Institutions of higher education have been on the forefront of technology integration. In particular, teacher education programs must respond to the training needs of prospective teachers who will in turn help young learners grow in the technologically advanced society. Several steps have been taken by universities and colleges to meet relevant accreditation standards. In addition, universities have joined efforts with other institutions, businesses, state, and national agencies to implement technology standards. Several grants have been given to these institutions to help meet their goals. Based on these trends and practices, this paper disseminates information about technology integration in schools. In particular, the paper highlights the outcomes of technology grant opportunities within the context of a National Council for Accreditation of Teacher Education-accredited university in California. First, it describes in terms of its conceptual framework, the Confluent Education Model (CEM), the context of a university teacher education program at California State University-Bakersfield. Second, it provides an account about a technology grant project, Teaching with New Technologies (TNT). Third, it highlights, in terms of the project's learning cycle, Confluent On-Line Language Pedagogy (CLOP), the interface between technology and literacy. Finally, the paper suggests implications for technology integration in language arts classrooms. (Contains 10 references.)
CONFLUENT LANGUAGE APPROACH REVISITED:
TOWARDS INTEGRATING TECHNOLOGY IN LITERACY EDUCATION

By

Mahmoud F. Suleiman, Ph.D.
Teacher Education Department
California State University, Bakersfield
Bakersfield, CA 93311

Tel. (661) 664-3032
Fax (661) 664-2199

E-mail: msuleiman@csub.edu

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By
Mahmoud Suleiman
California State University, Bakersfield

Introduction

The growing trends towards technology based instruction have resulted in promises and challenges in today's classrooms. State mandated standards require technology integration across curriculum and instruction. Also national accreditation agencies such as NCATE along with professional organizations have mandated standards to implement technology in the scope and sequence of teacher education programs. They also have mandated a solid conceptual framework, grounded in research and experience, for educating students and preparing them for their civic function.

Institutions of higher education have been on the forefront of technology integration. Apart from on-line course--and even program--offerings, these institutions have capitalized on the multimedia and technology tools to reach out to their clients. In particular, teacher education programs must respond to the training needs of prospective teachers who will in turn help young learners grow in the technologically advanced society.

Several steps have been taken by universities and colleges to meet relevant accreditation standards. In addition, universities have joined efforts with other institutions, businesses, state, and national agencies to implement expected technology standards. Several grants have been given to these institutions to help meet their goals.
Based on these trends and practices, this paper disseminates information about technology integration in schools. In particular, it highlights the outcomes of technology grant opportunities within the context of an NCATE-accredited university in California. First, the context of university teacher education program, at California State University-Bakersfield, will be described in terms of its conceptual framework: the Confluent Education Model (CEM). Second, the paper provides an account about a technology grant project: Teaching with New Technologies (TNT). Third, the interface between technology and literacy will be highlighted in terms of the project's learning circle: Confluent On-line Language Pedagogy (CLOP). Finally, implications for technology integration in language arts classrooms will be suggested.

**Context and Background**

There are several teacher education opportunities at California State University, Bakersfield which is located in a large service area in Kern County. There are several partnership activities between the school of education and the public schools and district offices. One of the key elements of this collaborative partnership is to write joint grants to enhance preservice and inservice teacher preparation within the state's learning-to-teach continuum. Both the university and the local county offices work together to ensure meeting professional and content standards in schools.

**The School of Education**

Given the diverse nature of the student populations in its service area, the School of Education's mission is keenly linked to the overarching framework of democracy. It aims, according to the SOE Handbook, "to strengthen the foundations of democracy and equal
education opportunity through quality programs which prepare committed education professionals and counselors in the context of a linguistically and culturally pluralistic society" (p. 1). Teacher preparation must be based on a confluence of coherent philosophical underpinnings (DeMeulle & D'Emidio-Caston, 1996). Thus, "The philosophy of the School of Education has as its basis confluent education which perceives learning as the merging of cognitive, affective, social, and psychomotor domains. This belief underscores the premise that education nurtures and promotes intellectual growth and the emotional, social, and physical well being of all students with a special focus on diversity and equity" (SOE Handbook, 2000, p. 1).

Furthermore, the Handbook outlines several goals within its conceptual framework. Based on the Confluent Education model, the following goals provide a direction for educating the whole person:

1. To formulate a comprehensive view of human growth and development, a global knowledge of self and others, and an empathy and sensitivity to multiple realities of a changing environment.
2. To develop a commitment and responsibility to democratic and social values through professional collaboration, educational leadership, and collegial partnerships.
3. To promote critical, inquiry through research and practice in order to improve teaching, learning, and communication.
4. To broaden knowledge and skill bases in terms of pedagogical multicultural principles conducive for effective curriculum delivery and instruction in diverse settings.
5. To utilize and integrate various current multimedia resources and technological tools to enhance teaching and learning in the ever-changing society.
6. To apply multiple methods of assessment with a special focus on critical reflection and self-analysis for continual professional development and on-going program evaluation.

Goal five involving technology and multi-media integration has gained a great deal of attention in the past few years. Several efforts to implement these goals especially the use of technology have been made. These efforts have been jointly taken with the SOE partners in public schools, state agencies, and district offices. A major outgrowth of these activities is the technology grant.

**Teaching with New Technologies:**

An outgrowth of collaborative efforts between the university and local public schools, Project TNT (Teaching with New Technologies) has been initiated to engage faculty, K-12 school teachers, and students to augment learning and teaching in various settings.

According to the TNT Project website, the purpose is "to restructure teacher education by developing innovative technology-based pedagogical approaches to teaching and learning and by providing models for systemic change in educational institutions," through developing "Communities of Practice consisting of Learning Circles, Task Forces, and project partners". Further, the strategies for integrating technology through the Project's consortium are articulated:

1. brought together university teacher educators, K-12 TechMentor teachers, technical consultants, and future teachers to form learning circles (LCs) to design and implement tech-based pedagogies;

2. restructured the teacher education program to prepare future teachers to meet new state technology standards as operationalized in the CTAP technology proficiencies;
3. increased the numbers of teacher educators capable and committed to modeling new technologies.

One of the primary tasks of TNT participants is to infuse technology across the curriculum within the context of the content standards. The Learning Circles focus on specific technology-based curriculum contingencies and plans. In particular, the Confluent Education Task Force has focused on technology and standard-based pedagogical practices in terms of the language arts frameworks including relevant English language development standards and guidelines. To do so, the Confluent Language On-line Pedagogy (CLOP) has worked to implement the following goals:

(a) examine ways to utilize technology effectively to meet language arts standards in terms of expected state and national expectations and guidelines; and

(b) develop knowledge and skill in using technology based Units Of Practice (UOPs), and standard driven digital video cases in literacy classrooms.

The product of this unique Learning Circle (LC) can benefit a large audience that includes prospective teachers and practitioners in schools. First, project participants have attained various levels of state-recommended technology proficiencies. As participants engage in various technology-related tasks, they document and demonstrate these skills within the state certification criteria. Second, participants have become more reflective in their teaching and learning. Thus, they have sought to develop technology-based strategies to best meet state and national accreditation standards. Most importantly, they have enhanced effective practices to increase student learning outcomes.
Confluent Language Pedagogy

Confluent approaches to language education are deeply rooted in various schools of humanistic psychology. According to Chamot & McKeon (1985), the whole-person learning is achieved through various cognitive, affective, and interactive language opportunities. Following are some of the key elements in confluent-based language practices:

1. Teaching and learning take place 'here and now' in a context-rich environment;
2. Teacher-created and student-inspired materials and activities are implemented;
3. Social discourse opportunities are provided for interpersonal communication;
4. Language is used as a vehicle for personal discovery, reflection, and growth;
5. Needs assessment is the basis of determining high-interest language activities;

Creating confluent-rich literacy opportunities can be enhanced through multimedia interactions in learning/teaching situations given its pedagogical appeal. In fact, the social and cultural make-up of today's classrooms dictates on language teachers to provide differentiated learning tasks to meet specific linguistic and academic needs of diverse students. This is especially true when addressing the English language development (ELD) expectations and standards as they relate to the educational needs of English language learners (ELL) in U.S. public schools.

The place of computers in today's literacy classrooms cannot be undermined especially in the ever-changing macro socio-ecological culture. In the age of this "efficiency-rated culture" (Provenzo & Gotthoffer, 2001, p. 2), computers are effective tools that can achieve coherence in educating the whole-learner, thus promoting many dimensions of literacy skills. While the social environment plays a central role in determining how computers are used in today's classrooms
(Labbo, Reinking & McKenna, 1999), technological advances have forced teachers to consider a new paradigm to teach language arts (Anderson & Speck, 2001; Greenlaw & Ebnenezer, 2001). There are many innovative trends and practice that have sought to integrate technology in reading and language arts instruction. Also several state and national accreditation agencies have implemented professional standards relevant to technology integration in the language arts programs. For example, the National Council for Teachers of English has responded to the place of technology in language arts programs and provided on-line resources and techniques on how to meet relevant standards. Likewise, in addition to having a sound and comprehensive conceptual framework for teacher education preparation, educational institutions are expected to meet new technology standards required by the National Council for Accreditation of Teacher Education (NCATE). Thus, technology integration across the curriculum and instruction must become an unmarked part of educational discourse in schools.

Thus, based on the diverse academic, linguistic, cognitive, social, and educational needs of the whole-person, technology integration can have promising consequences. In fact, electronic discourse can enhance literacy development in all learners, especially linguistically diverse populations. There are several broad ways in which computer-based pedagogy can be integrated in literacy classrooms:

**Interactive demonstrations:**

Computers have the power to provide many opportunities for interactive learning and teaching. They can engage learners in seeing, hearing, experiencing and doing. They have the potential to tap into one's multiple forms of intelligences and skills.
Internet and intranet interactions:

Digital discourse takes many shapes and forms. It involves negotiation of meaning through internet and intranet possibilities that allow one to solve problems, access and relay information, as well as discover and inquire given content.

Themed content integration:

The digital world provides ample opportunities for learners to develop global literacy and broader human perspectives in learning and teaching situations. Computers can help in developing global critical literacy as one makes connections, thinks holistically, and interact universally.

In specific terms, linguistic discourse is keenly related to other forms of engagement especially in electronic-based tasks and activities. For example, lesson planning and literacy activities can be better implemented through computers and multi-media opportunities. They also transcend the traditional goal of content mastery to embrace a larger level of academic, social, and intellectual development of skills.

A Case in Point: Developing a Technology Based Unit of Practice:

Responding to these changes in the culture of schools, several major computer companies and even textbook publishers have capitalized on the role of computers in education. Consequently, Apple Classrooms of Tomorrow (2001), or ACOT "was a research and development collaboration among public schools, universities, research agencies, and Apple Computer, Inc. Initiated in 1985, ACOT began its work in seven classrooms that represented a cross section of America's elementary and secondary schools. Its goal was to study how the routine use of technology by teachers and students might change teaching and learning."
As an outgrowth of these efforts, a Unit of Practice (UOP) has been developed to "integrate technology, teaching, and learning through a framework for designing, discussing, and reflecting on technology". Accordingly, a blueprint for Learning and Professional Development to integrate technology in learning/teaching situations, has been developed. There are several components of UOP scheme as outlined by the Apple Learning Professional Development website:

**Invitation:** The curriculum question and project overview that the students will be addressing.

**Tasks:** The actions that the students will be asked to undertake.

**Assessment:** The criteria by which the students' work will be evaluated.

**Standards:** The frameworks developed by the school, district, or state as guidelines in the development and assessment of curricula.

**Situations:** The places where the activity will take place, and the amount and specific periods of time that the students will have to work on the activity.

**Interactions:** The way the students will work, the ways the teacher will work with the students, and the ways the students will interact with others.

**Tools:** The materials that the students will use to approach their tasks.

Based on this plan, learning circles of the CLOP have developed a series of video cases reflecting components within each element of the UOP. Following is an example of a CLOP-based digital case.
A Sample Case

The teacher overviews the literacy tasks to the students using technology and multimedia instruction. Then, the teacher describes to the students the nature of the task they will engage in individually and in groups using computers. Based on state content standards and language arts frameworks, the students are given a rubric to guide their learning and completing the task successfully along with the assessment and evaluation process. Then the context for engagement is established based on 'here and now' situations. The students will interact with the content, peers, and the teacher using various technology tools while the teacher guides and monitors progress.

Likewise, recognizing special needs for English language learners, the teacher plans activities and tasks in terms of the state mandated ELD standards. To meet these needs, the teacher engages the whole learner tapping their literacy activities to emotional, physical, makes input comprehensible through visual cues, oral cues, and body-mind connections.

Building on the learners' schemata, the teacher assesses prior knowledge using informal techniques such as graphic organizers and the like. Then, several strategies are integrated within the scope and sequence of the curriculum and instruction. The UOP is a confluence of the following strategies:

1. Strategic interaction activities
2. Using graphic organizers
3. Audio-lingual engagement
4. Internet/intranet interaction
5. Pattern practice and drills
6. Interactive writing/reading
7. Total physical response
Apart from meeting expected literacy standards to develop linguistic and metalinguistic awareness, students can develop a wide range of meta-electronic skills and abilities as they utilize computers for learning in and out of class settings.

**Implications and Conclusion**

There are several regarding of technology integration in schools today. Several guidelines must be kept in mind to best harness technology in learning/teaching situations. These are:

1. There is an between technology and learning especially in language arts classroom;
2. Technological literacy intricately relates to other forms of literacy;
3. Didactic engagement can be achieved through interactions with computers;
4. Technology can assist in literacy development of the whole learner.

Finally, the business world teachers us that the best way to predict the future is to create it. If technology is going to continue as a major social force that shapes our lives, it's imperative then to create multiple learning opportunities through technology based curriculum and instruction. As far as literacy is concerned, the interface between language education and technological skill development cannot be undermined.
References


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Signature: ____________________________
Printed Name/Position/Title: Mahmoud Suleiman, Ph.D.
Organization/Address: California State University, Bakersfield
Telephone: 661-664-3032
FAX: 661-664-2199
E-Mail Address: msuleiman@csub.edu
Date: 6-5-01