Introduction

At one of the first CALL interest action meetings held at the international TESOL conference in the early 1980s, someone asked a panel of "experts" whether there was any evidence that computers really helped students write better papers. The "experts" responded that there was not, in fact, any such evidence and that some students even wrote shorter and less well-developed papers on the computer. Clearly frustrated by the answer, the woman responded that she could not ask her dean for money to buy computers without any evidence that they helped students write better.

Looking back on this story after more than 20 years has passed, this question seems almost ancient. As Nydahl (1991) argued in the early 1980s, there was a tremendous amount of enthusiasm about the potential of the computer in the composition classroom but little, if any, empirical evidence that this enthusiasm was justified. Even when the research began to be published on the effects of word processing, it was often inconclusive and contradictory. Today, there is still little evidence that technology creates better writers (Hyland, 2002a).

However, the spread of computers, and later development of the Internet, throughout every aspect of our society has made the use of these technologies almost inevitable. For many teachers, the question itself is irrelevant since there is little evidence to "prove" the significance of any classroom practice. Kemp (1998) has argued that very little that is done in the composition classroom, including the use of technology, has been proven to create "better" writers. All such classroom practices are often too "messy" to be examined in quantifiable and replicable studies. What also makes this research in technology messy is not only that new technologies are being constantly

introduced but also that old technologies are constantly evolving. Each of these changes in the technology or in how it is being used can require a different form of implementation. As each implementation varies, the positive or negative results may not be generalizable because in its next instantiation, the nature of the technology, how it was implemented, or the background of the users may have changed, all of which can affect the introduction or the effectiveness of its use.

From the stand-alone computer to the development of the Internet, teachers have struggled with these issues of implementation in the composition classroom. Advocates of the use of computer technology in the classroom have argued that technology can alter the writing process, the nature of the writing environment, and the types of literacies found in these environments all in positive ways. Technologies such as computer networks, hypertext, computer-mediated discourse (CMD), and concordancing have extended the role of technology far beyond that of the stand-alone computer and the word-processing programs that first sparked the interest of L2 composition teachers in the use of technology. Even the traditional word-processing program, which was once only thought to be a tool to help students draft or edit papers, can now be integrated with the Internet and other technologies to create a more complex tool for the writing classroom that can be used by teachers and students at any time and anywhere.

The introduction of these technologies has not been without controversy. The ability of students to communicate at any time and anywhere has sometimes meant that students may expect their teachers to be on call 24 hours a day, seven days a week. The growth of the Internet has challenged traditional ideas of authorship, the ownership of online intellectual property, and the relationship between creativity and the free flow of information (Barlow, 1993; Lessing, 2001; Stallman, 1999). Teachers have often had to become experts in intellectual property law to understand how they can legally use the vast trove of information available to them on the Internet. Students who have been uploading and downloading music files may

have different ideas of what constitutes "stealing" than do their teachers. Given the long history of the interrelationship between intellectual property, authorship, and plagiarism, the growing importance of the Internet may greatly affect how composition is taught in ways we cannot imagine. Unfortunately, it is often difficult for both teachers and students to understand which materials they can legally use. Traditional concepts that have governed the use of materials for educational purposes, such as fair use, are often difficult to understand even for lawyers (Crews, 2001) and are continually being attacked by copyright holders (Lessing, 2003). New concepts of how intellectual property can be used, such as "copy left" ("What Is Copyleft?" 1999) and "creative commons" (Lessing, 2003) have inspired people to post materials on the Internet that others can use and modify, often with specific guidelines on how these materials should be acknowledged.

The introduction of technology into the classroom has always been accompanied by warnings about the dangers of overestimating the usefulness of technology, a point of view that sometimes has been referred to as techno-utopianism, a belief that technology is revolutionizing society, and that digital technology in particular would increase personal freedom by freeing people from the big government bureaucracy (see Wikipedia). The old controversy over whether technology will replace teachers has evolved into new controversies over the role teachers play in a technologically enhanced classroom and the quality of education that may result from the introduction of these new technologies. Neil Postman (1992) warns that technology is not a panacea for solving pedagogical problems but can worsen the problems by limiting what teachers can do with the technology to only what the technology itself can do.

In online education, technology has become the central focus of the educational process. Not everyone has felt that such a focus is a positive development. Online programs have been dubbed "digital diploma mills" that have relegated teaching to be a minor part of the course package (Noble, 1998, para.

31). Controversial assessment programs such as the Intelligent Essay Assessor™, which has been used for evaluating the content of essays (Landauer, Laham, & Folte, 2003), and e-rater® (Burstein, 2003), which has been used by the Educational Testing Service (ETS) for evaluating the essays on its standardized tests, have raised old questions about replacing humans with machines for some of the more mundane tasks associated with composition. Other programs, such as Write~Now (2003) and Smart Thinking *(www.smartthinking.com)* take advantage of technologies by providing outsourcing services for grading online compositions.

The ease by which students can cut and paste entire texts or pieces of texts from the Internet has raised a concern over whether the Internet has aided in what has been called by many a "plagiarism epidemic." Online texts are easier to cut and paste than print ones, and there has been a proliferation of sites (e.g., *www.schoolsucks.com* or *www.sparknotes. com*) that are dedicated to such practices. On the other side, teachers have increasingly turned to using tools like the search engine Google™ or proprietary websites like Turnitin.com (e.g., Marsh, 2004) to check whether their students have plagiarized. The passion many teachers feel about plagiarism has turned the Internet into a virtual battlefield between teacher and student over how to deal with plagiarism. The CCCC intellectual property caucus *(http://ccccip.org/files/CCCC-IP positionstatementDraft%209%2016%2006.pdf),* for example, has argued that plagiarism detection websites "can compromise academic integrity (para. 3). On the other hand, defenders of Turnitin.com argue that this program can be a valuable tool for identifying instances of plagiarism and can save teachers hours of work (Bruton, 2006).

Plagiarism is one of many areas where technology has affected literacy. As Postman (1992) argues, we have learned from Plato's warning in his dialogue *Phaedrus* that literacy can undermine memory, and the use of one technology can negatively impact the uses of other, potentially more useful technologies. He warns against what he calls a "technopoly" where educational

decisions are primarily determined by the available technologies. He argues that new technologies can alter the structure of objects, the symbols used to think about them, and, perhaps most important, our awareness of the implications of these changes. It is difficult if not impossible to predict the directions these changes will take. The result, as Cuban (2001) warns, is that there have been numerous failures in the implementation of technology in education, which should warn us about being overenthusiastic about the use of any technology. The same fear is evident with regard to concerns some have as to whether our handwriting has become worse or whether we are paying less attention to grammatical correctness (cf. Crystal, 2001). When the financial costs of implementing a technology are added in, it is no wonder that any discussion of technology will encounter resistance.

The result of all this controversy has been that many teachers, even those who want to use technology, are frightened away from becoming involved in the implementation and evaluation of technology in their classrooms. In addition, then there are all the considerations regarding implementing a technology. Therefore, a fear of failure is quite understandable. Selfe (1999) writes that some of the failures in the use of technology can often be attributed to a lack of understanding of how technology functions within the political, social, and economic forces of educational institutions in which they are implemented. As a result, she argues that teachers interested in using technology need to be lifelong learners not only of the uses of technology but also of the theoretical perspectives in which the technologies have developed. All of these factors, in fact, make it more important for teachers to become involved. Therefore, technology needs to be approached like any other issue in the teaching of composition. In her book on the controversies in L2 composition, Casanave (2004) urges teachers to always be engaged in the discussions that are occurring in their fields of interest, which is important in the use of technology where all the controversies existing in the composition field may be compounded.

The Goals of This Book

The primary goal of this book is to help L2 composition teachers to become participants in this discussion of the potential for the use of technology. The major challenge this book addresses is that teachers interested in using new technologies often have to make choices not only about whether a technology or technologies are appropriate in a given learning environment but also how these technologies should be implemented. As Agre (2001) argues, it can be difficult, if not impossible, to generalize about the effects of technology on the writing process without taking into account issues regarding both implementation and training. We have found that technologies are inherently workable or not. A technology that works in one context may not work in another; conversely, what fails in one context may be remediated or integrated with other technologies to work in a different context.

To help teachers understand these issues, this book attempts to provide the reader with ideas for using technology in the L2 composition classroom, a theoretical perspective that can be useful for deciding which pedagogies to use, and an approach for investigating the effectiveness of various technologies in different writing contexts. The book attempts to combine theories about composition teaching, the use of technology both inside and outside of the language classroom, and reflections of our own uses of technology. This combination of theory and pedagogy is important for showing teachers (1) how their use of technology is connected to how they teach composition, (2) the nature of the technologies themselves, and (3) how these technologies fit into the larger social, political, and economic contexts.

While any book on technology risks a certain degree of obsolescence as older technologies are better understood and newer technologies are introduced, it is hoped that this book will provide a theoretical perspective that allows teachers to adapt to the challenges in balancing theory and practice. Because of the growing complexity of technologies that L2 composition

teachers may have to use, it is not enough to offer "tips" in how to use a technology in the classroom. It is also important for L2 teachers to understand the complex series of relationships underlying the nature of the technology itself, its relationship to other technologies, and its relationship to the writing environment in which it is used.

This understanding can help teachers implement technologies to the specific needs and goals of their classes as well as remediating problems they may encounter in the implementation. In this way, teachers can adjust their uses of the technologies to reflect the contexts of their classroom and the uses and problems they want to address. For example, most teachers believe in the value of classroom discussions, but they seem to be continually fighting the same battles over getting students to talk. However, the introduction of a technology, such as a listserv or a blog, can dramatically change how such problems are viewed. How we conceptualize technology as an environment for forming groups could help such teachers solve their problems.

Adapting a technology, however, to fit a certain problem is not always simple. Research into the use of technology is inherently chaotic, particularly when jumping from older technologies to newer ones without completely understanding the old technologies. This chaos results from the nature of technological development as well as from the nature of research into using these technologies. As Feenberg (1999) argues, technology does not develop linearly from one stage to another but frequently develops branches into new areas and then may return to the original point of development with a new perspective. How to respond to these new perspectives and subsequent new needs can be hampered by the lack of a concentrated focus by researchers on the problems that these developments may entail. As Baron (1999) argues, there is a danger in the fact that most research focuses on cutting-edge technologies while ignoring the technologies that are most prevalent in the composition classroom, which can be confusing and frustrating for teachers and students who are told to implement a new technology before they have mastered the

previous one. The result is that both teachers and students often have to balance learning about new technologies and trying to master existing ones.

Thus, a middle ground has emerged that assumes that technology is neither transparent nor deterministic, neither inherently good or bad. This position is often referred to as "technorealism" ("What Is Technorealism?" 1998, para 22); technorealists share with the determinists the concept that "technology is not neutral," which assumes that there are positive consequences to the use of technology yet demands a critical approach toward its role. Integral to this perspective is an understanding that the current tide of technological transformation, while important and powerful, is actually a continuation of changes that have taken place throughout history.

> In truth, technologies come loaded with both intended and unintended social, political, and economic leanings. Every tool provides its users with a manner of seeing the world and specific ways of interacting with others. It is important for each of us to consider the biases of various technologies and to seek out those that reflect our values and aspirations ("Technorealism," 1998, para 7).

This book focuses on both old and new technologies from theoretical and pedagogical perspectives. It is the ultimate goal of this book to explore how technology can both aid and affect our goals for helping what Mike Rose (1989) has called "the richness of the composing process."