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When reviewing the literature, the researcher evaluated what has been written on the subject of distance learning and online management education in three areas. The first was, would potential students in the management field be willing to choose distance / online learning as a viable way to acquire desired skills and training? Second, will the learning through online mode be satisfactory when compared to traditional face-to-face learning environments? And thirdly, what are the threats and opportunities that will impact online education?

There is very limited research published concerning the willingness of potential students to participate in distance learning and whether they would have the necessary skills and tools. However, there has been an extensive review of research concerning the effectiveness of distance learning. Because of the limited information concerning students that are involved with management much of the research is based on students in other disciplines. It is the author’s assumption that much of the research is applicable no matter the subject matter and program of study. Therefore the results of this research, regardless of the discipline are assumed to be pertinent to this study. (www.uwstout.edu/lib/thesis/2001).

2.1 Historical Context

In the early 1900s, following the World War I, technological advancements helped to stimulate the growth of distance learning. In view of the fact that distance education originated with the concepts of correspondence study, many people involved with education still link distance education to correspondence courses. Keegan (1986) links distance education to correspondence study because
the student is physically separated from the teacher and learns independently. However, higher education scholars link distance education to telecommunication technologies. The restructuring of a definition for distance education has resulted in the inclusion of new technologies that can benefit distance learning and guide the research needed. Distance education has evolved into a method of providing education as well as a means to give the college or university the capability to go beyond the classroom walls to reflect the changing needs of today’s potential learner. The key to understanding and utilizing distance education lies within communications capabilities (Garrison, 1990). These capabilities can help facilitate teacher/learner interaction. Larsen (1985) indicated that educators must develop a strong understanding of communication interactions to stay current with advancing technologies or they (educators) will not be prepared to efficiently use the technology.

Garrison (1990) described distance education technologies based on their communication characteristics, and also categorized the technology into one-way and two-way systems. Two-way communication has made the most significant impact regarding the design and delivery of education at a distance by providing educators with an opportunity to further understand the educational transaction required to personalize instructional content and direct it to specific groups and individual students. Two-way communication includes three different generations of distance learning: 1) correspondence (print) study, 2) computer-based instruction, and 3) telecommunications or audio and video teleconferencing.
(Garrison, 1990). However, telecommunications technology is the most essential part of a distance education system because it utilizes two or more kinds of communication to link the student and his or her mentor (Rumble, 1986). Two-way telecommunications channels may include: 1) telephone, 2) cable, 3) fiber optics, and 4) satellites.

In the past audio and video teleconferencing has been seen to provide the most interaction between instructor and the learner because it allowed groups to explore and convey curricula and provide informal evaluations concerning student progress. Barker, Frisbie and Patrick (1989) noted that: Without question, telecommunications is an effective teaching means.....when an audio and video communications link is employed, the opportunity for live teacher/student exchanges in real time is possible, thereby permitting immediate response to student inquiry and comments. Much like a traditional classroom setting, students can seek on-the-spot clarification from the teacher (pp. 23, 26).

In contrast to correspondence study, telecommunications does more than focus on an individual student because it also focuses on small groups at different locations, thus creating a network. This is a benefit to all because it increases both communication skills and socialization. Garrison (1990) noted that the use of telecommunications in distance education “marks a new generation in designing the educational transaction” (p. 43). Zemke (1986) proclaimed telecommunications, primarily video teleconferencing as the instructional technology of choice in the 1990s.
2.2 Flexible Learning Mechanisms and the University Environment

Flexible learning is enabling learners to learn when they want (frequency, timing, duration), how they want (modes of learning), and what they want (that is learners can define what constitutes learning to them)." (Van den Brande, 1993 p. 2). Flexible learning is centered on the learners who take responsibility for learning and schedule their study time and pace their learning in a way most suitable to them (Odendaal, 2001).

Flexible responses to the changed university environment have been discussed by a number of writers [Spender (1995), Le Grew and Calvert (1998), Latchem and Moran (1998), Lewis (1998)]. Spender believes that communication and information technologies have changed the basis on which society rests. She believes that we are witnessing a move from a print based society to a computer based one. She believes that universities will have "to change their purposes and their practices. Scholarship, knowledge, research and teaching are significantly differently when done electronically" (1995, p. xxiii). Le Grew and Calvert describe the changing political and economic climate in which universities operate and suggest that the key factor stimulating changed practices in universities is a "dramatic rise in participation" (1998, p. 5). Three reasons for the rise in participation are changing aspirations of an increasingly diverse student population, an increasing need for university qualifications in order to gain paid employment and a need to participate in life long learning in order to maintain
credentials in a rapidly changing employment environment (Latchem and Moran, 1998, p.67). These writers identify one important dimension for university based flexible delivery is a move "from a teacher-dominated, transmission-based process to a learner centered, constructivist process;" (1998, p.67).

Lewis and Merton quoted in Lewis (1998) suggest that the application of technology to flexible learning has been "patchy" in that it has met with mixed results. Technology in flexible delivery can support students by providing:

- Information on the curriculum;
- Recognition for existing achievements and advice on appropriate learning routes;
- Flexible access to resources, facilities, and program content;
- Opportunities to practice and apply learning." (Lewis p. 27).

Particularly important are the uses of technology to "maintain contact between students and tutors" (Lewis, 1998, p.27)

The decision to increase distance education enrollment hinges on the factors of pedagogical effectiveness, interactivity, audience, faculty incentives, retention, program type, and profitability. A complex interplay exists among these scalability concerns (i.e., issues related to meeting the growing enrollment demand), and any program's approach usually requires trade-offs. Guri-Rosenblit (1999) has noted that "many conventional universities worldwide operate as large-
scale universities and are in a continuous search to find the right balance between massification trends, quality education, and the catering to the individual needs of students” (p. 289).

2.3 Strategic Issues in Online Adoption by Universities

The Internet has provided universities with a powerful new tool for unit and course delivery— a tool which is likely to transform teaching and learning practices irrevocably in the future (Bates, 2000). Universities attracted to Web-based delivery need well-defined policies and strategies in place that will give them the best chance of promoting effective learning, gaining market share, and demonstrating leadership in the quality of the online learning experiences it offers (Deden & Herrington, 2002). In order to achieve such ends, a university must focus its efforts on strategically building its capacity, managing quality and planning its online presence. The various issues that universities need to take into consideration for online education may be stated as follows:

Economics

The development of Web-based learning materials is currently proceeding at a frenetic pace in universities worldwide. From an economic perspective the thrust for this activity is based on the perception that:

- Geography is no longer a barrier to competition
- High profile traditional universities and new commercial online universities are gaining global market share through online programs
• The opening of new markets for higher education, especially in areas of the developing world with large populations and increasing Internet access, like India. (Deden & Herrington, 2002).

Views that e-learning reduces the expense of delivering learning are false. So far, in most institutions, e-learning is a "special project" that requires extra funding - it is not (yet) a cost saver. A system is cost efficient if, relative to another system, its outputs cost less per unit of input (expenditures versus revenues, and not necessarily just $). A system increases its cost efficiency when it maintains output with a less than proportional increase in inputs. In other words, more is taken in than spent.

Online courses require expensive technical infrastructure (Farell, 2000); The universities may provide sufficient support for setting up the technology but the users connecting from home may have slower modem connections or other constraints that may limit the effectiveness of the course delivery.

Cost effectiveness is a measurement or determination as to the extent to which a system produces outputs that are relevant to the needs and demands of its clients. Cost-effectiveness essentially means that, given the amount of money and time expended to teach a concept, course, unit, whatever...are the learning outcomes achieved, to what extent, and with how much of an investment. What is harder to determine is the monetary value of the convenience and access issues.
that are a by-product of the delivery system. What is it worth and how can an organization gauge the net value? (www. elearnpace_everything elearning).

**Pedagogical quality**

The online tools that have been added to distance education have further improved the distance education experience for students. It offers a greater level of interactivity with other students who may be from the other side of the world. Online delivery, if designed correctly, will improve distance education in the way that it will allow an increased level of interaction between students and teachers. The Internet has provided many ways in which students can communicate in real time, which had previously missing from distance education courses (www. aacsb.edu/publications/metif/).

Mioduser, Nachmias, Oren & Lahav (1999) reviewed 500 websites and evaluated aspects of the design and implementation. Their report revealed that it is insufficient to equip universities with appropriate technology to enable online learning without pedagogical advantages. Courses must be designed with the emphasis not only on content but on learning processes.

There is pressure to replace more teacher-centred courses with student-centred approaches [Black, Sileo & Prater (2000); Housego & Freeman (2000)], and to emphasise more authentic learning settings [Brown, Collins & Duguid (1989); Barab, Squire, & Dueber (2000); Cronin (1993); Herrington & Oliver
(2000); Lebow & Wager (1994)], and problem-based learning tasks [Reeves & Laffy (1999); Roschelle & Behrend (1995); Savery & Duffy (1996)].

The role of the teacher has changed from that of instructor to guide to coach [Cuban (1993); Greenfield (1984)], assessment has a more fundamental place in the learning process [Reeves & Okey (1996); Wiggins (1990)] and collaboration is acknowledged as an important element in student learning, both in face-to-face situations and online [Del Marie Rysavy & Sales (1991); Jonassen (1995); Oliver, Omari & Herrinton (1998); Qin, Johnson, & Johnson (1995)]. In adopting these approaches, the nature of the learning moves away from abstracted knowledge-based learning to learning that supports both authentic contexts and the completion of tasks that reflect the genuine practices of the professional (Herrington & Oliver, 2000).

With the amount of technology available to everyone at the present time, it is doubtful that potential students would reject distance learning on the basis that it is different than the traditional classroom situation. The bigger question would be "Can I get the training that I desire?" The curriculum that is being used and the pedagogy implemented are more important than the delivery system. For any continuing education or training to be worthwhile to students it must deliver value for both the time and money invested. Janet Poley theorized that the learning needs of students must be met to guarantee that distance learning will be chosen and in the end be effective for the learner. She also stated that for institutions to effectively deliver learning at a distance, the investment in technology must be
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incorporated into their educational plans. A question that may be asked is who is more hesitant to embrace distance learning, students or colleges and universities?

How the instructor perceives his or her role as the educator and the techniques that they use in instructional delivery will be more important than the learner’s characteristics. Parer (1988) contended that educational institutions must offer training for academic faculty and staff in the necessary skills for distance education. Dillon (1989) suggested that campus wide faculty development programs be expanded to include instructional telecommunications and focus primarily on mentoring, effective communications between the student and the instructor, and how to increase the influence of the instructor.

Peter Navarro and Judy Shoemaker (2000) conclude that distance learners can learn as well as or better than traditional students regardless of the learner’s characteristics such as gender, academic background, computer skills, or academic aptitude. When offering courses through web-based methods success is more reliant on other features such as: multimedia lectures that stimulate the classroom experience; an interactive threaded electronic bulletin board; online discussion groups; and electronic testing with immediate feedback. These findings indicate that the actual instruction and how the pedagogy employed is more important than the characteristics of the potential learner.

Student demand

Online distance education ‘offers the potential to provide learning to new audiences - educate under-served populations,’ (Candy et al., 1994 in Volery and
Many students study online via distance education because it is simply too far to travel to their nearest education institution campus. Significant increases are also observed in enrolments for overseas fee paying students (Kemp, 2000). This increase is an indication of the trend towards lifelong learning through ongoing postgraduate study, which is seen by professional associations as a necessary requirement for maintaining community standing. Students of online distance education need to be more motivated in order to keep on track and this will lead to a better level of education for all involved.

In the past, many individuals could not attend institutions of higher education, because their schedules conflicted with traditional classroom hours. Today, the same people can acquire associates, baccalaureates, and masters’ degrees through technology-based distance delivery systems offered by a number of colleges and universities. Distance education is suited for busy people who wish to increase their knowledge and skills without giving up jobs, leaving home, or losing income. Classrooms, libraries, and textbooks can now all be accessed from a student’s personal computer at home or at their place of work.

The main audience for online learning programs apparent in the literature is the non-traditional adult learner (beyond the traditional 18-22 years of age) at the undergraduate and graduate levels, which balances work and family demands with part-time degree completion. The study notes aspects that appeal to the adult learner primarily include flexibility of time, convenience of
working from home or office, and culturally diverse group interactions. This audience includes those individuals already working in the business disciplines with fluctuating schedules. These professionals sometimes find they are working in remote locations, or employed across the broad expanses of the management, accounting, hospitality, sports, and related business segments. In addition, individuals working in areas such as event planning and sport facilities management services have schedules that preclude attendance at regularly scheduled classes. Other groups are comprised of international learners.

*Online management education targets* mass community of learner. This ranges from students to top executives, and without any age bar. The target segments with the respective advantages, for online management education, are discussed below in brief: -

**Students**- The primary advantage of online management education for a student is that it cuts the physical presence for the study program or course he/she chooses. It is often a lesser cost when compared to the cost a student spends on boarding, traveling, etc., to attend regular classes physically. It equips student with more emphasis on global interaction and latest expansion of knowledge.

**Professionals**- Professionals are at the convenience to advance their management education online without taking leave or cuts in your salary. And after they complete their degree, they can get promotion, increments, and higher-responsibility position in decision-making. So, online management education integrates the profession with studies.
Businessmen- Businessmen have lots of company responsibilities and extensive workforce to look after so their absence from their workplace may mess up the business affairs. So the online education helps the businessmen to acquire a degree or an advanced course in their interested field without any blockade in business affairs.

Employers- The need for survival and to match the competition from the rival companies enforced the employers to train their work force so that they perform better. Online management education increases productivity of the employees. Researches have shown that productivity growth is approximately five times as much as would be generated by compensation incentives.

House-wives, Retired Personnel- House-wives and retired personnel may not be able to travel to the university or institute due to certain circumstances such as domestic responsibilities that demand greater attention. But they have the zeal to continue your education. So, in such circumstances they can rely on online management education.

Branding and marketing

Deden & Herrington (2002), observed that we do not yet know how the graduates of online programs will perform on the job, as compared to the graduates of the classroom programs. Some early innovators – the universities, which have had a head start in going online, have definite advantages. Brand recognition is one of them. University of Phoenix and Jones University offered only few credits online and the student could complete an MBA started elsewhere.
Thus the start was of a minimal nature, but they are looked upon as sector leaders such that they set benchmarks for competitive features and quality. For traditional universities, the creation of online courses and units to date has represented a significant investment in both technology and intellectual property. This investment has been made in the expectation of improving student access to education; however, the university sector has not yet developed powerful strategies for marketing online courses.

New corporates, vertically integrated companies, especially owning significant intellectual property are creating a highly competitive online learning marketplace. Competition from these new commercial ventures with value certification (e.g. Microsoft, Cisco, NIIT, etc.) as opposed to a university degree is seen to have the advantage of worldwide brand recognition. (Deden & Herrington, 2002)

*Maintaining competitiveness in two over-headed business at the same time*

Colleges and universities that have resolved the e-learning/classroom debate face another concern: *how* to integrate e-learning into the existing curriculum without cannibalizing existing classroom offerings. (www.elearnSpace_everything_elearning: Elearning vs. Classrooms, 2002).

Traditional universities have high overhead: physical infrastructures and must at least maintain these at a competitive level while trying to be competitive online as well. Right now, the performance results of graduates of online or mixed
mode programs have not yet been established. The reputations of existing institutions still rest on the graduates of their on-campus programs and on their research. They cannot afford to abandon, or even loosen their grip on their traditional strengths. This divided attention doesn’t help in building expertise in the online delivery and even the focus gets lost. (Deden & Herrington, 2002).

**Institutional inertia**

Universities have notoriously slow response times, ponderous decision making processes, and great resistance to change. It takes tremendous push by powerful players and tremendous capital investment to change the practices of academic staff. The rapid pace of technological change requires tremendous focus, funding, and flexibility. As Diana Oblinger points out (Morrison and Oblinger, 2002), most universities are used to incremental change, unaccustomed to large IT expenditures, and functioning based on pre-technology definitions of their markets and services. All these factors impede the rate at which these institutions can change to make effective use of the potential benefits of Information Technology.

**Systemic issues**

Limited consideration is sometimes given to issues in the student's life that may be impacting a desire to take an online course (or even the idea that students ought to have the choice). The focus is sometimes about organizational need, not student need. The perception seems to exist that successful online courses negatively impact regular on-campus classroom courses...so the de-linking is seen
as essential. These are huge systemic issues that must be addressed. (www.elearnspace_everything_elearn, 2000).

Many colleges/universities have several departments: regular programs, continuing education, distance education, and contract training (training for corporate or specific industry needs). They have been built to be silos - stand alone, function alone. Now, e-learning is obliterating barriers. Distance education is/will be "stealing" continuing education and day program students. The problems arising out of this development can be stated as:

- All program areas (distance, continuing, day, contract) are hiring for their own needs - i.e. each hires a programmer - part time
- No consistent look, feel, or quality standards
- Generally, limited resource sharing - day programs are not too eager to share content with distance/continuing ed (alluded to in other emails - cannibalism)
- Bruised egos - traditional power structures (I have content/knowledge, I rule) are coming under pressure from models that require collaboration.
- Slow responsiveness to trends in the learner market. The organization is fractured in pursuit of customers...so a unified vision is missing
- Registration - all programs handle registrations differently - a nightmare.
Instructor wages and contact hours - each program pays separately according to unique arrangements...program silos need to be broken down so sharing of resources across the organization is possible

The ownership of online courses is a complicated issue which has not been resolved [Farrell (2000); Kompf (2001)]. Copyright laws do not adequately cover online educational environments. Do the courses belong to the university, the teacher, or the designer? (This research will not explore these complex topics but raises them as issues worthy of further study).

Overall - tremendous wasted resources...duplication...slow reaction time...no/little collaboration. (www.elearn.space_everything_elearning, 2002).

Emerging changes in academic work styles and motivators.

Despite the inherent advantages provided by technology such as Speedback™, distance education administrators can encounter obstacles in promoting pedagogical effectiveness. Faculty lack expertise in design and delivery of course materials for online environments. It is difficult for faculty to develop instructional activities, because most do not have formal training in curriculum and lesson planning. Most faculty also have not planned “interactive strategies in advance of course delivery, as they are accustomed to relying upon verbal cues and the spontaneity of classroom discussion to serve as a catalyst for interaction” (O’Quinn and Corry, 2002, p. 2).
Poley (1998) also discusses the need for educators to design and teach in new ways, with the focus of all education to be learner centered throughout their lifetime. This can be daunting for institutions and faculty that are comfortable with the status quo. Each educational institution has to decide what role, if any; alternative delivery of education will take, with the understanding that in the competitive environment that education finds itself today, if these alternatives are viable some other public or private education institution will fill the need.

Whiting (1987) reported that distance educators must be more than just “talking heads.” He indicated that instructors must provide an interesting pace to distance education courses and programs, i.e. use a variety of audio and video materials and pre-produced segments. Whiting also noted that television production greatly improves the teaching skills of faculty because it forces them to become better communicators by molding wordy lectures into a specific time frame. The literature suggests that educational institutions and their faculties must develop and more effectively use teaching skills in order to remain scientifically and technically up-to-date in contemporary society. To be successful in distance education it is apparent that faculty and staff need to be properly trained in the delivery of either interactive television or web-based courses. Distance education offers faculty an opportunity to teach desired courses, and motivate learners, while taking advantage of new and exciting modes of delivery in a very competitive environment.
In online education, the instructor's time is freed up for the time there would be a lecture in a face-to-face class (Wade & Power, 1998). This could be used to foster smaller group learning (Sandercock & Shaw, 1999). In a study by Almeda and Rose (2000), instructors reported changing their teaching approach for online classes. They spent more time with online teaching and saw a need to provide plenty of motivation and written feedback for students. They liked the online format because they could access the course from anywhere.

Online learning provides academics the world over with the opportunity to teach for several institutions at the same time, from one location. Many are already enjoying this professional lifestyle. In such a world, professional affiliation and licensure may be more valued by academics than tenure and promotion in a single institution. (Deden & Herrington, 2002).

As documented in The Business of Borderless Education (Cunningham et al., 2000), the online learning economy is heating up. In their quest to maximize the revenue generated by their intellectual capital, universities want to respond to growing student expectations that courses will be available on the Web in a highly effective, efficient and maximally convenient way.

Customizing the management education

Concerning distance education, Cheney (2002) writes that "the quality of human interaction is more critical than the technology as a predictor of success [Kelsey (2000); White and Weight (2000) p. 4]. In many ways, the distance
education environment more easily facilitates strong student-faculty interaction than traditional education, in that the "role of the professor shifts from that of authority to the role of course manager" [Roberson (2002), p. 2; Scagnoli (2001), p. 21]. The functions these course managers perform include "facilitator, teacher, organizer, grader, mentor, role model, counselor, coach, supervisor, problem solver, and liaison" (Riffée, 2003, p. 1). Since distance education instructors are relieved of much of the "responsibility of 'covering the content,' they [are] able to engage in 'customized coaching'" (Offir, 2003, p. 67). From an administrative standpoint, such interactive approaches require more investment in human rather than technological resources (Allen, 2001).

Online management education caters to two sets of customers - the 'students' and the 'industry'. For marketers, the best measure of quality is customer satisfaction. Satisfaction is a function of perceived performance and expectations. Satisfaction is determined by how closely an experience with a product meets or exceeds a customer's expectations. Whether a buyer is satisfied after the purchase depends on the offer's performance in relation to the buyer's expectations.

Only the learning organization can cater to today's dramatic demands quickly. Not only will the global markets reward learning, but also they will severely punish the lack of it. The first step to overcome the shortfalls in the Indian education system is to know whether its customer is satisfied and if not
how can these be achieved? High satisfaction or delight creates an emotional bond with the brand, not just a rational preference. The result is high customer loyalty.

With the expansion of the university sector, growing concerns about quality and also of ‘consumerism’ of online management education, there has been a significant growth of, and sophistication in, process designed to collect views from students. The Indian online management education system needs to look at this significant growth and take lessons from the same. Most management education institutions, all over the world, collect some type of feedback from students about their experience of management education. ‘Feedback’ in this sense refers to the expressed opinions of students about the service they receive as students (customer satisfaction). This may include perceptions about the learning and teaching, the learning support facilities, the learning environment, other support facilities and external aspects of being a student. These can also be considered as the variables of customer satisfaction that actually spell viability for a system.

Student feedback systems have been a subject of increasing interest in online management education also in recent years. Students are important stakeholders in the quality monitoring and assessment process. It is thus imperative that the universities providing online management education lay due emphasis on customer satisfaction and quality assurance.

Students in online courses are isolated from the culture of the college or university and have less access to support structures (Farrell, 2000; Leask, 2000).
It is a challenge to provide geographically dispersed students with access to libraries, counsellors, tutors, help desks, and other services that are offered at a physical university. The dropout rate in asynchronous-based courses is higher than in traditionally delivered courses (Hiltz, 1997).

2.4 Information and Communication Technologies (ICT) Developments and Opportunities

New digital technologies have created new potential for educational environments and distance learning. As referenced by Wilson (p. 990), Davis, Botkin, and Perelman predicted that educational environmental learning will occur in the global market, broader and deeper than anything seen to date and far more competitive.

The main challenge for tertiary institutions is to be able to respond relevantly and intelligently to the existing needs within the public service vis-à-vis management training. The developments in ICTs since the advent of the Internet and the World Wide Web have made it possible to provide such an intelligent and relevant response. The developments in ICTs invariably have important consequences for the practice and theory of public administration and management, since, as Frissen (1994:280) points out, ICTs apply to knowledge and the acquisition and representation of it.

These characteristics of ICTs allow future oriented education and training institutions to exploit ICT capabilities in order to offer students the flexibility,
accessibility, and affordability they require. Pritchard and Jones (1996; cf. O’Donoghue, Jentz, Singh & Molyneux: Online) recognise that ICTs:

- can facilitate the assembling of critical masses of intellectual and economic resources to create new, advanced research and teaching, and
- are able to offer accessibility and flexibility to those precluded for whatever reasons, from attendance at the time and place dictated by conventional institutions.

Seen in terms of the above, it is evident that ICTs can enable tertiary institutions to extend their capacities beyond traditional campus boundaries, providing instant accessibility to prospective students who may otherwise be barred from receiving education and training.

Caviedes (A technological perspective: On-line) identifies three important modalities of access to education, viz.: Local, or same place at the same time (e.g. electronic classroom and traditional classroom format). Synchronous, or different places at the same time (e.g. distance learning methodologies). Asynchronous, or different places at different times (e.g. distance learning methodologies that use the World Wide Web to deliver course material, administer examinations, exercises and quizzes, communicate with students and access information resources (cf. Walsh, 1999: 20, 21).
It should be pointed out that many of the technologies used in traditional classroom methods and environments are also appropriate for usage in asynchronous learning environments. In order to create a multi-mode teaching and learning environment independent of time and space the several educational technologies are available, like, Video conferencing, Video recordings of lectures and procedures, the Internet for on-line teaching and learning programmes, Multimedia CD-ROMS, Electronic testing, Special Tools that are being integrated into learning with a strong desire to duplicate classrooms online (transferring vs. transforming learning). This might explain why programs like Centra and HorizonLive (which duplicate lectures, question and answer) are so popular.

The appeal of an asynchronous learning network (ALN) lies in the fact that it enables students to learn at any place and at any time; as dictated by their personal propensities, discipline, access to ICTs, and work obligations. In this sense, it is an appealing alternative method of achieving learning and educational goals in an environment where traditional methods cannot be utilized, or where they are not the ideal method to employ. (www. up.ac.za/academic/)

2.5 Reviewing Online Effectiveness

2.5.1 The Debate

Until recently, the debate between e-learning versus classroom learning has centered primarily on learning effectiveness that is perceived to be inherent in each format (see www.teleeducation.nb.ca/nosignificantdifference and
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www.teleeducation.nb.ca/significantdifference). Essentially, the evidence evaluating format effectiveness has moved to evaluating which traits in a format result in effective learning. (www.elearnspac_everything elearning: Elearning vs. Classrooms).

A quick look at the “No Significant Difference Phenomenon” website might lead the casual observer to the conclusion that an overwhelming amount of data exists to support the notion that technologically mediated instruction and or distance education, in nearly every form imaginable, has proven to be an effective and sometimes preferred method of educating students outside the confines of what is commonly referred to as the “traditional classroom” (Russell, 1990). From 1928 to the present, Russell has cataloged at least 355 studies, technical reports, and dissertations that have reviewed student learning outcomes in the form of satisfaction surveys, grade comparisons, standardized test scores, common embedded questions, frequency of interaction between students and faculty, and a dizzying array of other “measures” ostensibly aimed at determining if any measurable or statistically significant differences exist. Russell concludes that learning outcomes are independent of the mode of delivery. That is, Russell claims that according to most studies no significant difference in learning exists between TEC and traditional courses.

Recent research has indicated that online education has positively influenced many aspects of education both directly and indirectly (CEO Forum, 77)
2000; Phipps & Merisotis, 1999). On one hand, Clark (1983, 1994) maintained that media do not influence learning in any condition. On the other hand, Kozma (1994) debated that educational technologies influence learning by interacting with an individual's cognitive and social processes in constructing knowledge. These earlier debates are still relevant since newly emerging technologies respond to the earlier criticisms and enable learners to use them more efficiently.

According to Phipps and Merisotis (1999) and Russell (1999), there have been two lines of research comparing students' end-of-semester grades or learning outcomes for online and traditional sections. The first line of research focused on the "significant phenomenon" and cited significant increases in learning outcomes for online learners over their traditional counterparts. The most widely cited literature in this line is McCollum's (1997) report. McCollum cited a sociology professor who divided his statistics class into two groups: one in online format and one in face-to-face (FtF) format. According to McCollum, online students had more collaboration and their performance outscored their traditional counterparts by an average of 20 percent.

Later studies also supported the "significant phenomenon". Day, Raven, and Newman (1998) compared and studied the effects of web-based vs. traditional instruction on students' achievement in undergraduate technical writing in an agricommunication course. They found that online students attained significantly higher achievement scores in the major class project and essay assignments than
those in the traditional course. In addition, Day, Raven, and Newman found that online students obtained a higher mean gain in attitudes toward writing.

The second line of research supported the "no significant phenomenon." These studies cited no differences in learning outcomes between online and traditional groups. Navarro and Shoemaker (1999) found that about 90% online learners in a graduate MBA class believed that they learned as much as or more than they would have in a traditional classroom. Schulman and Sims (1999) did not find any significant differences on the posttest scores between the online and traditional students in an undergraduate course. Jones (1999) conducted a comparison study of an all web-based class to a traditional class and also found no significant differences in GPA between online and traditional learners.

More recently several other studies have found no differences in learning outcomes in various courses between online and traditional learner. Johnson, Aragon, Shaik, and Palma-Rivas (2000) compared a graduate online course with an equivalent course taught in a traditional format on outcome measures such as course grades and student self-assessment of their performance in the course. They found no significant differences between the online and traditional student groups. Less than significant, traditional students had slightly more positive perceptions about the instructor and overall course quality.
Ryan (2000) compared online and traditional student performance in construction, equipment and methods classes and found no significant differences in performance between the two groups. Student evaluations of the course were also similar. Similar results of no significant differences in performance were also found by Gagne and Shepherd (2001) in their graduate accounting class, as well as by Johnson (2002) in an introductory biology class.

At face value, it seems that comparison or outcomes studies would be one of the most effective methods for determining the effectiveness of various educational technologies. But Clark (1983) presents the idea that measurable learner outcomes, when replicable using different media, indicate that the selection of the media has little to do with learner outcomes, rather the method that the media share in delivering content is the true catalyst that leads to understanding. Succinctly, "there are no benefits to be gained from employing different media in instruction" (Clark, 1983, p. 450). Based on Clark's thinking, it would seem that the 355 reports contained in Russell's "No Significant Difference Phenomenon" website, have focused primarily on differences in the media rather than the methods employed via the medium." Excerpt from "The No Significant Difference Phenomenon: A Literature Review" (www.usq.edu.au/electpub/ejist/docs/html2002). Clark's conclusion that the media format itself is not consequential, has not achieved full acceptance in many university and college
environments. In these environments, the struggle is still about ways to communicate e-learning's viability/validity.

2.5.2 Conclusion of Debate on 'E-learning':

For many universities online courses have moved past the pioneering stage and are becoming an accepted part of the educational landscape. Debates about the effectiveness of the web as a medium for course delivery are subsiding, as study after study indicates that it is possible to create online courses with quality which is as good as or better than that of classroom courses [Kulik (1994); Kearsley et. al. (1995); Fulkerth and Stevenson (1996); Quintana (1996); Hiltz (1997); anonymous (1998); Kinzie et. al. (1998), Musumeci (1998)].

Because education is a service, a customer-oriented definition of quality is appropriate. Harrington's (1994) definition of quality as "meeting or exceeding customer expectations at a cost that represents a value to them" (p. 23) is representative of this view of quality.

John D. Bigelow (1999), in his studies on Quality Assurance for Online Courses, identified eight areas for obtaining information on quality, which are: (1) course and instructor support, (2) course design, (3) external comparisons, (4) student test scores, (5) student surveys, (6) competency testing of graduates, (7) post-graduate surveys, and (8) employer surveys.
Discussion has shifted in the use of e-learning, the focus is now on how to make e-learning effective and useful to an organization. Essentially, the question has changed from "do we use e-learning?" to "how do we implement e-learning".

The changes required are both technologically demanding and sociologically revolutionary, shifting our academic culture from a narrow "campus community" to an inclusive "virtual community" while retaining effective learning. The dichotomy of research and teaching has become a trilogy - "teaching research" for almost every class!

According to Dave S. Knowlton (2002), there are three specific questions related to the viability of technologically enhanced courses (TECs): (1) Does empirical evidence suggest that a significant difference in learning between technologically-enhanced courses and traditional courses exists? (2) Do our experiences in instructional design and faculty development seem to suggest differences in learning between TECs and traditional courses? (3) What guidelines can professors and course developers use to maximize the potential for student learning as they teach and design TECs? In spite of these concerns, he cited that technology for online learning provided the right outcome in higher education in universities.

2.5.3 Effective Learning Outcomes Impacting Viability
(Ref: www.sunilhazari.com/education/webct/)

Traditional classrooms have used objectivist model of learning which is based on Skinner's theory of transfer of knowledge from teacher to the learner. In
this model, the instructor controls the material and pace of learning. Describing this model, Cuban (1993) mentions that instruction is directed to the whole class as a large group, the pace of learning is controlled by the teacher, and curricular and instructional decision making is guided by the textbook as the primary medium.

On the other hand, constructivist model is student centered (Hofstetter, 1998). Here the instructor acts as a moderator primarily responsible for facilitating learning. In this model, most instruction occurs in small groups, students help choose the content to be organized and learned, teachers permit students to determine the rules of behavior, classroom rewards, and punishment. (Cuban, 1993). Because of the capability of Internet to use discussion groups and text, graphics, audio, video, file transfers over electronic mail, in asynchronous format and also videoconferencing, whiteboards, chat in synchronous real time modes, a different learning medium has evolved that is closely based on constructivist approach to learning.

Oliver (1999) gives examples of the online environment changing the students' role in the learning process; the Internet can deliver increased access to information resources, active learning opportunities (collaboration and shared learning), authentic activities (problem-based, case-based, and work-based learning) and the opportunity to improve generic skills (information literacy, task management, teamwork, and self-sufficiency). Bates and Bartolic-Zlomislic
(1999) report that students' writing skills increased significantly as they worked through an online course, and that the anonymity of discussion groups encouraged more student participation. According to Feenberg (1999), online discussions inspire high quality discussions, even better than in face-to-face classes. This could be because participants have time to think before replying and normally shy students may feel more inclined to join in because they feel more anonymous.

Since Web-Based Instruction is such a new medium, evidence of effectiveness of online courses compared to traditional instruction is lacking. Although there have studies e.g. [www.csun.edu/sociology/virexp.htm (1996)], showing virtual classes perform better, other researchers such as [www.horizon.unc.edu/TS/commentary/1998-06.asp, (1998)] have disputed these by questioning research design and methodology used to arrive at these results.

Hiltz, Yi Zhang, and Turoff (2001) explain the term effectiveness in online education in their studies of effectiveness of Learning Networks. According to them "Effectiveness" is defined as primarily concerned with learning outcomes for students, but also includes effectiveness from the instructor's point of view. It thus includes studies that look at student perceptions, student performance, or faculty perceptions, satisfaction or performance in this mode of course delivery.

Faculty pioneers have offered online courses that simulate traditional classroom environment by using syllabus, schedule, course notes, assignments,
discussion rooms. In addition students are also provided the opportunity to communicate with the instructor or other students by using e-mail, bulletin boards, live chat rooms. Capabilities such as online assessment, simulations, multimedia, course delivery, access to external resources, provide potential advantages over lecture-only classes. Effectiveness of these experiential type learning has been supported by researchers. Vygotsky (1986) emphasizes the use of social dialog and interaction to be an essential part of the learning process. Web based testing represents a cognitive behavior modification technique designed to help students develop goal setting behavior, planning, and self-monitoring (Good & Brophy, 1995) and provides opportunity for students to master the concepts (Bloom, 1981).

Instructional design principles must be applied to develop pedagogically effective learning materials. Ritchie and Hoffman (1997) emphasize that well designed courses include elements that motivate the learner, specify what is to be learned, prompt the learner to recall and apply previous knowledge, provide new information, offer guidance and feedback, test comprehension, and supply enrichment or remediation. Web Based Instruction must be designed to accommodate individual learning styles. This does not mean using all available technologies but instead using those appropriate technology mechanisms that will directly contribute to enhance learning.

Distance education providers lacked a consistent vocabulary to be able to organize and compare different aspects of the program from one school to the next.
(Wolf & Johnstone, 1999). The lack of vocabulary uniformity restricted the
classification and measurement of distance education, especially in the area of
quality definition.

In a survey of students enrolled in a distance education program conducted
at the University of Nebraska at Omaha, Krzycki (1998) found student satisfaction
was directly linked to the student-faculty interaction. This exchange ranked higher
than any other aspect of the program.

The teacher-student relationship must be established early and maintained
through timely feedback. According to Eaton (2000), all too often instructors were
thrust online without the proper training or time to manage this new and important
connection. Distance education presented a challenge for teachers, as they were
faced with a new kind of delivery system. Regular evaluation by the student and
instructor allowed effective monitoring so instructors were able to correct their
situation as needed. Different delivery techniques were necessary to facilitate
learning in distance education (Burnham, 1994). In a study of graduate students
by Scott-Fredericks (1997), the online experience required students to pass
through stages of understanding to become skilled learners in computer-mediated
communication. The progression involved causal and intervening conditions that
included "... the need for direction, support, and level of dependence on the
instructor" (p.1). As a result, the instructor played a key role in the students'
mastery of the learning process.
Essentially people still need the interaction and exchange between other people in order to fully learn and grow. If all learning could be done straight from books, traditional classrooms would have closed long ago. Technology facilitated the learning delivery; it did not replace the need for active faculty involvement in ensuring that learning and understanding occur.

Establishing a consistent vocabulary to refer to distance education and its components would help in building a strong foundation for evaluation and comparison. The current confusion surrounding terminology caused problems for potential students, professional educators, and the general public (Wolf & Johnstone, 1999).

2.6 GATS & Online Management Education

General Agreement on Trade in Services (GATS, 1995) was one of the agreements that were signed under the purview of the World Trade Organization (WTO). General Agreement on Trade in Services (GATS) came into force in 1996 and it provides for progressive liberalisation of trade in 12 Service Sectors (with 161 Sub-sectors), including Educational Services which has five Sub - Sectors. Under the framework developed through GATS, member countries are expected to put forward their specific proposals, engage in negotiations, and make their own commitments for the progressive liberalization of trade in such services. (Powar, 2005).
2.6.1. Modes of Trade in Services

The GATS defines four ways in which a service can be traded, known as 'modes of supply'. These four modes of trade apply to all service sectors in GATS. Trade in Higher Education can take place through: Cross Border Supply, Consumption Abroad, Commercial Presence, & Presence of Natural Persons. Exhibit 3 provides a generic definition for each mode, applies them to the education sector and comments on the relative size of the market supply and demand. It is important to note that the current use of the term 'borderless education' covers all four modes of supply.

**Exhibit 3 - Modes of Trade in Services**

<table>
<thead>
<tr>
<th>Mode of supply According to GATS</th>
<th>Explanation</th>
<th>Examples in higher education</th>
<th>Size/potential Of market</th>
</tr>
</thead>
</table>
| 1. Cross Border Supply           | The provision of a service where the service crosses the border (does not require the physical movement of the consumer) | -Distance education  
- E-Learning  
- Virtual universities | -Currently a relatively small market  
-Seen to have great potential through the use of new ICTs and especially the Internet |
| 2. Consumption Abroad            | -provision of the service involving the movement of the consumer to the country of the supplier | -Students who go to another country to study | -Currently represents the largest share of the global market for education services |
### 3. Commercial Presence

- The service provider establishes or has presence of commercial facilities in another country in order to render service
- Local branch or satellite campuses
- Twinning partnerships
- Franchising arrangements with local institutions
- Growing interest and strong potential for future growth
- Most controversial as it appears to set international rules on foreign investment

### 4. Presence of Natural Persons

- Persons traveling to another country on a temporary basis to provide Service
- Professors, teachers, researchers working abroad
- Potentially a strong market given the emphasis on mobility of professionals

#### 2.6.2 Key elements and rules of the GATS

General obligations or unconditional obligations are those which apply automatically to all member countries, regardless of existence of commitments. These are: A) Most Favoured Nation Treatment – Favour one favour all; B) Transparency through publication of all measures of general application, and through setting up of enquiry points; C) Setting up of procedures for review, appeals, and operation of monopolies. Each member country has to identify Sectors/Sub-sectors, and Modes of Supply, in which it is willing to make Commitments. It can also impose Limitations i.e. lay down limiting conditions under which it will allow service suppliers access and national treatment.

Conditional Obligations under GATS – 2:
A) Market Access: It is a commitment undertaken by the members in specified sectors, after negotiations, and may be subject to one or more limitations.

B) National Treatment: It means treating one's own nationals and foreigners equally. However, under certain condition, there can be limitations on National Treatment.

2.6.3 Barriers to Trade in Higher Education Services

It is necessary to identify the barriers of GATS in higher education services so as to eliminate of these barriers. There are some barriers that are applicable to all sectors. There are other impediments that are specific to the education services sector. There is no agreement or consensus on which barriers are the most critical as they are usually seen from a self-interest perspective. Attention needs to be given to whether the barriers are seen from the perspective of an exporting or importing country. Finally, it is important to remember that what is perceived as a barrier by some countries is perceived as fundamental to the education system in another.

2.6.3.1 Some Generic Barriers

The majority of these generic barriers are from an exporter country's point of view and focus on supply modes one and three.

- Lack of transparency of government regulatory, policy and funding frameworks
- Domestic laws and regulations are administered in an unfair manner
❖ Subsidies are not made known in a clear and transparent manner
❖ When government approval is required long delays are encountered and when approval is denied, no reasons are given for the denial and no information is given on what must be done to obtain approval in the future
❖ Tax treatment that discriminates against foreign suppliers
❖ Foreign partners are treated less favorably than other organizations.
❖ Inappropriate restrictions on electronic transmission of course materials
❖ Visa, costs and foreign currency and exchange requirements
❖ Rules for twinning arrangements
❖ Recognition of credentials
❖ Employment rules—restrictions on use/import of educational materials to be used by foreign teacher/scholar

Of course, many of these barriers are not new or specific to the GATS, as they already impact the flow of education services across borders.

2.6.4 Implications

Making commitments in higher education would have important implications:

▪ The traditional Indian concept that education is a public social service which leads to empowerment, through the imparting of knowledge and skills, and to development of values, could be lost.

▪ The commodification of education will have results that are in contradiction to the National Policy relating to access and equity.
• The entry of foreign providers would favour the private sector.

• This in turn, would allow the government to absolve itself from its responsibility to Higher Education.

• If there is a large-scale entry of foreign providers there is the possibility of a new form of elitism emerging.

While the GATS may lead to expanded use of electronic or online management education and may contribute to more commercial or market oriented approaches to education, it cannot be held responsible for the emergence or existence of these trends. Supporters of more trade in education services can celebrate the existence of the GATS to maximize the benefits of these trends and opportunities.

Critics, on the other hand, can emphasize the risks associated with increased trade, believing that it leads to more for-profit providers, to programs of questionable quality, and to a market oriented approach - all of which are seen to challenge the traditional 'public good' approach to online management education. However, the impact of trade liberalization on online management education cannot be positioned as an 'either-or' question or answer; it is a multi-layered and complex set of issues.

The advent of increased cross border delivery by foreign online management education providers raises the following issues, all of which impact on the role of government:
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1. Licensing and regulation procedures for foreign providers

1. Quality assurance and accreditation for imported and exported online management education services

2. Funding protocols including operating grants, loans, subsidies and scholarships

3. Qualification recognition and credit transfer systems.

4. The role of government as an education provider needs to be examined. A combination of increased demand for public services and limited financial capacity is forcing governments to examine their priorities and options for service delivery.

5. In higher education, this has prompted a number of new developments. These include: developing funding formulas, which are placing more of the financial burden on students; forcing publicly funded institutions to seek alternate and additional sources of funds through entrepreneurial or commercial activities at home and abroad.

6. Individual institutions wanting increased autonomy from government regulation

7. Permitting new private providers (non-profit and for-profit) to deliver specific education and training programs.

These developments are further complicated if and when

A) A foreign public or private education provider is interested in access to the domestic market; and
B) If a domestic public provider is interested in seeking markets in other countries. Together these scenarios require the government to take a long term and macro perspective on the impact of increased foreign trade on their role in the provision of and regulation of higher education.

2. Recognition and transferability of credits

National and international recognition of qualifications and the transfer of credits has already been the subject of a substantial amount of work and it becomes more important in this GATS regime.

3. Quality assurance and accreditation

Not only is it important to have national mechanisms which have the capacity to address accreditation and quality assessment procedures for the academic programs of new private and foreign providers, it is equally important that attention be given to developing an international approach to quality assurance and accreditation. It is imperative that education specialists discuss and determine the appropriate regulating mechanisms at the national and international level and not leave these questions to the designers and arbitrators of trade agreements.

Quality assurance of online management education in some countries is regulated by the sector and in others by the government to a greater or lesser degree. The key point is that authority for quality assurance, regulation and
accreditation of cross border delivery needs to be examined and guided by
stakeholders and bodies related to the online management education sector and not
left solely in the hands of the market.

4. Research and intellectual property rights

In the new economy that emphasizes knowledge production and trade, there
is increasingly more value attributed to the creative and intellectual content
inherent in both products and services. The ‘Trade-Related Aspects of Intellectual
Property Rights’ (TRIPS) is another trade agreement, completely separate from
the GATS, but which also addresses trade liberalization. TRIPS cover such things
as patents, trademarks and copyright, all of which are salient to the research and
teaching/learning functions of online management education. Careful monitoring
of TRIPS is also necessary by the online management education sector.

5. Internationalization

Attention needs to be given to the impact of trade liberalization on non-
profit internationalization activities. Will trade overshadow and dominate the
international academic relations of countries and institutions, or enhance them?
Will these programs have less or more importance when there is increased
pressure for trade? Will revenue raised from commercial education activities be
used to subsidize internationalization activities? What might happen to student
exchange, internships, and other forms of academic mobility that do not have an
income generation or for-profit motive? Will limited financial resources be
directed to trade initiatives that have an economic return instead of

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internationalization activities, which stress added academic value? How can internationalization and trade activities complement each other? Will bilateral relationships and multilateral networks among institutions be shaped by trade opportunities at the expense of research, curriculum development and other academic endeavors?

6. Present status and future options

In the scenario that has emerged in the GATS regime, the option open to our administrators and academics is to act or to perish. In order to keep up with international developments it is necessary to:

- Review, the national policy relating to the funding of higher education.
- The allotment to higher education needs to be immediately raised to 1 percent against the present 0.4 percent.
- Provide adequate financial support, at least to the leading research-oriented universities,
- Implement academic reforms
- Undertake innovative measures like the establishment of Free Education Zones, akin to the Free Economic Zones

As of today the situation is unclear. Hopefully the negotiations will lead to a situation wherein the national interests of the country can be protected. (Powar, 2005).
2.6.5 EDUSAT - a unique opportunity for India education

George Iype (July 28, 2005) –


Education in colleges and schools across India's villages and urban areas will not be the same from July 28 onwards after the launch of a revolutionary education service by President A P J Abdul Kalam on Thursday by connecting 15 teacher training centres and 50 government schools through satellite in Kerala. Nearly a year after the Indian Space Research Organisation launched the world's first dedicated education satellite, Edusat, virtual classrooms have become a reality in the country.

What is Edusat? And how does it make virtual education a reality for India's illiterates as well as thousands of government-run village schools?

- Edusat is a collaborative project of ISRO, the Union ministry of human resource development, state departments of education and the Indira Gandhi National Open University.

- Edusat is the first exclusive satellite for serving the educational sector in India. Growing demand for an interactive satellite based distance education system through audio-visual medium, employing Direct to Home quality broadcast prompted the government to launch it.
• The satellite has multiple regional beams covering different parts of India -- five Ku-band transponders with spot beams covering northern, northeastern, eastern, southern and western regions of the country, a Ku-band transponder with its footprint covering the Indian mainland region and six C-band transponders with their footprints covering the entire country.

Install a one-and-a-half feet long, small dish antennae in your home, school, neighbourhood community hall, college or university and you can attend world-class classroom lectures, whether you are a primary student or a college graduate. Such lectures delivered at any remote learning centre or the Indian Institutes of Technology are disseminated to your home. Kerala became the first state to launch virtual classes through Edusat in elementary education.

The report reveals *an opportunity for online education in the country*. Education, through satellites, will see a new revolution. A firm beginning has been made and more changes will be witnessed soon by the coming generations.

2.7 Online Management Education Model of Punjab Technical, University; Jalandhar

Literature review was also done to study some proposed models of Web-university or virtualization of universities. An existent online university model, in the Indian context, has also being examined for better understanding of the
implements involved and their integration so as to create a workable model of a Web-university.

2.7.1 Concept behind the Virtual Campus of Punjab Technical University

The Virtual Campus is a platform for providing Internet enabled Distance Learning. The significant increase in penetration of Internet clearly indicates the worldwide acceptance of Internet as a communication tool. Virtual Campus uses Internet as a media for leveraging the pitfalls of our traditional education system by providing an environment, which is more learner-centric rather than being more instructor-centric. Through the Virtual Campus, learners can now undergo training sitting at their homes or any other place with Internet accessibility and continue their education.

Punjab Technical University in collaboration with Lovely International Trust has taken the bold initiative to start a Virtual Campus offering education through Online Mode and e-Correspondence Mode. This hi-tech state of the art virtual campus promises to provide learning at lower cost in addition to providing a multimedia rich interactive learning experience.

The Virtual Campus shall have a global target audience and will allow people including students, professionals, businessmen & executives, housewives, employees, defense personnel, retired persons to learn and get degrees / diplomas.

2.7.1.2 Programmes offered by PTU through Virtual Campus

PTU delivers Online Virtual Campus programme in two modes

1) Online Mode; and 2) E-Correspondence Mode.
The students can take admission in both the modes in either of the two ways namely online admission through the website and offline admission through the Prospectus / Admission form.

1) **Online Mode:** Under **Online Mode**, the learner will be entitled to the following benefits:

- Access to Virtual classroom in the website for collaborative learning experience via a host of online and offline interactive tools including Chat, Discussion Forum, Electronic White Board, File Sharing, Online Tests, E-mail and much more...
- Semester wise Interactive multimedia courseware CD with complete voice-over recorded lectures.
- One week contact programme in each semester at Jalandhar, India (Optional)
- Facility to order the courseware books (optional).
- Access to My Account section to obtain the latest information about the Admission Status, Courseware, Payment Details, Examination & Certification Details and any other Correspondence with Punjab Technical University.
- Access to Online Library providing links to Digital Libraries of Colleges and Universities across the world.
Chapter 2: Review of Literature

➢ Access to Infotainment section providing links to Latest News Channels, Book Publishers providing facility to order Books Online, Online Games, Greetings, Music, Software Downloads and Certification.

➢ Facility to create a personal web page.

2) E-Correspondence Mode: Under e-Correspondence Mode, the learner will be entitled to the following benefits:

➢ Semester wise Interactive multimedia courseware CD with complete voice-over recorded lectures.

➢ Courseware Books

➢ Ask Doubt facility for interacting with the faculty members and Subject Matter Experts.

➢ One week Contact programme twice per semester Jalandhar, India (Optional)

➢ Access to Online Library providing links to Digital Libraries of Colleges and Universities across the world.

➢ Access to Infotainment section providing links to Latest News Channels, Book Publishers providing facility to order Books Online, Online Games, Greetings, Music, Software Downloads and Certification.

2.7.1.3 The Accreditation of Punjab Technical University

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Punjab Technical University has been established by an act of the State Legislature to promote Technical, Management & professional education at the degree level & above. University Grants Commission, the apex body for accrediting Indian Universities, accredits Punjab Technical University. The university is also a member of the Association of Indian Universities. More than 80 colleges/institutes affiliated to Punjab Technical University, have the approval of AICTE, New Delhi (an apex body for affiliating technical programmes in India.) Which are offering professional Graduate and Post Graduate Degrees in Engineering, Management, Information and Technology and Pharmacy.

2.7.1.4 The accreditation status of PTU programmes offered via Virtual campus

Punjab Technical University is amongst a very few Universities in India offering under graduate and post graduate programmes through virtual campus. Under Section 3 of the University Act, the Punjab Technical University is authorized to institute and confer Degrees, Diplomas, Certificates & academic distinction. The nomenclature of all the programmes are as per the University Grants Commission (UGC) norms and it is a member of Association of Indian Universities. Thus, the degrees and diplomas given by the Punjab Technical University stand recognized by other Universities on a reciprocal basis.

2.7.1.5 The benefits of online programmes offered via PTU Virtual Campus over conventional Distance Learning programmes offered by various universities
Chapter 2: Review of Literature

The Online Mode of Virtual Campus aims to cater to learners beyond geographical and cultural barriers by providing following benefits in order to provide an engaging and conducive learning environment anytime and anywhere learning.

2.7.1.6 Evaluation Procedure

The evaluation of the students is done on continuous basis through assignments and end semester Proctored examination. The break up of evaluation is as under in Exhibit 4:

Exhibit 4: Online Evaluation Break-up

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Semester End Proctored Examination</td>
<td>80%</td>
</tr>
<tr>
<td>ii) Assignments (Online Uploading / Written Submission)</td>
<td>20%</td>
</tr>
</tbody>
</table>

➢ The assignments to be submitted are communicated to the students during the semester.

➢ For attempting the assignments one month's time is given to the students. The students have the facility to submit the assignment either by post or upload the same online.
The end semester examination is being conducted twice in a year corresponding to the time of admission.

### 2.7.1.7 End Semester Examination

**For Indian Students:**

- The end semester examination, is comprise of Proctored (in the presence of an invigilator) offline written examination to be conducted at the designated Examination Centre.
- The Exam schedule for Proctored offline written examination will be communicated to the students through online announcements & newsletters.

**For Foreign Students:**

- The students from outside India will have to appear for end semester Proctored examination (in the presence of an invigilator).
- If the student fails to clear the end semester Proctored examination or Reappears in case of failure he or she will be allowed to reappear by paying INR 550 or its equivalent or US$200 or its equivalent for each paper & for each attempt.
- The reappear examination has to be scheduled along with the end semester examination of the next batch viz two times in a year.
The evaluation and marks declared for end semester Proctored examination is to be final and binding on the students. In any case, there will be no provision for re-evaluation.

The students have the facility for taking lesson wise Online test for self-evaluation which would help the students in assessing their level of understanding of the concepts and preparing for the proctored examination.

2.7.1.8 Grade of Pass Criteria:

- **For Under Graduate Degrees:** The grade of pass requires, marks not less than 40% in each paper and the aggregate score should not be less than 40%.

- **For Post Graduate Degrees:** The grade of pass requires, marks not less than 40% in each paper and the aggregate score should not be less than 50%.

- **For Under Graduate/Post Graduate Diplomas:** The grade of pass requires, marks not less than 40% in each paper and the aggregate score should not be less than 40%.

The final examination answer script will not be shown to the students under any circumstances.

2.7.1.9 Identity Card

Every student has been issued an identity card. The student is required to carry his/her identity card at all times while he/she visits designated examination centre & produce it when required.
> In case of loss of identity card, a duplicate card is to be issued subject to a request from the student and payment of INR 100 (or its equivalent) or US $ 25 (or its equivalent).

> No student will be allowed to sit for the end semester proctored examination without the identity card.

> The student also can use the identity card to refer to the designated library.

2.7.1.10 Award of Degree/Diploma/Certificate

> The Degree/Diploma/Certificate are awarded to the student only if he/she has acquired a pass grade in all the end semester examinations.

> In case the student does not clear all the end semester examinations in the maximum time as mentioned in the programme details, he/she is not to be awarded any Degree/Diploma/Certificate.

> In the event that the student is not in a position to continue the programme that he/she sought admission to, the student is not to be awarded Degree/Diploma/Certificate.

> Medium of instruction for all programmes is English.

> Age is no bar for admission to any programme.

> The university reserves the right to update the programmes through changes in methodology, contents & structure from time to time.
➢ It is not obligatory for the University to offer training on the modified/updated programmes to the students who have registered for an earlier version of the programme.

➢ In case the University does not start any programme in a particular session which has been announced earlier, due to any reason whatsoever the student is eligible for the full refund of fee.

➢ **Punjab Technical University** has the right to suspend the programme for a particular session.

➢ The competent authority, without any notice, may change the provisions in this prospectus.

➢ For any clarification/dispute the decision of the Director (Outreach), Punjab Technical University shall be final & binding on all concerned.

➢ All disputes shall be under the jurisdiction of Jalandhar Court of Law, Punjab, India.

➢ The Punjab Technical University shall be the competent authority to amend any of the above provisions.

➢ There will be an automatic increase of 10% per year on the fee prevalent at that time and this will also be charged from the students that have already enrolled with the university in the past.

➢ The nomenclature of the programmes offered in Virtual Campus offering education through Online Mode and e-Correspondence Mode are as per
UGC, however the university reserves the right to change the same as and when directed by UGC with retrospective effect.

➢ The University reserves the right to change the syllabus of the programmes and the content thereto without prior notice.

➢ Examination system and the procedure, weightage can be changed.

2.7.1.11 Structure of ‘The Learning Network’

2.7.1.11.1 Regional Counseling & Facilitation Centre

Regional Counseling & Facilitation Centre will be responsible for making and monitoring the e-learning Centres, Counseling Centres, Learning Consultants in their assigned area that can be a state or a part of the state. Target Audience: Educational Institutes who can make and monitor the centers and are looking for the new horizons can become a prospective Regional Counseling & Facilitation Centre.

2.7.1.11.1(a) e-Learning Centres

A place like Computer Institute / Educational Institute having suitable infrastructure, internet connectivity for providing online access facility, localized counseling and admission facility who are looking for the new horizons can become a part of the growing Learning Network as a prospective e-learning centre. The e-learning centres shall perform three functions: -
2.7.1.11.1(a).1 **Function (1): Learner Facilitation:** The e-learning centre would maintain a high quality infrastructure, local area network with multimedia PCs and high bandwidth connectivity to allow the learners to study online via [http://www.ptuonline.com](http://www.ptuonline.com) as well as offline via the CD-ROM containing the course curriculum. No faculty shall be required to take the classes for both the online and e-Correspondence programmes.

2.7.1.11.1(a).2 **Function (2): Education Consultancy:** The students can undergo counseling and career development sessions at the learning centre where the students would be given proper guidance on how to select a career path depending upon their strength and areas of interest.

2.7.1.11.1(a).3 **Function (3): Learner Awareness:** The e-learning centre will generate the awareness about the PTU online education through local advertisements, banners, in-house and institutional seminars etc. to target audience in educational institutes who are looking for the new horizons can become a part of the growing Learning Network as a prospective e-learning centre.

2.7.1.11.1(b) **Counseling Centres**

A Counseling Centre will provide the guidance to students on how to select a career path depending upon their strength and areas of interest. The Counseling Centre shall perform **Education Consultancy Function and Learner Awareness Function.** **Target Audience:** A place like Computer Institutes/Coaching Centre
who is looking for the new horizons can become a part of the growing Learning Network as a prospective Counseling Centre.

2.7.1.11.1(c) Learning Consultant

A Learning consultant will provide the proper guidance to students on how to select a career path depending upon their strength and areas of interest. The Learning Consultant shall perform **Education Consultancy Function** only and shall be attach to the e-Learning Centre. **Target Audience:** Individual / Professional / Freelancer with good communication and interpersonal skills with urge to provide career guidance can become a part of the growing Learning Network as a prospective Learning Consultant.

Following **Exhibit 5** shows the schematic structure of the learning network.
2.7.1.12. Synchronous and Self-paced Learning

- Higher retention rate through multimedia rich interactive content that includes animations, voice over text, demonstrations and case studies.
- Collaborative learning experience via chat, discussion forum, email, electronic white board, file sharing, announcements, reminders and newsletters.
- Online Library with access to a host of online journals, e-books, white papers and tutorials
- Hyperlinks to download required software.
- Search Engine for searching the web for resources.
- Hyperlinks to selective websites/pages for reference.
- List of books in each subject for further reference.
- Tasks and Case Studies to get a practical knowledge of the concepts covered in the chapters.
- True Learning experience on one-to-one basis.
- Lower cost of learning.
- Productivity tools including glossary, search, notepad.

2.7.1.13. The Instructional Methodology

The entire programme consists presently of several semesters lasting over 6 months each. The programme material is so designed across the various semesters to ensure that the learning experience and the instruction provided changes with
the development of the student. It is assumed that at the entry to the program the student is not very comfortable with self research and does not possess the discipline and the enthusiasm to seek out information and learn through self motivated effort and activity. The student is habituated to an instructor lead learning environment and the online self-instructive methodology needs to be inculcated and enhanced across the semesters of the programme.

2.7.1.13.1 Instructor Driven to Self-Driven Approach (Exhibit 6)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Study Material</th>
<th>Material induced</th>
<th>Self induced learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

By this methodology the initial semester programme content will explain the concepts more in detail while the programme material will incorporate several tasks and activities which will enliven the study effort and enhance the knowledge.
application. As the student progresses through the program, the programme material will explain the concepts in brief while laying more emphasis on application of the concepts and attributing them to real life situations.

The students will grow comfortable with the online medium over time and will begin to appreciate the benefits of the online programme.

2.7.1.13.2 Content Structure

The layouts of the contents of each chapter are depicted in Exhibit 7 as follows:

2.7.1.13.2.1 Introduction

Each chapter will have an introduction at the beginning. This will be in direct speech, which will give the student a brief introduction of the chapter and the contents within - more like a learning objective for the chapter.

2.7.1.13.2.2 Subject Matter

The subject matter will have the following features-
**Examples:** contemporary real life examples that the student can relate to and understand the concept being explained better.

**Tasks:** The student is introduced to certain tasks which may involve some activity or internet search etc. e.g. Search the internet to learn more about Param, India’s super computer; search the newspapers to understand the latest configuration of desk top and laptop computers being marketed.

**Cautions:** Certain aspects that the student needs to be aware of to ensure that no untoward incident occurs or wrong learning input is acquired, e.g. ensure that the computer is disconnected from the mains lines before opening up the cabinet.

**Notes:** Several salient features and notes need to be added which will add value to the learning, e.g. “Did you know that India has its very own super computer developed indigenously called the Param”.

**Graphical representations, animations, figures, pictures etc.:** The text matter will have as many pictorial representations and graphics as possible. Some concepts may need animations to explain the concept better. This animation flow has to be described. There will be a voice over for all such animations that will explain the animation in detail. Pictures and images, wherever possible, will be used to make the learning interesting and more informative.
Power point presentations: Power point presentations that explain specific concepts will also be included, wherever necessary. This may also be coupled with a voice over.

Commentary: Certain concepts will be explained in detail through a voice commentary.

Case Studies and Case-lets: Case studies and small case incidents will be introduced wherever relevant.

Reading References: Wherever a concept needs further exploration or the student has to refer certain texts, then the appropriate book/reference material will be given.

Journals/Books/Papers: This is an Internet based activity, wherever necessary references of journals/books/papers will be included, which the student can seek out and explore to gain additional knowledge.

Summary: At the end a brief summary will consolidate the salient features explained in the chapter and the learning obtained. This will be in direct speech which will give the student a gist of the contents covered in the chapter.

2.7.13.2.3 Self Evaluation

At the end of each topic, there will be set of objective-type questions in the form of fill in the blanks, match the following, multiple choice questions, etc. This is a quick test or a quiz to test students' understanding of the topic. At the end there will also be assignment/submissions that the student needs to do and
submit. At the end of each semester, there will be an examination that would include mix of objective and descriptive questions (refer section 10 for details)

2.7.1.13.2.4 Content Presentation & Delivery

The student experiences an exhilarating learning environment provided by state of the art programme material delivered via a "Virtual Classroom" which helps the student to learn more efficiently and effectively. The content shall also be available to the students on a CD for offline browsing along with option to have a printed copy.

Once the content has been proofed by the programme consultants, the same is given for digitization and adaptation to the computer medium. Here the critical elements of the programme content are given the proper representation using multimedia technologies and the programme material is digitized.

The crucial elements are:

➢ Pictorial and graphical representations: - The text matter will have as many pictorial representations and graphics as possible. Pictures and images, wherever possible, will be used to make the learning interesting and more informative.

➢ Animations to explain concepts: - Some concepts may need animations to explain the concept better. This animation flow has to be described.

➢ Voice over explanations of concepts.
Audio and video presentations.

Power point presentation with voice over commentaries.

The content is presented in a manner that keeps the student focused and involved in the subject matter. The student may be prompted to seek out information either through direct field or desk research or proceed on an internet exploration to gather additional information.

The student has access to the evaluation of his learning through self-tests and quizzes. In addition the faculty can constantly keep track of the student’s progress through various assignments and submissions made by the student.

The student can use various productivity tools including:

Glossary: This tool allows students to search for information based on alphabetical index.

Search: This tool allows students to search for specific information from within the programme content by entering specific keywords.

References: This tool provides additional information like reference books, links to related websites, tutorials, etc.

Notepad: This tool allows students to capture their notes and views on the content.
For extensive reading and reference, the students will also be provided the following facilities:

- Online Library with access to a host of online journals, e-books, white papers and tutorials.
- Hyperlinks to download required software.
- Search Engine for searching the web for resources.
- Hyperlinks to selective websites/pages for reference.
- List of books in each subject for further reference.
- Tasks and Case Studies to get a practical knowledge of the concepts covered in the chapters.

2.7.13.2.5 Collaboration Tools

**Chat:** The students can use this tool to interact with the faculty and their fellow batch-mates by exchanging written messages in real-time. In order to interact in real-time, both the partners need to be online at the same time and logged on to the virtual campus.

**Discussion forum:** The students can use this tool for open offline discussions on their topics of interest. The students can write their queries in the forum under a specific subject category. The faculties and other students can enter their replies/answers to the queries posted by different students.

**E-mail:** The students can use this tool to send mails to the faculty and fellow batch-mates by entering their messages. Once the messages are delivered,
they will show up in the "inbox" of the receiver. The receiver can then read the message and also post a reply to the message or forward the same to another student/faculty.

**Electronic whiteboard:** This tool simulates the conventional black board that is used by faculty to teach the students. As the faculty draws on the whiteboard, the students can view the image of the board in real-time. This gives the students a feel of the virtual presence of the faculty as is present in the conventional education system.

**File sharing:** This tool allows the students to share their documents with fellow batch-mates and enables them to work in teams or groups. This is of great help when they are working on projects or assignments.

**Announcements:** This tool allows students to receive important notices and circulars issued by the university.

**Reminders:** This tool allows students to prepare their own calendar by entering the various tasks that need to be completed on a certain point of time. The reminder will automatically remind the student in advance as soon as he/she logs on to the virtual campus about the task that needs to be completed that was entered for a particular day and time.

**Newsletters:** This tool allows students to periodically receive latest news updates issued by the university.

The foregoing has been an overview of the issues found in the literature about online education. The issues involved are complex, sometimes controversial,
and often groundbreaking. The literature review served as a springboard from which to begin the process of viability assessment of online management education, the description of which follows in the next section.