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Internet Distance Education: An Introduction

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About

Educators working through the 1990s will recall the rush to computerize education. We had convinced ourselves that computerization would revolutionize pedagogy, and help us to lead our students to a brave new world of learning efficacy and experiences. This belief in the power of computer technology was in part due to our own exposure to the real potential of personal computers, but largely through hype promulgated by industry and middle managers in state and provincial governments who were the targets of skillful marketing. That, and there was the sense that somehow just having computers in the classroom would usher in the new frontier. For the most part, computers were a solution looking for a problem, and educators at all levels held their breath waiting for the dividends to show. There is no doubt that the anticipated cost savings and efficiency gains have not materialized: classrooms are still overcrowded, teachers overworked, and budgets shrinking. Arguably, the greatest benefit of such large investments in time and resources was that students learned more about computers. In a world where the majority of students would graduate to go on to professions based in high-tech, this would be sufficient grounds to call the investment a success.

The role of computers in education is in a state of constant flux and evolution. There are still many ill-conceived erroneous notions surrounding computers in education, but the move forward technologically is now unmistakable. In the boardrooms of virtually all primary through post-secondary learning institutions, a permanent ledger entry has been created for classroom computer technology and professional training. Over time, we have learned some important lessons about using computers in education and what about computers should be taught, but in terms of pedagogy, we have yet to learn to approach computers as they are meant to be used: as tools for learning and not subject matter for the masses.

Computers have been proven to be excellent tools for data management and have yielded tremendous gains in administrative offices and research efforts in this regard. These days,
parents truly appreciate the instant emails and reporting of their children’s performance at school. And now, in combining the computing power of a single desktop with the unlimited reach of a highspeed Internet connection, a world of possibilities opens up. But once again, the simple availability of options does not require that the options themselves be implemented, nor should they necessarily be implemented; computers should not be used as a pedagogical tool simply because they are there but rather they should be used only when they provide some tangible benefit to the student’s learning. It goes without saying that Internet-based Distance Education requires computer intervention, but the role of the computer and network must be equally well-defined in the instructional process.

In this series, I will argue that there is a role for computers in education but that the role is rather specific, perhaps even limited. Furthermore, without proper planning and a respect for sound pedagogical principles, computers become the proverbial boat anchor, dragging learning institutions down into the murky depths of unnecessary expenses and missed opportunities. More specifically, computers are not teachers and will never effectively fill this role.

From here on, we will concern ourselves solely with Distance Education, though the same fundamental pedagogical principles apply to instruction regardless of modality. Distance Education (DE) however poses unique challenges and opportunities for educators. The need for sound instructional principles in DE is growing rapidly and it is no longer sufficient to simply present written knowledge in a slide presentation or web page and call it education. Likewise, evaluation of student performance requires equally rigid standards and this is particularly important in the DE context where students and teachers rarely have the human contact that can allow for varied degrees of interpretation of performance.

Teachers, in particular at the post-secondary levels where the Distance Education market is growing most rapidly, are obliged to ensure that the product (independent learners) is the highest quality; for the student, this means that well past their graduation date, they are well-equipped to find solutions to the questions raised in their professional and personal lives. To illustrate, according to the World Bank, China alone produces more than 100,000 graduates a year through distance education, with more than half of China’s 92,000 engineering and technology graduates having attained their degrees through distance education. In the same way an engineer must follow strict rules to ensure the quality of their work and safety of their products, DE educators and administrators must ensure that the programs they offer must be of the highest standards. Specifically, Internet-based DE programs must 1) meet the expectations and needs of their customers, 2) appeal to the widest possible range of learning styles, 3) provide equitable and fair evaluation of learning and performance, and 4) eliminate cultural, social, political bias from programming.

Paradoxically, one of the great benefits of the evolving DE universe is that it works best when the educator eliminates all personal (rather than instructional) bias from instruction. To this point in time, it may have been acceptable to run students through a ‘paper chase mill’ and invoke ghosts of the past to rationalize academic hazing (if a course is difficult, it must be achieving the
desired result). At a minimum, it was acceptable to turn a blind administrative eye to such behavior. While such hazing may provide some relief or entertainment for the egos of the instructors, it amounts to the imposition of the instructor’s morality on the students with final grades in the balance. This behavior, something we have all experienced, is nothing short of abuse of authority and will not be tolerated in a burgeoning DE market. Ironically, the teacher who can remove their moral selves from instruction will most often gain the most respect from students and achieve the greatest outcomes. Again, in focusing on the quality of instruction, the instructor achieves the greatest results and assures the continued successes of the DE institution.

Outside of Faculties of Education, there is a general notion that to teach is to provide information, give a few examples, then to test knowledge using questions that most often probe only a limited number of cognitive skills, with simple recall seemingly the most popular testable element. Furthermore, there is a common belief that an individual with a history of successes in a particular industry will, by extension, be the best teacher for that domain. Nothing could be further from the truth. To refer back to the earlier illustration, knowledge of bridges does not necessarily equate to the ability to teach new bridge builders. While pure knowledge is a key aspect of any academic endeavour, it represents only one small cognitive requirement of learning according to many decades of research in psychology and education.

Jean Piaget, one of many psychologists studying the nature of learning, described in some detail a model for hierarchical learning in infants, children and adolescents (Piaget, 1963). The fact that his name and theories are so well known in schools of education, medicine and psychology is a testament to our innate or intuitive understanding of how what he described must be, at least in part, true. If we know that learning occurs in stages, it only makes sense to approach teaching in the same way.

Volumes of research also show in great detail that learning is much more than simply memorizing. Contemporaneously to Piaget and since, many cognitive and affective models of learning have been developed. Great examples of this can be found in the many varied tests of intelligence and affect in current use in modern psychometrics. From early achievement tests, to SATs, to comprehensive diagnostic IQ batteries, such as WISC and Woodcock-Johnson, all demonstrate varying levels of complexity of cognitive and affective processing. One excellent analysis of cognitive processing was elaborated by J.P. Guilford in 1956.

Guilford developed a model of intellectual aptitudes (collectively considered ‘intelligence’), which seems to encompass most of those abilities defining testable performances of human intellectual functioning. He described the intellect as a cube, that is, having three intersecting dimensions: Operations, Contents, and Products. Each of the dimensions is further subdivided as follows:

1. Operations—Divergent Production, Convergent Production, Evaluation, Memory, and Cognition
2. Contents—Figural, Symbolic, Semantic, and Behavioral
3. Products—Units, Classes, Relations, Systems, Transformations, Implications

Guilford’s approach was to use multivariate methods and extract commonalities from various cognitive tasking operations (read ‘tests’) in common use at the time. This summary is a grotesque oversimplification of his work, but suffice it to say that the outcome, the Structure of Intellect, or SOI, has since yielded some clinically strong tools for diagnosis and treatment of cognitive and behavioral dysfunctions, including some contemporary tools in use in optometric practice among others. The point here is to demonstrate that an acknowledgement and application of the multifactorial nature of intellect can and will produce tangible results because learning and intellect is multifactorial.

Of particular significance to educators is a model illustrated by Bloom et al.: The Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain (B.S. Bloom, 1956). So successful is the ‘Bloom Taxonomy’, that is has been translated into more than twenty languages (Krathwohl, 1994) and has provided a basis for design of evaluation tools and curriculum development throughout the world. (Chung, 1994; Lewy and Bathory, 1994; Postlethwaite, 1994)

It is beyond the scope of this introduction to describe in any detail Bloom’s Taxonomy, and given its weighty role in pedagogical design, it will be covered in a separate article in this series, “Foundations of Distance Education”. In brief, evocative of the work of Guilford and the SOI, the Taxonomy elaborated the cognitive process dimensions of learning in terms of six axes, each of which is further sub-divided into measurable behaviors:

1. Remember—Recognize, Recall
2. Understand—Interpret, Exemplify, Classify, Summarize, Infer, Compare, Explain
3. Apply—Execute, Implement
4. Analyze—Differentiate, Organize, Attribute
5. Evaluate—Check, Critique
6. Create—Generate, Plan, Produce

The team went on to also elaborate the affective domain (Krathwohl, Bloom, and Masia, 1964) and others independently considered the psychomotor domain (Simpson, 1966; Harrow, 1972).

One of the great many benefits of formalizing the approach to DE, is that it enables instructors to be more effective paradoxically by releasing the instructor from the burden of a stage performance. Further, it should enable students to free themselves from the need for a teacher. As Meeker (1969) states, “… teaching the ability to learn should be as equally important a goal as mastery of prescribed content.” Indeed, the most effective teaching techniques are inextricably tied to the most successful models of DE.

In the next article, we will continue the discussion by considering the benefits of DE and how formalized, well-structured instruction enhances the experience and production of online
In the articles that follow, we will consider the foundations of effective instructional design, the role of computers in education, the integration of computers in post-secondary learning, and a possible business model of DE for post-secondary learning. In all cases, the emphasis will remain on the role of sound pedagogical practice and how it positively impacts on all aspects of Distance Education.

Works Cited


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3 THOUGHTS ON “INTERNET DISTANCE EDUCATION: AN INTRODUCTION”

registry cleaner
on February 3, 2014 at 2:53 PM said:

It’s an amazing piece of writing in support of all the internet users; they will obtain advantage from it I am sure.

cctv
on February 3, 2014 at 5:59 PM said:

WOW just what I was searching for. Came here by searching for Ghosts

registry cleaner pc cleaner speed up my pc clean my pc how to speed up computer
on February 3, 2014 at 9:25 PM said:

Hello this is kinda of off topic but I was wondering if blogs use WYSIWYG editors or if you have to manually code with HTML. I’m starting a blog soon but have no coding expertise so I wanted to get guidance from someone with experience. Any help would be greatly appreciated!