

## Chapter 2.7

# Business Graduates as End–User Developers: Understanding Information Literacy Skills Required

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### ABSTRACT

This investigates the introduction of ‘real-life’ scenarios with undergraduate business students to enhance their understanding of end-user development of database applications. It identifies the problems experienced with end-user development due to incomplete information, incorrect design procedures, and inadequate software knowledge. End-user development of small-scale applications by non-IS/IT professionals is becoming increasingly popular in the workplace, and it has been identified by many researchers as having some managerial risks associated with it. Conversely it has also been identified in the research that the benefits of application development by these ‘end-users’ mostly outweigh the managerial risks. By allowing access to ‘real-life’ situations, improving their information literacy skills, and identifying the design issues relevant to good database development, students will be given an insight into how

businesses use and store data, and be more aware of the requirements for their future employment.

### INTRODUCTION

Since the introduction of personal computers (PCs) in the early 1980s, there has been a shift in the use of computer systems from being predominantly the domain of information systems (IS) professionals to almost anyone within an organization (Barker & Monday, 2000). The proliferation of relatively inexpensive hardware and software has meant that employers can now afford to have computers within their organization. Subsequently businesses are increasingly requiring business graduates to not only have good information literacy skills, but also some knowledge of the concepts of application development (Barker & Monday, 2000). Govindarajulu (2003) identified that the introduction of end-user computing (EUC) is becoming “crucial

for increasing productivity in many firms” (p. 152). In 1993, Brancheau and Brown presented a paper that reviewed the previous 10 years of research into end-user computing. They commenced their paper by defining end-user computing as the “adoption and use of information technology by personnel outside the information systems department to develop software applications in support of organizational tasks” (1993, p. 439). Using this definition for EUC brought the understanding that the phenomenon of EUC included the development of applications by end-users. This paper (Brancheau & Brown, 1993) has become one of the most cited pieces of literature in the field of end-user computing and end-user application development, and subsequently Brancheau and Brown’s definition of EUC is widely supported by current researchers in the field. Edberg and Bowman (1996) defined user-developed applications (UDAs) as “any computer-based application for which non-IS professionals (end-users) assume primary responsibility” (p. 168).

This chapter will reflect on the experiences of the author and the business students in the development of small-scale database applications and the issues that should be addressed in regard to the information literacy skills required to undertake this type of development. However, it is important to first determine who end-user developers are and why they are becoming such an important part of today’s business.

## **WHO ARE END-USER DEVELOPERS?**

The first research relating to EUC was published in the late 1970s (McLean, 1979; Codasyl Report, 1979, cited in Cotterman & Kumar, 1989). In the 1970s computing was identified with mainframe computers, and end-user computing appeared to relate to one of three types of computer use: indirect use (where computing tasks were undertaken for the requester), intermediate use (where instructions

were given by the person requesting the information as to the format the information would take), and direct use (where information was retrieved by the user using a terminal).

The introduction of the personal computer (PC) in the early 1980s led to EUC being reported as “...a rapidly growing and irreversible phenomenon” (Alavi & Weiss, 1985, p. 6) which has attributed major advantages to organizations including “enhanced productivity of professional and white-collar workers, overcoming the shortage of DP professionals, provision of user-friendly and responsive systems, and overcoming the implementation problems of transferring this process to the user” (p. 6). The research into EUC has led to a number of differing definitions being developed dependent upon the researcher’s experience and how they classified end-users.

Rockart and Flannery (1983) identified six classifications of end-users dependent upon their function within the organization. These classifications were:

- non-programming end-user,
- command-level end-user,
- end-user programmers,
- functional support personnel,
- end-user computing support personnel, and
- data processing programmers.

These classifications expanded upon those defined by the Codasyl Report by being more prescriptive with their definition of how the end-users interacted with the technology. Early researchers (e.g., Rockart & Flannery, 1983) reported on a producer/consumer dichotomy when it came to describing end-users, while other researchers (Wetherbe & Leithseier, 1985, as cited in Cotterman & Kumar, 1989) reported on the comparison between the end-user operator and the end-user developer.

Leithseier and Wetherbe (1986) amended their research to include a third component, that of the amount of control that the manager or user

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