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# The Prospects for *E-Learning* Revolution in Education: A philosophical analysis

SAMSON O. GUNGA & IAN W. RICKETTS

*Department of Educational Foundations, University of Nairobi, Kenya*  
*Applied Computing Division, University of Dundee*

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## Abstract

*If I lose my key in Canada, for instance, and I search for it in the United Kingdom, how long will I take to find it?*

*This paper argues that problems in education are caused by non-professional teachers who are employed when trained teachers move in search of promotion friendly activities or financially rewarding duties. This shift of focus means that policy makers in education act without adequate professional guidance. The problems in education, therefore, result from demands made on mainstream education based on misconceptions about what education can offer.*

*It is argued that the implementation of e-learning in education faces the risk of developing on the basis of unproven theories. This scenario increasingly sees the replacement of formal education activities in institutions of learning with non-formal and informal education practices. Given that the contents and influences of non-formal and informal education are not under the control of the teacher, the experiences that learners bring to education settings are increasingly difficult to manage. The paper proposes that by integrating e-learning in teacher education and rewarding 'good teaching', there is a potential for a successful e-learning revolution in education.*

Keywords: a-Teacher, e-Student, e-Teacher, psychology of online-education, philosophy of online-education, online-education communications, administration of online-education, online-educational technology, online-education content management, online-teaching design, online-methods in chemistry

## Introduction

The use of information and communications technology (ICT) in education is widely regarded as good (Rogers & Finlayson, 2004) and the process of discovery of the pedagogical potential of ICT is at its early stages (Rawson & Naylor, 2005). The prospects of e-learning show that once connected to the Internet, the computer brings a lot of information into the classroom and therefore offers the potential to

overcome the shortage of learning resources (Gjørting, 2005). Advancements in online technologies have also facilitated a convergence of distance and campus-based learning which provides greater flexibility (Bennett & Lockyer, 2004). As a result, some universities previously concerned with on-campus teaching only, now have the opportunity to offer distance education courses via online or through blended learning.

The ability of e-learning technology to reach learners wherever they are means that the learners do not need, necessarily, to have face-to-face contact with the teacher. Through online collaboration or self-learning, it is possible to achieve higher order learning outcomes due to wide access to re-usable and sharable resources. Online e-education (interface of e-learning and education) has the capability to nurture the student beliefs portrayed as active, independent, persistent, flexible and open minded. Youn (2000) observes that these beliefs contribute significantly in self-search for knowledge, which is further enhanced by collaborative approaches to learning. Emphasis has, therefore, been placed on learner centred approaches (McCombs & Vakili, 2005) using Virtual Learning Environments (VLEs). The VLE facilities and tools for communication, interactive content delivery, assessment and interactive boards (Heacademy, 2006) are able to reach students remotely. The students' tasks emphasized in such collaborations include knowledge construction, co-operation, sharing ideas, selection and generation of learning resources (Bennett *et al.*). E-learning is seen, therefore, as the process of exploration of existing knowledge, sharing and enhancing its value to build ones capacity for self-study.

Research shows that teachers and learners prefer the blended environment rather than pure online approach (Motteram, 2006). While computers bring new opportunities to the human learning experience, they also remove some of the critical components of face-to-face learning (The HRD Group, 2006). If e-learning is to compete with face-to-face delivery for richness in terms of psycho-social and emotional flexibility, there is a need to enhance audio-visual and interactive capabilities of course management systems to compensate for sensory and emotional loss. The recognition that people learn in different ways favours the blended learning approach since learners perceive and process information in a variety of ways (Claxton & Murrell, 1987). Concrete-active perceivers process information after direct experience through doing, acting, sensing, feeling and using the information in a practical life situation while abstract-reflective perceivers conceive an idea after observation or thought and process it through analysis and reflection (On Purpose Associates, 2006).

### **The Assumptions of E-Learning**

Anderson & Elloumi (2004) define e-learning as 'the use of the Internet to access learning material [s]; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience'. Implicit in this definition is a general focus on the learner. As Carr-Chellman & Duchastel (2000) observe, e-learning 'calls not so much for providing instruction at a distance,

as for making available learning resources and instructional activities to students'. The attractive nature of e-learning stems from the way it tries to simulate social life through team collaboration evident in the corporate sectors of the society. In support of this view, e-learning innovations take place so rapidly that little time exists to provide thoughtful appraisal and a critique of the general and specific issues of adoption and use (Kompf, 2005). There is a belief that tutor supported interaction as students engage with learning resources is equivalent to the process of education. However, if the real life situation were as conceived there would be no need for face-to-face teaching as all human interaction involving an exchange of information to elicit a response would be educational.

E-learning is, however, a promising development in education, but as Mason & Lefrere (2003) point out, while 'promising practices' are worthy of consideration, the concept of something promising is semantically loaded toward unproven methodologies. The assumptions of e-learning ought to be based on a sound theoretical rationale if it is to be included and sustained successfully in teacher education programmes. The social constructivist theory (Lim, 2004) which guides e-learning practices needs to be grounded in teacher education for its principles to be embedded in education disciplines. Research and developments in online teaching have focused mainly on the implementation of collaborative facilities and the definition of standards for sharing and reusing the learning resources. Less effort has gone into defining the instructional processes suited to this type of teaching (Alonso, López, Manrique & Viñes, 2005). The increasing focus on e-learning (Schmidt, 2004) as opposed to online-teaching strategies is a growing challenge for teachers. This raises concern especially when little research exists on online-teacher education as current thinking considers all e-learning as educational.

### **Towards Integrating E-Learning in Teacher Education**

Many of the factors that influence successful online instruction are the same as those for traditional instructors (Roblyer & McKenzie, 2000), that is, good communication and classroom organisational skills. The nature of e-learning as an instructional medium, however, differs from face-to-face teaching as it requires new approaches to curriculum development, online course administration, subject methods, delivery, assessment and feedback. In e-learning, there is a separation between the instructional design and the learning process. The student is required to perform the integration through peer collaboration. Therefore proper management of cognitive load, information processing and instructional design principles are essential (Morrison & Anglin, 2005) for harmonising instructional and learning strategies.

In light of the increasing demand for virtual courses and the rapid expansion of schools to meet the demand, it is apparent that there will be a parallel need for teachers who are prepared to teach at a distance from their students. There will also be an equivalent need for counsellors and

other support personnel who understand the unique benefits of this new medium and are prepared to meet its needs and requirements. (Davis & Roblyer, 2005)

Although the educational value of the communication skills required of the online and face-to-face instructor are the same, there is a need for a paradigm shift in perceptions of instructional time and space, virtual management techniques and ways of engaging students in virtual communications (Easton, 2003). Teaching has several issues to deal with such as student discipline, socio-emotional and psychological concerns which ought to be taken into consideration as e-learning is designed. Young (2004) observes that teaching on the Internet is more demanding than teaching in the conventional mode due to the incorporation of various fast-growing technologies. This is further complicated by the lack of the physical presence of the learners and instructors in addition to dealing with the Web-specific content strategy, managing change, and re-engineering the pedagogy.

The introduction of technology in education without accompanying effort to integrate it with the content and pedagogy may not lead to change (Koehler & Mishra, 2005). It is the way in which teachers use technology that has the potential to change education (Carr, Jonassen, Litzinger & Marra, 1998). In essence, teacher education needs to be remodelled to reflect this demand. This can be performed during professional training of teachers and made an integral part of online e-education innovations. The successful application of e-learning would rely on changing teaching practices and cultures (Whitsed & Comrie, 2005) investing more in raising awareness and an understanding of online teacher professionalism.

E-learning is converting the traditional student—the ‘a-Student’—taught face-to-face by the ‘a-Teacher’ into an online student—the ‘e-Student’—collaborating with the ‘e-Teacher’. Traditional teacher education equips the a-teacher with the necessary instructional methodologies for successful teaching. These are normally embedded in teacher education disciplines such as ‘Educational Planning’, ‘Curriculum development’, ‘Sociology of Education’ and so on. These disciplines jointly ensure that the process of teaching is consistent with the principles of human learning that have cognitive, psychomotor and affective domains.

To overcome the problems associated with various issues in online teaching, it is necessary to develop online e-education disciplines. For instance, the ‘Psychology of online e-education’ would aim at using psychological methods and principles to manage and resolve issues arising from students’ behaviour online. Similarly the ‘Philosophy of online e-education’ would use philosophical methods to resolve issues generated by the application of principles of other online e-education disciplines. All traditional teacher education disciplines will need to create their online equivalents. Others could be ‘Online e-education Communications’ to deal with issues of collaboration, ‘Administration of Online e-education’, ‘Online e-education Technology’ and ‘Online e-education content management’ etcetera. The purpose of these developments would be to produce trained teachers who are able to design online teaching models using the tools of a Virtual Learning Environment (VLE). The programme will also be able to train IT experts (‘Online e-education Technologists’)

to develop learning resources that have an intuitive appeal consistent with the 'online-teaching design'. Subject specific specialists will, therefore, need to undertake a study in 'Online-Methods' for their particular subject areas. For example, to teach chemistry online, one would require that the teacher had training in 'Online-Methods in Chemistry'. This is because the teaching of mathematics online, for instance, would require different tools and techniques compared to the delivery of chemistry.

### **The Interaction of Teaching, Pedagogy and Education**

The demand by society that school leavers contribute to the growth of economy and technological innovation has led to psychomotor and cognitive abilities being considered the most reliable predictors of performance in industry (Carretta & Ree, 1997). This is because research confirms that the results of education do not meet employers' expectations (Nabi & Bagley, 1999; Lange, Ottens & Taylor, 2000). Members of the business and ICT industry readily complain when they think schools are not meeting their needs. They then 'guide' society on what ought to be in the curricula and how knowledge and skills should be acquired (Kohn, 2004). This means that decisions about the performance of education are being made by parties whose functions are removed from the circumstances of learning, teaching and knowledge production. Education is thereby being considered an instrument for improving productive output or otherwise contributing to innovations and viable economic development. Industry demands ever more flexible and self-confident professionals with skills in communication, problem analysis and problem solving, planning, networking and life-long learning (Kakabadse & Korac-Kakabadse, 2000).

The concept of pedagogy relies on the utilitarian view of education. In Britain and other English-speaking countries, pedagogy relates to the science of teaching, learning and the formal curriculum of schools, colleges and universities (Petrie, 2005). However, its meaning has been associated with forms of education that support technological and economic development. While pedagogy requires education to have instrumental value, the concept of teaching reflects the open and intrinsic value of education based on development of socially approved self-regarding virtues and dispositions. An educated person is praised for possession of worthwhile ideas, which may not necessarily relate to any particular overt performance. This distinction creates conflicts concerning the use and application of the concepts of teaching and pedagogy. This conflict is succinctly captured by Rozema (2001) in distinguishing two kinds of education: (a) the education, the commodity—the kind of education that seeks to produce persons who will maintain and enhance economic performance. 'And there is (b) the education of community—the kind that seeks to foster persons who will maintain and preserve the essential characteristics of community'. While education—'the commodity'—puts more emphasis on intellectual performance, education—'the community'—assumes that personal discipline and minimal delinquent tendencies are prerequisites for socially productive intellectual efforts. Although the two are not mutually exclusive, the latter assumes a more abstract role as it focuses on the holistic purpose of education in human life.

While teachers consider their duty as educational, the guardians (Dobbs, 2003) of society require that teaching be evaluated as a pedagogical activity:

... we need only examine the methods used to raise education standards to realize very swiftly that what is involved is an exercise in pedagogy, with specific means employed to hit identifiable targets ... so many teachers are unhappy. They are no longer teachers or lecturers but mere pedagogues. (Hinchliffe, 2001)

If the guardians of the society have a different conception of teaching from teachers as a consequence of the education 'the commodity' and education 'the community' dichotomy, it may not be possible for education to achieve its goals. Teachers are supposed to implement the goals of education as formulated by the society. However, if such goals are logically contrary to what education can achieve then teachers can only be providers of content to students as proposed by those who emphasize learning as opposed to teaching. Education cannot achieve the goals formulated like those of an industrial attachment. Organizations which specialize in serving the various sectors of the economy have specific needs and are best placed to supplement the foundation provided by formal education with their own additional training tailored to the specific organization's needs (Venter, 2003). The exact nature of the relationship between education and creation of jobs in a society is, also, not evident (Lewis, 1997). It is a fallacy to expect education to solve problems like creating jobs, improving the economy and enhancing the learners affect. Each sector of the society must train 'specialist educators' who then utilize the 'facilities' of the education sector to resolve issues in the specific disciplines. An example of a successful scenario is medical education (Godfrey, Dennick & Welsh, 2004; Orlander, Gupta, Fincke, Manning & Warren, 2000; Parsell & Bligh, 2001). Practitioners in the medical field have not required the mainstream education to provide specialist knowledge in health and biological sciences. Instead the medical sector trains 'medical educators', who are initially doctors to apply the principles of pedagogy in medical study.

The concept of education in this regard is comparable to that of mathematics. While almost all sectors of society appreciate and utilize the power of mathematics, none of them expect mathematics as taught in schools to solve their problems; neither is a mathematician expected to solve problems in any sector. For instance, a 'physicist mathematician' or astronaut who uses mathematics to calculate distances to reach the moon does not need to refer to a mathematician, but appreciates what mathematics is and its power. Mathematical principles are formulated to address the issues of all possible worlds—the real world being just an instance of possible worlds. When mathematicians engage in abstract thought their major concern is not that the knowledge would be relevant for the scientists or the general public. Frege (1964) showed that because mathematical principles are formulated independent of the physical reality, so are its truths. It follows, therefore, that mathematical statements are stipulations of language rather than statements of nature. For instance, eight multiplied by four equals thirty two, that is,  $8 \times 4 = 32$  is true simply because that is the way mathematicians choose to use the terms.

Counting eight objects four times and adding them to get thirty-two objects is an intuitive rather than a mathematical activity. It is performed to aid the power of human reason, which may be unable to perceive the result instantly. In other cases empirical evidence may be neither possible nor feasible as in  $n$ -dimensional spaces or  $96,784 \times 678,959$ , for example.

Propositions of pure mathematics are free from any existential ontological conditions that require a limited interpretation. The subject-matter or content of mathematics consists of possibilities that are subject to [ordered] series of transformation. These are organized according to rules involving rigorous and fruitful substitution of meanings. Pure mathematics becomes the study of abstract forms of reasoning (inference) and inquiry, not of specific concrete existential context (objects and relations of space and time). (Sidney, 1992)

There is a stage in mathematics when all reference to existence and applicability is eliminated. A new order of abstraction is created, that is set up and controlled by categories of abstract relations only. Ayer (1983) observes, for instance, that mathematical propositions do not make any assertion about the empirical world, and cannot be confuted in experience. Consequently, the validity of mathematical statements is grounded in the structure of those statements, and not in any particular subject-matter. The logic of the subject is modelled on the theory of 'possible worlds' (Baldwin, 2001; Bunnin, 2003). Therefore human experiences in social interactions and transactions involving buying, selling, counting, comparing and measuring (Rhees, 2002) use mathematical principles applicable to the actual world as an instance of possible worlds.

The development of mathematics is based on a continual attempt to harmonize the apparent conflict between opposites: Actual versus possible, concrete versus abstract, discrete versus continuous, particular versus general, change versus permanence, material versus formal and finite versus infinite (Lacroix, 2000). Therefore it is the attempt to resolve the conflict between opposites that paradoxically develops the mathematical system. Man's attempts to discern order in the universe reveal necessary relationships in space and time which revolve around establishing distinctions between differences and similarities of properties of human experience. The experiences are structured by perception into categories of properties by matching, sorting, pairing, counting, ordering, comparing and measuring.

Similarly, whilst education is an important instrument of society, it cannot solve any particular problems directly. The wealth of knowledge, skills and positive affect provided by education has to be appropriated and applied by specialists in various disciplines and sectors of the society for its value to be realized. While mathematics establishes the principles that define the nature of necessary relationships, education defines the principles of the ideal 'good' that govern human interrelationships and harmony with the natural order. Education provides one with the capacity to fit into any of the productive sectors of the society and from which assignments for earning a living are guaranteed. These sectors are defined by various institutions. In contemporary societies, such institutions can be broadly categorized as political,



social, cultural, religious, economic and educational institutions. They operate in harmony by observing a specific ideology that acts as the cultural policy to which they adhere. Every person finds his/her place to serve the society in one or several of these institutions and to participate in sustaining the harmony. This harmony, valued as the common 'good', is what education is supposed to nurture. Therefore the idea of education is developed by contrasting that which sustains harmony with that which creates disharmony. An education system is built by contrasting the good and the bad and then emphasizing knowledge and practice of the good. The system does not produce a specialist in any discipline but does produce an educated person. The quality of the educated person so produced depends on the school curriculum designed by subject specialists and the contents of the non-formal and informal education settings within the society. It is from these three forms of education that online e-education derives the 'educational value' of its theories, content and methodologies.

### **The Value of Education**

While integrating e-learning in education, it is important to re-consider the values that education is supposed to promote and the circumstances appropriate for doing so. It is, also, important to separate the kinds of learning that are educational from those that are not. This will lead to adequate preparation of e-learning environment, design of collaborative strategies that promote dialogue and selection of the right content. In the behaviourist's point of view, learning is a change of behaviour as a result of having gone through certain experiences. Wills (2004) defines learning by specifying behaviour modification that it occasions; an 'organism is said to have learnt when it has increased its options for applying, to a specific set of circumstances, new or different behaviour which the organism believes will be to its benefit'.

Education is largely a directive process which does not need just any experience left to the beliefs of the participants. An educated person is considered to have improved after undergoing the process. This requires that what is learnt, how it is learnt and the experiences that influence them need to be constrained by specific rules of order.

The value of education is recognized by all societies and compulsory education for children is a worldwide phenomenon (Dultz, 1999). The word education is derived from two Latin words *educare* and *educere*. *Educare* means 'to raise', 'to train', 'to rear', 'to bring up', 'to guide' and 'to direct' (Adeyemi & Adeyinka, 2003). In this sense education is an initiation into intellectual and social concerns for public and private improvement of the human person. As *educere* meaning 'to lead out' or 'to lead forth', 'to raise up', education is the process of nurturing the development of human potentialities measured against the normative criteria defined by society.

It is assumed that each person has an innate principle of growth towards progress and improvement whose realization could be very slow or inadequate if left without intervention. Education is therefore a disciplined intervention into human life to

avoid waste. It serves to guide and hasten the natural processes of growth: intellectually, mentally, psychologically, spiritually, emotionally and socially. It is in this sense that education is viewed as enabling one to build appropriate knowledge, skills and dispositions for the purposes of making responsible judgements, informed choices and appropriate actions. It is assumed that at certain stages of children's lives some decisions have to be made on their behalf as they do not yet have the intellectual and moral capacities necessary for processing information and making decisions. For instance, it is for a parent to decide which school his/her child would attend. Such a decision would not be left to the child since he/she is not equipped to know what to consider in choosing a 'good' school. Considerations for the choice may be based on, for instance, security, financial resources, proximity etc. which the parent can readily evaluate.

There is a relationship between education and enculturation. The concept of culture refers to the socially acquired practices of past human accomplishments which serve as the resources for the current life of a social group (D'Andrade, 1966). Human beings depend upon the various forms of human-environment interactions that culture supports in order to sustain and reproduce themselves (Tomasello, 1999). Both culture and education emphasize sustaining the life of the community by bringing about change in the youth and adults (Cole, 2005). Education can therefore be defined as the range of activities and processes that lead to successful enculturation. It is the process of cultural transmission and renewal during which senior members of a society guide the development of the younger generation by initiating them into the culture of the society. However, in current practice, education is not a linear process of information passing from the older to the younger people but one of interactions that create new systems appropriate to current circumstances. Therefore both adults and children participate in education to enhance their knowledge and skill levels.

In Aristotelian philosophy, the concept of education subsumes the principles of societal ethos (McLaughlin, 2005). Education not only involves acquisition of knowledge and practical skills but also dispositions, virtues, ideas and practices aimed at character and habit formation. Because publicly prioritised activities and values are targeted by educators, it is important that special conditions for the way they are learned should operate (Silcock & Duncan, 2001).

In developing the concept of education as espoused by R. S. Peters (1966), Njoroge & Bennaars (1986) propose four dimensions of education namely the cognitive, normative, creative and dialogical dimensions. They conform to the extended version of Bloom's domains (Anderson & Krathwohl, 2001).

The well known cognitive domain is extended to include ideational functions of imagination and creativity, and the affective domain is enhanced to include internalization, wonder, and risk taking. The psychomotor domain is expanded into a sensorimotor domain, incorporating five senses along with balance, spatial relationships, movement, and other physical activity. A social domain is introduced to accentuate socio-cultural processes that accompany thinking, feeling, and sensing/movement.

Lastly, the four domains are synthesized into a unified domain of thinking, feeling, sensing/moving, and interacting to optimize potential and self-fulfilment for all students. (Dettmer, 2006)

Any educational process whether formal, non-formal or informal needs to be evaluated and made to conform to the four dimensions of education. The cognitive dimension focuses on the acquisition of knowledge for the purposes of informing human judgement, choice and action. An educative process has to have a body of knowledge to be mastered. In order to have the right content, several questions need to be answered by the content developers: Whose knowledge will be mastered in education? How is the knowledge justified in society? How will actions based on such knowledge be appraised? Answers to these questions are necessary in formulating curricula for formal education and regulating the content of non-formal and informal education.

The normative dimension of education recognizes that human actions and operations of various institutions of society do affect the purposes of other individuals and institutions. Although some researchers believe that education has moral and political meanings that vary with locale and culture as well as the identity and values of a people (Tabak, 2003), education is generally associated with order and worthwhile practices. Just as nature is ordered and inherently observes measures of regularity (Foster, 2001), so human operations are an effort to synchronize with natural order. Education is the process of making man understand and apply the principles for sustaining this harmony. Such principles inhere in the idea of the 'good' believed to be endowed with 'worthwhile' possibilities and which education promotes. In Aristotle's concept of *phronesis* (practical wisdom or prudence) with regard to education, both teachers and learners help themselves to achieve concrete human judgment based on good reasoning as a prerequisite for attainment of the 'Good Life'. The Aristotelian principle of *phronesis* refers to the ability to make right decisions in difficult circumstances (Arnkil, 2006; Smeyers & Hogan, 2005). The 'Good Life' is based on an understanding of the idea of *eudaimonia* (the specifically human good) and *praxis* (action, practice). Aristotle identifies *phronesis* as one of *dianoetic* virtues, that is, those intellectual virtues that characterize the well-ordered mind. Such virtues are: *Sophia* (wisdom of first principles or pure contemplative wisdom), *episteme* (scientific knowledge or true knowledge as opposed to mere opinion), and *nous* (intuition or understanding) (Kristjánsson, 2005). The perfection of practical rationality is a life of complete virtue of character guided by *phronesis*.

... all people recognize some moral code (that some things are right, and some things are wrong). Every time we argue over right and wrong we appeal to a higher law that we assume everyone is aware of, holds to, and is not free to arbitrarily change. (Craig, 2003)

The definition of what is worthwhile is not arbitrary or relative; otherwise humanity would not be agreed on categorizing certain acts as evil and others non-evil. I would not demand respect, for instance, if there was no universal principle that

defines respect and its associated indicators as worthwhile. Intentional killing of a human being outside the legal jurisdiction is condemned (Samuels, 2003) by many, if not all, communities. Even those who take peoples lives based on personal or group convictions (Graham, 2002) would not justify killings on their intentions. The war against terror is a struggle of the 'good' against the 'evil' (C. Taylor, 2005). When people prefer things of high quality as opposed to those of low quality they indicate their preference for observing a standard of compliance. Humanity appreciates the ideas of truth and rights (Chandler, Sokol & Wainryb, 2000) without questioning the credibility of their supposed ultimate-originator. These provide credence to the fact that there is a universal principle from which humanity draws the idea of the 'good' which education fosters by understanding.

The creative dimension of education promotes an individual's or groups' constructive initiatives, innovative practice, critical thinking, self-reliance and autonomy. Creativity is the ability to come up with new ideas that are intelligible and valuable in some way (Boden, 2001). It involves cognitive processes in which intelligence, observation, thought and innovation work in harmony (Gardner, 1999). Research shows that creative thinking can be used within a number of learning contexts to enrich the acquisition of knowledge and skills.

'... the factors influencing creative teaching in Integrative Activities are (a) personality traits: persistence, willingness to develop, acceptance of new experiences, self-confidence, sense of humour, curiosity, depth of ideas, imagination, etc.; (b) family factors: open and tolerant ways of teaching children, creative performance of parents, etc.; (c) experiences of growth and education: self-created games and stories, brainstorming between classmates, etc.; (d) beliefs in teaching, hard work, motivation and (e) the administrative side of school organization. Among these factors, beliefs in teaching, hard work and motivation are the main aspects. The effective teaching strategies are: student-centred activities, a connection between teaching contents and real life, management of skills in class, open-ended questions, an encouragement of creative thinking and [the] use of technology and multimedia. Integrated Activities are closely connected to life experience and a basis for the development of creative thinking within education. (Horng, Hong, ChanLin, Chang & Chu, 2005)

The teacher's task is to assist learners exploit their creative potential exhibited in originality and intentionality which also act as predictors of creative achievement (Helson & Pals, 2000; Craft, 2003). Suwa (2003) identifies two steps involved in a creative teaching/learning process: (1) Problem-finding: finding and solving one's own problems instead of solving given ones marks the beginning of a creative exercise. The view that asking a productive question is normally more important than answering a set of ready questions (Wertheimer, 1945) is a philosophical position that has been held since time immemorial. This position is evident from how Isaac Newton formulated the Law of Gravitation (Wayne & Staves, 1996) by asking an apparently simple question: Why do apples 'fall' downwards rather than

sideways or upwards. An attempt to answer a self-formulated question provides a range of possibilities and opens up horizons of critical thought in attempting to answer the question. (2) Constructive perception: Attempts to answer a self-formulated question raise other issues that may have been taken for granted. The ability to generate and coordinate resolution of such issues normally lead to a reorganization of thought processes which, in turn, sustain the motivation for continued search for new knowledge.

The dialogical dimension of education caters for the logical basis of an educative process. Education involves communication which utilizes methods that pay due regard to the dignity, intellectual integrity and judgment of those involved. Dialogue defines the human social presence in a learning environment. Learning is mediated by intrapersonal dialogue inherent in self-knowledge, facilitated by interpersonal dialogue and enriched by instructional resources. In a learning environment, the teacher is not restricted to imparting specific kinds of knowledge or skills but exposes the learner to a range of ideas defined by the society as useful for man's survival, welfare and progress. The teacher operates within the formal education which promotes a structured and institutionalized form of learning. Formal education is expected to increase the skills and knowledge base of learners (Sen, 2000) through organized and controlled delivery procedures. It has specific guidelines in terms of regulations and rules of order. Normally learning in such institutions is guided by curricula which are designed and delivered by certified specialists. Other characteristics of formal education include adherence to time specifications, certification, entry requirements and all that go with strict organization such as government or corporate control and financing.

Although formal education provide an organized body of knowledge and skills, non-formal education enables people to participate in cultural, community and corporate practices which enhance a sense of togetherness and common understanding. It is any organized and systematic activity carried outside the framework of the formal system to provide selected types of learning to particular subgroups in the population. It is intended to serve identifiable learning clientele whose needs have been ascertained. The teaching and learning activities in non-formal education settings are not bound by strict regulations. The methods used are practical exercises which are a combination of teaching and work rooted in local issues. Such methods are highly varied, flexible and include group projects, self-study and peer teaching. They are normally used to inform communities of new developments or innovations and to take care of the needs of those who prefer to learn in their local settings. They are aimed at achieving broad development goals for out-of-school communities and people with special needs. They have a wide scope, versatility, diversity and adaptability (E. Taylor, 2005). They have multiplicity of auspices, sources of support and are totally pragmatic.

Informal education is the kind that one gets subconsciously in society. Much of what people learn take place outside the schools in places such as the family, neighbourhood, community, leadership, peer groups, religious institutions, work, recreation, newspapers, television, radio and the Internet. They contribute in language and habit formation (Cohen, 2004), character development, orientation of

dispositions, emotional and psycho-social stability. As children grow up they are initiated into the social practices of the society from their childhood to adulthood. Informal education starts in the family as parents bring up their children. In traditional societies parents expect their children to adhere to strict rules that would ensure they encounter those influences that are approved by the parents. For young children, education often takes the form of showing them appropriate ways of operating at various stages of their lives. Parents are expected to 'bring up' their children, assisting them to select and harmonize appropriate content from agents of informal education. It is from this guided choice-making process that rules exist that constrain human behaviour so as to conform to the principles of education.

### **Re-Examining the Role of the Teaching Profession**

The importance of good teaching has not been properly emphasized in higher education where e-learning takes root and therefore the change agents do not have adequate professional guidance. While universities reward lecturers for their research output (published articles in refereed journals, conference papers, etcetera), effective teaching is not rewarded (Errington, 2001). It is therefore understandable that lecturers tend to focus on research rather than teaching (Engelbrecht, 2003). This has led to an erroneous belief that there is something wrong with the teaching profession.

Teacher-directed whole class teaching ... restricts the learners' contribution to the discussion both in terms of how much they say and the content of their input. It places them in the position of responding rather than initiating discussion and compels them to follow the teacher's line of thinking. This approach clearly has advantages in terms of transmitting knowledge, but [is of] limited use [to] teachers wishing to encourage independent and active learning. (Le Cornu & Collins, 2004)

E-learning comes into existence when the focus is shifting from teaching to learning and it is, therefore, modelled on the basis of enhancing learner activities and emphasising learning outcomes (Pearson & Trinidad, 2005). Since learning is the students' rather than the teachers' activity, there is a renewed interest in encouraging students to learn by themselves. Due to this perception, the staff who collaborate with students online include, also, the academic-support staff normally referred to by several titles: tutors, mentors, facilitators and so on.

Many people have written about the changes to teaching, tutoring and mentoring styles that e-learning brings into play. Tutors are no longer positioned as the founts and guardians of knowledge, and become conduits for knowledge from multiple sources, or facilitators of learners constructing their own understandings. (Jennings, 2005)

The reduced interest in good teaching as a result of teachers shifting interest to the more rewarding research means that less effort is invested in lesson preparation

hence ineffective achievement of objectives. This renewed interest in student-centred education environment has not worked well.

In several countries (e.g. the United Kingdom and the US) the dissatisfaction with the traditional approach to teacher education has led to programmes in which a considerable part of teacher education is being moved into the schools. Several institutions for teacher education have entered into partnerships with schools, and have developed new programmes in which sometimes novice teachers receive very little theoretical grounding. In some of these programmes, teacher education becomes more of a process of guided induction into the *tricks of the trade*. In many countries, this trend is also being influenced by the understandable need to solve the problem of teacher shortages.

The focus seems to move completely away from an emphasis on theory to a reliance on practical experiences. Such a *practice-based* approach to teacher education is, in turn, not very successful. In fact, it has been demonstrated that teaching experiences can lead to an unproductive process of socialisation rather than to fruitful professional development. (Tigchelaar & Korthagen, 2004)

Although, learning, which is the goal of teaching, is done by students, professional teaching remains an important element of an education environment. Learning is not guaranteed by just allowing students to interact amongst themselves and with the learning resources. The experiences that learners bring to a class have to be harmonised with the goals of education to be beneficial to them. Education is about selective learning, that is, learning certain things rather than others and teaching is about finding and applying strategies that optimize the learning of educative content. If non-professional teaching does not guarantee learning, it is not easy to see how non-teaching that e-learning promotes would achieve it. Teaching and learning are connected by intentional rather than necessary relations and it is the professional teacher who can be in a position to teach successfully.

By rewarding good teaching and research, professional teachers will concentrate on teaching and thereby improve the image of the profession. Consequently governments will be encouraged to invest more in teacher education programmes and shortage of teachers will become a thing of the past.

### **The Problems in Education**

The various forms of education namely formal, informal and non-formal are currently interacting in ways that have not been seen before, as agents of informal education become dominant, numerous and uncontrolled. As societies become more urbanised and parents become involved in pursuing careers (Quek & Knudson-Martin, 2006), parental influence on their children diminishes. Parents are no longer the most obvious objects of identification. Their roles have been taken, in part, by superficially much more attractive film and television heroes and football stars and therefore the authority of parents over their children is on the decline

(Wardekker, 2001). Sources of information have, also, increased and children encounter peers from diverse backgrounds. As they enter into formal education, the experiences acquired from the informal sector dominate the learning environment. The teacher is expected to build on such experiences by harmonizing the learning goals of students so as to contribute towards achieving the objectives of the school curricula. This is on the assumption that the diverse experiences the learners bring to the educational environment are not contradictory either to the teacher's instructional objectives or individual student's personal expectations.

Since the influence of informal education is not within the teacher's control, his/her efforts will be either rewarded by 'positive' learner experiences or hampered by the 'negative' ones. Although it has been argued that schools should not have any role in shaping students' value-attitudes (Hofstee, 1992), teachers' problems increase when several learners have needs that are contradictory to the goals of a learning community. Since the teacher's role is to support learner capacities appropriate for the achievement of specific objectives (Bennett *et al.*), the teacher has to attend to the individual students whose expectations are at variance with the goals of the group. Any failure by the teacher to build harmony at this stage is detrimental as it creates learner exclusion with the accompanying affective issues.

The process of education is further complicated by current trends where the distinction between children and adults is fast disappearing (Olmsted, Crowell, & Waters, 2003). Children are increasingly being treated as miniature adults as societies change from authority to negotiation based relations (De Swaan, 1982). In the name of democracy (Mahony & Moos, 1998) and non-authoritarianism (Knafo, 2003), an *adult's environment* is unleashed onto youth and a culture of liberalism in education is promoted as democratic. The extent of parental influence and control is increasingly related to the values of a specific parent, as children get multiple influences and value messages from several sectors of the society (Padilla-Walker & Thompson, 2005). There is no rule governing access to content from most agents of non-formal and informal education. Both adults and children share the same resources. For instance, since research has proven that access to 'inappropriate' sites on the Internet affects behaviour of the youth negatively (Byoungkwan & Tamborini, 2005), rules should be formulated to ensure that such sites are not available to them until they either become adults or their circumstances change as stipulated. Negative behaviours emanating from such private exercises are normally in the public domain and contravene secular law and the culprits may get undeserved punishments as adult members of the society fail to provide guidance.

Teaching is an educational activity and since education is associated with the acquisition of worthwhile knowledge, skills and dispositions, it is expected that the purpose of teaching is not only to guide learners but also create an environment where order prevails and 'right and wrongs' (Swift, 2005) are recognized. In the light of educational principles, institutional operations and people's actions ought to be constrained by specific rules. This is not to curtail freedom but to ensure that rights and freedom are aligned with corresponding responsibilities. It is in this sense that rules are necessary to govern access to information upon which human



actions depend. Information needs to be categorized and released to appropriate individuals or groups of people according to their needs and circumstances. Although such efforts have been described by human rights activists as censorship of information (Besette & Hauffer, 2001; Glenn, 2004), the wisdom of treating unequal people equally is yet to be established.

The current efforts at integrating ICT in all sectors of the society have elevated the influence of informal education. Although it is expected that the content of informal education should be regulated by socio-cultural norms, religious commitments and secular law, there is a need for an intentional effort to ensure that such content is in accord with the principles of *educatedness* (Kohn, 2004). In online e-education, there is a need for identification of the required content and selection of useful sites that provide unambiguous information to the learner. While the student will be free to search for relevant information on the Internet, a clear basis for appropriate information needs to be put in place.

## **Conclusion**

This paper highlights the role that e-learning innovations play in education and its ability to increase access to learning resources. The educational promise of the Internet and distance education is real. The cluster of technologies that constitute the Internet powerfully reinforces and extends some of the most effective traditional forms of teaching. The impact of the Internet in education is more dynamic and pervasive than that of any previous breakthrough in information technology. Consequently, in online e-education courses, the teacher is not the only driving force in the class; students have a chance not only to learn on their own, by experimenting with various learning styles, but also to collaborate with fellow students from around the world in order to add special interests and experiences to the class interactions. As online e-education evolves its design should be made to include both self and collaborative learning styles. The place of the teacher as a guide, counsellor and facilitator in the online e-education environment therefore requires sustained attention.

E-learning can be used to reach large numbers of students remotely and therefore has the capacity to enhance access to education. The integration of ICT and the Internet in education has the possibility of encouraging intra-institutional networking for a globally managed learning forum. There is the possibility of students and teachers all over the world sharing and developing a common knowledge base that can be enhanced and reused. However, current practices in e-learning innovations concentrate on learning as opposed to teaching. It has emerged that e-learning is built on a practice that emphasises self-learning as the corporate sectors of the society determine the goals of mainstream education. The practice brings into question the role of the professional teacher and the future of teacher education programmes.

In current practice, teaching and research in higher education are not given equal weight, especially, in their contribution to promotional prospects. Many teachers have therefore concentrated on research instead of perfecting their teaching

capabilities. The resultant effect has been negative as education has been blamed for the failure to meet the needs of society. By shifting focus, professional teachers are therefore unavailable to influence educational policy formulations regarding what the mainstream education can possibly achieve through various practices. Consequently, society currently requires education to contribute directly to economic growth and industrial innovations, an idea which has led to emphasis on students' practical abilities to work in the corporate sectors after school. The practice has therefore changed the overall purpose of education as the content of education from the non-formal, informal and formal educations are left to interact unduly. While online e-education accords the learner the freedom to explore his/her learning styles, there is a need to retain the teacher as a counsellor, consultant and a guide. Although prominence is given to the recognition of the learners' individual differences in their efforts as they engage in exploration and acquisition of knowledge, skills and dispositions, the teachers' role is paramount. The learner has the freedom to discover his/her preferred learning styles and to determine the pace of learning within the limits of acceptable rationality consistent with the pursuit of the 'Good'. The teacher as the custodian of the socially approved curriculum holds a prominent position in the identification of 'appropriate content' from the World Wide Web.

This paper proposes that while e-learning should be integrated with teacher education disciplines, there is also a need for discipline-specific educator programmes. The eventual effect is that instructors in all institutions of learning will be trained teachers as opposed to the current practice where they are found only in the mainstream-pre-university and teacher education institutions. Mainstream education cannot produce, directly, graduates capable of demonstrating competencies required by all sectors of the society. Its purpose should be maintained at providing the foundation for continued learning without expecting a specialist orientation. For the purposes of specific orientations, parallel education settings need to be put in place to serve the technological, corporate, industrial and economic sectors. The overall purpose of education will be achieved if (1) teaching is treated as a profession (2) the policy guidelines of mainstream education are guided by educational rather than corporate or political principles and (3) discipline specific educators are trained to serve various sectors of the society.

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