This article is the first of two articles dealing with the role of leadership in Information and Communications Technology (ICT) in secondary schools. Where the first article will examine the historical context and current research available surrounding the role and focus of ICT leadership, the second article - to be published in 2012 - will provide recommendations for effective ICT leadership in teaching and learning.

The role of Information and Communications Technology (ICT) leadership in secondary schools is not consistent from school to school. ICT leadership means different things to different people. In some schools the position is treated as a senior role, while in others it is not terribly important. Financial remuneration and time allowance for the ICT leader role varies. In addition, no system-wide description of the role of an ICT leader exists.

In trying to understand the ICT leadership role, research was conducted to obtain perspectives from teachers and others in key leadership positions in secondary schools. These perspectives were then compared to the literature. For this purpose, comparisons were conducted across seven schools and participants in the following roles: Heads of Departments; Deputy Principals; Classroom teachers; Head Librarian; Computer Technicians; Principals; Network Administrators; and Curriculum Coordinators.

An over-riding factor in inhibiting the development of ICT has been the problem of leadership. To be an effective ICT Leader, one needs to have the following, built into their role description:

- Knowledge and skills – both in terms of having a sound educational background and a knowledge of hardware and software.
- Professional development – with regards to the technical team, the ICT vision team, and all staff.
- Leadership – with particular respect to vision and strategic leadership.
- Seniority – especially with respect to belonging on senior teams within a school and being able to have direct communication with the Principal.

**Knowledge and skills of the ICT leader**

An ICT leader in a secondary school setting can come from a variety of backgrounds. Their qualifications can reflect this. Take for example a Network Administrator appointed by a school as an ICT leader. Typically, this person would not have a teaching qualification. ICT leaders come to this position from a variety of educational pathways including university qualifications in ICT related courses; teacher qualifications; Certificate level courses; or technical Certification from major Information Technology companies such as Novell, Microsoft, or Cisco. Research found that it was desirable for the ICT leader to have a formal teaching qualification and substantial teaching experience but also some ICT related studies.
Although it was not felt that the ICT leader needed specific network qualifications, the ICT leader could not be completely removed from the operation of the school’s network.

Clearly, the ICT leader is an educational leader with an educational background, but also needs to have some relationship with the operation of the network. On this basis, the relationship of the ICT leader to the network; and network staff; and teaching and other staff; is described below in Figure 1: ICT leader relationships.

ICT leader relationships

All of this represents something of a balancing act. While specific network/technical qualifications are considered significantly less important than educational ones, the role of the ICT leader needs to direct technical staff about educational planning.

At the same time, it is clear that the ICT leader is expected to lead teachers. This, in turn, suggests that the ICT leader needs to have significant expertise in teaching and learning. The portrait that emerges of the ICT leader is of someone who is as skilled as a teacher; has formal qualifications in ICT; is able to provide strategic direction for the network; and can lead teachers in the development of ICT.

When we consider the rapid historical changes in ICT in the last thirty years, what emerges is a shift from the ICT leader ensuring the stability of the network and perhaps requiring some technical expertise, to the development of the ICT leader as a leader in teaching and learning. Therefore, it follows that the background and qualifications of the ICT leader need to enable the leader to give direction to both the technical staff and teaching staff. If the ICT leader is going to provide leadership to the teaching staff, then central to the role of the leader is the provision of professional development to the staff.

Professional development in the area of ICT is paramount. However, there is much disparity amongst schools and educators in terms of the content to be delivered; the amount of time devoted to it; the cost; and who leads it (Cuttance, 2001; Glazer, Hannafin, & Song, 2006; Jenson, Lewis, & Savage, 2002; Schrum, 1999). Professional development also needs to be sustained and continuous (Downes, et al., 2002). ‘One-off’ professional development sessions or workshops do not translate to productivity in the classroom, especially when taught out of context.

“Professional development is effective where it is identified and implemented within the school context to meet the needs of their teachers and students, for the continuous improvement of professional practice” (Downes, et al., 2002, p. 22). Improvement of professional practice should lead to enhanced and improved student outcomes. Therefore, the ICT leader needs to be in a strategic position to be able to oversee the school’s priorities and work within the school’s aims in order to provide the necessary professional development.

Professional development is a key component of the ICT leader’s role. However, the ICT leader need not be the one physically training staff in all instances, but rather coordinating the training.

The ICT leader can provide professional development in two ways.

Professional development in how to use ICT in education needs to be ongoing, sustained and practical if it is to genuinely build teacher capacity. In a modern school, professional development is likely to be multifaceted, and multidimensional if it is to cater to the needs

“‘One-off’ professional development sessions or workshops do not translate to productivity in the classroom, especially when taught out of context.”
of individual teachers. It would encompass help-desk functions; developing staff skills; and planning for future learning, as illustrated below in Figure 2 - ICT Leader Professional Development.

Professional development integration

The idea that the ICT leader can identify areas for whole staff professional development assumes that staff members have homogenous needs in professional development. Such a view, if it were ever true, is long out-dated. If, on the other hand, attempts are made to have the ICT leader provide a variety of professional development activities with a view to meeting the needs of all staff, then the task of providing that professional development becomes virtually impossible. There would not be enough time for the ICT leader to provide all the different kinds of professional development that staff might wish to undertake.

Technical issues, for example, could be dealt with through a help-desk service, freeing the staff and the ICT leader to provide professional development linked to pedagogical needs. Appropriate ICT skills cannot focus solely on the individual’s personal skill, but rather for teaching and learning.

The ICT leader cannot be responsible for an individual’s basic skill needs. They might coordinate and disseminate information about the professional development available, but it is a waste of capacity and time to be running professional development on Word and email. Professional development needs to be targeted at building capacity in teaching and learning purposes otherwise the job is too big. The central role of the ICT leader in terms of providing professional development to staff has implications for the leader’s membership in key school leadership teams.

LEADERSHIP

When consideration is taken of the importance of professional development in the role of the ICT leader, it is clear that the leader should not act in isolation and must not be cut off from influential leadership structures in the school. Given the fact that professional development is an important aspect of the role, the ICT leader needs to be in a position to shape the professional development agenda. This is especially important when it comes to capacity building in key teaching and learning stakeholders because, unless the ICT leader is ‘connected’ to these key people in schools, the ability to develop others is significantly diminished.

Whilst this may appear self evident, the position of the ICT leader does not fit easily into the ‘obvious’ teams that schools might have. ICT leaders are clearly not pastoral leaders nor do they fit neatly under the Faculty/Department Head group - as the role does not fit the traditional discipline based subject areas. Leadership in ICT is not necessarily tied into the teaching of Information Technology, as this is separate and distinct from responsibility for ICT for the whole school. It can be argued that ICT does not belong in a single faculty at all, but in all the faculties of a school’s curriculum. It is interdisciplinary in nature. This makes it difficult in school organisational structures to find where the ICT leader belongs. Whereas most middle managers in schools have a defined area of responsibility, the ICT leader has responsibility across the whole school curriculum - albeit only one aspect of that curriculum. Nor would it be thought that the ICT leader necessarily belongs on a school Leadership Team because it might be perceived that the ICT leader’s focus is too narrow.
In general terms, the ICT leader can be seen to have legitimate claim to interaction with three broad kinds of teams – in addition to the network team - commonly found in schools as shown below in Figure 3: ICT Leader Team Membership

**Belonging to significant teams**

In defining the relationship of the ICT leader to these teams, it is noted that the relationship can be expressed differently. For example, the ICT leader leads the Network Team by providing strategic direction and understanding the curriculum needs of the teaching staff. The ICT leader needs to belong to relevant teams in the school which have a broad learning and teaching focus. These teams might include: Curriculum Executive; Curriculum Committee; and ICT Strategic Teams. Whilst membership might well depend on the local context and the specific needs of the school, what seems clear is that there is likely to be a significant relationship between the Leadership Team and the ICT leader, regardless of whether the ICT leader is part of the team.

In different schools the ICT leader reports to different people in the organisational structure. Whilst the ICT leader may be an important position in the school, the line management structure is not always clear. Like all staff employed in a school, they ultimately answer to the Principal. The assumption is made that the senior administrator further up the line is highly skilled and knowledgeable in the kinds of duties that those under him/her perform. However, with respect to the ICT leader, this is rather more difficult. An ICT leader may well be more knowledgeable about the use of ICT than either the Principal or the Deputy Principal, but may be less knowledgeable in budget terms than the Business Manager. Moreover, the ICT leader may have to defer on some technical matters to the Network Administrator. All of these factors make for a complex set of arrangements, which is likely to have to be sorted out in reporting terms internally at the local level.

The central dilemma of the question, to whom the ICT leader should report, is largely a problem of expertise. It is entirely likely that the ICT leader will be the expert in the field, so that in one sense reporting to someone further up the line in a line management structure, means reporting to someone less knowledgeable. This means that the ICT leader’s experience is different to that of the teaching staff who can be expected to report to a senior colleague, whose experience is in comparable areas.

What seems clear, though, is that no one disputes that the ICT leader’s role is complex and strategic, and that reporting structures need to reflect the nature of the position. Schools have a great variety of reporting structures, which vary enormously depending on the context. Two things need to be taken into consideration. The first is the reporting structure of the individual school - the reporting regime for the ICT leader needs to be contextually relevant. The second, and more important factor, is the reporting structure for the ICT leader - this needs to take into account the significance and the special knowledge of the position. While this is probably not the most important aspect of the role, the wrong structure is likely to inhibit strategic planning.

**Seniority**

The school’s leadership team, whereby the Principal and his/her senior nominees meet on a frequent basis to discuss the operations of the school, typically includes all or some of the following roles: Deputy Principal/s; Curriculum Leader; Finance Manager; School Organiser; and other key personnel. This type of leadership model allows for leadership to be distributed amongst senior personnel in the school and not solely with the Principal.

Although there is essentially agreement from participants from this study on the place of the

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ICT leader on the school’s leadership team, in some ways there is an almost hierarchical aspect to the way in which Principals and Deputy Principals viewed this. In most cases, these two groups did not agree that the ICT leader’s role should be included on the leadership team. A recurring theme that was raised by participants is that the ICT leader’s position needs to be senior in ranks. That is, the ICT leader needs to oversee the ICT needs of the entire school and have a thorough understanding of the operations of the school.

In Summary

ICT plays a very important and critical role in secondary education and beyond (MCEETYA, 2006). Given the emphasis and the need for ICT, it is surprising that the area of leadership is not considered to be equally as important.

There are clear signs that school leaders are increasingly of the view that ICT needs to be lead by someone with educational experience who will put the needs of learning and teaching ahead of the purely technical requirements of running a network. Nevertheless, important questions remain. In many schools, the precise role of the ICT leader is not well defined and, where the position exists, there is a danger that the position will be either marginalised or under-utilised.

There is a significant role for the ICT leader in terms of facilitating professional development for all staff in the use of computers. The research has highlighted the wide variety of views by school leaders about the best kind of professional development to meet their own needs. Moreover, it is clear that the teachers and leaders who responded to this research believed that they have professional development needs in ICT. There is still much to do with respect to capacity building through professional development, especially as the research suggests that the use of ICT for learning and teaching remains underdeveloped.

References


Promoting teachers’ competencies on integration of ICT in teaching and learning

ICT integration in education is a thematic priority for the Flemish Association for Development Cooperation and Technical Assistance (VVOB). VVOB is using a range of support strategies for ICT integration in education in different countries around the world. A crucial factor in these strategies is capacity development on ICT integration among teachers, teacher educators, educational managers and policy makers. This capacity development includes the provision of strategic and technical advice, the facilitation of training, knowledge building and sharing, and the facilitation of effective partnerships amongst various stakeholders.

In South-East Asia, VVOB has education programmes with an ICT component in Cambodia and Vietnam. In these programmes, Teacher Education Institutions (TEIs) are the main partners. VVOB believes that dedicated educators will always be essential for any successful ICT4E initiative, since they are the key to the appropriate and effective use of technology. In both countries the work aims at the use of ICT to enhance classroom teaching and student learning by teachers (and/or teacher educators). Different ICTs are introduced (referring to Technology Knowledge). Educators are encouraged to reflect on pedagogical aspects (referring to Technological-Pedagogical Knowledge) and to apply and try out certain approaches in subject teaching (Technological-Pedagogical-Content Knowledge). As argued by Ng, Miao & Lee (2010), too often the approach to ICT integration in teacher training is the one-off crash course on computer literacy. A guiding principle is to start from the existing curriculum and only to introduce relevant tools and materials that can enhance or even innovate teaching and learning. The TEIs and especially schools in both countries are still coping with limited ICT resources. However, optimal use of existing resources could result in creative solutions.

In Cambodia, in 2009 the Ministry of Education developed an ICT master plan in collaboration with UNESCO. One of the components of the plan is the introduction of interactive multimedia for teacher training.

Reference