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Diagnosing and Supporting a Culture of Organizational Learning in Scottish Schools

Abstract: *This paper reports an empirical study of the extent to which the 93 schools in a Scottish education authority were ‚learning organizations‘. A 22 item questionnaire to assess learning organization culture, defined as Shared Vision, Openness to Criticism, Knowledge Sharing and Administrative Support, was distributed to school staff. Analysis of the 753 replies indicated an overall conviction that these schools were learning organizations, although school leaders were more likely to believe this than Class Teachers, and primary teachers more than teachers in secondary schools. The exception was the item „opportunity to discuss best practice with staff from other schools“, which the majority of staff believed was limited. Measures were developed to strengthen this aspect of the education authority's culture.*

1. Introduction

In recent years, school leaders have come under pressure to improve their pupils' achievement in standardized tests and examinations. Faced with this challenge, many have turned to organizational theories in search of ways of understanding, planning and bringing about the desired improvement. The connection between organization and school outcomes revolves around the distribution of power. In any organization providing a service to a diverse body of consumers, such as the pupils of a school, it is important to delegate power to the local level. As one of the main exponents of learning organization theory explains, „Localness means moving decisions down the organizational hierarchy (…) local decision makers confront the full range of issues and dilemmas (…) Localness means unleashing people's commitment by giving them the freedom to act (…)“ (Senge 1990, 287-8). In the context of school organization and improvement, this means empowering Class Teachers to lead improvement strategies and facilitating the sharing of knowledge about best practice. This requires organizational structures such as school improvement networks and clusters of teachers who face similar problems (Fullan 2003).

Among the organizational theories invoked for the purpose of school improvement, the concept of ‚the learning organization‘ and its core activity of, organizational learning‘ are perhaps the most widely accessed (Hargreaves 1999). A ‚learning organization‘ has been defined as ‚an organization which facilitates the learning of all its members and continually transforms itself‘ (Pedler/Burgoyne/Boydell 1991, p. 9) and ‚an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights‘ (Garvin 1993, p. 80). All schools are learning organizations in the sense that they exist to promote the learning of their pupils. In the context of school improvement, however, the learning referred to is collec-

tive learning by the school staff of ways of improving pupil achievement. To qualify as ‚organizational‘, learning of this kind must be implemented by school-based teams and other small groups, must involve all the staff (not just the senior management team) and its outcomes must be shared widely so that they become part of the school's culture (Snyder/Cummings 1998).

2. The Craigton Organizational Learning Strategy

This paper examines organizational learning in Craigton, a Scottish Local Authority whose education service comprises 93 nursery, primary, secondary and special needs schools and which employs 2017 teachers together with a large number of support staff. From 2003, the present authors provided research and consultancy in support of Craigton's aspiration to harness organizational learning to the goal of improving its pupils' achievement. At that time, as measured by national tests and examinations, the levels of achievement by Craigton pupils were below the average for Scotland even when the results were statistically corrected by measures of social disadvantage. Faced with this situation, Craigton's Director of Education responded positively when the present authors proposed developing the Authority and its schools on the principles of the learning organization. The policy developed by the authors in consultation with the Director of Education identified three objectives:

1. improving achievement for every pupil,
2. engaging all school staff in teacher-led action research projects in pursuit of such improvement,
3. sharing and implementing what was learned in these projects across the school and the whole Authority.

The Authority explicitly adopted the principle of organizational learning when it stated in a policy document: „… Society requires individuals, communities and organizations to respond to the ever-increasing pace of change by engaging in continuous development and improvement. In order to respond effectively to this challenging agenda, it is crucial that an organization, whose core business is learning, is itself able to demonstrate the capacity to learn. [Craigton] therefore applies the principle of the Learning Organization, a proven business strategy, to our educational context. More specifically, it focuses on our key purpose of raising attainment and achievement for every pupil. "

This commitment to organizational learning replaced a top-down approach to school improvement in which the Authority had previously told each school what priorities and activities they should be pursuing. In contrast, the central principle of organizational learning is that those who are directly involved with pupils in schools are in the best position to develop effective practice to meet their needs, and the role of the Authority as a whole should not be to impose pedagogic policies but to facilitate and support those in the frontline in developing their own. The plan was that each school, working with its own school community, would start by identifying a need for im-

provement in the quality of its pupils' learning. This would be carried out by teacher-led investigations into underachievement in their own schools, and where and how barriers to learning were being experienced by pupils (Frost et al. 2000). Focusing on the problems thus identified, staff would then carry out collaborative action enquiries in the form of action research projects to develop creative and reliable ways of improving pupils' performance. It was anticipated that there would be up to three such collaborative projects per school. Because these enquiries would be conducted by the teachers of the pupils concerned, it was believed that the innovative practices they developed would be tailor-made for the specific difficulties experienced by specific groups of under-achieving pupils.

However, before implementing this strategy it was necessary to investigate how far the Authority's schools were attuned to organizational learning, and where necessary, develop an organizational learning culture so that the action enquiries could take firm root. The research therefore addressed three questions:

1. How well did the culture of the Craigton schools meet the criteria of organizational learning?
2. Were there differences between the four sectors – nursery, primary, secondary and special needs?
3. Were there differences in the extent to which different grades of teacher believed they were participating in an organizational learning culture?

3. Diagnostic measurement of organizational learning culture

Organizational learning is best understood within the context of sociocultural theory (Reeves/Forde 2004; Boreham/Morgan 2004). From a sociocultural perspective, it is a complex social and cultural process, a simultaneous transformation of social practices and the individuals who participate in them. This perspective on organizational learning reflects the insights of several sociocultural theorists, including the cultural perspective of Vygotsky (1978), the communities-of-practice framework based on the work of Wenger (2002) and the ethnomethodology of Garfinkel (1967). Whilst there remain differences between these theoretical frameworks, they share the common theme that learning is mediated by social factors, especially interactions with pupils and colleagues, and by cultural tools such as curricula, textbooks, school rituals and the spaces pupils and teachers occupy. On this view, learning is formative process in which sociocultural factors mediate the individual teacher's direct experience of working in a school. The mediation is not merely a support to the exercise of individual faculties such as pedagogic skills and subject knowledge, but a process of creating a new cultural reality which constitutes the higher psychological processes such as ‚problem solving' and ‚innovative practice' through which working and learning become fused in collective activity. The outcomes of this activity are instantiated in the social structure of the school workplace (for example, a curriculum team will adopt a new way of dealing with a pedagogic problem), in the cultural artifacts of the workplace (for example, the stories teachers circulate about their work and the teaching

aids they design and use in the classroom), as well as in the individual memories and skills which, as Vygotsky stressed, are fundamentally reconstituted with every new revision in the way the work group carries out its activity. Consistent with this view of organizational learning is that of Schein (1992), who described it as a process of culture change within an organization brought about by purposeful and collective action. Schein makes the important point that what an organization can or cannot do depends on its culture, and that what the individual members of that organization can or cannot do depends on the extent of their socialization into that culture.

From this theoretical perspective, initiatives such as teacher led action enquiries cannot be expected to modify pedagogical practices unless the sociocultural context already embodies practices supportive of organizational learning. The first step in the project was therefore to develop a quantitative measure of the extent to which Craigton schools possessed such a culture. The method was to develop a confidential questionnaire for completion by all employees of all the Authority's schools (including both teachers and support staff). The intention was to diagnose ways in which the existing system fell short of the norms of organizational learning, and thence to identify needs for the culture change on which the success of the teacher-led action enquiries would depend.

3.1 The Questionnaire

Based on an exploration of the meaning of the central concepts of ‚learning organization‘ and ‚organizational learning‘ in the context of Craigton's educational service, a questionnaire was developed comprising 22 items anchored on a 7-point Likert scale. The items were selected to cover the main dimensions of organizational learning highlighted in the research literature with reference to this specific educational context. The items were grouped thematically into four categories of Shared Vision, Openness to Criticism, Knowledge Sharing, and Administrative Support. To counteract response bias, some of the items were expressed positively and some negatively. To complete the questionnaire, participants were asked, „Please indicate how true you think the following statements are about your experiences in the school(s) where you work. (1 = completely untrue, 4 = neither true or untrue, 7 = very true)". Subsidiary data were collected about the sector in which the participant worked (nursery, primary, secondary or special education) and their grade (Head Teacher, Class Teacher, Catering Assistant, etc.).

Shared Vision. Senge (1990) emphasises the importance of shared vision as *a sine quâ non* of organizational learning: „You cannot have a learning organization without shared vision. Without a pull toward some goal which people truly want to achieve, the forces in support of the status quo can be overwhelming" (1990: 209). The following questionnaire items referred to Shared Vision: 1. Pupil learning is the top of the school's agenda; 5. The school responds creatively to pupils' problems; 18. There is a real will to work together to improve pupil learning.

Openness to criticism. Another prerequisite for organizational learning is an ethos in which the teachers who participate in action research feel free to openly criticize the way things are being done. Otherwise, the identification of problems and the introduction of new approaches would be impossible. The following items referred to a culture of openness to criticism: 6. Staff are discouraged from openly questioning the way things are done in school; 9. I can raise problems about my work without fear of being criticized; 10. I am not encouraged to question the way I think about my work; 11. The senior management team always welcomes innovative ideas; 12. Failures of teaching and learning are rarely discussed constructively; 17. The school is reluctant to support enquiries into better ways of meeting pupils' needs; 19. The school faces up honestly to gaps in its current performance; 22. I am encouraged to participate fully in school improvement activities.

Knowledge sharing. Organizational learning depends on a culture of knowledge-sharing, so that lessons learned by one group are disseminated and reconstructed throughout the whole organization and thus become part of the common culture. The following items referred to knowledge-sharing: 4. It is difficult to find colleagues who are willing to help if I have a problem; 7. There is a lot of dialogue in school about how pupil learning can be improved; 8. In this school, people keep good ideas to themselves; 14. Staff spend a lot of time sharing information on the difficulties pupils have with learning; 15. I am rarely invited to debate how pupils learn; 16. It is difficult to share ideas with colleagues about improving pupil learning; 23. There is little chance to discuss pupils' progress. All these items refer to knowledge sharing within the school, but sharing knowledge across the whole Authority is important too. The following items referred to this aspect: 2. The school is alert to developments in other schools; 21. I have very few opportunities to discuss best practice with staff from other schools.

Alignment of administration to the shared vision. All teachers undertake a certain amount of administration. A frequent criticism is that this does not directly promote the overall goal of maximizing pupil achievement. In Scotland, a procedure known as school development planning was introduced to involve all staff in generating better ways of meeting pupils' needs. This was an attempt to promote organizational learning before such a term entered common usage. In later years, however, many teachers expressed the view that development planning had lost its initial purpose and had become an exercise in administration for its own sake that did not address pupils' needs. The following items referred to the alignment of administration to the shared vision: 3. Development planning is a valuable tool for improving pupils' learning; 13. The administrative work I do is irrelevant to improving pupils' learning.

3.2 Data Collection

The questionnaire was distributed to all categories of school employee, including seven categories of teaching staff: Head Teacher, Depute Head teacher, Principal Teacher, Class Teacher, Visiting Teacher, Probationary Teacher and Classroom Assistant, and nine cate-

gories of support staff: Administrative and Clerical, Business Support Manager, Catering, Facilities Management Assistant, Pupil Support Assistant, Pupil Support Manager, Support for Learning Assistant, Technician and Wraparound Care Assistant. Returned questionnaires were reviewed by a researcher, numbered and coded. Spoiled papers were omitted: spoiled papers were those where the respondent had not completed any of the questions asking for background information. The results were analyzed using the data-analysis package SPSS (version 11).

3.3 Response Rate

When the questionnaires were distributed, there were 969 primary teachers, 964 secondary teachers, 55 special needs teachers and 29 nursery teachers (total n=2.017) in Craigton[1]. A total of 753 replies were received including 545 teachers and 208 support staff, representing 27% of the total population of teachers in Craigton (the total number of support staff was not available to enable the response rate to be calculated).

- 62 replies were received from the nursery sector of which 19 were nursery teachers (65.5% of total number of nursery teachers in Craigton) and 43 were support staff;
- 431 replies were received from the primary sector of which 334 were teachers (34.5% of total number of primary teachers in Craigton) and 97 were support staff;
- 227 replies were received from the secondary sector of which 185 were teachers (19.1% of total number of secondary teachers in Craigton) and 42 were support staff;
- 10 replies were received from the special needs sector of which 7 were from teachers (12.7% of total number of special needs teachers in Craigton) and 3 were from support staff.

4. Results

4.1 How well did the culture of the Craigton schools meet the criteria of organizational learning?

Table 1 presents the means, standard deviations (sd) and number of respondents (n) for each item. The questionnaire was answered in a way which suggests that, on average, respondents believed that their school was a learning organization. A one-sample t-test against a sample mean and middle rating of 4 revealed a significant difference between all the observed means and the sample mean at $p < .001$.

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1 Source: Human Resource Management, Craigton Council.

Table 1: **Means, standard deviations (sd) and number of respondents (n) for each question on the „Experiences of working in Craigton Schools" questionnaire** (Scale: 7 = True, 4= Neutral, 1 = Untrue)			
Question	*n*	*mean*	*sd*
1. Pupil learning is the top of the school's agenda	735	6.34	1.04
2. The school is alert to developments in other schools	710	5.42	1.33
3. Development planning is a valuable tool for improving pupils' learning	715	5.84	1.27
4. It is difficult to find colleagues who are willing to help if I have a problem	741	1.96	1.63
5. The school responds creatively to pupils' problems	729	5.39	1.50
6. Staff are discouraged from openly questioning the way things are done in school	728	2.92	2.06
7. here is a lot of dialogue in school about how pupil learning can be improved	714	5.62	1.48
8. In this school, people keep good ideas to themselves	725	2.35	1.63
9. I can raise problems about my work without fear of being criticized	747	5.32	1.88
10. I am not encouraged to question the way I think about my work	726	2.51	1.83
11. The senior management team always welcomes innovative ideas	724	5.39	1.74
12. Failures of teaching and learning are rarely discussed constructively	682	2.86	1.88
13. The administrative work I do is irrelevant to improving pupils' learning	711	3.65	1.98
14. Staff spend a lot of time sharing information on the difficulties pupils have with learning	710	5.13	1.69
15. I am rarely invited to debate how pupils learn	699	3.51	1.06
16. It is difficult to share ideas with colleagues about improving pupil learning	700	2.79	1.88
17. The school is reluctant to support enquiries into better ways of meeting pupils' needs	705	2.23	1.64
18. here is a real will to work together to improve pupil learning	726	5.74	1.54
19. The school faces up honestly to gaps in its current performance	710	5.52	1.67
20. Overall, I am very satisfied with my job	733	5.39	1.77
21. I have very few opportunities to discuss best practice with staff from other schools	718	4.81	1.98
22. am encouraged to participate fully in school improvement activities	712	5.59	1.65
23. There is little chance to discuss pupils' progress	696	2.89	1.93

However, one item was rated significantly differently from the neutral score of 4 in a direction which implied that the school was not a learning organization: question 21 – „opportunity to discuss best practice with staff from other schools". The majority of employees felt that they did not have this opportunity, and this emerged from the study as the main weakness in the Craigton culture in terms of organizational learning. It reflects the traditional organization of the Scottish educational system, most teachers working within one school with few structured opportunities to work collectively with teachers from other schools. However, on the basis of case studies of school improvement, Drew/Fox/McBride (2008) have shown that interchange between teachers is essential for transforming schools because it enables them to co-construct a bank of knowledge which becomes an evidence base about effective innovative practices tailored to specific school contexts. Clearly, if Craigton's organizational learning strategy is to be successful, the Authority needs to maximize opportunities for teachers to discuss pedagogical practices with teachers from other schools on a much wider scale than at present.

4.2   Were there differences between the four sectors – nursery, primary, secondary and special needs?

The second question was whether responses differed by the education sector that respondents belonged to. The main finding was that employees in the primary sector rated their schools as significantly more of a learning organization than those in the secondary sector.

The statistical significance of the between-sector differences were tested by running one-way ANOVA's against all the learning organization items using Sector as the independent variable. All the ANOVA's were significant at $p < .001$ apart for questions 9 ($p = .009$), 10 ($p = .007$) and 21 ($p = .046$). As an additional check on the statistical validity of the data, we calculated the effect sizes for these three one-way analyses. Olejnik and Algina (2000) suggest this is particularly important when sample sizes are large (as ours were) because small differences can still pass significance tests. Olejnik and Algina recommend using partial eta-squared to measure the size of the treatment effect. For questions 9, 10 and 21, the effect sizes were eta-squared = .011, eta-squared = .016 and eta-squared = .017. Cohen (1988) suggests that values of .01, .06, and .14 be used to indicate small, medium and large effects. Using these guidelines, the effect size for these three questions was small and therefore any differences should be treated with caution.

Post-hoc comparisons (using Tukey HSD) revealed a consistent pattern whereby the means for the secondary sector were significantly lower than those for primary and nursery. The exceptions to this rule were Q9 („I can raise problems about my work without fear of being criticized") where the secondary staff were significantly more in agreement than primary (but not nursery) staff, and Q10 („I am not encouraged to question the way I think about my work") where there were no significant differences between the four means although the $p = .051$ for the difference between secondary and

primary for Q21 („I have very few opportunities to discuss best practice with staff from other schools") suggests that primary staff were significantly more likely to disagree than nursery staff.

4.3 Were there differences in the extent to which different grades of teacher believed they were participating in an organizational learning culture?

For this analysis, support staff were omitted and the teachers were consolidated into three groups: Senior Management (defined as Head Teachers and Deputy Head Teachers), Middle Management (defined as Principal Teachers) and Class Teachers. Other grades of teacher such as probationer and visiting teacher were omitted from the analysis. The main finding was that Senior Management rated most of the items significantly more positively than both Middle Management and Class Teachers. For some questions, there were no significant differences in ratings between Principal Teachers and Class Teachers but there were no examples where these groups' ratings were higher than Senior Management (Table 2).

Table 2: **Means, standard deviations (in parentheses) and outcomes of post-hoc comparisons where the one-way ANOVA was significant for each item in the questionnaire for the three levels of staff, Senior Management, Middle Management and Class Teachers** (n.s. means not significant)				
Question	*Means*			*Post-hoc*
	Senior Management A n ≈ 61	*Middle Management B n ≈ 100*	*Class Teachers C n ≈ 283*	
1. Pupil learning is the top of the school's agenda	6.64 (0.82)	5.98 (1.18)	6.31 (1.05)	A > C > B
2. The school is alert to developments in other schools	5.48 (1.18)	5.07 (1.35)	5.22 (1.40)	n.s.
3. Development planning is a valuable tool for improving pupils' learning	6.18 (1.04)	5.32 (1.45)	5.64 (1.31)	A > C > B
4. It is difficult to find colleagues who are willing to help if I have a problem	1.72 (1.48)	2.33 (1.67)	1.88 (1.55)	n.s.
5. The school responds creatively to pupils' problems	6.33 (1.01)	4.55 (1.71)	5.19 (1.47)	A > C > B
6. Staff are discouraged from openly questioning the way things are done in school	1.70 (1.36)	3.36 (2.30)	3.20 (2.08)	A < B = C

7. There is a lot of dialogue in school about how pupil learning can be improved	5.85 (1.50)	5.25 (1.76)	5.54 (1.53)	n.s.
8. In this school, people keep good ideas to themselves	1.75 (1.14)	2.65 (1.61)	2.39 (1.61)	A < B = C
9. I can raise problems about my work without fear of being criticized	5.92 (1.41)	4.92 (2.02)	5.05 (1.95)	A > B = C
10. I am not encouraged to question the way I think about my work	1.93 (1.65)	2.89 (2.05)	2.67 (1.80)	A < B = C
11 The SMT always welcomes innovative ideas	6.44 (0.91)	5.04 (1.84)	5.04 (1.85)	A > B = C
12. Failures of teaching and learning are rarely discussed constructively	2.14 (1.74)	3.27 (1.95)	3.03 (1.88)	A < B = C
13. The administrative work I do is ir relevant to improving pupils' learning	4.44 (1.78)	3.83 (1.20)	3.99 (1.82)	A > B
14. Staff spend a lot of time sharing information on the difficulties pupils have with learning	5.48 (1.40)	4.51 (1.65)	5.01 (1.75)	A > C > B
15. I am rarely invited to debate how pupils learn	2.41 (1.86)	3.35 (1.95)	3.50 (1.20)	A < B = C
16. It is difficult to share ideas with colleagues about improving pupil learning	2.30 (1.66)	3.11 (1.94)	2.77 (1.86)	A < B
17. The school is reluctant to support enquiries into better ways of meeting pupils' needs	1.70 (1.56)	2.42 (1.72)	2.48 (1.74)	A < B = C
18. There is a real will to work together to improve pupil learning	6.25 (1.27)	5.31 (1.61)	5.59 (1.65)	A > B = C
19. The school faces up honestly to gaps in its current performance	6.23 (1.06)	5.24 (1.71)	5.32 (1.86)	A > B = C
20. Overall, I am very satisfied with my job	5.64 (1.61)	4.58 (2.11)	5.18 (1.77)	A = B > C
21. I have very few opportunities to discuss best practice with staff from other schools	3.61 (1.99)	4.43 (1.92)	5.01 (1.79)	A < B < C
22. I am encouraged to participate fully in school improvement activities	6.73 (0.89)	5.65 (1.56)	5.62 (1.61)	A > B = C
23. There is little chance to discuss pupils' progress	1.93 (1.55)	2.99 (1.78)	3.85 (1.90)	A < B = C

Using these three groups of teacher as the independent variables, one-way ANOVAs were carried out for the dependent measures of the 23 items in the questionnaire. Post-hoc comparisons were carried out using the Least Significant Difference test (LSD)[2] for all analyses where the one-way ANOVA was significant. The results of the post-hoc comparisons (but not the ANOVA) are detailed in Table 2.

5.   Discussion and Conclusions

5.1   Findings from the Questionnaire

As the results show, the majority of the staff working in Craigton schools believed that the culture was supportive of organizational learning, in that their schools were committed to a shared vision of promoting pupil learning, were open to criticism, possessed a culture of knowledge sharing and that the administrative chores were aligned to achieving the shared vision. It would be surprising if this were not the case, as educational provision in Craigton was the result of many decades of school improvement activity and a high level of professionalism in which pupil achievement had always been the shared and overriding goal. This lends some support to the critique of organizational learning theory, that it is not a new idea but a new terminology for long-established values and practices (,the latest management fad'). After all, the central ideas of openness to criticism and knowledge sharing as the norms for good organizational practice in education can be found in the writings of Dewey (1899) and even as far back as renaissance educational theorists (Ascham 1570).

Nevertheless, the survey identified weaknesses in the organizational learning culture in Craigton that enabled the research team to plan activities to strengthen the culture and thereby provide a more favourable environment for the new initiative of teacher-led action enquiries. Two of the weaknesses were related: that secondary schools met the criteria for learning organizations to a lesser extent than primary schools, and that Class Teachers were less likely to believe they were engaged in organizational learning than staff in management positions. These issues are related in that secondary schools are more hierarchical than primary schools, and debate about improvement tends to be concentrated among the ranks of Middle and Senior Management. The third identified weakness was that the majority of staff felt they lacked opportunities to share experiences with colleagues in different schools. In the remainder of this paper, we describe how we developed support measures in response to these weaknesses.

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2   Howell (1992) recommends using the Least Significant Difference (LSD) test when the number of contrasts are less than four.

5.2   *Support for organizational learning*

5.2.1   Towards greater participation in decision making at the school level
To address the problem of hierarchical control as it affected secondary schools, a series of seminars were held for Senior Managers over a period of six months. A central issue in these seminars was the prevailing top-down pattern of communication by the Authority's central administration, which influenced the pattern of communication in schools. As advised by the researchers, the Authority signalled change in the direction of a more open and participatory relationship with schools. The change in ethos that the seminar sought to promote was towards joint problem-solving involving all teachers, and this was strongly reinforced by the Director of Education and her team at the centre.

5.2.2   Building learning networks between schools
To address the problem of lack of opportunities to learn from colleagues in other schools, the researchers advised the establishment of a new structure of Professional Networks (Hargreaves 2003). The aim was to enable groups of staff with similar remits from different schools across the Authority to meet in order to learn from each other. Groups were expected to be solution focused, to share best practice and create new good practice by focusing collaboratively on issues which would bring about improvements for all the group members.

In order to ensure that learning arising from the Action Enquiries with each school was available to all schools across the Authority, Network Coordinators facilitated communication between schools in specially designated opportunities for networking the learning that issued from these projects.

5.2.3   Conclusion
Organizational learning initiatives, such as the adoption of teacher-led action enquiry, depend on a pre-existing organizational culture favourable to organizational learning. This is because learning through teacher-led action enquiry depends on mediation by the whole school culture. In this paper we have reported the development and use of an organizational learning questionnaire as a diagnostic instrument which, together with the researchers' knowledge of the Authority gained from previous training and consultancy activities, enabled the strength of the organizational learning culture to be assessed. The instrument proved sensitive enough to pinpoint specific needs for culture change. Based on these findings, the authors designed interventions for strengthening the organizational learning culture, so that the action enquiries would obtain better support at school level and the results be widely shared throughout the Authority. The impact of the support measures that were implemented is currently under evaluation and will be the subject of future publications.

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