Technology Integration and Educational Reform: Considering Student Voice

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Many aspects of education today are considered as schools struggle with reforms and meeting the demands of the No Child Left Behind Act (U.S. Dept. of Ed., 2001). However, most reform efforts ignore the voice of what is most central to learning - the student. The majority of existing research in the area of student voice is qualitative in nature. The review of literature for this study revealed no existing scale to measure student voice within a school. The purpose of this research was to create an assessment tool that provides more quantitative observances of student voice and encompass the integration of emerging technologies. The concept of student voice provides promising ideas in truly transforming education.

Keywords: Student Voice, Educational Reform, Educational Technology, Multiliteracy, Learner-Centered

INTRODUCTION

The United States was once a place of industrial and agricultural economies that functioned within a known hierarchical structure of laborers, managers and owners; now the country revolves around technological innovations and global interdependency driven by a workplace that emphasizes the skills of a knowledge economy (Cope & Kalantis, 2000). Educational reforms attempt to address many aspects of education within this knowledge economy such as teachers, administration, assessment, resources and buildings. Surprisingly, much of the effort ignores the voice of what is most central to learning: the student. Today's students feel desensitized, disenfranchised, and disengaged. Though they comprise 90% of what schools are, their voice is often ignored (Harper, 2000). Student voice, as proposed in this study, is a critical factor of successful educational reform to include the integration of technology.

PROBLEM STATEMENT

Failure of schools in the United States to educate students for current workforce skills was first brought to the forefront by the National Commission on Excellence in

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Education (1983) report, *A Nation at Risk.* In 2001, after almost two decades where many changes were initiated but little transformation in the way schools educated students occurred, the federal government responded by replacing the 1965 Elementary and Secondary Education Act with the No Child Left Behind Act known simply as NCLB (U.S. Dept. of Ed., 2001). This act attempts to change schools by stressing accountability through mandatory testing of common standards, allowing schools flexibility to achieve strong results, and providing choices when schools fail to be accountable. The stated goal of the act is to strengthen "the performance of America's elementary and secondary schools while at the same time ensuring that no child is trapped in a failing school." (U.S. Department of Education, 2001). The NCLB Act goals are intended to meet students' needs through accountability, choice, and flexibility. Current reform efforts, however, center on accountability as reflected in a test centric educational system; the focus of schools has become that of preparing and performing on tests. The vision of transforming schools to prepare students as citizens in an advanced knowledge economy, fueled by technological advances, was given inadequate attention. Why look to technology as a major vehicle of transformation when there is no test focused on technology?

Access to technological tools is widespread within schools. Yet, the problem remains that the quantity and quality of access, tools, and skills taught in utilizing digital tools remains a widening gap: a digital divide persists. The United States education system embraced technology much slower than the society in which their students lived. Computers and networking devices in schools are configured and utilized in ways that assimilate to more traditional beliefs of pedagogy and learning such as the dichotomy of teacher as one that imparts knowledge to students who then receive and recall back information. The reality is that the students live a life with ubiquitous use of technology and know far more in employing these tools than the teachers charged to provide learning environments for them. Past studies reflect that many teachers acknowledge the world in which they live differ tremendously from that in which they knew as youth and students. These teachers struggle with visions and techniques to alter and create educational settings that can prepare students for today's society. Schools need more than tests to transform education into a means for preparing students to become contributing citizens to a global, diverse, and technologically advanced society which exists today. Schools are still failing the educational goal of preparing students to be citizens in today's knowledge economy. The concept of student voice provides promising ideas in truly transforming education.

REVIEW OF LITERATURE

The review of literature explores the pillars of education that form the concept of student voice along with the theoretical concepts that support the call for student voice. Emerging from these ideas is a distinct definition of student voice used in this research.

INSTRUCTION: LEARNER- CENTERED ENVIRONMENTS

Based on a study by the American Psychological Association conducted throughout the 1990's, a comprehensive report was published that identified general principles of learning which have sustained in practice over time (APA, 1993). The study called for educational reform and shifting paradigms to a focus on learners and learning. Further work revealed fourteen principles described as "learner-centered" which provided a framework for school reform and redesign (APA, 1997). Learner-centered is described as a function of learner perceptions which, in turn, are the result of each learner's prior

experiences, self-beliefs, and attitudes about schools and learning as well as their current interests, values, and goals (McCombs & Quiat, 1999). "Honoring student voice" is a domain categorizing a portion of principles that are validated by research and describe the personal and environmental conditions that best support high levels of learning and achievement.

Insight into learner-centered classrooms found that to accomplish learning, the learner must take risks and consider the environment in which he or she is attempting to learn. Implications of learner centered psychological principles involve moving from a mechanistic style of teaching where knowledge is imparted by teacher to student to a transformed model of learning where students are engaged in their learning and teachers are the masters of facilitating experiences for students in which they can learn. Both parties contribute to the learning. By sharing power and exchanging roles throughout the learning process, student voice emerges as a critical part of the process. Within these environments (learner centered) can be found the ideal posited by Donovan, Bransford, and Pellegrino (1999) "Focusing on how people learn also will help teachers move beyond either-or dichotomies that have plagued the field of education." (p.19)

PEDAGOGY – MULTILITERACY

Multiliteracies is a term born out of a collaboration of scholars and researchers who are interested in literacy and the effect of societal changes in the modern era (New London Group, 1996). Calling themselves the New London Group (named after the site of their first meeting place), they scripted a theoretical overview of new approach to literacy pedagogy. Their work is not intended to radically change current practice at the price of experience and knowledge wealth of teachers, but rather extend teachers' pedagogical and curriculum repertoires allowing them to provide learning experiences which will prepare students for effective citizenship and productive work. Multiliteracies are defined as the multiplicity of communications channels and media, and the increasing saliency of cultural and linguistic diversity. Pedagogy of multiliteracies focuses on modes of representation much broader than language alone (Cope & Kalantis, 2000).

Multiliteracy pedagogy provides a complex but achievable guide for teachers and students in learning environments when coping with the multitude of complex literacies that have evolved in today's advanced technological society. Interacting with society becomes valuable only when a student can construct meaning from the experience. Teachers are then challenged to provide instruction that is meaningful for students Research in the design of a multiliteracy pedagogy implied that possible technological tools students may interact with include email, Internet research, media tools (such as creating a school television program or magazine), and chat rooms for collaboration and downloading of information. Most important is the need to include the student first and foremost (student voice) when employing such pedagogy.

EMERGING TECHNOLOGIES

Many educational institutions of present day are in the process of restructuring what goes on in daily existence. Part of this change is due to a shift in the skills required in today and future workplaces. Educational goals of yesterday are no longer sufficient in assisting students in becoming successful, contributing citizens in society. A major player in the current paradigm shift within the education world, technology continues to be a nuisance to some and the answer for others.

While arguments still abound as to the use of technology in the classroom (Armstrong & Casement, 2000), focus today is found on thinking about how educators should be

using technology in instruction (US Dept. of Ed, 2004). A shift in focus from boxes and wires to how technology is actually integrated into schools verifies progress in the arena of technology and schools.

However, technology integration remains the biggest challenge for educational reformers. In a recent survey, "Fewer than one in 10 school leaders consider their teachers' skills at integrating technology into the learning experience to be "very good" or better" (Consortium for School Networking, 2004). A possible explanation may be seen in the lack of consideration for today's students. Morrell (2004) points out (p. 23), "In the cyber-world the students may actually have expertise in the technology though teachers remain experts at maintaining an ethos of interrogation and assisting students in conceptualizing and framing their questions and ideas." The acceptance of this fact and exploiting it in classroom practice may reveal how student voice truly supports successful learning environments.

THEORETICAL MODEL - SITUATED LEARNING

First presented by Brown, Collins and Duguid (1989), the situated learning theory describes learning within the context of practical application while part of a community. Their work is based on much of the research done by Jean Lave. Lave stressed the importance of the student to identify himself or herself as a learner within an authentic context, a community of practice. Key to this theory is the recognition of learner's perception of the situation and their role within it whereas the situation becomes the community of practice and the learner aspires to move within the circle from apprentice to expert (Lave & Wenger, 1991). The unit of analysis becomes the transgression of the learner along continuum of learning. If the learner is not allowed to proceed within a spiral of legitimate peripheral perception their ability to learn will only progress so far along the continuum. Student voice becomes the means that allows the learner to progress towards a greater quality of learning within the community of practice.

While many theories have shown to provide worthwhile consideration when studying student voice, situated learning proves to be promising in the goal to reform schools, enhance learning and provide students with skills that apply to the world they live in (Cobb & Bowers, 1999).

Student Voice. What is student voice? Student voice can refer to many ideas. These range from giving the student some role in sharing authority with the teacher in the classroom space, to allowing the student to engage in dialogue to bring their personal background into the learning equation, to giving light to a student's cultural identity within the learning experience (Kordalewski, 1999). For the purpose of this research, student voice encompasses all these ideas. Student voice is giving students the ability to influence policy and programs as opposed to directly challenging teacher practice (Harper, 2002).

PURPOSE OF STUDY AND RESEARCH QUESTION

The purpose of this research was to create an assessment tool that provides the ability to gather more quantitative observances of student voice. With this data, attempting sustainable educational reform becomes possible. The research study was guided by one overarching question:

What relationships exist between student voice, pedagogues, learning principles, and the integration of emerging technologies in learning?

METHODOLOGY

RESEARCH DESIGN -DELPHI STUDY

The Rand Corporation first developed the Delphi Study research method in the 1950's for technological forecasting. They recognized that when accurate information was unavailable or expensive to obtain, creation of evaluation models requiring subjective inputs to the point where they become dominating parameters was a viable qualitative alternative research method (Linstone & Turoff, 1975).

The Delphi method utilizes a structured method of communication to facilitate consensus by a panel of experts on a complex problem or task within their circle of expertise. The expert participants' responses are kept anonymous from the group, thus eliminating the pitfalls of ego and avoiding domineering responses which are often challenges posed by in person group dynamics. This is accomplished by soliciting individual responses and then consolidating the results that are reported back to the panelists.

By using a method recognized as viable by the research community as a qualitative measure, the researcher was confident in the feasibility of constructing the described scale that could then be tested for reliability and validity.

PARTICIPANTS

Participants in a Delphi Study are normally considered experts as determined by stated criteria. The criterion of this study called for participants to have (1) published work in one of the areas which emerged from the literature when identifying student voice to include cognitive psychology, literacy, educational technology, educational reform, or teacher education and (2) maintain active membership in an organization that promotes one of the these areas. Delphi study methodology recommends anywhere from four to 40 participants when using probability sampling methods. This methodology resulted in a random, small sample of ten participants who met the criteria and represented a balance of expertise across the areas mentioned in the criterion.

DATA COLLECTION/ ANALYSIS

Implementation of the Delphi Study included three rounds. The first round elicited questions which emerged in the literature review process for the purpose of generating a list of measurable observations within a school that are reflective of student voice. The second round reported the results from round one that were analyzed using qualitative methods (Miles & Huberman, 1994) and then written as a instrument in question format that described an observable characteristic of student voice within a school setting. The instrument was created by aligning items with models and tools currently available within the literature. These included an assessment rubric for schools attempting reform (Re-inventing Schools Coalition, 2004); a model for integrating student voice within a school culture (Mitra, 2004); and a survey questionnaire for schools to, "involve young people in organizational decision-making" (Fletcher, 2003). Participants were asked to utilize a Likert scale to identify the importance of each survey item relevant to student voice. The third round provided participants with descriptive statistics of the responses from round two and comments. At this time, participants were asked to consider changing any previous responses based on the information of the group. Results of this round were analyzed for consensus validating the scale to measure student voice. This study achieved consensus within three rounds.

MEASURES

In designing this research, the intent was to ensure the survey instrument measured what it was intended to measure, or, in other words, that it was valid (Light, Singer and Willett, 1990). There are multiple methods to assess whether an instrument is valid or not. A common way is to compare the instrument to others that attempt to measure the same or similar concept. As stated before, no instrument that attempted to measure student voice could be found in the body of research; therefore, in this case, this was not a viable check for validity.

Other methods include content validation and predictive validity. Content validation can be achieved by having experts in the field review the instrument. The very nature of the Delphi Study methodology ensured that the contents of the instrument were valid. None of the items was deemed irrelevant or not applicable to the concept of student voice by the panel of experts. Predictive validity provides evidence that there is a high correlation between what the instrument can predict and what it should be able to predict based on the theoretical concept proposed by the research. To test this validity, the survey was sent via email to schools known for strong student voice as defined in this research. Their responses validated that the instrument did provide for predictive validity.

To ensure the survey instrument was reliable, a sample of the data was tested using the Cronbach Alpha statistical test. A reliable test should minimize the measurement error so that the error is not highly correlated with the true score. On the other hand, the relationship between true score and observed score should be strong. Cronbach Alpha examines this relationship, which is a numerical coefficient of reliability. Any score above 0.80 is considered reliable: the results of the scores met this criterion with a score of 0.83.

RESULTS

The resulting survey instrument, the Student Voice Instrument, was divided into three sections. The first two sections, school culture and instruction, combine and integrate responses related to concepts of learning principles and pedagogues as described in the literature review. The third section focuses on tools for enhancing learning, specifically emerging technologies.

Participants experienced the most degree of consensus in "School Culture" section of the Student Voice Instrument shown in Table 1. Many participants expressed that schools which have policies and processes as described in the questions not only provide for student voice but also ensure sustainability of honoring student voice over time. Having the policies and procedures in place may also pressure reluctant districts to follow suit.

Table 1. Student Voice Instrument: Section– School Culture

Item	Descriptor	Scale
1.	Students participate as evaluators and/or interpreters of student input into organizational (school or district) policies, processes, and procedures.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population

		(e) does not exist within school population
2.	Written policy exists identifying why students are involved/included in decision making within the organization (school and/or district).	(a) yes (b) no (c) Other – fill in blank
3.	Program exists within school and/or district to train adults on understanding students as collaborators in education.	(a) yes (b) no (c) Other – fill in blank
4.	Program exists within school and/or district for students to train other students in participating as school and/or district level decision makers.	(a) yes (b) no (c) Other – fill in blank
5.	There is a documented process in place for students to understand, communicate, and educate the school's and/or district's education model to others.	(a) yes (b) no (c) Other – fill in blank
6.	Students participate in school's professional development for teachers, administrators, etc.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
7.	Resources are dedicated for student/teacher collaboration to develop pedagogical methods and continually improve educational model.	(a) yes (b) no (c) Other – fill in blank
8.	Structures (forums, surveys, focus groups) exist outside the classroom to ensure student input is received on a regular basis.	(a) yes (b) no (c) Other – fill in blank
9.	District and/or school reporting systems are consistently reviewed and refined on a regular basis with feedback from a group that includes student membership.	(a) yes (b) no (c) Other – fill in blank
10.	Students review and refine school and/or district assessments regularly through a documented process.	(a) yes (b) no (c) Other – fill in blank
11.	A variety of assessment data are utilized to meet students' needs.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population

12.	School culture reflects a community of learners, instead of distinct groups of administrators, teachers, and learners.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population

The second section of the Student Voice Instrument discusses instruction as depicted in Table 2. When considering instruction, the expert participants' responses reflect the diversity of perspectives they bring to the concept of student voice. One participant, who rated most questions in this section as only "somewhat important to the measurement of student voice", commented that, "I don't define student voice as having autonomy in learning systems, but rather having input in the broader structures of schooling." This reflects a strategy to engage at the school level versus classroom level when utilizing student voice as a means to reform. Another participant who felt questions in this section to be critical or very important to measuring student voice noted that (referring to the question asking if procedures exist that requires dialogue between student and teachers), "…without this direct dialogue, student voice is not really part of the conversation." Two instrument items mentioned standards and were rated as important to student voice, however the possibility of actually accomplishing did not appear likely to most panel participants. "Most content standards are mandated by state and national content standards and cannot be influenced much by students," was the input submitted by one participant.

Table 2. Student Voice Instrument: *Section - Instruction*

Item	Descriptor	Scale
1.	Dialogue (teacher to student and between students) is an integral part of instruction within classrooms.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
2.	Procedures exist that require dialogue between teachers and students to inform instructional decisions made by the teacher.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population

3.	Instruction is flexible in that students' self reflection in learning process contributes to decisions of pace, approach and sequence.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
4.	Students contribute to decision on what standards are integrated into curriculum and instruction.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
5.	Students understand, communicate, and review standards on a regular basis that determine curriculum and instruction.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
6.	Project Based Learning is a predominant instructional approach.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
7.	Flexible grouping is a predominant instructional approach.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population

8.	Teachers routinely research student interest for input into instructional design.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
9.	Teachers routinely solicit student input when evaluating their instruction.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population

The third section of the Student Voice Instrument depicted in Table 3 addresses current emerging technologies and their relevance when considering student voice in learning. A recurring theme throughout all the rounds of the Delphi study when discussing tools and emerging technologies was the emphasis not on *what* tools were used, but rather *how* they were used. Most agree that emerging technologies do enhance learning and encourage student voice in the learning experience at a degree of "important". Of particular interest in this section pertained to what did *not* emerge: the integral part technology plays in our students lives today. Cook- Sather (2002) observes, "But we do not know more than students living at the dawn of the 21st century about what it means to be a student in the modern world and what it might mean to be an adult in the future."

Table 3.Student Voice Instrument: *Section – Emerging Technology*

Item	Descriptor	Scale
1.	Email access is available to students.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
2.	District and/or school policies reflect that the intent of email access is for students to collaborate, mentor, provide feedback to teachers and administrators, and evaluate learning.	(a) yes (b) no (c) Other – fill in blank

3.	Internet access is available to students.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
4.	Internet access policies reflect that among reasons it is made available to students is for collaboration within a learning community.	(a) yes (b) no (c) Other – fill in blank
5.	Chat room access is available for students.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
6.	Chat room policies emphasize the value of collaboration, feedback and building learning communities through this technological tool.	(a) yes (b) no (c) Other – fill in blank
7.	Discussion Boards are available for use to students.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population (d) applies to 1% -25% of school population (e) does not exist within school population
8.	Discussion Board policies emphasize the value of collaboration, feedback and building learning communities through this technological	(a) yes (b) no (c) Other – fill in blank
9.	Laptops, personal digital assistants (PDA) and /or other portable hardware technology tools use policies emphasize value of collaboration, feedback and building learning communities that these tools make possible.	(a) yes (b) no (c) Other – fill in blank
10	Design tools (graphics, videos, and computer-assisted design) are available for instructional use.	(a) applies to 76%-100% of school population (b) applies to 51%-75% of school population (c) applies to 26%-50% of school population

		(d) applies to 1% -25% of school population
		(e) does not exist within school population
11.	Design tools are integrated into instruction with intent that students are able to express their individual voice within a community of learners.	(a) yes (b) no (c) Other – fill in blank

DISCUSSION

The body of research examined revealed that three primary areas of education contributed to the concept of student voice: psychological principles of learning, multiliteracy pedagogy, and educational technology. Each of these pillars call for learning environments that are student centered and involves the student significantly in the shaping and design of the environment. Qualitative observations of student voice in the classroom and school environments find that students become more interested in school and notable improvements are realized in the areas of attendance and school drop outs (Northwest Regional Educational Laboratory, 2001).

Theoretical constructs that support the concept of student voice include situated learning, legitimate peripheral participation, and communities of practice. Communities of practice structure an organization's learning potential in two ways: through the knowledge they develop at their *core* and through interactions at their *boundaries*. (Wenger, 1998). Applied to a school setting, the core knowledge represents both the knowledge that the teacher and the knowledge that the student develops through interactions and allowing boundaries, specifically those of power and influence, to interact.

IMPLICATIONS FOR PRACTICE

The results of the Delphi Study can enlighten educators through the use of the Student Voice Instrument. This tool can provide a measurement of student voice within a school. By examining the aspect of student voice and its effect within a school, efforts toward sustainable educational reform may become doable.

The model in Figure 1 represents the essential factors present in an education system that attempts to prepare students as global diverse, adaptable citizens. The model consists of three pillars: pedagogy, principles and tools of learning. At the center is always the learner.

Multiliteracy Pedagogy: The pedagogy applicable to this model of transformed education is multiliteracy. Pedagogy, described here as the art of teaching, involves the consideration of learning within a world with a multiplicity of communications channels and media, and the increasing saliency of cultural and linguistic diversity. Instruction occurs in modes to include overt instruction, situated practice, critical framing and transformed practice (Cope & Kalantzis, 2000). The modes are part of an ongoing cycle of design, designing and redesigning of learning. The learner becomes the center as this pedagogy is centered not around, but rather from the learner. The voice of the student is a key aspect of the learning environment.

Learner Centered Psychological Principles: The principles described within this model recognize that collaboration between a student and a teacher provides the foundation for learning. Neither are experts, nor novices but rather the roles carried out in the learning situation must be driven by the learner's needs and shaped the teacher's

ability to facilitate the learning experience. Teachers enable learning as opposed to delivering knowledge and learners take risks in order to experience learning. The learner's (student's) voice is honored and treated as a meaningful contribution to the learning experience.

*Figure 1.*Model of Transformed Education.
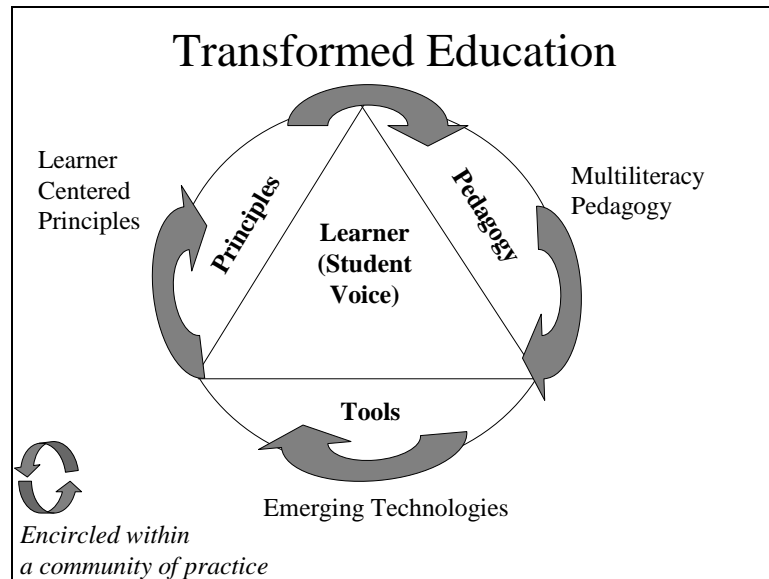
Emerging Technologies: Tools as resources for learning include a wide variety of shapes and forms from books to pencils to school buildings. Research shows that simply placing technology tools in the classroom does not ensure that learning will change (Kinlaw, 2003). The strategy used when technology is implemented into the learning situation drives the results. In this model of transformed education, technology becomes the conduit for the learner to express their voice and consider their own needs in learning, not only to motivate them but to move them to a higher level of learning.

Situated Learning: The three pillars within the model are centered on the learner and encircled by the theory of situated learning, more specifically a community of practice. (Lave & Wegner, 1991). The learner must travel the path of legitimate peripheral participation, through a community of practice, and be allowed the power to transgress from apprentice to expert within the community.

The three pillars of *pedagogy*, *principles,* and *tools* share the central aspect of the learner, the catalyst of the learning experience. Each pillar identifies the learner as central or critical to the ideals expressed within their context. Within a context of a community of practice the learner becomes the catalyst to propel the educational system forward. Most significant to the model is the existence of student voice at every level of the educational process.

NEED FOR FURTHER RESEARCH

As stated in the first chapter of this study, most of the body of research which calls for student voice is qualitative in nature (Mitra, 2002; Morrell, 2001, Cole & Ault, 2001). While these works provide a rich and illuminating picture of what schools that honor student voice may accomplish in the goal of learning, it fails to portray a more

quantitative analysis on the topic. A significant contribution to the body of research from this scientifically based work was the creation of an assessment tool leading towards measurable observances of student voice. This instrument can be significant in observing relationships among school characteristics such as those between student voice and academic achievement that may lead to much needed educational reform.

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