Chapter XVIII
Using WebQuests to Support the Development of Digital Literacy and Other Essential Skills at the K–12 Level

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ABSTRACT

This chapter introduces the WebQuest as one means of addressing effective technology use for developing digital literacy skills at the K-12 education levels. It argues that technology use that promotes constructivist learning principles has been found to have the greatest effect on learning. Furthermore, the WebQuest and its extension, the Web Inquiry Project, exemplify strategies that promote constructivist learning principles when they are designed to encourage student-directed learning, problem solving, higher-level thinking, perspective taking, real-world authentic issues, and collaboration. The author hopes that by providing specific examples of each of these strategies, readers will be better able to envision effective, constructivist-based technology use for their classrooms.

WHAT IS LITERACY?

These days literacy has taken on a whole new meaning. The current buzzword in educational circles is digital literacy. According to the North Central Regional Educational Laboratory (NCREL) Web site (http://www.ncrel.org/engauge/skills/agelit.htm), digital literacy encompasses a large number of literacies, including basic literacy such as language proficiency and numeracy, scientific literacy, economic literacy, technological literacy, visual literacy,
information literacy, multicultural literacy, and
global awareness. In addition to these literacies,
NCREL calls for an emphasis in K-12 school-
ing on other skills such as higher-level think-
ing—including critical and creative thinking and
problem solving—as well as communication
skills in order for students to be successful in
the 21st century. This is a major undertaking for
schools and teachers as they struggle with how
to address all of these aspects of digital literacy
in their teaching. Computer technologies can be
used to assist and support teachers in their
endeavors.

This chapter begins by reviewing what we
currently know about effective computer use to
support and enhance teaching and learning.
Constructivism is then examined as a promising
theoretical framework for that use. The re-
mainder of the chapter looks at WebQuests and
their extension, Web Inquiry Projects, as ap-
proaches that have the potential to effectively
address constructivist learning principles and
digital literacy skills, as well as essential higher-
level thinking, problem solving, and communi-
cation skills.

WHAT DOES RESEARCH TELL
US ABOUT WHAT MAKES
EFFECTIVE AND MEANINGFUL
TECHNOLOGY INTEGRATION?

Before examining ways to address literacy
skills in teaching, it is important to review what
we know about effective technology use. Com-
puters are becoming more readily available in
many K-12 schools worldwide, and the Internet
is often hailed as an innovation with unprece-
dented potential for the improvement of teach-
ing and learning.

However, teachers are at varied levels of
awareness about the possibilities for employing
these technologies in effective and efficient
ways to enhance teaching and learning. Re-
petently the research has found that computer
technologies have had “only isolated, marginal
effects on how and what children learn in
school, despite early champions of their revolu-
tionary educational potential” (Roschelle, Pea,
Hoadley, Gordin, & Means, 2000, p. 77). Con-
sequently, “many computers in schools, even
up-to-date multimedia computers with high-
speed Internet access, are not being used in
ways that significantly enhance teaching and
learning” (Kleiman, 2000, p. 8). The foremost
problem seems to be that teachers tend to use
computers as add-ons to the ways they have
always taught which often is modeled after a
traditional, transmissionist approach. As noted
by Howard Gardiner (2000), “When the [com-
puters] are plugged in, they are all too often
simply used to ‘deliver’ the same old ‘drill-and-
kill’ content” (p. 33). As McAdoo (2000) as-
serts:

_The issue of equity centers not on equality of
equipment but on quality of use. The computers are there, yes, but what is the real
extent of access? And are schools able to raise not just students’ level of proficiency
but also their level of inquiry, as advanced use of technology demands?_ (pp. 143-144)

The key to best use is not the fact that
computers are being used, but how they are
being used. Computer use needs to go beyond
low-level tasks such as students being able to
demonstrate understanding of how to operate
the various technologies with proficiency, to
tasks that encourage more advanced learning
with computers. Over a decade of research
indicates that the most effective uses of com-
puter resources in schools occur when the
technology is used by students as an informa-
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