

# Chapter XLVIII

## Selecting Open Source Software for Use in Schools

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### ABSTRACT

*Schools are places where the choices made about computing technologies not only reflect their technical requirements but also reflect the philosophical priorities directing those choices. Schools can deploy a startling range of software (i.e., operating systems, databases, office productivity software, and applications software) for specific teaching and learning purposes. Applications software deployed in schools must be suitable for use by students who are young and often have limited reading and fine motor skills. Back-end software must be robust enough to handle hundreds and sometimes thousands of users concurrently. One issue that faces schools interested in deploying open source software is the number of choices available; there is a wide variety of open source software that is suitable for use in schools. It is intended that this chapter provide readers with entry points to selecting open source software by identifying criteria that can be used by schools to shortlist potential open source software appropriate for their local environments.*

### INTRODUCTION

Schools are characterized by their diversity, complexity, and multidisciplinary nature; they are unique and complex organizations in which students are, for the most part, legal minors. Societies invest heavily in education since it is the way in which societies reproduce themselves (Berger & Luckmann, 1979). Schools, therefore, are dynamic and inherently social, political, and cultural places (Johnson & Christensen, 2004) in which values and philosophies are on show in

practical and concrete ways. Indeed, the choices a school makes about computing technologies can operate as indicators of the values and philosophies that school endorses.

In the 21<sup>st</sup> century, including computing technologies into education is occurring throughout the world. Countries are at different stages in this process, but in general, the deployment of technologies is moving from individual, stand-alone computers to integrated technologies that are networked and, when possible, connected to the Internet (Hepp, Hinostroza, Laval, & Rehbein,

2004). Since models of open source software (OSS) development are based on contributing to the public good through online networked activities (Bessen, 2004), the paradigm shift away from personal to networked computers linked to the Internet makes OSS viable both technically and philosophically for the education sector. Some of the technical and philosophical contributions that OSS can make to education are discussed here in order to report the criteria proposed for identifying suitable OSS for use in schools.

## **TECHNOLOGIES IN SCHOOLS**

Schools vary in the way computers are deployed for student use. Some schools may not have any computers in classrooms but may have them in a computer laboratory or library resource center. Other schools may have no computer laboratories but may have computers in classrooms or on portable carts; other schools may have computers in classrooms as well as in computer laboratories. Still other schools use thin-client or terminal service solutions (Moyle, 2005). Wireless, portable, and handheld technologies are also finding places in schools (Preparing Tomorrow's Teachers to Use Technology, 2002). In countries where basic access to computers is approaching universal, there are pedagogical moves away from teaching computing skills per se to integrating technologies into the teaching and learning (Guttman, 2003; Hepp, Hinostroza, Laval, & Rehbein 2004).

Integrating technologies into school education depends upon a robust information technology (IT) infrastructure: the hardware, software, and telecommunications (where it is available). Schools are becoming increasingly sophisticated IT environments in which hundreds of users can be logged on at any one time, but not all schools use software in the same way or to the same extent. A challenge for schools is to determine what infrastructure is appropriate for their contexts.

In education, traditionally the term *infrastructure* has referred to the physical attributes of schools; it now includes an IT infrastructure. Schools use a variety of IT infrastructure models. The choice of model depends upon an array of educational, social, and economic factors. If we accept that the main role of schools is teaching and learning, however, and if we accept that teaching and learning should include the integration of technologies, then we also must accept that the infrastructure of schools must emerge from what we want to happen in classrooms with our students, irrespective of whether those classrooms are physical, in an online environment, or are a mixture of both. Over the past several years in both developing and developed countries, there have been sustained efforts to put in place both school-based and systemic networked IT infrastructures (Farrell & Wachholz, 2004; Guttman, 2003; Programme for International Student Assessment (PISA), 2005). Schools and education departments, however, continue to grapple with the best way to organize themselves in order to ensure technologies are usefully and meaningfully deployed (United Nations Educational, Scientific and Cultural Organization (UNESCO) Bangkok, n.d.). It is timely, therefore, for schools to consider whether OSS has a place in their IT infrastructures.

Schools use various sorts of software for the respective pedagogical and administrative purposes they undertake (British Educational and Communications Technology Agency (BECTA), 2005; Hepp et al., 2004; Moyle, 2003). Some schools deploy only proprietary software, while others deploy only OSS; still others deploy a mixture of both. Some schools and school systems commission software development (e.g., student reporting, human resource, and payroll systems) as well as purchase off-the-shelf products (e.g., Microsoft Office). Over the past decade, however, the inclusion of OSS into schools' IT portfolios has been an emerging phenomenon around the world.

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