STUDENT PERCEPTION TOWARDS THE EFFECTIVENESS OF INSTRUCTIONAL STRATEGIES FOR ONLINE LEARNING IN SULTAN IDRIS UNIVERSITY OF EDUCATION (UPSI)

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DECLARATION

I hereby declare that the work in this dissertation is my own except for quotations and summaries which have been duly acknowledged.

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ABSTRAK

Berlandaskan Tujuh Prinsip bagi Amalan yang Baik untuk Pendidikan Peringkat Sarjana Muda, penyelidikan ini mengutarakan kerangka theoretikal yang mungkin dapat membantu menzahirkan pembelajaran atas talian. Masalah utama yang menjadi fokus kajian ini ialah sama ada pelajar peringkat sarjana muda di Universiti Pendidikan Sultan Idris (UPSI) tahu tentang Tujuh Prinsip ini dan apakah implikasinya. Sampel seramai 397 partisipan telah berjaya diperolehi. Dapatan kajian menunjukkan bahawa tahap kesedaran pelajar terhadap Tujuh Prinsip tidak bersandar dengan pembolehubah bilangan semester di universiti dan afiliasi dengan fakulti. Di samping itu, tahap penggunaan teknologi komunikasi seperti telefon dan pesanan ringkas (SMS), emel, forum dan bahan pembelajaran atas talian oleh tenaga pengajar juga tidak bersandar dengan pembolehubah tahap kesedaran pelajar. Dengan menggunakan ujian ANOVA sehala antara kumpulan, didapati bahawa terdapat perbezaan yang signifikan antara persepsi pelajar dari kumpulan semester lima, enam dan tujuh terhadap keberkesanan strategi instruksional untuk pembelajaran atas talian. Ujian post-hoc Tukey's HSD menunjukkan perbezaan persepsi di kalangan pelajar semester tujuh adalah lebih tinggi berbanding dengan pelajar dari semester enam dan semester lima. Ujian ANOVA sehala antara kumpulan juga telah dilakukan untuk pelajar dari berlainan fakulti. Dapatan ujian menunjukkan bahawa terdapat perbezaan yang signifikan antara persepsi pelajar dari berlainan fakulti. Ujian post-hoc Tukey's HSD menunjukkan perbezaan persepsi di kalangan pelajar dari Fakulti Bahasa adalah lebih tinggi, berbanding dengan pelajar Fakulti Teknologi Maklumat dan Komunikasi, di ikuti pelajar Fakulti Sains dan Teknologi, Fakulti Sains Sosial dan Kemanusiaan, dan Fakulti Sains Kognitif dan Pembangunan Manusia. Akhir sekali, analisis faktor eksplorasi telah dijalankan. Ini untuk mengesahkan struktur konstruk kerangka theoretikal yang jika digunakan sebagai strategi instruksional, mungkin dapat menzahirkan pembelajaran atas talian. Dapatan kajian menunjukkan bahawa memang terdapat Tujuh Prinsip di mana kesemuanya mempunyai nilai 'eigen' yang lebih besar dari 1. Analisis lanjutan yang dilakukan terhadap komponen matrik yang diputar menunjukkan bahawa dari 34 item yang digunakan, 23 adalah pembolehubah tulen dan lagi 11 adalah pembolehubah rumit.

ABSTRACT

Based on the Seven Principles for Good Practice in Undergraduate Education, this research attempted to put forth a theoretical framework that might facilitate the manifestation of online learning. The central problem that was the focus of the research was to determine whether undergraduate students in *Sultan Idris University of Education* (UPSI) are aware of the Seven Principles and subsequently its implications. A sample of 397 participants was successfully obtained. Findings indicated that student awareness of the Seven Principles was independent or not related to variables such as the number of semesters they had experienced online learning and faculty affiliation. Additionally, the utilization level of communicative technology such as telephone and text messaging (SMS), email, forum, and online resources such as materials by teaching staff was also independent or not related to the variable of student awareness. A test using One-way between groups ANOVA revealed significant differences between student perception towards the effectiveness of instructional strategies for online learning among fifth, sixth and seventh semester students. A post-hoc analyses using Tukey's HSD indicated that the average perception among students was higher for seventh semester students, followed by sixth and fifth semester students. A second test using One-way between groups ANOVA revealed significant differences between the perception of students from different faculties. A post-hoc analyses using Tukey's HSD indicated that the average perception of students' from the Language Faculty was highest, followed by students from the Information Technology and Communication Faculty, Science and Technology Faculty, Social Science and Humanities Faculty and, Cognitive Sciences and Human Development Faculty. Lastly, an exploratory factor analysis was conducted. This was to verify the validity of the intangible constructs that constitute the theoretical framework that if used as instructional strategies, might facilitate the manifestation of online learning. Findings revealed that there are indeed Seven Principles with all of them having eigenvalues greater than 1. Further analysis of the rotated component matrix revealed that of the 34 items used, 23 were pure variables, while the remaining 11 were complex variables.

TABLE OF CONTENTS

CHAPTER 4   ANALYSIS OF DATA

LIST OF DIAGRAMS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Introducing the Research

For the past century, the world that we live in has had to change dramatically and rapidly. In very much the same manner as to how discoveries and inventions fuelled the Industrial Revolution a new revolution has begun. The catalyst for this new revolution is technology, to be more precise the invention of the microprocessor that is used in today's personal computer (PC), and the extended applications of the Internet.

During the 1950's super computers took up entire floors and were astronomically expensive. During the 1970's mainframes became smaller but were still relatively expensive. By 1979, microcomputers were developed and thus began the age of personal computing. Now twenty-six years later, laptop computers are much more powerful, portable and cheaper than the super computers and mainframes of yesteryears.

In 1969, ARPANET (Advanced Research Project Agency Network) was developed for military, scientific and research purposes. After thirty-six years ARPANET has evolved into a global network known as the Internet. During the early 1980's only a few hundred were connected to the Internet. But in 1993 when Marc Andreessen released MOSIAC, the first ever point-and-click graphical user interface (GUI) for the Internet, nothing would ever be the same again (McCain & Jukes, 2001).

The impact of PCs and the Internet on our daily lives has been without a doubt significant. The bold claim made by the American Institute for Higher Education Policy that "not since the printing press was invented by Johann Gutenberg in the 15th century has an 'invention' generated so much potential to dramatically change how people communicate, interact" and share information with one another is substantiated (Bullen, 2001). In very much the same vein, "technology is an Information Age teaching tool" (Lever-Duffy, McDonald & Mizell, 2003).

Although for the record, in a Discovery Channel program it was pointed out that the first printing press was actually invented by the Chinese in the 8th century. Johann Gutenberg's printing press arrived 700 years later in the 15th century (What the Ancients Knew, 2006).

Predictions about paradigm shifts in the way educators will conceptualize and deliver education to learners were quick to be made. However, having access and being able to cope with technology are two different things, what more to make it all work. To the unprepared change either becomes uncomfortable or disorientating. Shying away from change and going back to their tried and tested ways is the only alternative for those who are unprepared. If change were to be forced, then most of them would choose the easy way-out i.e. the path of least resistance (McCain et al., 2001).

As a result, the acceptance of computers and the applicability of the Internet in the field of education appear to be in a state of paradigm paralysis. Educators are struggling for answers to simple questions like why and how should computers and the Internet be used. Therefore, "research is needed to better assist students [and teaching staff] in using this electronic medium for their academic success" (Yixin,

2003). Compared to our counterparts from the military and business world for example, we in the field of education are "laggards" (Morrison, Ross & Kemp, 2001).

According to the interpretation of McCain et al., (2001), "paradigm is a model, perspective, value system, frame of reference, or worldview that guides one's actions. Paradigm governs almost everything that we do and everything we think." When in a state of paralysis the unprepared do not think, they just react. Most often their knee-jerk reaction is to hang on to what is customary and secure since it is only human nature to do so.

Hence the need to change current paradigm, or in layman's terms the mind-set about how the teaching and learning experience has always been to what it needs to be. This is due to the fact that modern society is becoming more and more reliant on complex technological infrastructure to create, process and distribute information.

For that reason, society requires that its workforce be properly trained. Sixty-five percent of the worth while professional and clerical jobs currently being sought after are those that deal with information and its diffusion, for example teachers, accountants, bankers, bureaucrats, clerks, programmers, insurance people, lawyers, managers, secretaries, stock brokers, technicians and many others (Naisbitt, 1984).

This demand for competent knowledge workers can only be supplied by the education sector. Education is the pillar of modern society. Therein, lays the dilemma. How does education assimilate with technology? Is it merely a set of circumstances that requires the incessant purchase, installation and upgrading of computer related infrastructure and paraphernalia? To use an analogy; is education fated to transmute into some sort of cybernetic organism evocative of the Borg from Star Trek?

Questions regarding the practicality and acceptance of computers and the Internet in the field of education have already been partly answered in John Naisbitt's

book entitled *Megatrends; Ten New Directions Transforming Our Lives* (1982) and Everett Roger's *Theory of Diffusion and Adoption* (1983). The Naisbitt Group used an intelligence gathering technique employed during World War II to monitor public behavior and social change. By utilizing the technique of content analysis to gather data they were able to synthesize what was happening in society and forecast what might be future trends or single out pointless fads.

Consequently, Naisbitt (1982), and his group were able to identify and predict that computers would firstly, "offer a cost effective albeit capital-intensive way of individualizing education." Secondly, "computers simplified the extensive recordkeeping required for individualized instruction." And thirdly, "familiarity with computers is now considered a strong vocational advantage, [or in other words] a salable skill."

In addition, Naisbitt (1982), and company were also able to come up with *The Three Stages of Technological Development*. Firstly, new technology or innovations would follow the route of least resistance. Basically, this meant that technology would be applied in ways that did not intimidate people or threaten their jobs. Secondly, technology would be used to improve previous technologies. For example, how the typewriter has been replaced by the computer or how digital cameras are gradually replacing cameras that use film. Lastly there is the discovery of innovative directions or applications that are developed from the technology itself, which according to Naisbitt has yet to occur. Nevertheless, when considered in the context of current literature, is probably happening as you read this, case in point, the Internet and its many spin-offs.

Meanwhile, Roger's Theory of Diffusion and Adoption suggested that there are many reasons to explain why an innovation may or may not be accepted. For

example, there are factors such as the advantages of the innovation, the compatibility of values, needs and experiences, innovation complexity, ability to try the innovation, communicating information about the innovation as well as the social system; the influence of networks and relationships (Morrison et al., 2001). Though, within the context of this research it was hypothesized that a deficit in the observability of results best explains why great doubt still exists regarding the effectiveness of online instruction. Or in simpler terms, how online instruction manifests itself so that educators will know exactly what to do, how to do so and where to look for tell-tale signs of whether they are succeeding or are failing.

Additionally, Rogers also classified those who adopt technology into five categories. Firstly, there are the first adopters who rush out to adopt innovations as soon as possible, sometimes even going after prototypes or test versions. Secondly, there are the early adopters who adopt an innovation as soon as a 'commercial' version is available. Thirdly, there are the early majority adopters who comprise the first fifty percent to adopt an innovation. Fourthly, there are the late majority adopters who adopt an innovation only after it seems 'safe.' And lastly, there are the laggards who are the last to adopt an innovation or sometimes completely fail to do so (Morrison et al., 2001).

1.2   Research Background

With regards to how the teaching and learning experience would be effected, many educators and learners alike were initially guilty of thinking that online instruction, or generally referred to in Malaysia as online learning, would be a simple task of going through prescribed content followed by an automated evaluation of

learning, based on set responses. This sounds very much like behaviorism and could possibly be a textbook example of operant conditioning i.e. stimulus and response. For low proficiency students, drilling is often the only teaching approach that would guarantee some measure of success.

Fortunately, this is not the only way online learning works. It is also about satisfying the high proficiency student's hunger for knowledge, for which the motivation is intrinsic rather than extrinsic. However, if there is a lack of motivation then learning would only occur at a superficial level.

That is why online learning can also cater to constructivism. Constructivism believes that learning is an active process and does not happen in a vacuum. Knowledge is the result of learning and "knowledge is unique to the individual who constructs it" (Lever-Duffy et al., 2003). Active learning, contextual learning, inquiry learning, learning contracts, mastery learning, and meaningful learning are all terms used to describe the various learning activities advocated by constructivism. In addition, learners must want to learn and share information in an online environment. Learners must not be passive, silent or sleeping partners in the learning process. They are constantly challenged and provoked with new perspectives.

Analyzed closely, these learning principles are exactly what have been outlined by Chickering and Gamson's *Seven Principles for Good Practice in Undergraduate Education* (1987). Learners are presented with appropriate learning materials and tasks that match, or better yet, somewhat exceeds their proficiency level. And in phases, they are provoked with challenging motives and perspectives that can 'hook' them to the learning process. All of this might be hard to fathom for some, but so was the thought of being able to lug around a laptop computer some fifty-five years ago when super computers were the size of whole floors. But the truth of the matter is

what stands in the way of education being dragged out of the stone-age and into the 21st century is just a few steps that educators and students alike must be made aware of when they engage in online learning. Once these steps have been taken, then questions regarding the observability of results should become insignificant. Instead it now becomes "how to continue good teaching practice while integrating technology" (Robertson, Grant & Jackson, 2004).

1.3   Statement of the Problem

The central problem that was the focus of the research was to determine whether undergraduate students in *Sultan Idris University of Education* (UPSI) are aware of the Seven Principles for Good Practice in Undergraduate Education. A sub-problem that the research also investigated was the perception of UPSI students towards the effectiveness of instructional strategies for online learning based on the Seven Principles. A final sub-problem that the research investigated was the validity of the Seven Principles in order to verify whether the items used actually measured what they were suppose to measure.

Consequently after categorically determining student awareness of the Seven Principles, the researcher proceeded to investigate whether student awareness was independent or related to demographic variables such as the number of semesters they had experienced online learning and faculty affiliation. In line with the central problem, it was also pertinent to identify whether the utilization level of communicative technology and online resources by teaching staff was independent or related to student awareness. The underlying purpose for this course of action was two-fold. Firstly, the researcher wanted to find out if there exist any observable

patterns that should be noted. Secondly, are instances of student awareness of the Seven Principles occurring purely by chance?

Based on the secondary sub-problem, there was also the need to investigate whether any differences exist between the perceptions of students from different semesters towards the effectiveness of instructional strategies for online learning. This was to explore if students' perception was inclined to be influenced by an increase in the amount of experience they had with instructional strategies for online learning in an integrated environment such as UPSI.

Subsequently, there was also the need to investigate whether any differences exist between the perceptions of students from different faculties towards the effectiveness of instructional strategies for online learning. This was to analyze if students' perception was inclined to be influenced by faculty affiliation.

Last but not least, the researcher conducted an exploratory factor analysis to verify the validity of the intangible constructs being studied. This was to find out how many principles actually exist and whether the items used were tapping into the constructs that they were suppose to.

1.4   Research Objectives

The primary objective of this research was to categorically measure students' awareness of the Seven Principles for Good Practice in Undergraduate Education. Its secondary objective was to scrutinize student perception towards the effectiveness of instructional strategies for online learning. While its final objective was to verify the validity of the Seven Principles and its items.

a. To categorically measure and gauge students' awareness of the Seven Principles for Good Practice in Undergraduate Education.

  i. To determine if student awareness was independent or related to demographic variables.

  ii. To determine if the utilization level of communicative technology and online resources by teaching staff was independent or related to student awareness.

b. To study and analyze students' perception towards the effectiveness of instructional strategies for online learning.

  i. To determine if there were differences in perception between fifth, sixth and seventh semester students towards the effectiveness of instructional strategies for online learning.

  ii. To determine if there were differences in perception between students from different faculties towards the effectiveness of instructional strategies for online learning.

c. To verify the validity of the Seven Principles and its items.

1.5   Research Hypothesis

Based on the problems and objectives that had been identified, the researcher would like to put forth the ensuing nol hypotheses (HO) and their respective alternative hypotheses (HA):

HO1:   There was statistically no significant relationship between the number of semesters students' had experienced online learning and their awareness of the Seven Principles,

HA1:   There was statistically a significant relationship between the number of semesters students' had experienced online learning and their awareness of the Seven Principles.

HO2:   There was statistically no significant relationship between faculty affiliation and student awareness of the Seven Principles,

HA2:   There was statistically a significant relationship between faculty affiliation and student awareness of the Seven Principles.

HO3:   There was statistically no significant relationship between the use of telephone and text messaging (SMS) by teaching staff and student awareness of the Seven Principles,

HA3:   There was statistically a significant relationship between the use of telephone and text messaging (SMS) by teaching staff and student awareness of the Seven Principles.

HO4:   There was statistically no significant relationship between the use of email by teaching staff and student awareness of the Seven Principles,

HA4:   There was statistically a significant relationship between the use of email by teaching staff and student awareness of the Seven Principles.

HO5:   There was statistically no significant relationship between the use of forums by teaching staff and student awareness of the Seven Principles,

HA5:   There was statistically a significant relationship between the use of forums by teaching staff and student awareness of the Seven Principles.

HO6:   There was statistically no significant relationship between the use of online resources by teaching staff and student awareness of the Seven Principles,

HA6:   There was statistically a significant relationship between the use of online resources by teaching staff and student awareness of the Seven Principles.

HO7:　　There was statistically no significant difference between the perceptions of fifth, sixth and seventh semester students, towards the effectiveness of instructional strategies for online learning,

HA7:　　There was statistically **a** significant difference between the perceptions of fifth, sixth and seventh semester students, towards the effectiveness of instructional strategies for online learning.

HO8:　　There was statistically no significant difference between the perceptions of students from different faculties, towards the effectiveness of instructional strategies for online learning,

HA8:　　There was statistically **a** significant difference between the perceptions of students from different faculties, towards the effectiveness of instructional strategies for online learning.

1.6   Significance of the Study

The significance of this study to the field of education, specifically undergraduate education, was that it attempted to provide a theoretical framework for the application and assessment of good practice in teaching and learning. Students and teaching staff alike, must realize and understand that prior to the conceptualization of the Seven Principles, there was no surefire formula that could either guarantee successful or fair assessment of teaching and learning practices. A lot of the intricacies and idiosyncrasies that were key elements in the crafting of successful teaching and learning practices were categorized as abstract concepts or experiences that had to be acquired through trial and error.

That is why it is pertinent for all of us, to either be aware off or even acquire as a theoretical prerequisite the Seven Principles for Good Practice in Undergraduate Education. Comparable to the manner in which *Mager's Setting of Performance Objectives, Merrill's Component Display Theory, ARCS (Attention, Relevance, Confidence and Satisfaction) Theory of Motivation, Gagne's 9 Events of Instruction* and *Bloom's Taxonomy*, the Seven Principles can be utilized as a rubric for the application and assessment of good teaching and learning practices.

In the context of this study the Seven Principles was also utilized as the theoretical framework that if used as instructional strategies, might facilitate the manifestation of online learning. Quite often students and teaching staff alike find themselves in a bind when having to use new technology. Among the more frequent questions they would ask themselves were; how do you decide how to use new technology if you do not know how? How do you know where, when, and which

technology to use when you are absolutely clueless? And how do you gain the necessary experience to utilize such new technology without being embarrassed by the mistakes that are bound to be made (Dawes, 2000)? Skillfully wielded as instructional strategies, the Seven Principles along with tools and resources such as telephones and text messaging, emails, forums (MyGuru), and learning materials (MyGuru) would enable the above mentioned questions to be answered. All that is left to be done is to use the predetermined principles in the form of instructional strategies and utilize your own judgment to where, when and which communicative technology or online resource to use.

Consequently, it was because of these reasons that the instrument used in the study was chosen. In a way, it might just be the catalyst that disseminates the much needed answers to how, where, when, and which communicative technology or online resource to use in realizing online learning. Not only that, but it may even show us the right way to go about doing so effectively.

1.7 Assumptions and Limitations of the Research

It was assumed that the participant's of this research possessed a level of computer competency that would enable them to comprehend the terminology used. It was also assumed that they would have had sufficient exposure to UPSIs' integrated online environment to enable them to relate to the instructional strategies mentioned.

Due to constraints with regards to financial resources, limited access to students and the need to obtain data from a large sample, the researcher utilized a simple cross-sectional survey to study "a sample from a population at a single point in

time" (Ary, et al., 2002). Consequently, the researcher used the probability sampling technique of two-stage purposive cluster sampling (Cochran, 1977; Ary, et al., 2002). In case there was an urgent need for the researcher to obtain additional participants to 'make up the numbers' the technique of accidental sampling would have been used (Ary, et al., 2002).

For that reason, generalizations and conclusions based on the research's findings should only be applicable to the target population and not be considered reflective of a larger population, or in other words the norm. Furthermore, there was also the possibility that the sample would be influenced by what is known as the "Hawthorne Effect," in which it is assumed that responses to the survey's instrumentation was inadvertently influenced by participation in the research itself (Sandy, 1980). In this instance, the influence may have arisen from inadequate levels of exposure to the instructional strategies for online learning and also the innovativeness of the Seven Principles for Good Practice in Undergraduate Education.

1.8   Operational Definitions

The following are terms and definitions that were contextualized by the researcher for use in this research.

1.8.1   Asynchronous Communication

Online tools that do not require real-time interaction. For example, email, [forums] and electronic bulletin boards (Lever-Duffy et al., 2003).

1.8.2 Behaviorists

Those who view all behavior as a response to external stimuli; they believe that the learner acquires behaviors, skills, and knowledge in response to the rewards, punishments, or withheld responses associated with them (Lever-Duffy et al., 2003).

1.8.3 Catalyst

An instrument to bring about change.

1.8.4 Cognitivists

Those who focus on learning as a mental operation that begins when information enters through the senses, undergoes mental manipulation, is stored, and finally used (Lever-Duffy et al., 2003).

1.8.5 Communicative Technology

The use of "microprocessor-based resources" such as telephones, text messaging, personal digital assistant (PDA), email, and forums to interconnect with learners (Seels & Richey, 1994).

1.8.6 Constructivism

A school of psychology which holds that learning occurs because personal knowledge is constructed by deriving meaning from experience and the context in which that experience takes place (Seels & Richey, 1994).

1.8.7 Competency

Knowledge, skills, or attitudes which the student can demonstrate at a pre-determined level (Seels & Richey, 1994).

1.8.8 Diffusion of Innovations

The process of communicating through planned strategies for the purpose of gaining adoption (Seels & Richey, 1994).

1.8.9 Dissemination

Deliberately and systematically making others aware of a development by circulating information (Seels & Richey, 1994).

1.8.10 Effectiveness

"Measuring the degree to which" students perceive the successful use of instructional strategies for online learning (Morrison et al., 2001).

1.8.11 Efficiency

The economical pursuit of ends through use of resource (Seels & Richey, 1994).

1.8.12 Feedback

Providing students with answers to exercises and other information relative for progress in learning (Morrison et al., 2001).

1.8.13 Individualized Learning

Allowing learners to learn by providing appropriate objectives and activities with regards to their characteristics, preparations, needs, and interests (Morrison et al., 2001).

1.8.14 Instruction

A set of events, [either in the form of activities or commands, which] affects learners in such a way that learning is facilitated (Gagné & Briggs, 1979).

1.8.15 Instructional Design

The systematic planning of instruction in which attention is given to nine related elements (Morrison et al., 2001).

1.8.16 Instructional Designer

The person responsible for carrying out and coordinating the systematic design procedure (Morrison et al., 2001).

1.8.17 Instructional Development

Managing the planning, development, and implementation procedure for instruction or training (Morrison et al., 2001).

1.8.18 Instructional Event

The manner in which a learning experience has been designed beginning with learning objectives all the way to outcomes (Lever-Duffy et al., 2003).

1.8.19 Instructional Objective

Statements describing what the learner is specifically required to learn or accomplish relative to a topic or task (Morrison et al., 2001).

1.8.20 Instructional Strategy

Specifications for selecting and [arranging] events and activities within a lesson (Seels & Richey, 1994).

1.8.21 Instructional Technology

The use of resources such as [equipment] and materials for the process of instruction (Morrison et al., 2001).

1.8.22 Intellectual Skill

Organizing and structuring facts for learning to form concepts, principles, rules, attitudes, and interactions (Morrison et al., 2001).

1.8.23 Learner Characteristics

Factors relating to personal and social traits of individuals and learner groups that need to be considered during planning or learning (Morrison et al., 2001).

1.8.24 Learning

The active process of acquiring knowledge or skills, before permanent changes in behavior or attitude occur due to experience (Seels & Richey, 1994).

1.8.25 Learning Activity

"The activity carried out by a leaner either by means of self-instruction or with guidance" from teaching staff that result in learning (Dewan Bahasa & Pustaka, 2002).

1.8.26 Learning Strategy

The manner in which instruction is presented determines how the student can process the information (Lever-Duffy et al., 2003).

1.8.27 Learning Styles

Various methods of learning that are preferred by individuals or may be more effective with different individuals (Morrison et al., 2001).

1.8.28 My Guru

The Integrated Management System (IMS) used by Sultan Idris University of Education (UPSI).

1.8.29 Online Instruction

Either the "presentation of information" or arrangement of learning activities or distribution of commands; conducted or communicated electronically using "microprocessor-based resources" that "affect learners in such a way that learning is facilitated" (Lever-Duffy et al., 2003; Seels & Richey, 1994; Gagné & Briggs, 1979).

1.8.30 Online Learning

Is any learning that utilizes the Internet to deliver instruction to learners separated by time, distance or both. However, there are forms of synchronous or asynchronous learning that cannot be considered online learning for example correspondence courses and computer-based training using CD-ROMs without web components (Reiser & Dempsey, 2002).

1.8.31 Paradigm

The mind-set that guides an individuals' course of action.

1.8.32 Paradigm Paralysis

An individuals' state of closed mindedness that rejects suggestions about improving their course of action.

1.8.33 Perception

Student observation concerning the degree of success to which instructional strategies are being used for online learning.

1.8.34 Prerequisite Test

Portions of a pretest that measure content or skill preparation a learner has to have before starting a course or unit (Morrison et al., 2001).

1.8.35 Pretest

A test administered prior to the start of instruction to determine the learner's level of knowledge and the necessary preparation relative to a topic or task (Morrison et al., 2001).

1.8.36 Principles

The underlying value system that should guide an individuals' course of action.

1.8.37 Proficiency Level

The amount of knowledge, skill or experience possessed by a student prior to receiving instruction (Cambridge, 2003).

1.8.38 Rubric

A form of check-list that specifies the objective application, successful evaluation and effective assessment of definite principles (Lever-Duffy et al., 2003).

1.8.39 Scaffolding

The process of building bridges to prior knowledge at the beginning of a lesson (Lever-Duffy et al., 2003).

1.8.40 Self-Paced Learning

Allowing learner's to satisfy required learning activities by accomplishing objectives at their own speed or convenience (Morrison et al., 2001).

1.8.41 Seven Principles

Refers to the Seven Principles for Good Practice in Undergraduate Education.

They are;

(i)   Encourages Contact Between Students and Teaching Staff,

(ii)   Develops Reciprocity and Cooperation Among Students,

(iii)   Encourages Active Learning,

(iv)   Gives Prompt Feedback,

(v)   Emphasizes Time on Task,

(vi)   Communicates High Expectations &

(vii)   Respects Diverse Talents and Ways of Learning.

1.8.42 Synchronous Communication

A method of communication in which the participants interact at the same [or in real] time (Lever-Duffy et al., 2003).

1.8.43 Theory of Multiple Intelligences

Howard Gardner theorized that each individual has multiple types of intelligences, only a few of which can be measured by IQ tests. These intelligences [or talents] include the verbal linguistic, mathematical-logical, musical, visual-spatial, bodily kinesthetic, interpersonal, intrapersonal, naturalistic, and existential intelligences (Lever-Duffy et al., 2003).

1.8.44 Teaching

The "presentation of information" or arrangement of learning activities or commands by an individual entrusted with the responsibility to conduct learning activities or provide guidance (Lever-Duffy et al., 2003).

1.8.45 Teaching Staff

The individual entrusted with the responsibility to formally conduct learning activities or provide guidance. Also known as educator, teacher, tutor, instructor, coach, trainer, facilitator, lecturer or professor.

1.9   Research Summary

The proliferation of personal computers and the Internet has been without doubt important elements in on our daily lives. All that one has to do is look around to see how much our lives have changed because of them. Yet, their utilization as an information age teaching tool remains stunted. Why is this so? What is holding the field of education back? How long have we been hearing about predictions concerning paradigm shifts in the way educators would conceptualize and deliver education? If it was just about issues pertaining to the practicality and acceptance of computers and the Internet, then all that has to be done is read up on John Naisbitt's; *Megatrends;*

Ten New Directions Transforming Our Lives and Everett Roger's; *Theory of Diffusion and Adoption.* Then again that was never really the issue. The real problem lies with those who have access to such technology but are not able to cope and make it all work. What are they waiting for? Anything and everything that attempts to cajole them out of their comfort zone is either painful or disorientating. Shying away from change and going back to their tried and tested ways is an understatement.

That is why it is pertinent for students and teaching staff alike to be mutually aware or better yet acquire as a theoretical prerequisite the Seven Principles for Good Practice in Undergraduate Education. Without such a theoretical framework, it would not be probable for good teaching and learning practices to be justly integrated with technology. Only after being armed with such knowledge would students and teaching staff alike no longer find themselves in a bind when having to use new technology. Confidently, they will be able to execute instructional strategies using tools and resources such as telephones and text messaging, emails, forums (MyGuru), and learning materials (MyGuru). Intuitively they would now be able know where, when, and which technology to use. With the Seven Principles serving as a guide for the application and manifestation of good teaching and learning practices in either a conventional or online environment, the future is already here to be had.