

1-1-1999

Propositions for information technology: Planning for success

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Recommended Citation

Ken Haycock and G. Jopson. "Propositions for information technology: Planning for success" *Teacher Librarian: The journal for school library professionals* (1999): 15-20.

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Planning for Success

Ken Haycock and Geoff Jopson

In 1995 the West Vancouver (British Columbia) School Board established a district goal related to the appropriate and effective use of information technology as both a school and community resource.

In 1997, a newly-elected Board reiterated the Board's commitment to the 1995 goal and extended it to other areas, including a comprehensive assessment of the impact of technology on student achievement. The Board's concern was that there was no common vision for the use of information technology to enhance student learning and parents and other community members were concerned about value for investment, particularly as most technology had been purchased through local revenue and parent-raised funds.

Overarching these issues was the broader concern that the district needed a planned and congruent approach to resource management and use which focused on the necessary mechanisms to improve achievement; further, the Board was committed to full implementation, review and assessment by the end of its electoral mandate at the end of 1999.

Further to its stated goal, then, the Board proposed thirteen propositions about the selection, management and effective use of information technology and directed its staff to prepare an action plan for consideration and approval.

For each proposition, abbreviated here, the senior management included a full outline of the current status, a plan of action, the

name of the staff member responsible and a time-line, ultimately culminating in an external assessment of implementation of each proposition and of the impact on achievement. The propositions are clustered here by area, from vision to assessment.

Vision

The Board must be able to articulate a common vision or

purpose for the investment that the district and community has made in information technology other than to prepare students for the "new global economy".

Proposition # 1: Our vision must focus on learning. The Board believes that it should be the intent of the West Vancouver School Board to provide resources and technologies to ensure that each teacher and student is able to access and use information and ideas effectively.

Status

In consultation with teachers, administrators and parents, the

West Vancouver School Board's Goal on Information Technology

The Board has provided leadership in the application of technology to school and district management and to instructional programs; we are known internationally as leaders in this field. As part of our continued commitment, we are examining the "information infrastructure" to plan for equitable access to information for all students and the skills of information literacy, that is, the ability to access and use information and ideas effectively. Key to this plan will be the clarification of the roles of our teacher-librarians and school library resource centers as stations on the information super-highway; in addition we will be seeking improved access for the community to the electronic resources of other information providers, beginning with the municipality, the West Vancouver Memorial Library and Capilano College. We will review the role and responsibilities of school and district technology committees as well as our policies on the selection and use of learning resources, to include access to electronic resources and remote sites.

The Board believes that information technology must be tied to intended learning outcomes and have a positive relationship on student achievement. To this end we will provide training opportunities and support for teachers and other staff and undertake a comprehensive assessment of our use of technology by the end of our mandate.

Board developed a statement of beliefs about information technology and student learning goals.

Statement of Beliefs

Learning is most powerful when students construct meaning for themselves by gathering, processing and communicating information. Through discussion and reflection, students can refine their thinking. The effective and ethical use of technology will enhance students' learning.

We believe that technology will support learning when

- students appreciate the profound impact of technology on education, the workplace and the global community;
- students develop traits of curiosity, critical analysis, selfreliance, flexibility and collaboration through the use of technology in their learning experiences;
- the learning environment supports values of safety, security, privacy and the ethical use of technology, and develops an awareness of the impact of technological change on society;
- students recognize that technology includes a wide variety of tools and resources. Central to the effective use of technology is the careful and appropriate selection of tools and resources.
- teachers employ technology to enhance a wide range of instructional strategies in order to meet the unique learning styles of their students;
- teachers understand that creativity is nurtured in the learning environment and apply technology to support the creative process;
- students understand that, while presentation is important, it does not replace quality of content and original thought;
- staff development assists teachers to create student learning activities which incorporate appropriate technology;
- it is introduced to the learning

community in a thoughtful and timely manner;

- teachers and students are given resources and reliable support so that they can focus on the learning without being distracted by technical problems;
- there is an ongoing assessment of technology's effectiveness in enhancing student learning.

Student Learning Goals

In making effective use of technology and information students will:

Question

- identify and define essential issues, problems, and decisions related to fields of study
- expand and elaborate on original questions as exploration proceeds
- continue questioning throughout the learning process

Seek

- access information from a variety of sources
- navigate through complex choices of resources
- select valid and relevant sources
- organize, save and retrieve information

Understand

- analyze, synthesize and evaluate information
- find connections to other understandings
- think critically and problem-solve
- use software applications to extend comprehension

Cooperate

- be flexible and open minded
- understand what it takes to be a contributing group member
- create a shared knowledge base
- respect, support and collaborate with each other

Create

- invent new solutions, ideas and images
- use appropriate strategies and resources to formulate an action plan

Communicate

- present findings and thoughts for consideration by others
- represent new learning and understanding in a variety of ways
- listen and question to enhance understanding

Value

- act in an ethical manner
- understand cultural and societal implications
- develop individual responsibility and a sense of stewardship regarding the use of technology
- demonstrate a commitment to excellence
- delight in learning and creating
- persevere
- wonder

Definition

What do we mean by information technology? Is it solely computer hardware and software? Some would argue that books, as carriers of information and ideas, are also a technology. The Board believes that a common definition is necessary such that we do not impair one delivery system [e.g., library budgets] to feed another. An integrated approach to learning resources and technologies would ensure that all media are used for their appropriate purpose and for an instructional end.

Proposition # 2: A definition of what we mean by technology is essential.

Status:

Technology encompasses much more than computer hardware and software. The statement of beliefs suggests that technology will support learning when students recognize that technology includes a wide range of tools and resources. Central to the effective use of technology is the careful selection of tools and resources.

Our goal is the development of an information literate school com-

munity. This includes teaching students to use effectively all components of the technology landscape. It is our shared understanding that technology is any tool (books, computers, the human question) that allows students to explore issues, solve problems, or create meaning and new ideas.

Social Issues

The Board has stated that it will develop a plan for equitable access to information for all students, regardless of ability, location or gender.

Proposition # 3: A district plan is necessary to address the issue of equitable access.

Status:

In order that all students have equitable access to information, the district has:

- assigned both the budget for learning resources and the staffing for teacher-librarians to schools according to a formula based on student population;
- provided all schools with access to a newly established district network which permits free and rapid access to the Internet;
- provided all staff with access to technical support services, including a 24 hour Help Desk accessible seven days a week;
- provided all staff with access to the support of a district resource teacher, who has led an extensive professional development program, including summer institutes;
- worked with the parent community through the Site Technology Committees to purchase additional computers for many schools, so that our computer-student ratio continues to compare very favorably to other school districts.

In order to plan for equity, it will be necessary to agree upon a definition of what equity means as it relates to information access. The following definition is approved:

Equitable access ensures that a basic level of technology and instruction will

be provided so that all students learn to access and make meaning of information. Equity does not necessarily mean equal. Rather, it is intended to ensure that all students will have the resources and support required to acquire the knowledge and skills which are commonly agreed to as being basic and appropriate to their age. Beyond this, however, the district should continue to ensure that teachers are able to undertake initiatives that address the unique learning needs of a particular student group.

So that equity can be achieved, a district committee will be established to develop a plan for implementation of this goal. This plan will define the basic standards of hardware, learning resources, teacher competencies and district support necessary to ensure equity.

Equity will also address access issues based on gender and ability.

Learning Issues

The Board has stated that it will develop a plan for the development of the skills of information literacy, that is, the ability to access and use information and ideas effectively, by all students. In spite of the introduction of information technology, however, there is no evidence that our technology programs are successful in terms of student learning.

Proposition # 4: As the issue of information literacy, that is, the ability to access and use information and ideas effectively, is of critical concern to the district a plan will be developed to ensure attention, resources and implementation.

Status

While information literacy is an important skill, indeed essential for students to achieve the learning outcomes prescribed in our curriculum, and while many teachers and librarians are involved in teaching it, there is no discrete program devoted to it. Accountability for an overall system of teaching and assessing these skills is not well defined because they are integrated into many curriculum areas.

Teacher-librarians with expertise in designing learning activities to teach information literacy are provided in all schools. While many teachers choose to use this expertise to plan collaboratively and team teach cooperatively information literacy skills, a plan to ensure that all students are provided with such learning activities needs to be developed.

Teacher-librarians will work with administrators and teachers at school sites to develop a systematic plan for the development of the skills of information literacy by all students. This plan will assume that while information literacy includes many skills, at its core is the ability to interpret information in order to create meaning and new ideas. The plan will include:

- information gathering skills;
- skills in the selection, sorting and discerning use of information;
- skills that enable students to organize, translate and synthesize information;
- skills that enable students to clearly communicate the meaning of ideas they have created (written, spoken, visual and electronic communication).

Proposition # 5: The Board directs that the district design and implement a specific district-wide K-12 program on appropriate Internet use.

Status

In order that teachers are able to effectively instruct their students regarding appropriate Internet use, the district has:

1. developed a five-step process to guide students using the Internet for research purposes that includes
 - promoting to students the concept of generating curriculum-based questions that online information can be used to answer (in addition to other learning resources);
 - teaching students how to search for information properly using Boolean logic,

- evaluating a website for its credibility including determining whether information found is accurate or biased, and whether the author of online information is credible;
 - teaching students how to extract information from websites to support questions originally posed;
 - teaching students to compare information from online resources with other learning resources such as books, journals and CD-ROM resources, to emphasize the importance of students using a variety of learning resources to acquire information;
2. conducted in-service sessions with teacher-librarians to assist them in providing workshops for staff on the ethical use of the Internet by students.

The next step in this process will see the development of age specific guidelines for appropriate Internet use. This document will include guidance regarding copyright and intellectual property, data protection, libel, computer misuse (sexually explicit, immoral, antisocial material), incitement and e-mail etiquette.

Proposition # 6: The Board directs the district to investigate a graphic user interface connecting learning resources in the school, in the district and beyond, for use in elementary schools consistent with the policy on the selection of learning resources.

The intent here is to ensure an in-district gateway to the school's resources (e.g., library resources, school-developed web-site bookmarks, other school resources), to district resources (e.g., district collections of learning resources too expensive or specialized for one school, other school resources and gateways), and beyond (e.g., the resources of other appropriate service providers, such as public libraries, reference tools, and children's information magazines, for which site licenses for the district or broader community have been signed).

Status

The Learning Center (http://www.sd45.bc.ca/master_learning.html) has been created as a component of the School District #45 website. This leads teachers, students and parents to websites that include links to educational websites, curricular resources, tutorials on integrating technology into lesson planning, search engines, articles on citing websites as well as search techniques and strategies.

In addition extensive staff development has been undertaken on creating web sites and links. As well, the existing school library database will be converted into html and published on the school district website to promote awareness of the existing collection of learning resources that exist at different schools. Curriculum teams will identify appropriate sites and the district will develop the requested interface.

Clarification of Roles and Responsibilities

The Board engages, and assigns to each school, specialists in the selection, management and effective use of learning resources and technologies; the Board has noted that "key to its plan will be the clarification of the roles of our teacher-librarians and school library resource centers as stations on the information superhighway". Research evidence makes it clear that effective performance and realistic evaluation only take place with clearly stated roles and responsibilities; in this way accountability is also better guaranteed to all stakeholders. Further, this specialized role requires specialized qualifications if the Board is to gain full value for its investment.

Proposition # 7: The West Vancouver School Board will approve a role clarification for teacher-librarians.

Status:

The Board approved *Students' Information Literacy Needs:*

Competencies for Teacher-librarians in the 21st Century, which provides clear direction for the role of teacher-librarians during the next decade. A staff development plan is being prepared in cooperation with teacher-librarians to enhance these competencies. Excerpts follow [the entire document appeared in TL, 26:2]:

In approving this document, the Board affirms the research evidence that indicates that integrated library programs impact positively on collaboration, leadership and student achievement when the teacher-librarian has experience as a classroom teacher, qualifications in teacher-librarianship and information studies and learning resources management, preferably at the graduate level, and works collaboratively with teachers in flexibly scheduled programs to integrate information problem-solving skills and strategies in the ongoing instructional program.

Professional Competencies

The teacher-librarian:

- 1.1 places a priority on staff relationships and leadership in the implementation of change.
- 1.2 provides leadership in collaborative program planning and teaching to ensure both physical and intellectual access to information and commitment to voluntary reading.
- 1.3 knows curriculum programs mandated by the province, district and school.
- 1.4 understands students and their social, emotional and intellectual needs.
- 1.5 has expert knowledge in evaluating learning resources in different formats and media, both on-site and remote, to support the instructional program.
- 1.6 develops and promotes the effective use of informational and imaginative resources in all formats through cooperative professional activities.
- 1.7 provides appropriate information, resources or instruction to

- satisfy the needs of individuals and groups.
- 1.8 uses appropriate information technology to acquire, organize and disseminate information.
 - 1.9 manages library programs, services and staff to support the stated educational goals of the school.
 - 1.10 evaluates programs and services.

Personal Competencies

The teacher-librarian:

- 2.1 is committed to program excellence.
- 2.2 seeks out challenges and sees new opportunities both inside and outside the library.
- 2.3 sees the big picture.
- 2.4 looks for partnerships and alliances.
- 2.5 creates an environment of mutual respect and trust.
- 2.6 has effective communications skills.
- 2.7 works well with others in a team.
- 2.8 provides leadership.
- 2.9 plans, prioritizes and focuses on what is critical.
- 2.10 is committed to lifelong learning.
- 2.12 is flexible and positive in a time of continuing change.

Proposition # 8: The Board also requests a statement of minimum qualifications for teacher-librarians.

While recent appointments to this position have completed this post graduate course work, not all current teacher-librarians have done so. The Board believes that a teacher-librarian is a professional teacher with a minimum of two years experience and additional qualifications in the selection, management and utilization of learning resources.

For future postings, the minimum qualifications for a teacher-librarian shall be based upon the additional qualifications of three graduate courses directly related to the selection, management and utilization of learning resources. At least

one of these courses should deal with the application of information technology. Current teacher-librarians who do not meet these qualifications will be expected to complete this level of studies within four years.

Integration of Information Delivery Systems

Proposition # 9: The district will plan for the integration of existing facilities and services in information delivery systems.

Access to quality information in all forms (including print, audio-visual and electronic) is necessary for student learning. Indeed, research suggests that "technologically mature" school districts find increased demand on their learning resource budgets.

Status

A district committee will prepare an overall collection development strategy. This committee, consisting of classroom teachers, administrators and teacher-librarians, will be responsible for making recommendations prior to the annual budget-setting process.

Finally, a district committee will be established to review existing facilities and services in information delivery systems and to recommend an overall plan for the coordination of these services. Among topics to be examined will be consideration of what is best delivered at the school level and what can best be shared among schools or coordinated at the district level.

Proposition # 10: The district needs to assess and implement access to bibliographic and full-text databases appropriate for student learning. The Board requests a plan to address this issue.

Status:

Preparation of *Teaching and Learning with Technology* has also led to a shared understanding that we cannot simply rely on the free Internet to access quality information. Teacher-librarians see site licenses as having considerable potential and assessment of these resources is underway.

The secondary school teacher-librarians have been investigating bibliographic and full-text databases and have arranged three-month trials for periodical databases. At first these and other databases were only available on a few stations in the library but they are now being made available on pods in the library and in labs connected to the library. In expanding the availability of these databases cost, technical support and computer accessibility have been problems.

A district committee will be established to identify and recommend bibliographic and full-text databases appropriate to student learning.

Proposition # 11: The automation of school libraries has been started but is yet to be completed. The Board requests a plan for completion.



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Status

Secondary schools are completed—the entire collection is bar-coded and married to electronic cataloguing records; all staff and students are registered as borrowers. All circulation and search functions are in daily use. Elementary schools are in progress. There will be some training issues surrounding the startup period for these schools.

Clerical staff has been hired; web browser software and an NT server will be purchased in order that any computer in the network will be able to do a catalog search of any school. The project will be completed in 1999.

Community-based Information Infrastructure

The Board intends to seek improved access for the community to the electronic resources of our schools and other information providers, beginning with the municipality, the West Vancouver Memorial Library and Capilano College; almost a million dollars has been invested to date, with no direct return to the local taxpayer.

Services such as the Electronic Library Network, a provincially funded agency, provides a single point of entry to the collections of over 64 post-secondary and public libraries throughout British Columbia, system-wide access to research databases, including full-text and full image sources, online gateways to specialized databases and services on the Internet, and tools that foster life-long information literacy skills; the school district needs to pursue opportunities for participation for the benefit of our citizens and taxpayers.

Proposition #12: As the issue of a community-based information infrastructure was first raised in 1995 and significant resources assigned to it, the Board requests a plan for implementation.

Status

As mentioned earlier, site licenses for our schools will be pursued.

Discussions with the community college and the public library will be ongoing. A report will be made to the Board in 1999.

Assessment

The Board believes that information technology must be tied to intended learning outcomes and have a positive relationship to student achievement. To this end it will undertake a comprehensive assessment of the use of technology, and its effectiveness, by the end of its mandate. The process will be inclusive, addressing professional and community concerns and issues; it is now time to “plan for the plan.”

Proposition # 13: As the issue of the relationship of information technology to student achievement is a significant one for the Board, the Board requests a plan for discussion.

Status

Staff have identified the student learning goals which they hope to be able to evaluate. It should be recognized, however, that assessing the impact of technology on student achievement is complex, and that this is a relatively new field in education.

For each grade level, the Technology Leadership Team and Leadership Teams in other disciplines will be asked to identify a few key learning outcomes which involve the use of technology. These key learning outcomes will be taken from the student learning goals. Following discussion with various stakeholders, learning outcomes related to the use of technology will be identified for each grade. District staff will approach government for support in the development of tests which will accurately measure the impact of technology on student learning. This would include both a limited number of performance based assessment activities and a general survey instrument.

Conclusion

While the importance of information technology for teaching,

learning and citizenship is without dispute, it is reasonable to have a vision and a plan for its effective use. The West Vancouver School Board has identified areas of concern, developed plans to address those concerns and responded to the educational and fiscal questions of its constituents.



Ken Haycock is past chair [president] of the West Vancouver (British Columbia) School Board. Dr. Haycock prepared the initial presentation of propositions for approval by the Board in June, 1998. He can be reached at <ken.haycock@ubc.ca>.



Geoff Jopson is director of curriculum and staff development with the West Vancouver (British Columbia) School Board. Mr. Jopson prepared the senior management response to the Board's propositions for approval by the Board. He can be reached at <gjopson@sd45.bc.ca>.