

ICT leadership - do you have what it takes?

The role of Information and Communications Technology leadership in secondary schools is not consistent from school to school. Information and Communications Technology leadership means different things to different people. Although the role of the Information and Communications Technology leader in schools has not been formally investigated as much as that of Principals, some commentators have begun to suggest that Information and Communications Technology Leaders have a crucial role to play.

In Victoria, Australia, Information and Communications Technology leaders in secondary schools are labelled with a variety of position titles. 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 Information and Communications Technology leader role varies. In addition, no system-wide description of the role or expectation of an Information and Communications Technology leader exists.

An over-riding factor in inhibiting the development of Information and Communications Technology has been the problem of leadership. Leaders in schools – whether the Principal or others – have, understandably, been ill-prepared for the changed world which Information and Communications Technology has created. Therefore it can be argued that leadership becomes *informed* with an appropriate consideration of four issues – “Equity and Resources”, “Pedagogical Issues”, “Professional Development” and “External factors.”

It is of paramount importance to secure the right type of person for the position in Information and Communications Technology leadership. The appointment of key staff in Information and Communications Technology underpins the success of Information and Communications Technology implementation in schools; however, it was more than just the leadership position that determined the success. The quality of people was instrumental in the success of Information and Communications Technology implementation in schools. Unlike the role titled ‘Principal’, the Information and Communications Technology leader does not have a uniform name to identify the position, and nor is there consensus on the duties executed.

When computers were evolving in education, many of those involved in the beginning were enthusiastic teachers without formal computer qualifications. As the need for computers in education became more complex and highly specialised, schools employed technicians and Information Technology experts. In many schools, these experts by default became the Information and Communications Technology leaders.

As part of the study exploring ICT Leadership, the participants see the role description of the Information and Communications Technology leader as having the following components:

Towards a Position Description for an ICT Leader

It is identified that the role description of the Information and Communications Technology leader has the following components:

Knowledge and Skills – both in terms of having a sound educational background and knowledge of hardware and software;

Team Leadership – with regards to technical team and Information and Communications Technology vision team and all staff in terms of professional development;

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.

These components provide important points of amplification in terms of developing a position description. We will now discuss each in turn.

Knowledge and Skills of the ICT Leader

An Information and Communications Technology 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 Information and Communications Technology leader. Typically, this person would not have a teaching qualification. Lee (2006) writes about “network managers who have little appreciation of the needs of teachers, who decide unilaterally what is best for teachers. Terms like ‘network Nazi’ unfortunately abound” (p. 47). Information and Communications Technology leaders come to this position from a variety of

educational pathways including university qualifications in Information and Communications Technology related courses, or a teacher qualification, or TAFE courses in ICT, or even technical Certification from major Information Technology companies such as Novell, Microsoft, or Cisco.

The participants of this study thought it is desirable that Information and Communications Technology leaders in secondary schools have studies and experience in learning and teaching pedagogies. For this to occur, the Information and Communications Technology leader needs qualifications in teacher education. Some of the participants in this study criticised Information and Communications Technology leaders as being too technical and not in tune with the curriculum/classroom teacher's needs.

Whilst there seems to be agreement on the whole that the Information and Communications Technology leader needs to come from an educational background -with familiarity and proficiency of Information Technology technical understanding.

Qualifications: Integral to the Role of the ICT Leader

The vast majority of participants in this study believed that the Information and Communications Technology leader should have a formal teaching qualification and that the leader's qualifications should include Information and Communications Technology related studies. Although it was not felt that the Information and Communications Technology leader needed specific network qualifications it emerged from this research that the Information and Communications Technology leader could not be completely removed from the operation of the school's network. Clearly, then, the Information and Communications Technology leader is an educational leader with an educational background, but also needs to have some relationship with the operation of the College network.

Ambivalence about the role of the Information and Communications Technology leader can be partly explained by the history of the way computers were introduced into schools. When computers came into secondary schools in the 1980s someone needed to oversee the network, troubleshoot and generally take ownership of the computers. In the first instance these people who took ownership were members of the teaching staff. As networks grew, schools began to appoint people to look after the networks. As networks became more complex, these people needed technical expertise to maintain and develop the infrastructure.

When we consider the rapid historical changes in Information and Communications Technology in the last 29 years, what emerges is a shift from the Information and Communications Technology leader ensuring the stability of the network and perhaps requiring some technical expertise, to the development of the Information and Communications Technology leader as a leader in teaching and learning. Therefore, it follows that the background and qualifications of the Information and Communications Technology leader need to enable the leader to give direction to the technical staff as well as to the teaching staff. Of necessity, the direction given to the technical staff will be different from that given to the teaching and other staff. For the technical staff, the direction is essentially strategic, while for the rest of the staff the emphasis is likely to be on skill building. If the Information and Communications Technology 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.

Need for Professional Development Delivered by the ICT Leader

Professional development in the area of Information and Communications Technologies 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. Professional development also needs to be sustained and continuous. One-off professional development sessions or workshops do not translate to productivity in the classroom, especially when taught out of context.

Improvement of professional practice should lead to enhanced and improved student outcomes. Therefore, the Information and Communications Technology leader needs to be in a strategic position to be able to oversee the school's priorities and work within the school's aims to provide the necessary professional development.

The professional development that the Leader should give is to develop the thinking of staff; extending their horizons for the possible use and integration of ICT in the learning situation when staff see a reason to extend their own skills in ICT they will be more motivated. *Just in time* professional development is too often the professional development that staff request. Information Technology staff and others can be used for staff development courses.

It seemed that the more senior the role, the more their need for one-on-one assistance. This could possibly be explained by the fact that personnel in these roles are often time poor and are often not in the position to devote large blocks of time to develop a new skill in a training environment or learning new skills - many of which will soon be forgotten if the user does not have an immediate need for them. There also appears

to be some confusion here between an immediate need for assistance which can only be satisfied by one-to-one help, training in some aspect of hardware and software which might be useful for the future, and professional development which genuinely builds on current knowledge and understanding. It may also be the case that more senior staff have, or believe they have, information technology needs which are particular to their position.

Whilst some school personnel have strongly agreed that the Information and Communications Technology leader should provide one-to-one professional development, many of these did not translate into wanting *just in time* professional development. *Just in time* professional development is the delivery of training that is useful at a particular point in time to assist with the current organisational need. For example, if a new student information system was developed and implemented, and some staff needed to use it, then just-in-time training would be required for those staff who would need to use the student information system immediately. However, if senior staff are looking for individualised assistance that is *just in time* in nature, perhaps what they are after is not professional development as such but a Help Desk environment whereby a person fields enquires and questions from staff on a constant basis. Generally the Help Desk provides staff with instructions on how to resolve issues by following a set of instructions usually labelled Frequently Asked Questions (FAQs).

Many school personnel believed that if teachers could manage computers, that is, have some technical knowledge on how to maintain computers, then that was sufficient Information and Communications Technology training. Therefore, providing professional development on hardware or software in isolation is not conducive to the needs of the school, nor does it advance learning and teaching.

In the opinion of the researcher, the bulk of Information and Communications Technology professional development should be coordinated by the Information and Communications Technology leader, rather than delivered by this person. Having said this, there will be times that the Information and Communications Technology leader will need to provide professional development to colleagues with regards to innovations or the implementation of new systems.

Professional Development: Integral to the ICT Leader

Professional development is a key component of the Information and Communications Technology leader's role. However, the Information and Communications Technology leader need not be the one physically training staff in all instances, but rather coordinating the training. Professional development in how to use Information and Communications Technology in education needs to be on-going, sustained and practical. It also needs to be multi-faceted if it is to cater to the needs of individual teachers.

Perceptions surrounding the kind of professional development delivered by an Information and Communications Technology leader tend to be confusing. A number of school leaders favour one-to-one assistance as their preferred model. What they seem to be really talking about is a help-desk function. Useful as this is for solving immediate problems, it is not exactly professional development.

Debates have been conducted in educational circles about whether professional development is delivered in a *just in case* or *just in time* model. What seems uncontested is the necessity for the Information and Communications Technology leader to facilitate professional development for staff. In a modern school, this professional development is likely to be multifaceted, and multidimensional.

Two things have become clear: first is the central role of professional development in describing the role of the Information and Communications Technology leader. Second, because of the Information and Communications Technology leader's whole school responsibility and the impracticality of the Information and Communications Technology leader administering all the different types of professional development being demanded by staff. This suggests that the role of the Information and Communications Technology leader cannot be simply to provide professional development - although that remains central to the task - but to coordinate and facilitate the provision of professional development to staff in schools. This can be broken down in a number of ways.

The simplest and most immediate is in the coordination of the help-desk which is often the first port of call for staff with an immediate Information and Communications Technology need. It is beyond the scope of the Information and Communications Technology leader to provide all of this help themselves given their other responsibilities. The Information and Communications Technology leader would oversee the management and daily operations of the help-desk service. The help-desk service would operate with dedicated technical staff manning the desk. S/he would support the systems designed to assist end users with technical and functional questions and problems. This would include providing information and assistance to the users of the computer network. The help-desk operator would be the single point of contact for all user inquiries and problems for all users.

Another important function of the Information and Communications Technology leader emerging from the literature and surveys is the provision of professional development to staff. If coordinating a help desk is a relatively straight forward task, the provision of professional development for teaching and non-teaching staff

becomes more and more problematic by the day. As Information and Communications Technology has developed in schools, the kinds of professional development which people require has become more and more complex as the skills of individual staff members have become more divergent. Take, for example, the introduction of computerised reporting in schools. To some extent the provision of professional development for this kind of change is relatively simple and straight forward. If this is a new program then the Information and Communications Technology leader can provide whole staff professional development with the assumption that everyone is more or less at the same place when it comes to the implementation and use of the package. As time goes on, the needs of staff become more and more complex. As new staff move into the school, it seems relatively straight forward for the Information and Communications Technology leader to provide professional development in the reporting package which targets the new staff and, perhaps, continuing staff who want a refresher course.

This highlights an important issue. To some extent, ideas of professional development provision for Information and Communications Technology remained locked in the kinds of models that were developed when computers were new in schools and the only time a teacher might actually use a computer was at school. The use of computers in school has developed: new teachers have come on board, and teachers have been given computers to use at school and at home. The idea that one size fits all professional development for schools is outdated. This creates a problem for the Information and Communications Technology leader who is likely to have the provision of professional development as a central aspect of the role. If the Information and Communications Technology needs of teaching staff varies from person to person then running professional development workshops for software-specific workshops in Word and PowerPoint after school hardly seems worthwhile. While no doubt many of the respondents might find professional development in this area worthwhile, it is hardly an efficient use of the Information and Communications Technology leader's time to run such professional development, nor is it necessarily going to advance the skills and capacities of the staff in other areas. Logically, then, if it is necessary to run ten professional development courses in year A, the number of courses to be run in years B and C will only increase. The likelihood is that basic courses will not drop off but that other, more advanced courses will be added on. This would significantly increase the workload of the person delivering the courses.

There is no doubt that the Information and Communications Technology leader has a central part to play in professional development. There can be a difficulty in identifying which professional development needs are best delivered by the Information and Communications Technology leader and which should be delivered in other contexts.

The idea that the Information and Communications Technology 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 outdated. If, on the other hand, attempts are made to have the Information and Communications Technology 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 Information and Communications Technology leader to provide all the different kinds of professional development that staff might wish to undertake.

As has been argued, technical issues could be dealt with through a help-desk service, freeing the staff and the Information and Communications Technology leader to provide professional development linked to pedagogical needs. Appropriate Information and Communications Technology skills cannot focus solely on the individual's personal skill, but rather for teaching and learning.

The Information and Communications Technology leader can not 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 teaching and learning purposes otherwise the job is too big.

It follows that a major aspect of the provision of professional development in this role is in determining the strategic development of Information and Communications Technology professional development. Central to the role is the ability to identify and develop professional development rather than be reactive to individual needs. Therefore, professional development needs to be seen at a macro rather than a micro level. It needs to be considered as an organisational wide priority.

The proposed model arising from this research argues that there have to be sensible limits on the kinds of expectations that can be asked of the Information and Communications Technology leader in the provision of professional development. It is likely that the learning needs of staff will exceed the capacity of any individual, however talented, to deliver. The size of schools, the explosion of Information and Communications Technology and the emergence of Web 2.0 technologies add to the complexity of the task. Therefore, an important role for the Information and Communications Technology leader is to build the capacity of others to provide professional development in specific Information and Communications Technology areas. This is likely to be relevant when it comes to more faculty-based professional development as individual learning areas will have

specific software needs (Rudd, Smith, & Conroy, 2007, p. 4). It is a more sensible use of resources for the Information and Communications Technology leader to facilitate the skill building of others so they in turn can provide professional development in a relevant and timely manner to other staff. We need only to consider a basic list of software relevant to different Learning Areas to begin to understand how difficult and complex it is to expect one leader to be proficient in all these areas as can be seen in Table 1.

Learning Area	Software
English	Wordprocessing Desktop publishing Powerpoint
Mathematics	Spreadsheets Graphing mathematical equations CAS calculators
SOSE	Databases Multimedia Simulation (Sim City) Internet Mapping
Science	Data-logging Simulations
Technology	Computer Aided Design Simulation
Art	Drawing and Photo manipulation Web authoring Animation
Music	Notation
LOTE	Language based software
Health PE	Forms of Data logging (fitness testing)
Drama	Scripting Lighting

Table 1: Typical software needs of Learning Areas.

As can be seen from the table above, the needs of staff have become more and more complex to the point where it is quite unreasonable to expect the Information and Communications Technology leader to provide professional development to accommodate all these highly specialised needs. While there will be a need from time to time, for whole school professional development in Information and Communications Technology, a more sensible approach is for the Information and Communications Technology leader to facilitate the learning of others to look after the needs of their staff.

The central role of the Information and Communications Technology leader in terms of providing professional development to staff has implications for the leader's membership in teams.

The Belonging of the ICT Leader on Significant Teams in the School

Many schools use different names for basically the same Leadership Team. For example, a school's Leadership Team can also be referred to as an Executive Team, whereby the Principal and his/her senior nominees meet on a frequent basis to discuss the operations of the school. Typically, a Leadership Team would include all or some of the Principal, 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.

A reoccurring theme that was raised by participants is that the Information and Communications Technology leader's position needs to be senior in ranks. That is, the Information and Communications Technology leader needs to oversee the information and communication needs of the entire school and needs to have a thorough understanding of the operations of the school.

Significant Teams: Integral to the Role of the ICT Leader

In some schools, Information and Communications Technology is dominated by Network Administrators who are fixated on technical solutions and are unresponsive to teacher needs, they are describing a situation where the Network Administrator tends to act in isolation.

When consideration is taken of the importance of professional development in the role of the Information and Communications Technology leader, it is clear that the leader should not act in isolation and must not be cut off from others in the school. Given the fact that professional development is an important aspect of the role, the Information and Communications Technology leader needs to be in a position to shape the professional development agenda and be part of whatever structures are in place in schools for the provision of professional development. This is especially important when it comes to capacity building in key teaching and learning stakeholders because, unless the Information and Communications Technology 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 Information and Communications Technology leader does not fit easily into the "obvious" teams that schools might have. Information and Communications Technology leaders are clearly not pastoral leaders but 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 Information and Communications Technology is not necessarily tied into the teaching of Information Technology as this is separate and distinct from responsibility for Information and Communications Technology for the whole school. It can be argued that Information and Communications Technology does not belong in a Faculty at all but in all faculties of a school's curriculum. It is interdisciplinary in nature. This makes it difficult in school organisational structures to find where the Information and Communications Technology leader belongs. Whereas most middle managers in schools have a defined area of responsibility, the Information and Communications Technology leader has responsibility across the whole school curriculum-albeit only one aspect of that curriculum. Nor would it be thought that the Information and Communications Technology leader necessarily belongs on a school Leadership Team because it might be perceived that the Information and Communications Technology leader's focus is narrow. This represents something of a paradox. On the one hand, the Information and Communications Technology leader's position is not easily understood in the middle management section of a school's structure because of the broad nature of the position's responsibilities, while on the other hand from a whole school perspective the Information and Communications Technology leader might be thought to have a narrow focus. This paradox helps explain the difficulty experienced in arriving at a satisfactory position statement for the Information and Communications Technology leader in schools.

Who Should the ICT Leader Report To?

In different schools the Information and Communications Technology leader reports to different people in the organisational structure. Whilst the Information and Communications Technology 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. However, who they actually report to on a day to day basis varies greatly.

In terms of providing a generic position description for an Information and Communications Technology leader, the variety of school contexts makes it difficult to suggest with great specificity who the Information and Communications Technology leader should report to. The findings from the questionnaire - reflected elsewhere in this discussion - show the complex role of the Information and Communications Technology leader. Other roles in schools tend to have a fairly straight forward line management structure. For example, Year level coordinators who have a pastoral role report to a Deputy Principal or a Head of Campus. Similarly, a Head of Department reports to the Head of Learning and Teaching. The assumption is made in each case that the senior administrator further up the line is highly skilled and knowledgeable in the kinds of duties that those under him or her perform. However, with respect to the Information and Communications Technology leader, this is rather more difficult. An Information and Communications Technology leader may well be more knowledgeable about the use of Information and Communications Technology than either the Principal or the Deputy Principal, but may be less knowledgeable in budget terms than the Finance Manager/Business Manager. Moreover, as already has been discussed, the Information and Communications Technology 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.

Reporting Structures: Integral to the Role of the ICT Leader

The central dilemma for the question of who the Information and Communications Technology leader should report to is largely a problem of expertise. It is entirely likely that the Information and Communications Technology 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 Information and Communications Technology 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. Perhaps the closest analogy to the Information and Communications Technology leader in a school is the Business/Finance Manager who may well be reporting to a Principal with little knowledge of finance. Even so, the experiences are not really comparable.

What seems clear, though, is that no one disputes that the Information and Communications Technology leader's role is complex and strategic, and that reporting structures need to reflect the nature of the position. One of the things which emerged in the survey is that 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 Information and Communications Technology leader needs to be contextually relevant. The second – and more important factor – is the reporting structure for the Information and Communications Technology leader 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.

In Summary

The recommendations for practice outlined below have applications in schools that are of a medium to a large size such as 600-1800 students, however it is limited in practicality when applied to large schools that have multiple campus' or to smaller schools. In addition, the recommendations for practice can be used in schools to develop a position description of the Information and Communications Technology leader with elements of uniformity.

1. The position of the Information and Communications Technology leader needs to be clearly defined in the school's organisation structure.
2. The Information and Communications Technology leader's position should be senior in rank. Ideally the position should be equivalent to a Deputy Principal position or failing that, at the level just below the Deputy Principal. The position should be remunerated accordingly with the seniority of the position.
3. The Information and Communications Technology leader leads the Network Team by providing strategic direction and understanding of the curriculum needs of the teaching staff.
4. There needs to be a significant relationship between the Leadership Team and the Information and Communications Technology leader regardless of whether the leader is part of the Team.
5. The Information and Communications Technology leader needs to work closely with teams with responsibility in the following areas: Network, Information and Communications Technology Strategic, Curriculum and Leadership.
6. The Information and Communications Technology leader is skilled as a teacher, has formal qualifications in Information and Communications Technology, is able to provide strategic direction for the network, and is able to lead teachers in the development of Information and Communications Technology.
7. The Information and Communications Technology leader oversees the network operations and the work of the technicians.

8. Professional development is a key component of the Information and Communications Technology leader's role. The facilitation of Information and Communications Technology related training for all staff is the responsibility of the Information and Communications Technology leader.
9. Professional development from the Information and Communications Technology leader needs to include skill building for staff development.
10. Professional development from the Information and Communications Technology leader needs to include capacity building for innovation.
11. The communication structure for the Information and Communications Technology leader, the context, along with the special knowledge inherent in the position needs to be considered. The Information and Communications Technology leader needs to provide direction to the Leadership Team.

About the Presenter

Therese Keane is currently an ICT Educational Consultant based in Melbourne. She has held positions of ICT Leadership in schools in Melbourne. Therese holds a Doctorate in Education and her topic focused on ICT Leadership in schools. Therese has worked in a variety of school settings. Two of the schools she has worked in had Notebook programs. She is a former office holder in VITTA (Victorian Information Technology Teachers Association), and has been a State Councilor for the ICTEV (Information and Communications Technology in Education Victoria). She has presented numerous seminars and workshops for teachers involved in the teaching of Information Technology. She has also presented on Problem Based learning and the use of Learning Management Systems. Therese was the Assistant State Reviewer of Information Systems for several years and has been on the exam setting panel for VCE Information Processing and Management. Therese has also published several textbooks in all strands of VCE Information Technology.

Therese can be contacted on therese@keaneonlearning.com.au

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