

A Cross Cases Analysis of Computer Use among ELL University Instructors in Taiwan

MICHAEL K. THOMAS, WAN-LIN YANG

Department of Curriculum and Instruction, University of Wisconsin-Madison, U.S.A.
mthomas@education.wisc.edu
wyang2@wisc.edu

Abstract: In this paper, we investigate Taiwanese college English Language Learning (ELL) instructors' central concerns regarding technology implementation for instructional purposes as well as the actions they take in response to top-down decisions in terms of technology implementation. The interplay of teachers' beliefs, actions, and the context in which they are situated are discussed.

Keywords: technology implementation, English Language Learning (ELL), teachers' beliefs, teachers' actions, context

Introduction

Technology implementation for instructional purpose has always been of interest among policymakers and administrators because researches have suggested potential advantages of incorporating computer technology for language learning. However, the actual use of technology by teachers is still disappointing to policymakers and administrators. Cuban (2004) pointed out that if teachers are not involved in the decision-making process, the policies will become just compliance and may not be fully adopted by the practice community. Apparently, the disregard of teachers' perspectives of technology implementation and the overlook of teachers' real needs and concerns in teaching are the reasons that cause the gap between policymakers' expectations and teachers' actual use of technology for instructional purposes in school contexts. Since teachers are on the "front line" of technology implementation, Cuban (1986) has called for more research on technology-rich educational innovations with particular emphasis on the role of the teacher. Therefore, this study intends to employ a qualitative methodology to further investigate Taiwanese college English Language Learning (ELL)¹ instructors' central concerns regarding technology implementation in their school contexts and actions they continually employ in response to top-down decisions with respect to technology implementation.

¹ In the literature, the term ESL is used to mean English as a Second Language. This refers to English language learners who are learning the language in the context of an English speaking environment. The term EFL is used to mean English as a Foreign Language. This refers to English language learners who are learning the language in the context of a non-English speaking environment. At times the terms are used interchangeably in the literature. In this research, the more up-to-date term ELL will be used to mean English Language Learner/Learning. The term ELL is thought by some to avoid privileging one context or another.

1. Background of the Study

In Taiwan, colleges of technology normally hope to become universities of technology. This would offer them more prestige and more students. The way that colleges of technology become universities of technology involves an evaluation and credentializing process in which English language instruction and technology implementation feature prominently among other factors.

While technology implementation is highly encouraged by the Ministry of Education in Taiwan, the number of high-tech facilities schools provide and the degree of teachers' use of technology are used as criteria for the evaluation of education quality. Policymakers believe that with the aid of computer technology and by providing students with training on computer literacy, schools can well-prepare students to compete in the future job market.

If a college of technology does not pass the evaluation process, the Ministry of Education might ask them to reduce their class size or limit the number of student they may recruit. They may also be denied funding from the government as a kind of punishment for not providing what they see as a good quality education for their students. This pressure makes administrators believe that they must promote technology implementation and English language instruction so that they will do well in their evaluations. In other words, technology implementation has been used as a selling point for credentializing the schools and for recruiting more students. However, in the context of the pressure brought to bear by this far reaching policy, many schools promote technology implementation without fully consulting teachers' opinions. This study explores Taiwanese ELL teachers' central concerns with respect to technology implementation in Taiwanese colleges of technology in the context of this evaluative pressure.

2. Significance of the Study

Much of the research on technology implementation focuses on its potential for enhancing students' learning achievement (Belmonte & Verdugo, 2007; Greenfield, 2003; Stepp-Greany, 2002) as well as the strategies of implementation technology in a particular subject area (Liou, 2000a, 2000b, 2000c; Wu, 2000; Yang, 2000). Other research focuses on investigating teachers' central concerns through quantitative study (Becker, 2001; Egbert, Nakamichi & Paulus, 2002; Pai, 2005). However, a limited body of literature focuses specifically on the teachers' perspective with respect to technology implementation by deeply looking at the context in which the teachers are situated. There is also a limited body of literature investigating the actions teachers take in response to top-down decisions and how they overcome the dilemma of dealing with the reality of daily practice or obeying policies. Therefore, in order to bridge the gap between policymakers' high expectations regarding technology implementation and teachers' infrequent use of technology for instructional purposes, it is essential to investigate teachers' central concerns and beliefs, the actions they take in response to top-down decisions, and the context in which they are situated. These three constructs (teachers' beliefs, teachers' actions, and the context) cannot be separated from one another and the interplay of these three constructs should also be further investigated.

3. Methodology

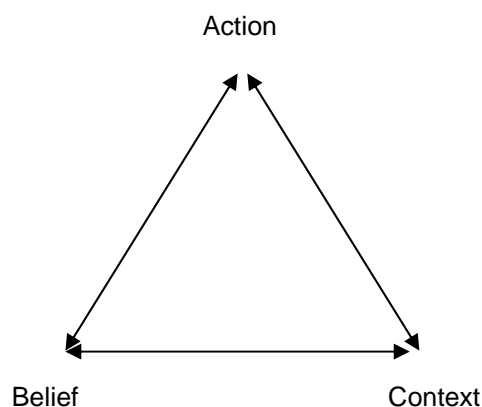
3.1 The Integration of Grounded Theory and Case Study Approaches

This study focuses on how Taiwanese teachers respond to top-down decisions with respect to technology implementation. A blending of grounded theory and case study research methodologies was employed in this study.

In pursuit of gaining a rich-think description of the life worlds of language teachers in Taiwan and how the implementation of technology impacts this, a collective or multiple case study and accompanying cross case analysis was conducted. In this study the individual cases are ELL teachers in Taiwan. From these deep examinations, we hope to inductively build theoretical assertions from the thick descriptions of single cases and then from the cross case analysis. A methodology that provides the tools for building theory from description is grounded theory.

We remain open to developing conceptual categories and themes that are grounded in the data rather than predetermining them. This means that we intend to adopt the research methods from grounded theory, such as open coding, theoretical coding, memoing, and constant comparison (Glaser & Strauss, 1968; Glaser, 1978) as well as the tools from the case study approach which may also serve in theory development.

3.2 Theoretical Framework



A-B-C Model (Action, Belief, Context)

The ABC model serves as a theoretical framework for grounding this inquiry. This framework brings together Berlack and Berlack's notions of *beliefs* and *actions* in social context, Bem's notions of *beliefs*, *attitudes*, and *behaviors* being regulated in social contexts, and Roger's notions of responses to the five attributes of innovations, beliefs, context, and *homophilia*. The model asserts that actions, beliefs, and context are inextricably interconnected. It is further informed by the work of Cuban who specifically looked at the social dimensions of technology implementation in schools and the work of Zeichner who looked at the meaning making of teachers. It also is informed by the work of Becker who considered that technology must incorporate all the components of this model. This model also came about from our pilot study through which we found that all of the three elements of this model were operating in a systemic fashion. In this way, the theoretical framework that underpins this study is grounded both in the empirical and conceptual work of other researchers (Becker, 2001; Bem, 1970; Berlack & Berlack, 1981; Cuban, 2001; Rogers, 2003; Zeichner, 1994) and our own data and analysis from our previous pilot study.

3.3 Research Questions

- What are ELL teachers' perceptions of technology implementation for instructional purposes and what are their central concerns regarding this?
- What patterns of action (processes) do Taiwanese ELL teachers employ in response to top-down decisions with respect to technology implementation in their respective contexts?

3.4 Participants and Data Collection

This study was conducted by interviewing two ELL college instructors in two different colleges of technology in Taiwan. Both schools aim at creating a tech-rich environment for teachers and students in order to facilitate teachers in teaching and to enhance students' learning achievement. A semi-structure interview protocol was followed and all the interviews were recorded. These two participants are at the same age and have the same gender. One of them has been teaching for five years while the other has been teaching for nine year.

4. Results

The preliminary data from our study indicates that teachers' use or nonuse of technology for instructional purposes co-relates with their beliefs about teaching and learning. There is a strong indication that if teachers aim at creating an interactive, dynamic and student-centered learning environment and view students as active learners, technology will be viewed as a powerful tool to facilitate teaching and learning. This type of teacher does not see teaching as "just a job" but rather places value more on the *process* of learning rather than the *outcomes* of learning. Promoting students' learning motivation and developing their desire for independent and life-long learning for this type of teacher would become a major focus in their teaching objectives. The implementation of technology for this type of teacher would therefore be a voluntary activity because the relative advantages of technology implementation fits well with their concerns.

All participants mentioned that "the lack of time" and "heavy workload" are the major reasons that inhibit them from employing technology in instruction as much as the schools have anticipated. In addition to the heavy workload arising from teaching, it is known that teachers in colleges of technology in Taiwan are also burdened with significant administrative duties. In addition, "the lack of time" and "heavy workload" may also inhibit teachers from attending workshops for learning new technology or learning strategies for incorporating technology into current curricula. Therefore, even though some teachers have positive attitudes toward technology, they will probably only use it for limited purposes.

5. Conclusion

In the ELL context in Taiwan, because of the policy, the problems of inadequate equipment, technical support and professional training have been resolved. In this study, we found that teachers' awareness of the potential of computer technology for instructional purposes is not the reason that determines their use or nonuse of technology.

Instead, it is teachers' awareness of the relative advantages of technology implementation and their educational philosophy that determines their attitudes toward technology as well as the actions they employ in response to top-down policies. The data showed that teachers use computer technology for limited purposes (such as preparing teaching materials, emailing and searching online resources) because there is insufficient guidance to lead teachers to incorporate technology into their existing curricula. In addition, even though teachers have a positive attitude toward technology implementation and show interests in exploring more innovative teaching strategies, they are unable to attend workshops to receive professional training because of the problems of "the lack of time" and "heavy workload."

References

- [1] Becker, H. J. (2001, April). How are teachers using computers in instruction? Paper presented at the 2001 meetings of the American Educational Research Association, Seattle, WA.
- [2] Belmonte, I. A., & Verdugo, D. R. (2007). Using digital stories to improve listening comprehension with Spanish young learners of English. *Language Learning and Technology*, 11(1), 87-101.
- [3] Bem, D. J. (1970). *Beliefs, attitudes, and human affairs*. Belmont, CA: Wadsworth Publishing Company, Inc..
- [4] Berlak, A. & Berlak, H. (1981). *Dilemmas of schooling: Teaching and social change*. London: Methuen.
- [5] Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920*. New York: Teachers College Press.
- [6] Cuban, L. (2001). *Oversold and underused: Computer in the classroom*. Cambridge: Harvard University Press.
- [7] Cuban, L. (2004). *The blackboard and the bottom line: Why schools can't be business*. Cambridge: Harvard University Press.
- [8] Egbert, J., Nakamichi, Y. & Paulus, T. M. (2002). The impact of CALL instruction on classroom computer use: A foundation for rethinking technology in teacher education. *Language Learning and Technology*, 6(3), 108-126.
- [9] Glaser, B. G. & Strauss, A. L. (1968). *The discovery of grounded theory*. New York: Aldine de Gruyter.
- [10] Glaser, B. G. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA: The Sociology Press.
- [11] Greenfield, R., (2003). Collaborative E-mail exchange for teaching secondary ESL: A case study in Hong Kong. *Language Learning and Technology*, 7(1), 46-70.
- [12] Liou, H. C. (2000a, September). Internet and English education: Technology, language and learning. Paper presented at the Internet and Society Conference 2000, Hsinchu, Taiwan.
- [13] Liou, H. C. (2000b, October). Conceptualization and implementation of an English learning website which bridges TEFL theories and practices. Paper presented at the 4th International Conference on Multimedia Language Education, Taipei, Taiwan.
- [14] Liou, H. C. (2000c, November). Development of the ELT in Taiwan Web Site for English learning and teaching. Paper presented at the ICCE/ICCAI 2000 Conference, Taipei, Taiwan.
- [15] Pai, S. (2005). The relationship of institutional supports/constrains and instructors' characteristics to EFL Taiwanese teachers' use of technology. (Doctoral dissertation, Colorado State University, 2005)
- [16] Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: The Free Press.
- [17] Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining Teacher Technology Use: Implications for Preservice and Inservice Teacher Preparation. *Journal of Teacher Education*, 54(4), 297-310.
- [18] Stepp-Greany. (2002). Students perceptions on language learning in a technological environment: Implications for the new millennium. *Language Learning and Technology*, 6(1), 165-180.
- [19] Warschauer, M. (1997). Computer-Mediated Collaborative Learning: Theory and Practice. *The Modern Language Journal*, 81(4), 470-481.
- [20] Wu, H-C. (2000). 探討學生透過網際網路進行合作學習對其科學過程技能的影響 [The influences of web-based learning on students' academic achievement: A collaborative learning approach] (Master thesis: National Taiwan Normal University, 2000).
- [21] Yang, L-H. (2000). 大專院校實施遠距教學課程現況與發展之研究 [A study of the development of distance education in higher education] (Master thesis, National Taiwan Normal University, 2000).
- [22] Zeichner, K. M. (1994). Research on teacher thinking and different views of reflective practice in teaching and teacher education. In I. Carlgren, G. Hamdal & S. Vaage (eds.), *Teachers' Minds and Actions: Research on teachers' thinking and practice* (1st ed., pp. 9-27). Bristol, PA: The Falmer Press.