

ICT Literacy in the Information Age

Ritchie Macefield

Staffordshire University & MEFU Ltd., UK

INTRODUCTION

It is necessary to begin this thesis by briefly defining and discussing the ideas of the “*information age*” and “*ICT literacy*”.

The Information Age

The development of homosapien man can be classified into *ages*. These ages fundamentally affect the patterns of how humans work, play and interact. Some social anthropologists (e.g., Toffler & Toffler, 1994) have identified three such ages: agricultural, industrial, and information. Definitions of these ages are complex, and a detailed discussion of them lies outside the scope of this chapter, however, they can usefully be typified as follows:

- The *agricultural age* affected us through *systems* geared to processing and distributing *food*.
- The *industrial age* affected us through systems geared to processing and distributing *energy*; energy that is harnessed to provide large-scale travel and automation.
- The *information age* affects us through systems for processing and distributing *information*.

Therefore, in the Information Age many people will work and play exclusively using ICT systems and use this technology as a primary means of interacting with other people.

According to Castells (1996) we are presently in a transitory period, which he terms “*industrial-informational*” whereby we are integrating the new (ICT) technology of the information age into systems that were conceived in the industrial age. It is this integration that gave rise to for example, computer integrated manufacturing (CIM), “fly by wire” aircraft, and “smart bombs”. However, present patterns of human behaviour remain generally similar to that of the industrial age and these will only shift significantly as we complete

the transition into the information age. Such transitory periods are challenging for us because, in order to maintain social inclusion, we must fundamentally change our skills and mind sets to be compatible with the systems of the new age.

ICT Literacy

A useful starting point is to consider the European Computer Driving Licence (ECDL, 2004) initiative. This originated in Finland and has become somewhat of an icon for the idea of ICT literacy. This framework has a clearly defined scope and the learning is fairly prescriptive. It emphasises the attainment of specific knowledge points associated with (*pre*)specified tasks and goals.

Reid (1992) appropriately contextualizes the ECDL’s perspective of ICT literacy within the wider idea of ICT literacy when writing:

An old definition of “computer literacy” is the ability to write computer programs. But this is not very relevant today, in the era of packaged application software.

One common view of IT literacy is to say that “computer literate” people are those who can use a few standard (or widely used) application packages (such as a word-processor and a spreadsheet), know how to manage their data, and know how to find out more if they need to. But this is a very mechanical definition, in which we are judging a person’s literacy by what they commonly do, rather than by the special abilities they may possess.

The use of the term “computer literacy”, or “IT literacy”, begs a comparison with conventional, or “reading” literacy. Here we are not so much concerned with whether a person does much reading, but whether they can, when the need arises—and they are sufficiently familiar with the advantages of reading,

that they can make sensible decisions about whether to read something or not.

The most useful definition then is that an IT literate person is one who knows when to use which IT for what purpose, and knows where and how to find out more about areas where their competence is inadequate. Thus they may not, in fact, be regular users of IT, but they have sufficient perception about the various ITs that exist to be able to make sensible decisions about whether to use IT in a given situation or not.

Here, Reid demonstrates how the definition of ICT literacy depends upon the commentator’s perspective and the time when the commentary is made. Reid also argues that the idea of ICT literacy is (necessarily) becoming much more one of a *general transferable skill*. In other words, ICT literacy should be seen as an ability that has application across disparate contexts and (technological) devices.

In keeping with this perspective, this article explains new thinking as to how we might (re)define and better engender ICT literacy for the needs of the Information Age.

BACKGROUND TO ICT LITERACY IN THE INFORMATION AGE

The industrial age reflects a period in which the economically driven goals were, in general, fairly prescribed, predicable and persistent. This meant that job roles had a considerable life span. In turn, this gave rise to the idea of *training* individuals for lifelong job roles. In contrast, the information age reflects a period in which the goals will be a far more dynamic, ephemeral, and unpredictable.

This aspect of the information age means that it will become increasingly difficult to predict what we

will need to learn in advance. Existing knowledge will become redundant with increasing frequency (Lucas & Greany, 2000). Therefore, it is easy to conclude that, if individuals are to achieve social inclusion in this new age, it will require them to engage in lifelong learning. Further, learners will increasingly need to identify and realise their own learning requirements, and this will often need to take place in a *contingent* manner (Thimbleby, 1999). Therefore, the generic ability to learn is becoming more important than the subject matter, or content of what is learned. This is an idea termed *learnacy* by Claxton (1999).

Based on these discussions, initiatives such as the ECDL would seem to fit better with the needs of the industrial age than with those of the information age. As such, this author argues that new(er) initiatives to engender ICT literacy must begin with the rationale that ICT literacy is more of a general transferable skill, whereby individuals are equipped with the ability to learn new ICT efficiently and autonomously, and in a contingent manner.

Researchers within the SEUSISS (2003) project seem to support this idea. They found that only a small minority of employers regarded the ECDL as useful recruitment criteria, instead, they preferred the more *generic* ICT skills.

A NEW APPROACH TO ICT LITERACY: THE ADAPTIVE ICT LEARNER

The adaptive ICT learner model was designed by Macefield (2005) to engender ICT skills for the information age. In keeping with the comparison Reed (1991) made between ICT literacy and general literacy, it began with the idea that an ICT system interface can be modeled within the same framework we use to model a *natural language*.

Table 1. Grammar for a natural language

Semantics	The meaning of syntax, how it should be interpreted.
Syntax	A set of structural rules for how lexical items should be arranged including the use of functional constructs that glue the lexicon together.
Lexicon	A set (usually a hierarchy) of symbols that map to concepts (i.e., they have intrinsic meaning).

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