

Constructivism and Web 2.0 in the Emerging Learning Era: A Global Perspective

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Over the centuries, psychologists and scientists have explained the learning process based on two paradigms-Objectivism and Constructivism. The advent of the Internet ushered in the Web 1.0 initiative in the 1990's, which evolved into Web 2.0 that emphasizes collaboration, interactivity and dynamism. This paper will attempt to provide an in-depth analysis of the constructivist learning theory in light of emerging technologies and approaches to learning with a focus on Web 2.0.

INTRODUCTION

Learning in its simplest form is embedded in human existence. Learning takes place almost at every point in the human lifetime in various forms either in formal – (an organized and structured environment); or informal – (an unstructured environment). Learning is connected with education but learning occurs everywhere, in every age and is lifelong. According to Bostrom & Lassen (2002), every child is born with an innate ability to learn and it is a pre requisite for survival and development. Learning however does not take place in a vacuum, it is an active process in which the learner uses sensory inputs and constructs meaning out of the information being passed across (Driver,1989). Learning is a social activity; it is intimately associated with the human connection with other human beings, teachers, peers, as well as casual acquaintances. According to Herrick, 1996, learning can be viewed from two perspectives-traditional education that, is directed towards isolating the learner from all social interaction and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned, and in contrast, progressive education which recognizes the social aspect of learning and uses conversation, interaction with others, and the application of knowledge as an integral aspect of learning.

On the flip side of learning is teaching, the art and science of imparting and transferring innate and acquired knowledge to learners. Teaching is an activity aimed at guiding students towards learning and is the foundation for many educational processes. This includes instructions, intentions, inter-subjectivity, interactions, interpersonal activities and processes, actions and praxis (Bostrom & Lassen 2002). Teaching is the process of passing knowledge and information to students; it is a coaching process that can be modified to suit the learning needs of the students.

While the essence of teaching is the transference of knowledge to learners, learning is the process of inculcating and interpreting the knowledge and information being passed across. Many scholars have addressed bridging the gap between teaching and learning, scientists and psychologists over the centuries and consequently, several schools of thought have proposed various theories to explain the phenomenon of learning. These theories are premised on differing opinions justified with some proof of how learning takes place.

The emergence of the Internet in the 1990's has had tremendous global effects on every sphere of the human existence, learning inclusive. Globalization stimulated the shift in the traditional boundaries of teaching and this broadened the education horizon tremendously. At the turn of the century, the switch from the monopolistic (Web 1.0) to democratic (Web 2.0) use of the Internet stimulated radical changes in the manner in which the Web was used in Education and Learning. The entrance of the Internet ushered in the Web 1.0 initiative in the 1990's. This allowed the easy access and availability of information on the Web, the downside however was that the content could not be modified in any way. This began to change with the development of new technologies and applications that came into the limelight following the conceptualization by Tim O'Reilly who first articulated the term in 2005. He defined Web 2.0 by characterizing the "Web as platform," and Web 2.0 applications that run on the platform as services that provide users control over their own content and facilitate collaboration between individuals and groups (O'Reilly, 2007).

Web 2.0 technologies such as blogs, wikis, podcasts, social networks, and virtual worlds have become popular and are gradually making their way into the classroom. Instructors need to continually find innovative ways to use these technologies in education. (Williams & Chinn, 2009). The challenge, however, lies in a host of factors such as the availability of Internet access, the basic skills and knowledge required in taking advantage of the Web 2.0 platform and the effective use of these technologies to enhance learning, as they are gradually becoming a standard component in the classroom environment.

It is apparent that the Internet has become a unifying frontier and key factor in every sphere of the human existence. It is also quite obvious that technology will indeed continue to set the pace for all human endeavors, learning and education included. What remains vague however is the direction and pace of such changes and the best practices that can be adopted to take advantage of these changes. Thus, given the diverse paradigms and schools of thought in the learning field, it is important to highlight the importance and relevance of learning theories that have been developed over the centuries in light of emerging technologies with specific reference to the Web 2.0 initiative. Also, as the Global learning and education environment continues to change, in terms of student expectations and teaching methods, finding a model, or framework, to explain this trend is crucial to establishing a concrete basis for explaining the evolving paradigm.

This paper will attempt to provide answers to some questions such as; what are the significant differences and similarities between the Objectivist and Constructivist theories of learning? How has information technology impacted learning? What extent has Web 2.0 expanded the boundaries of learning? However, the key research question for this paper is-How is the duo of Constructivism and Web 2.0 applicable globally?

Focus will also be on the explanation of the differences between the Objectivist and Constructivist theories as it applies to learning. The emergence and development of Web 2.0 will also be analyzed and the current trend in the shift in the use of the Internet from Web 1.0 to Web 2.0. Based on this, we will attempt to show the link between Constructivism and Web 2.0 in relation to the global trends in learning. Finally, we will attempt to provide some direction for the future of learning with a global perspective based on existing literature.

Literature Review

Since the late 1800's, two learning theory paradigms have dominated the education field as a whole: learning as the acquisition of stimulus-response pairs (objectivism), and learning as the construction of knowledge (constructivism) (Mayer, 1992). However, changes in explanatory metaphors have resulted from, and have allowed for, new insights concerning the nature of learning and knowledge (Steffe & Gale, 1995). Psychologists and scientists over the centuries have proposed a plethora of theories which attempt to explain the phenomenon of learning and provide various propositions and rationale that stimulates the learning process. There are 5 popular schools of thought classified into two main paradigms – (Objectivism and Constructivism) that have been developed over the centuries and each school of thought has viewed the learning process from different perspectives.

Objectivist Theory

The Objectivist learning theory is based on Skinner's stimulus-response theory; learning is viewed as a change in the behavioral disposition of an organism (Jonassen, 1993) that can be shaped by selective reinforcement. The tenet of the model is that “there is an objective reality and that the goal of learning is to understand this reality and modify behavior accordingly” (Jonassen, 1993). The goal of teaching is to facilitate the transfer of knowledge from the expert to the learner. The model makes four basic assumptions about learning and instruction; in terms of learning, the first assumption is that there exists a reality that is agreed upon by individuals. Second, this reality can be represented and transferred to a learner. Third, the purpose of the mind is to act as a mirror of reality rather than as an interpreter of reality and fourth, all learners essentially use the same processes for representing and understanding the world. (Leidner & Jarvenpaa, 1995).

In terms of instruction, the Objectivist model posits that the goal of teaching is to efficiently transmit knowledge from the expert to the learner thus, “instructors structure reality into abstract or generalized representations that can be transferred and then recalled by students” (Yarusso, 1992). The Objectivist model also assumes that the instructor is the source of knowledge and that students learn best in isolated and intensive environments.

Objectivism is synonymous to the traditional model of teaching in which the instructor as the information giver uses a predetermined curriculum to aid the transference of knowledge to the learners with minimal input from the learner. (Yager, 1991). Typically, the traditional mode of learning is characterized by a highly structured, mapped out plan of activities in which the instructor guides the learners through the activities. Success of the learning process is usually based on the completion of the curriculum and not the extent to which the learners actually internalized the content.

Constructivist Theory

Constructivism is a theory of learning that has roots in both philosophy and psychology. The core of constructivism is that learners actively construct their own knowledge and meaning from their experiences (Fosnot, 1996). Philosophically, this essence relies on the theory that stresses subjectivism and relativism, the concept that while reality may exist separate from experience, it can only be known through experience, resulting in a personally unique reality (Satish and Munsung, 2004).

Constructivism opposes the existence of an external reality independent of each individual's mind. Rather than transmitted, knowledge is created, or constructed, by each learner, thus the mind is not a tool for reproducing the external reality, but rather the mind produces its own, unique conception of events (Leidner & Jarvenpaa, 1995). Constructivism as a paradigm posits that learning is an active, constructive process. The learner is an information constructor, that is, an individual actively constructs or creates their own subjective idea of objective reality and information is linked to prior knowledge. (www.learningtheories.com) Eventually, having analyzed different interpretations of information, the learner is able to detach himself from a subjective world of personal experience to the formation of abstract concepts to represent reality (O'Loughlin, 1992). The responsibility for learning is transferred from the instructor to the learner who creates a reality from experience and personal knowledge. The Constructivist model calls for learner centered instruction; individuals are assumed to learn better when they are stimulated to discover things themselves rather than when they are told, or instructed.

Constructivism offers a new paradigm for this new age of information brought about by the technologies of the last few decades. Most recently, with the advent of the WWW, it is now not only possible for learners to access tons of information almost instantly, but it is also possible for them to be in control of the direction of their own learning. Constructivism is a bold departure from the traditional objectivist strategies and the goal is for the learner to play an active role in assimilating knowledge onto his/her existing mental framework.

WEB 2.0 IN LEARNING

Web 2.0 refers to a perceived second generation of Web development and design that facilitates communications and secures information sharing, interoperability, and collaboration on the World Wide Web. Web 2.0 concepts have led to the development and evolution of Web-based communities, hosted services, and applications; such as social-networking sites, video-sharing sites, wikis, and blogs.

The concept of Web 2.0 was developed by Tim O'Reilly marking the radical shift from the monopolistic and static use of the Internet to a more proactive and interactive platform. We can equate Web 1.0 to a monopoly because even though information was readily available and easily accessible, the content could not be modified or edited. It was practically the "experts" providing information to information seekers. The entrance of Web 2.0 marked the democratization of the internet, users were not only able to read information, they were able to write, and the content could be modified. The Web became a highly interactive environment.

The use of Web 2.0 technologies in higher education has transformed learning and teaching in significant ways. Recent studies, for example, have examined the use of Web logs, wikis, and instant messaging in the classroom environment. Universities and colleges are rapidly embracing these new technologies and leveraging them to not only enhance their traditional curriculum but also to extend course offerings beyond the college campus. (Li & Pitts, 2009)

Web 2.0 Tools

There are a host of tools available on the Web 2.0 platform which facilitates and promotes communication and collaboration. These tools are highly interactive and stimulate the user's active involvement and participation. Some of these tools will be discussed in the sections below.

Wikis

A "wiki" is a collection of Web pages designed to enable anyone with access to contribute or modify content, using a simplified markup language, and is often used to create collaborative Websites. One of the best known wikis is Wikipedia. Wikis can be used in education to facilitate knowledge systems powered by students (Raman, Ryan, & Olfman, 2005).

Blogs

A blog (weblog) is a type of Website, usually maintained by an individual with regular commentary entries, event descriptions, or other material such as graphics or video. One example of the use of blogs in education is the use of question blogging, a type of blog that answers questions. Blogs can also be a collaborative endeavor among instructors and students. (Wagner, 2003) addressed using blogs in education by publishing learning logs.

Podcasts

A podcast is a digital media file, usually digital audio or video that is freely available for download from the Internet using software that can handle RSS feeds. The file can then be played on a personal computer or mobile device at the listener's convenience. The digital media file may be audio, audio enhanced with graphics (quite often with slides from a PPT presentation), or full video. YouTube is currently the most popular site to post and see podcasts.

Social Networks

A social network is a social structure made of nodes, generally individuals or organizations, which are connected by one or more specific types of interdependency. Facebook, with more than 200 million active users (Facebook, 2009), and MySpace are the two largest social networks.

Twitter is a combined social network and micro-blog service that enables its users to send and read messages known as *tweets*.

Virtual Worlds

A Virtual World is a computer simulated environment that enables users to interact with each other without geographical constraints. Each user is represented by an avatar. This avatar may be a generic representation assigned to him or her, somewhat resemble the user (e.g., gender, hair color, etc.), or, in more complex Virtual Worlds, be completely customized according to the user's preferences. Within these persistent - the worlds are available 24/7 - simulations, users can explore, socialize, and solve collaborative challenges. The Second Life developed by Linden Lab in 2003 is a classic example of a Virtual World with over 2 Million Users.

Classrooms are increasingly becoming heterogeneous in terms of the student composition and instructors are faced with the challenge of ensuring that learners not only get the best out of the learning experience but also that concepts and knowledge that have been learnt can be applied in real life situations irrespective of geographical locations. This is indeed a daunting task which must be addressed in emerging classroom settings given the fact that heterogeneous classrooms will continue to be the order of the day due to globalization.

METHODOLOGY

Extensive research has been conducted on learning theories and even though Web 2.0 is a relatively newer concept than the learning theories, some research has been conducted on this area as well. For the purpose of this paper, comparisons of the two broad learning theories will be made in terms of each theory's propositions, characteristics, advantages, and disadvantages. Based on these and other parameters such as the adaptability, applicability, and relevance of the theories, one theory will be singled out around which the paper will revolve. This paper is a conceptual, exploratory study, focused on highlighting the importance of incorporating the use of the internet with special reference to Web 2.0 to enhance the learning process.

Objectivism and Web 1.0

Objectivism suggests that the instructor is the expert and sole custodian of information and knowledge and for learning to take place, the instructor has to actively engage in transferring the knowledge in a highly structured and planned manner. This implies that the learner neither has control over the pace of knowledge transference nor influence on the content being transferred.

Web 1.0 is synonymous with the Objectivist theory of learning because the Internet provided users with information over which they had no control. Also, the content made available could not be modified in any way; it was basically "read only". Thus, users were limited to only reading the content without an avenue for them to make any input to the content. The platform did not facilitate cross-fertilization of ideas and sharing of opinions; this is typical of the objectivist learning theory.

Constructivism and Web 2.0

Constructivism proposes that the learner actively participates in the learning process. It is a departure from the objectivist thinking that the instructor is the sole custodian of knowledge. It assumes the fact that the individual learner takes active responsibility of the content of the material being learnt, the learning process as well as the manner of instruction. This calls for a drastic and novel way of stimulating the learner towards achieving the desired objectives of learning.

This is in synchrony with the Web 2.0 paradigm, which is a highly interactive platform that stimulates user involvement and participation in the development and maintenance of content. The Web 2.0 phenomenon supports user development and discovery of content via highly interactive means and the pace of the interaction is primarily determined by the learner.

THE ROLE OF THE CONSTRUCTIVE INSTRUCTOR

The role of the instructor is to organize information around conceptual clusters of problems, questions, and discrepant situations in order to engage the learner's interest. Instructors assist the learners in developing new insights and connecting them with their previous learning. Ideas are presented holistically as broad concepts and then broken down into parts (Brooks and Brooks, 1993). The activities are learner centered and learners are encouraged to ask their own questions, carry out their own experiments, make their own analogies and come to their own conclusions.

Yager (1991) in his work proposed certain guidelines for the constructive instructor to adopt in order to effectively educate the learners:

1. Seek out and use student questions and ideas to guide lessons and whole instructional units.
2. Accept and encourage student initiation of ideas while promoting student leadership, collaboration, location of information and taking actions as a result of the learning process.
3. Use student thinking, experiences and interests to drive lessons and encourage the use of alternative sources for information both from written materials and experts.
4. Encourage students to suggest causes for events and situations and encourage them to predict consequences.
5. Seek out student ideas before presenting teacher ideas or before studying ideas from textbooks or other sources and encourage students to challenge each other's conceptualizations and ideas.
6. Encourage adequate time for reflection and analysis; respect and use all ideas that students generate.
7. Encourage self-analysis, collection of real evidence to support ideas and reformulation of ideas in light of new knowledge.

Based on the foregoing, we can safely conclude that the role of the constructive instructor is a deviation from the traditional role of a classroom instructor and often times even when the content of the material to be learned is determined by the instructor, the mode and manner of delivery is highly dependent on the learner.

Advantages of Web 2.0 in Learning

Incorporating the use of Web 2.0 tools in the learning process affords both the instructor and learners many advantages which includes:

1. Increased learner involvement. Web 2.0 technologies are used in an IS class, students become part of the lesson. They have the opportunity (or requirement) to be an active part of the class. (Nowak, et al 1996). Active participation means they add to the wiki or blog, create a presence on a social network, or become a participant in a virtual world. All of these Web 2.0 technologies can engage the students and allow them to contribute to the lesson in an active manner, thus becoming a part of the lesson.
2. The world as a classroom. The best way to learn is to become active. Web 2.0 technologies expand the classroom to the virtual world and allow the world to become a classroom. Because of easy access to the virtual world, the lesson can be open to anyone; it is not confined to a single classroom or a single set of students (Galagan, 2009). This allows students to easily work across boundaries with others who may have different cultures, values, and interests. It is imperative that today's students have a more global perspective and Web 2.0 technologies can help to facilitate this.
3. Collaboration stimulates learning. There is a large body of research that has documented the beneficial effects of collaborative learning for college students (Gokhale, 1995). Competition also provides the opportunity for students to learn and widen their knowledge base. Most Web 2.0 technologies have aspects of collaboration and competition. They allow students to work together, or to compete with one another on projects. When Web 2.0 and virtual world technologies are used for collaboration and competition in the classroom, learning can increase.

4. The classroom is open 24/7. All of the Web 2.0 technologies are Internet based. This means they are available to students 24 hours a day, 7 days a week. A student simply needs an Internet connection and he/she can be in the classroom. As a result, students can interact in a classroom environment when they are best prepared.

Disadvantages of Web 2.0 in Learning

Despite the fact that web 2.0 offers huge advantages, it has some downsides, which can inhibit the learning process if not managed appropriately. These include:

1. Limited computing resources. Not every student has access to computing resources that are connected to the Internet when off campus. This is especially true in developing countries where the use of the Internet is not as advanced as what it is in The United States or Europe. This could be a major disadvantage for students who cannot afford or do not have access to a computer or an Internet connection.
2. Integrity of work is compromised. Online access is wonderful, but it can be like leaving your valuables on a table in your front yard (Harris and Rea, 2009). The integrity of individual work is compromised where other learners within the same setting can have access to the content.
3. Plagiarism is very easy in the online world; materials are available for learners to copy from and this explains why many learning institutions have system in place to checkmate such unruly use of the content available online.
4. Lack of privacy. Some students are very apprehensive about the openness of Web 2.0 technologies. Written assignments and responses are no longer just between the professor and student, but available for anyone to see and evaluate. This openness can cause extreme discomfort for some students.

CONSTRUCTIVISM AND WEB 2.0 IN THE GLOBAL CLASSROOM

Globalization has changed the structure of the modern classroom as evidenced by the composition of the average classroom in terms of the diverse cultures represented within an erstwhile homogeneous classroom some decades ago. Web 2.0 provides leverage for the active participation of the learner in constructing their learning processes by stimulating the individual learner to construe meaning out of the content being learnt. It has also been established that the duo of Constructivism and Web 2.0 indeed offers both the instructor and the learner excellent opportunities to harness their efforts and make the learning process a huge success.

In the 1980's Harvard psychologist Howard Gardner introduced the theory of multiple intelligences, which posited that individuals possess different strengths. (Gardner, 2006) Emphasizing these strengths could make the instructors role easier as the content of the material being learnt is customized based on individual strengths. This is synonymous with the concept of Constructivism. This implies that the instructor does not only deliver the "curriculum" but also most importantly identify the distinct intelligence of the learner, and subsequently customize the content to facilitate the learning process. This however necessitates the digression from the traditional instructor role of teaching the content of the class to actually ensuring that the content is delivered with an emphasis on individual learner strengths.

Learners' expectations continue to change in response to the changes in the environment. One major environmental change is the widespread use of the Internet. The use of the web is no longer restricted to business or government but has become a force to be reckoned with in academia. In order to stimulate the emerging dynamic learner towards maximum learning achievement, the instructor must be willing to shift gears from "what has been"- the Instructor as the sole custodian of knowledge to "what is emerging" - the Instructor and the Learner jointly constructing the learning content and process. This is summarized in the table below:

TABLE 1
OBJECTIVISM Vs CONSTRUCTIVISM

PARAMETERS	OBJECTIVISM	CONSTRUCTIVISM
CONTENT	Competitive/Individualistic	Co-operative/team based
STUDENT	Passive-dependent on Faculty	Active constructor
FACULTY	Classify and sort students	Develops students competencies and talents
KNOWLEDGE	From Faculty to Students	Jointly constructed by Student and faculty
RELATIONSHIPS	Impersonal among students and between Faculty and student	Personal among students and between Faculty and Student
ASSUMPTIONS	Only an Expert can teach	Teaching is a complex personal exploration

Adapted from Satish and Munsung (2004)

In terms of content, better results will be achieved if the learner has some input in designing the learning material. The effort will be seen as a collaborative one as such the learner is psychologically tied to making the learning process a success because they feel they have a stake in the content development. Rather than an Expert-Learner relationship, we want to propose that the instructor take the stance of a facilitator so as to be able to develop the student's competencies and stimulate the learner's exploration of various ideas.

For most Generation X and Y instructors, the old mindset that "only an expert can teach" needs to be re-addressed because essentially learners in the modern age take personal responsibility for the learning process and this is best exemplified in the increase of online classes that require the learner to construe their own meanings without the instructor acting in the capacity of a "teacher".

Constructivism is a bold departure from traditional objectivist classroom strategies. The goal is for the learner to play an active role in assimilating knowledge into his/her existing mental framework. The ability of learners to apply their school-learned knowledge to the real world is valued over memorizing bits and pieces of knowledge that may seem unrelated to them. The constructivist approach requires the instructor to relinquish his/her role as sole information-dispenser and instead to continually analyze his/her curriculum planning and instructional methodologies. Perhaps the best quality for a constructivist teacher to have is the "instantaneous and intuitive vision of the pupil's mind as it gropes and fumble to grasp a new idea" (Brooks and Brooks, 1993).

This suggests that for the successful implementation of the constructivist method of instruction and learning, the subjects of the process that is the learners should be involved in designing and developing the system that will support the learning process.

Whitten and Bentley 2007 propose that the success of any system depends highly on involving the users in the entire process of systems analysis and design principally because the users are in the best position to give the true representation of their expectations from the system. This may seem like a far cry in academia as compared to the business realm but with the way technology continues to affect all facets of life, we propose that the inputs of learners in the development of any system to facilitate learning cannot be underemphasized.

Clearly, the constructivist approach will open new avenues for learning as well as challenges for the instructor trying to implement it in the Global realm because the constitution of the emerging classroom will provide any instructor the opportunity to stimulate learners to construct their own learning irrespective of cultural inclinations. Moreover, regardless of geographical location, the internet is a unifying and flexible platform that can be harnessed to facilitate learning.

In developed countries like the USA and UK, the use of the internet has been on the increase because the rate of diffusion has been on the increase and advances in information technology have been harnessed efficiently to support the learning process. This is also coupled with the fact that these nations have been

able to attract intellectuals across the globe by offering cutting edge learning environments and capabilities to stimulate learning.

In developing and third world countries however like Africa and Asia, there is still a lot of knowledge gap in the use of technology to support the learning process as evidenced by the influx of human intellectuals from these parts of the globe to developed countries to obtain similar degrees that are offered in the respective home countries. This constitutes a huge drain on the intellectual capacity of these developing countries because the best hands are siphoned outside the country and the resultant effect is stagnation, which has plagued these countries over the decades.

If this trend continues, it raises the question of what the future of these developing countries would look like in the next couple of years if not addressed urgently. Also, if the system is not enhanced to encapsulate emerging technological trends, developing the human capital may be an almost impossible task and this will aggravate the current erosion of the most vital part of any country-its human resource. In his classic book “Disrupting Class”; Christensen, 2008 proposed a solution to this phenomenon-“disruptive innovation” by promoting the idea of focusing of areas of non-consumption within the entire market sector. In any society, there are always leaders in any industry; academe inclusive and these leaders service a huge chunk of the society. However, (Christensen, 2008) opined that embedded in any society is an even larger untapped segment that has not been serviced. This he highlighted in the case of Digital Equipment Corporation (DEC) the leading minicomputer company in the 1970’s and 1980’s and Apple, pioneers of the personal computer. Apple was able to develop a product, which was offered to an unserved portion of the market-children and continually improved on the product till users of the minicomputer no longer saw the need for the huge computing capacity of the minicomputer when the same processes could be done on the personal computer.

If education and learning would be approached and addressed as business entities are, then there would be a radical change in the manner in which learning takes place. Typically, business entities identify a need, a void that needs to be filled and then develop products and/or services that suit the specific needs which, consequently leads to profits for the business. As logical and simple as this sound it calls for some trade-offs and investment in the areas of non-consumption as opposed to competing with existing products and services.

If this is applicable and has been successful in business, then the same principle could be employed in the learning and education realm. The internet with specific reference to Web 2.0 can be employed as a tool in collaboration with student-specific intelligences to enhance learning in developing countries. Emphasis on employing the internet as a learning tool as against the traditional classroom approach to learning will indeed stimulate more learners to take advantage of the resources without having to go abroad. Incorporating the use of the internet in school curriculum has yielded huge benefits in developed countries and its application in developing countries would inadvertently yield similar results if undertaken without the undue bureaucratic nature of educational boards and government influence.

It has been shown that long bureaucratic processes of incorporating new ideas into existing systems are usually not easily adopted. As such the involvement of private bodies in fostering the adoption of the internet into the educational system will yield greater results than over reliance on the government. A classic example of this found in the ITC investment in e choupal in India, Although India has a distinction of having the largest arable land in the world, yet the average size of an Indian farm is 1.5 hectares while that in U.S.A. is 500 hectares. Similarly while 50% of farm produce is processed in U.S.A. less than 1 % is processed in India and approximately 25% of fruits and vegetables in India rot in farms. (Dash & Misra, 2008). However with the use of the internet, ITC has been able to empower the rural farmers and this has resulted in higher profits as markets are more readily found for the products and this has resulted in higher profits and a better quality of life for the average rural farmer. This suggests that irrespective of the educational level of an individual, technology can be used to propel progress and achieve phenomenal results be it in terms of turnover or academic qualifications.

Drawing from this experience, technology in the form of Web 2.0 tools and other proprietary software can be developed to suit the educational needs of learners in the developing countries thereby conserving

these intellectuals within the society which will in the long run have huge positive outcomes on the entire populace.

RECOMMENDATIONS

Based on the findings from the paper and the emerging trends in academia, we want to make the following propositions:

1. The idea that an instructor “knows it all” should be de-emphasized in academia because this stifles the learning process and erstwhile brilliant students are not given the opportunity to explore and develop their competencies.
2. More value should be placed on the use of the Internet especially in developing countries so as to stimulate active learning.
3. Academic institutions should gradually shift focus from the traditional approach to teaching to the highly flexible and interactive use of the internet so as to prepare the learner for the emerging global existence.
4. More Web 2.0 tools should be included in the curriculum so as to prepare and competitively position the average learner for the future.
5. The traditional boundaries of classroom teaching should be replaced by the boundless opportunities to learn via the use of the Internet; this re-defines learning because the classroom is “open” for 24 hours.
6. The continuous re-training of instructors to highlight the viability and relevance of in-incorporating Web 2.0 tools in the school curriculum so as to meet the expectations of the modern day learner.
7. The learner should be involved in the systems analysis and design process that supports any learning initiative because this will afford the authorities in charge to match the expectations of learners with the content of the curriculum.

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