Computer Literacy: A Pedagogic Pre-Requisite

Fundamentals of Computer Technology for K12 Educators

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Over the past several decades, the utilization of digital technology has become an integral and formidable part of the human condition. With these contemporary tools, the face of humanity around the world has taken on a fresh new appearance as we endeavor to integrate the myriad of silicon-based devices into every corner of our global culture. When it comes to the creation, manipulation, and assimilation of digital information, the human need and desire to use computer devices within the personal and social context of everyday life, is illustrated by the ostensible truth that modern society has now become addicted and dependent upon these innovative tools. Whether these devices are used by humanity for entertainment, fitness, education, community, commerce, and or personal expression is somewhat irrelevant. What is relevant is the fact that computers have now become a permanent fixture within the proverbial house that society built.

Within the scope of educational instruction, computers have permeated the outer layers of pedagogic tradition and didactic convention by improving upon an educator's ability to instruct with efficiency and effectiveness. Despite this fact, a study by Lambert (2008) reveals issues associated with *computer self-efficacy* (CSE) among many computer illiterate educators. During the case study, the participant's inability to execute basic computer related tasks brought about feelings of anxiety, frustration, ineptitude, and disinterest. According to Venkatesh (as cited in Ball, 2008), these sentiments lead to a psychological condition known as *computer anxiety* (CA), which promotes negative affective reactions toward the use of computers within the traditional classroom setting.

In addition to feelings of misery, despondence, and disempowerment, another aspect of computer illiteracy among unskilled educators is a negative attitudinal perception that computers do nothing more than waste precious time and valuable monetary resources. Based on a study conducted by Heinssen, Glass, and Knight (as cited by Ball, 2008), it was shown that limited

knowledge and experience in the use of computers could contribute to subjective perspectives, lowered expectations, and hardened indifference. While anxiety and experience are significant factors that sway an educator's acceptance or rejection of technology as an effective tool, it is important to note that educators who harbor negative attitudes and perceptions toward digital technology can greatly influence the implementation and ongoing use of computers within the classroom setting (Kitchenham, 2006).

The purpose of this instructional design project is to develop an instructional module that addresses the need for basic computing skills among K-12 educators across the country. As the nation's school systems recover from the No Child Left Behind (NCLB) Act's failed attempt at integrating and implementing technology within our school curriculums, the need to catch up with the rest of the global community weighs even heavier on those educators who lack the necessary skills needed to comply with the latest government mandates. The revised goals and objectives for educators raise the bar on pedagogic expectations with regard to computer proficiency and achievement (McConnell, 2011).

By way of an interactive web-based interface, willing participants of this project will have an opportunity to engage in an instructional lesson that includes a preliminary multiple-choice pre-test (10 questions) and a 4-Point Likert survey (40 questions) that will help to establish the individual's knowledge-base and attitude toward the use of computers. After the content presentation, participants will take a multiple-choice post-test (10 questions) and the same 4-Point Likert survey to help evaluate the effectiveness of the lesson in quantitative and qualitative terms. The core foundation of this web-based module will provide educators with a brief introduction and fundamental overview of computers. Participants will be required to

indentify correct terms and concepts associated with basic key components of a computer system, computing environments, applications, and storage media.

Based on prior research on computer literacy among unskilled educators, I anticipate mixed feedback consisting of both positive and negative reactions. Some participants of this instructional module might appreciate the useful and practical benefits this lesson plan has to offer, while other participants might find the module to be a complete waste of time due to their continued attitudinal disposition and negative perception toward computers. Regardless of the reaction, the goal and objective of this instructional module is to instill a modicum of confidence and self-efficacy in the participants with the hope of increasing their technical proficiency levels as 21 Century instructors. This in turn should help to improve the implementation and integration of technology within their lesson plans, and with any luck alter the way they view technology as a progressive pedagogic tool.

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