DISTRIBUTED LEADERSHIP IN SCHOOL ICT REFORM
A Survey of Principals

Jeanne Marie Ho and Chen Wen Li

THIS STUDY sought to understand how leadership in the use of ICT for teaching and learning is distributed among school leaders. The results confirm that the leadership of school ICT reforms is distributed, which suggests the importance of nurturing and supporting various school leaders, and highlights the importance of the leadership role played by heads of departments in school ICT reform. The findings also suggest that teachers in primary schools are using ICT more frequently than teachers in secondary schools.

INTRODUCTION
The study on Distributed Leadership in School ICT Reform aimed to understand how leadership in the use of ICT for teaching and learning in schools is distributed among leaders. This research brief reports on one component of this study, which was carried out from March to April 2007.

KEY IMPLICATIONS

- More HODs for IT should focus on instructional and transformational leadership.
- HODs of instructional programmes can be provided with the knowledge and skills necessary to provide instructional leadership for ICT reforms.
- Leaders in secondary schools could provide more explicit direction, expectations and instructional support to guide their teachers in the use of IT.

RESEARCH DESIGN
For this study, three surveys were carried out: (1) of principals’ perceptions of the extent to which they performed certain leadership tasks and of how their heads of departments (HODs) performed on these same tasks; (2) of HODs’ perceptions of the extent to which they performed certain leadership tasks and their perceptions
of their principals’ performance of these same tasks; (3) of teachers’ perceptions of the extent to which their principals and HODs performed certain leadership tasks.

In all three surveys, the items on leadership were adapted from the Principal Instructional Management Rating Scale (Hallinger, 1983) and the Multifactor Leadership Questionnaire (Bass & Avolio, 1990), originally designed to measure the instructional\(^1\) and transformational\(^2\) leadership of a principal.

These two leadership models were chosen as they are two of the foremost models in the field. They are arguably applicable to leadership for school ICT reform, which involves the use of ICT to support student learning and requires the commitment of teachers to innovate with the use of ICT.

The original items for both models were modified to measure leadership with specific reference to ICT implementation. All items were scored on a 1 (Almost never) to 5 (Almost always) scale, denoting the frequency with which participants perceived the specific task to be performed.

It should be noted that the survey does not measure the principal’s effectiveness as a leader. It only indicates the extent to which the principal perceives himself/herself to be providing instructional and transformational leadership to his/her school. Although higher scores in all areas may suggest frequent leadership activity by the principal, the most effective principals do not necessarily score highly on all sub-scales (Hallinger, 1983). Research suggests that principals’ perceptions of their own leadership are usually more positive than their subordinates’ ratings of them (Bass & Avolio, 1990).

The findings reported here are based on the survey of principals. The survey was emailed to the principals of all primary and secondary schools; response was voluntary. A total of 120 principals (66 primary school principals and 54 secondary school principals) completed the survey.

**KEY FINDINGS**

*On Principals’ Leadership*

The data suggests that principals perceived themselves to be performing instructional leadership for ICT fairly frequently as indicated by all the mean scores being above 3 (see Table 1). The mean scores for the primary school principals were generally higher than the mean scores of the secondary schools.

<table>
<thead>
<tr>
<th>Frame IT Goals</th>
<th>Communicate IT Goals</th>
<th>Supervise &amp; Evaluate IT-based Instruction</th>
<th>Coordinate Curriculum</th>
<th>Promote Professional Development</th>
<th>Provide Incentives</th>
<th>Create Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>All (n = 120)</td>
<td>3.8100</td>
<td>3.4500</td>
<td>3.1283</td>
<td>3.5813</td>
<td>3.7450</td>
<td>3.2792</td>
</tr>
<tr>
<td>Primary (n = 66)</td>
<td>3.8091</td>
<td>3.4394</td>
<td><strong>3.1758</strong></td>
<td>3.6212</td>
<td><strong>3.7636</strong></td>
<td><strong>3.3750</strong></td>
</tr>
<tr>
<td>Secondary (n = 54)</td>
<td>3.8111</td>
<td>3.4630</td>
<td>3.0704</td>
<td>3.5324</td>
<td>3.7222</td>
<td>3.1620</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charisma</th>
<th>Inspiration</th>
<th>Intellectual Stimulation</th>
<th>Individualized Consideration</th>
<th>Amount of Extra Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>All (n = 120)</td>
<td>3.7286</td>
<td>3.6069</td>
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<td>3.3542</td>
</tr>
<tr>
<td>Primary (n = 66)</td>
<td>3.7792</td>
<td>3.6768</td>
<td>3.5278</td>
<td>3.4343</td>
</tr>
<tr>
<td>Secondary (n = 54)</td>
<td>3.6667</td>
<td>3.5216</td>
<td>3.3889</td>
<td>3.2562</td>
</tr>
</tbody>
</table>
principals, except in the framing and communication of ICT goals.

In the literature on educational leadership, instructional leadership is more often associated with primary school principals and less with secondary school principals, as the subjects are more specialized and the school population is larger at the secondary school level, which suggests that it would be more difficult for just one person to provide instructional leadership (Hallinger, 2005; Leithwood, Jantzi, & Steinbach, 2000).

Overall, principals perceived themselves to be performing transformational leadership for ICT fairly frequently (see Table 2). Again, the mean scores for the primary school principals were higher than the mean scores for the secondary school principals. This is an interesting finding for which there is no parallel in the literature.

On HODs’ Leadership

Besides indicating the leadership tasks that they performed, principals were also asked to indicate the HOD they had worked most closely with to implement the use of ICT for teaching and learning. Ninety per cent of them indicated that they had worked most closely with the HOD for IT. The remaining principals worked most closely with one of the instructional programme HODs, with the Mathematics and Science HODs being the most often selected.

Looking at Table 3, it is interesting that similar to the findings for instructional leadership by principals, the mean scores for the HODs in primary schools were higher than those for the HODs in secondary schools. In addition, except for “coordinating the curriculum”, the mean scores of the HODs for instructional leadership were higher than the mean scores for principals in this area.

Table 4 shows that, again, the mean scores for the HODs in primary schools were higher than the mean scores for the HODs in secondary schools. Furthermore, the mean scores of the HODs for transformational leadership were higher than those of principals in this area.

On Leadership Models

Instructional and transformational leadership functions appear to be significantly and positively correlated. Similarly, principals’ performance of leadership is significantly and positively correlated to their HODs’ performance of leadership.

<table>
<thead>
<tr>
<th>Table 3. Instructional leadership by HODs (mean score).</th>
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<tbody>
<tr>
<td>Frame IT Goals</td>
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<tr>
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<td>Secondary (n = 54)</td>
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</tbody>
</table>

<table>
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<tr>
<th>Table 4. Transformational leadership by HODs (mean score).</th>
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<tbody>
<tr>
<td>Charisma</td>
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<td>-----------</td>
</tr>
<tr>
<td>All (n = 120)</td>
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<tr>
<td>Primary (n = 66)</td>
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<td>Secondary (n = 54)</td>
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</tbody>
</table>
IMPLICATIONS

The findings from this survey suggest that leadership for ICT reform in schools is perceived as distributed between the principal and at least one HOD, who in the majority of schools surveyed is the HOD for IT. This survey suggests that principals feel that the HOD for IT plays important leadership roles beyond the purchase and maintenance of hardware, which a survey of HODs for IT enrolled in NIE’s Diploma in Departmental Management (DDM) courses indicated they are preoccupied with.

That the extent of principals' performance of leadership significantly correlates to the extent of HODs’ performance of leadership suggests a close complementary relationship between the two roles and the leadership tasks performed (Heller & Firestone, 1995; Smylie, Conley, & Marks, 2002). This complementary redundancy, in which the same leadership functions are performed by people in different roles, provides some assurance that these functions will still be performed in the event of a change in personnel (Smylie et al., 2002, p. 173). As schools are provided with sufficient resources to employ technical support, perhaps more HODs for IT can focus on instructional and transformational leadership over time.

It is revealing that 10% of the principals surveyed indicated that the HOD they worked most frequently with to implement ICT reforms was the head of an instructional programme (IP). It may be useful to observe if such a trend continues and whether there will be a corresponding change in the role of the HOD for IT. In fact, in the two case studies explored in this project, the persons officially leading the ICT reforms concerned were subject-based leaders (one, the HOD of an IP and the other, a senior teacher), while the role of the HOD for IT was mainly to provide IT-based support.

If the role of the HOD for an IP in leading ICT reforms is to be enhanced, as proposed by MOE’s baseline ICT standards for HODs (MOE, 2005), it may be necessary to provide them with the knowledge and skills to provide instructional leadership for ICT reforms. As a key role of the senior/master teacher is to provide instructional leadership, we may also want to consider providing these teachers with the relevant training so that they know how to integrate IT into the curriculum as an effective teaching and learning tool.

For both instructional and transformational leadership, the mean scores for the HODs were higher than the mean scores for the principals. This is conceivable given that leadership for ICT reform is a subset of leadership for school reform, and it would not be possible for one person to provide leadership for everything in the school, both in terms of time and the knowledge and skills required (Pierson, 2001; Timperley, 2005).

In the literature, there is growing recognition that instructional leadership is more likely to be performed by teacher leaders, which includes HODs, than by the principal alone (Mangin, 2005). Certainly, in the principals’ responses to the open-ended question in the survey, many principals confirmed that they needed to work closely with an HOD:

The entire team works together. IT plans are made known to the IP HODs, who will ensure infusion and also hold discussions with JHs [job holders] during EPMS or classroom observations, as the case may be.

I will get the IP heads to sit down with the IT head and brainstorm on programmes and projects and what IT tools we can utilize to enhance the programme.

Through Bottoms-Up, the department will volunteer for IT in education project. For example, the Science department will be trying out the SmartBoard, the Arts and DT [Design & Technology] have asked for funding to use Tablet PCs after teachers were given Tablet PCs to use and try on their own.

HOD(s)/IP are deployed to monitor the use of IT in their supervisees’ classrooms.
Both the statistical analysis and the answers provided to the open-ended question confirm the importance of the HODs in playing a leadership role in school ICT reform. The principal’s main roles appear to be to ensure alignment of the ICT plan with the school’s own strategic plans, and to provide advice on and endorsement of the ICT plan. While the HOD for IT’s main role is to develop and support the school’s ICT plan through the provision of resources and training, the HODs for the IPs need to provide instructional leadership for the teachers in their department, based on the unique needs of their respective subject areas.

Finally, it is interesting that the mean scores for the principals and HODs of primary schools were higher than the mean scores of the principals and HODs of secondary schools. Internal studies by MOE (2005) have consistently found that teachers in primary schools are using ICT more frequently than teachers in secondary schools. While this finding could be due to various factors, it is plausible that leadership plays a role, given the extensive research that supports the importance of leadership in school ICT reform.

It may be necessary for leaders in secondary schools to provide more explicit direction, expectations and instructional support to guide their teachers in the use of IT. For this to be carried out effectively, HODs of IPs and senior/master teachers may need to play a part in providing this leadership, given subject specialization at the secondary level and the unique affordances of technology for different subject areas.

In summary, this survey confirms that the leadership for school ICT reform is distributed, which suggests the importance of nurturing and supporting various school leaders in their provision of leadership for the use of ICT in teaching and learning. And, if distributed leadership is effective, the benefits are presumed to be multiplicative as opposed to being simply additive (Gronn, 2000; Spillane, Halverson, & Diamond, 2001).

NOTES
1. Instructional leadership refers broadly to all leadership activities that indirectly affect student learning, including school culture and timetabling procedures, by impacting the quality of curriculum and instruction delivered to students (Southworth, 2002).
2. Transformational leadership focuses on developing the organization’s capacity and commitment to innovate, including setting directions, developing people, and redesigning the organization (Leithwood, Jantzi, & Steinbach, 2000).
3. This constitutes 38% of primary school principals and 32% of secondary school principals. There were 175 primary schools and 167 secondary schools in total.
4. The open-ended question was: “How do you normally work with your HOD for IT and HOD(s) for IPs in implementing your IT programme? Please describe an actual incident/project which illustrates this working relationship.”

REFERENCES


ABOUT THE AUTHORS

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