning organisations. These were: the existence of inclusive collaborative structures; effective communication channels; integrated professional development programs; and, learning-focused leadership. Johnston recognised that two key areas remained to be addressed: the first was the need to design practical concrete strategies to promote organisational learning; and, the second was to identify suitable outcomes that could be measured in schools purporting to be learning organisations.

In Canada, Leithwood, Loukard & Sharratt (1998) reported the results of synthesising evidence from three independent studies of conditions that foster organisational learning in elementary and secondary schools. Their findings related to school culture, structure, resources and leadership. They identified collaborative and collegial school cultures that included norms of mutual support, respect for colleagues’ ideas, a willingness to take risks in attempting new practices, the exchange of honest and candid feedback, shared celebrations of successes, a strong focus on the needs and achievements of the students, informal sharing of ideas and resources, and continuous professional growth. The school structures that were found to support organisational learning were those that allowed for greater participation in decision making by teachers. Current and sufficient resources supporting professional development to promote school initiatives were decided boosts to the teachers’ learning. Transformational forms of principal leadership were found to contribute significantly to school conditions fostering organisational learning processes as well as to organisational processes directly.

From this examination of the literature the following seven dimensions that characterised schools as learning organisations were identified and these defined what we initially meant by organisational learning (Silins, Zarins & Mulford, 2001).
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- **Environmental scanning** refers to the activities of the school that contribute to broadening the scope of the information, policy, theory and practice that is brought to bear on the school's development and decision making processes.

- **Vision and goals** refer to the recognition of and commitment to a coherent and an agreed upon sense of direction that is forged and re-forged to guide a school's everyday actions and decisions as well as shape long term planning.

- **Collaboration** refers to the extent that there is a climate of openness and trust, which promotes collaboration, cooperation, support and involvement in the functioning of the school.

- **Taking initiatives and risks** refer to the extent that school staff are open to change and feel free to experiment and take professional risks toward personal and whole school improvement.

- **Review** refers to the extent that programs and practices are reviewed, evaluated and actioned.

- **Recognition and reinforcement** refer to the extent that there is sincere recognition and valuing of effort, initiative and achievement.

- **Continuing professional development** refers to the extent that encouragement, opportunity and resources are provided to enable all school staff to learn, develop and implement the knowledge, skills and attitudes needed to contribute to improving the school's performance as a whole.

The quality of a questionnaire is dependent on the quality of its items. A thorough literature review enables the researchers to be reasonably certain that what is currently known about the area being investigated by the questionnaire is represented by the items. Furthermore, suggestions of possible elements identified for future research should be represented by the items as much as possible. The researchers and willing practitioners brainstorm additional areas and items to see if new characteristics or processes are identified and can be added to the questionnaire or whether further generation of areas and items results in overlap with the existing ones.

Creating such a 'model' of the characteristics and processes of schools as learning organisations in the process of questionnaire construction is only the initial step. We have to demonstrate that such a 'model' is supported and/or we make adjustments to the 'model' to reflect reality. Furthermore, if we want to use the information from the questionnaire to help us generate actual strategies to produce the characteristics and systems that make a school a learning organisation, we have to validate the model.

Validating the 'model' of the meaning of Organisational Learning is implied by the questionnaire and requires:

- The collection of all relevant and evidence based information on the concept of an area such as Organisational Learning (viz literature search to produce broad areas of interest such as environmental scanning, etc.) which will stimulate item construction.

- Testing of the items in the questionnaire for validity and reliability and for clustering to form factors or concepts such as environmental scanning, vision and goals etc.

- Testing concepts defined by the items for meaning.
• Testing whether the identified and defined concepts 'nest' under the broader concept of Organisational Learning and therefore are sufficient to define it, or not.

The Genesis of the Study

For the study reported here, the data used have been drawn from a survey of secondary schools carried out in South Australia and Tasmania as part of a larger, federal and state funded, three-year collaborative research project titled “Leadership for Organisational Learning and Student Outcomes” (LOLSO). The project was supported by the Australian Research Council and the two state education authorities.

The LOLSO Project was developed to investigate systematically the emerging reconceptualisation of schools as learning organisations. For the purposes of this research, organisational learning refers to the way the whole school staff, collaboratively and on a continuous basis, learns and put learnings to use. It is argued that it is this collective, continuous learning initiative that results in a learning organisation.

The project surveyed teachers and principals from 50 South Australian secondary schools and 46 Tasmanian secondary schools to determine their perceptions of schools as learning organisations, their views on school management and the nature of principals’ leadership. The aims, nature and scope of the larger project and the results of the investigations have been reported elsewhere (Silins et al, 2000; Silins & Mulford, 2002, Mulford, Silins & Leithwood, 2004).

This study focuses only on the perceptions of schools as learning organisations. As indicated earlier, the questionnaire for this section was constructed using the seven dimensions defining schools as learning organisations that employed the processes related to environmental scanning, developing shared goals, establishing collaborative teaching and learning environments, encouraging initiatives and risk taking, regularly reviewing aspects related to and influencing the work of the school, recognising and reinforcing good work, and providing opportunities for continuing professional development. Teachers and principals responded to items representing these seven dimensions on a self-report five-point Likert scale ranging from strongly disagree (value 1) to strongly agree (value 5). Over 2,500 responses provided the information on staff perceptions of schools as learning organisations for analysis.

Validity, Reliability and Generalisability

All research requires some form of observation. When we develop a questionnaire we are constructing a device to help us gather information about our environment that will provide us with a greater understanding of the nature and characteristics of the things we are observing. When we want to measure constructs such as organisational learning, we construct questionnaire items that represent observed characteristics of these constructs. Responses to related items could be grouped to provide scales that measure various aspects of the same construct. The items included in any questionnaire are a small sample of the universe of items associated with a particular construct that could have been selected. How good we are at both choosing the sample of items
that best represent the population of observations that can be made and constructing scales from related items for our questionnaires indicates the validity of our instrument, and cannot be overrated. We need to be confident that the scores we obtain from the selected items and the constructed scales are meaningful, strong and generalisable. This means that the measures used must be reliable and valid to allow a range of inferences to be made from them.

We have taken a number of steps in constructing our questionnaire and in analysing item responses to provide valid and reliable measures of the constructs we have used. First, we conducted extensive literature reviews to identify what was known about the characteristics of the construct we were investigating, organisational learning. This led us to identify seven categories of characteristics that we hypothesised could be associated with conceptualising schools as learning organisations and understanding organisational learning. This specification of characteristics provided the seven constructs representing organisational learning items incorporated in the questionnaire. Subsequently, the questionnaire was piloted, revised, and then administered to teachers and principals in the project who responded to each item. To promote generalisability of the information collected, care must be taken in sampling. In South Australia a random sample of 50 schools, stratified by size, was chosen. In Tasmania the full population of secondary schools was used. Within schools, teachers were surveyed across year levels.

It is difficult to analyse results from hundreds of questionnaire items, therefore several data reduction procedures need to be employed. In our research these data reduction procedures included: rating scale analysis from the Quest program (Adams & Khoo, 1993) to reduce the number of questionnaire items to be analysed to those that fitted the Rasch scale and to establish uni-dimensionality for this questionnaire; exploratory factor analysis with principal component extraction and varimax rotation to help develop scales underlying the constructs to be used in further analysis; and, principal component extraction to confirm the structure of the scales. The factor solution of organisational learning was then tested using a further confirmatory procedure employing the structural equation modelling software, LISREL 8 (Jöreskog & Sörbom, 1993). The LISREL output, however, was initially generated using South Australian responses and crossvalidated with Tasmanian responses for three models: One factor model; Four factor correlated model; and, Four factor correlated nested model. Taken together, the above sampling and statistical procedures strengthened validity, reliability and generalisability of this research.

These procedures resulted in a four-factor correlated nested model for organisational learning being the best fit for the observed data. The identification of the four factors required noting the items that were the strongest contributors in each of the four clusters of items and forming a concept that reflected their meaning. These factors or concepts and some of the noted items were:

- **Trusting and Collaborative Climate** - refers to a school where collaboration is the norm. Teachers participate in most significant school-level policy decisions and help to establish the school’s vision or goals. Discussions amongst colleagues are open and candid and information is shared with other members of the school community including parents. Staff is valued. Items are –
  - Discussions among colleagues are honest and candid.
  - Overall there is mutual support among teachers.
  - Most of us actively seek information to improve our work.
- We are tolerant of each other’s opinions.
- Colleagues are used as resources.
- There is ongoing professional dialogue among teachers.

**Shared and Monitored Mission** - refers to a school culture that encourages critical examination of current practices and continuous learning for improvement. The school staff keeps abreast of external events that may impact on their school. The curriculum is aligned with the school’s vision and goals. Information from other schools and from professional associations is used to support learning. Items are –
- Teachers have the opportunity to participate in most significant school-level policy decisions.
- We have a coherent and shared sense of direction.
- We critically examine current practices.
- Teachers and administrators work in partnership to learn and solve problems together.
- We actively share information with the parents and community.
- The effectiveness of the teaching program is regularly monitored.

**Taking Initiatives and Risks** - refers to staff being empowered to make decisions and feeling free to experiment and take risks. The school structures support teacher initiatives, the administrators promote inquiry and dialogue and are open to change. Items are –
- The school leaders protect those who take risks.
- The administrators are open to change. School structures support teacher initiatives and risk taking.
- The administrators empower staff to make decisions.
- There are rewards for staff who take the initiative.
- People feel free to experiment and take risks.
- Staff are valued.

**Ongoing, Relevant Professional Development** - refers to the engagement of staff in professional development. Professional reading is a source of learning and so are other schools. Developing skills of how to work and learn in teams is seen as important. External advice is sought as appropriate and school leaders provide all the support they can to promote professional development. Items are –
- We monitor what’s happening outside of the school to find out about best practice.
- Good use is made of professional readings.
- Groups of staff receive training in how to work and learn in teams.
- Good use is made of membership of teacher professional associations.
- We make use of external advisers, e.g., subject associations, project officers, consultants.
- Adequate time is provided for professional development.
O Staff engage in ongoing professional development.

Since we had taken care to use procedures strengthening the construct validity of the measures operationalising the constructs employed, judgments could be made about their meaning with some confidence and inferential methods could be used to draw conclusions and make judgments about the population they represented (Silins, Zarins & Mulford, 2001). Further information about these processes and how the constructs formed were used to answer research questions using path models for the LOLSO Project can be accessed in Mulford, Silins and Leithwood (2004) as can the short form of the Organisational Learning Questionnaire, and the short forms of all the questionnaires used in the LOLSO Project. These questionnaires include teacher perceptions of the principal’s transformational leadership and student perceptions of teachers’ work and their own home educational environment, academic self-concept, and engagement and participation in school.

Finally, Kaplan (1997) argued that the ultimate test of the validation and reliability of instruments used in inquiry methods is their usefulness in providing meaningful data that move us forward in understanding our world. All schools that participated in the LOLSO Project were provided with feedback on the perceptions of teachers about their school as a learning organisation and as measured by the constructs employed in the questionnaire. Many of the principals and staff of the cooperating schools used this feedback successfully to enhance the processes and structures in their schools to promote organisational learning.

References


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1 Adding other members of the school community to our sample, such as students and parents, and obtaining their views of organisational learning would have added to the generalisability of our findings. While we did obtain student views of teachers’ work and their own participation and engagement in school and self-concept, we did not have the time or resources to include their, or parents’, perceptions of school organisational learning.