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'An Exploratory Deliberation on whether Flexible Learning Environment facilitates opportunities for further studies at Higher Education Level or not: *Exploring the possibilities to opt for this new mode of learning in developing countries*'

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Abstract:

The debate is whether distance learning is better or worse than traditional face-to-face (f2f) learning has been continued for last few decades. Opponents of Online/ distance learning mode of learning (Garrison, 1987; Jeffries, 1996; Fox, 1998; Phipps and Merisotis, 1999; Fitzpatrick, 2001); supporters of online mode of learning. (Beare, 1989; McCleary and Egan, 1989; Kabat and Friedel, 1990; Souder, 1993; Freeman, 1995; Mortensen, 1995; Heines & Hulse, 1996; Schutte, 1996; Gubernick and Ebeling, 1997; Bartlett, 1997; McKissack, 1997; Bothun, 1998; Sonner, 1999) However, both opponents and supporters concur to conclude that any method which suits to learner's learning style enable him/her to achieve highest score at higher education level.

Keywords: Higher education, learners' learning style, face-to-face instructions, online/distance learning

1. Introduction

Since the inception of schooling that itself emerged from 'factory model' (Tomlinson 2000) in 18th century, the teaching and learning activities were restricted in school premises only. Either for Early Childhood Development (ECD) group to primary and secondary levels and to high schools or colleges, classrooms are meant to be essential place where teacher and students' interaction is mandatory. Mostly in 'traditional classrooms' (Shachar & Neumann 2003) students' teacher interaction is pivotal for effective learning, as students learn a lot from teachers' experiences. According to Fox (1998) students learn far too little when the teacher's personal presence is not available because the student has more to learn from the teacher than the texts.

On the other hand, twenty first century classrooms challenge the 'traditional' teacher-centred curriculum (Shachar & Neumann 2003) that cannot meet the diverse needs of learners; it is important to acknowledge that each student has unique learning style that cannot be flourished through 'only-one' standard classroom instructions. (Thompson, 2003) Furthermore, 'teacher centred approach' encourages 'transfer of knowledge' (McDonald 2002) where students' innate abilities become less important as compared to teachers' experience in terms of knowledge and competence.

Berliner (as cited in Scherer, 2001) states that in teachers' centred approach students only able to learn what teachers' skills and competences are. If the teacher is 'expert' than that could bring reasonable changes in the lives of students; otherwise, novice teacher cannot deliver the quality input due to lack of his/ her knowledge both in terms of content and pedagogy i.e. knowledge of how to teach. For many years, educationists, psychologists and philosophers have been debating upon the notion of 'learner's autonomy' in charting out what he/she wishes to learn regardless of whether he achieves this through 'teacher centred approach' or 'learner centred approach'. (Perkins, 1994; McCombs, 1997; Singham, 1998; McCombs & Whisler, 1997; Tomlinson, 2000; Altan and Trombly, 2001; Milamb 2001; Winograd, 2002; Henderson and Hawthorne, 2002; McDonald, 2002 & 2003; Thompson,2003; Marzano, 2003; Haycock, 2003; Blackwell, Futrell, and Imig, 2003)

However, these two approaches demand strong competence in teachers for both having command in content knowledge and strong understanding of pedagogical skills to be able to create an environment essential for learning and to become proficient to respond to students' individual queries time to time. Consequently, the main responsibility lies on teachers' shoulder in opting for learner' centred approach or teachers' centred approach. Within the educational circle, practitioners have been engaged extensively to find the pathway to encourage teachers to reflection on below questions while preparing themselves for 21st century teaching for creating learning environment suitable to learners' needs.

Reflection time!

- Can children be able to chart out what they wish to learn and achieve in life?

- Do we have qualified professional who allow children to pursue their choice in learning?

- Can we create ample opportunities for early years, primary middle and high school students to experience free learning?

- Will the notion of free or flexible learning be compatible with conventional/ traditional education delivery methods, if yes then how, if no then what could be the alternative to it?

- Whether complete autonomy is possible for students, if no then why not and if yes, then which age or level of learning is permissible for free learning?

It is essential for teachers, educators, school leadership and other practitioners to undertake an inquiry on the notion of flexible learning environment and ways to adapt their teaching and learning environment at least at higher education level comprises from high school/college to universities level. The next section is devoted to unpack the notion of flexible learning environment specifically at the higher education level where learners are making their choices themselves and with the commencement of smart technological equipments partaking in local as well as global initiatives.

2. **The notion of Flexible learning environment**

"Flexible Learning" according to Vuori (2001) is most important feature of learning, where learners apply his/her prior knowledge, experiences, their perspectives, backgrounds, talents, interests, capacities and heredity(McCombs (1997) to construct new meaning for him or herself. Does 'traditional classroom' (Shachar & Neumann 2003) facilitate flexible learning environment to learners? Will flexible learning be possible in the classrooms, then how do we respond to the century old claim that 'learning takes place "anywhere," at "anytime," in "any pace". (Shachar & Neumann 2003) Supporters and practitioners of Online/ distance learning claim that by Online/ distance learning mode of delivery, students get maximum opportunities of 'flexible learning' (Vuori 2001) on their own pace which otherwise is not possible in traditional mode of learning. As in traditional classrooms, the scheduled time table demands from each student to study a particular concept at particular time, or finish the verbal or written task at standard time. On the contrary, in Online/ distance learning mode of delivery, students time their work based on their own pace and capacity which is instrumental in ensuring their efficiency in preparing them as life long learners. Moreover, in Online/ distance learning mode of delivery students are not required to be physically present in the campuses of their colleges/ universities; they are not geographically limited to any location rather through online learning programs they can participate in any course without residential requirements. Though the opponents of Online/ distance learning agree with the notion of 'flexible learning' but Fox (1998) argues whether through non-conventional methods students will be able to experience the 'fullness of learning' that is cultivated through traditional' (Shachar & Neumann, 2003) mode of learning by teachers' presence. What constitute 'Flexible Learning'? According to Murdoch University Academic Council (in Vuori 2001:7), 'Flexible Learning' aims to 'provide a teaching and learning environment that supports a range of accessible delivery methods and different learning modes to optimize the learning opportunities of students'. To ensure the 'Flexible Learning environment' to learners, Vuori (2001) proposes the following resources to be essential in building the required environment:

    a. Infrastructure and resources requirement,
    b. Students' and faculty' needs, and
    c. Day to day management of flexible learning environment

(i)   Resources and infrastructure requirement for "Flexible Learning" environment are:

Resources requirement for "Flexible Learning" environment
• Network infrastructure
• Telecommunication infrastructure
• ICT support and management
• Online access to other university resources (library) etc
• Training for users and curriculum developers
• Unit development and maintenance
• Additional Academic staff time for communication with students
• Administration support

Table 1: Resources for flexible learning environment

(ii)   Students' needs consist of how students would like to receive their instructions and study materials, Vuori (2001) proves that students showed variety of options as in one of his research case study, 43.5% out of 100% asked for hard copies of instructional material instead of online instruction manuals. The details are as below:

Preferred form of unit materials

Preferred form	Numerical	Percentile
Hard copy (study guide and readers)	117	43.5%
Complimentary on-line	41	15.3%
Combine hard copy + on-line	38	14.1%
On-line	35	13.0%
Good as they are	24	8.9%
Like audio tapes	14	5.2%
Total	269	100%

Table 2: Preferred form of unit materials

(iii) Teaching faculty requires regular support from administrative and ICT staff, as they have to develop quality instructional materials for learners. Effective interactive teaching with heavy assignments is indeed demanding because face-to-face (f2f) teaching is entirely different from on-line classrooms.
The most challenging task for faculty is to consider students' preference for brining novelty in lectures, updating instructional materials; also seeking support from 'web authoring experts' to upload instructional materials on internet and other online software' structures. Hence, the entire teaching program becomes demanding and time consuming.

(iv)   Day to day management to endorse flexible learning environment is also challenging, where a continuous effort is required to update instructional and study materials on web. Uploading the simple word processing format on web format consumes time and technical skills, for instance, Table '3' presents one cycle of information sharing to the target audience, and there are multiple processes of encoding and decoding to it.

Typical production cycle for online learning environment

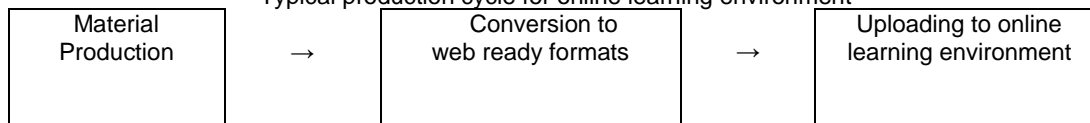| Material Production	→	Conversion to web ready formats	→	Uploading to online learning environment

Table 3: Typical production cycle for online learning environment

According to Waits & Lewis (2003) all universities in developing countries also plan to offer online programs within few years. However, Vuori (2001) has proposed a list of resources to promote 'flexible learning environment', but availability of qualified skilled people in all universities is quite critical because almost all major universities are offering on-lines programs. (Tucker, 2001) As Vuori (2001) argues that all forms of instructional materials should be available for students if university claims that it provides flexible learning environment for higher education; however, it is equally important to discuss who will bear the cost of flexibility. Will all stakeholders including government bodies, education leagues, universities, parents, and students as most of them will be mid career professional and working would agree to contribute their share for the development and initiation of the flexible learning environment at higher education level. Secondly, though at present one is questioning flexible learning environment for higher education in

developed countries, but will developing countries be able to provide such flexible learning environment in near future as they have been struggling to provide the basic infrastructure as their basic needs are yet to be met? More importantly, getting and retaining qualified and skilled people will also be critical issue for the universities, as besides faculty, these web authoring experts are equally essential for endorsing 'flexible learning environment'.

However, the notion of 'flexible learning environment' is sophisticated but certain elements of this environment can be merged into non-conventional/ alternative education delivery methods for higher education.

3. **Traditional education delivery method at Higher Education level**

The traditional education delivery method in Higher Education has always been in a classroom setting with students taking notes and professor giving a lecture or a talk. These 'interactions' between professor and students were viewed as 'essential learning element within the arrangement' and recognized as '*sage on the stage'*. (O'Malley and McCraw, 1999)

4. **Technological pressure on Higher Education System in present era**

"*The rapid growth of end-user computing, low-cost communication and the development of the Internet have lead to a surge of online courses. In light of this, many educators still await the promise of technology's power to improve teaching effectiveness." (Volery, 2001:77)*

According to 'E-learning essentials' at the World Wide Web, education delivery method through E-learning has various types, which includes totally on-line instructions with no face-to-face (F2F) meetings, or a blended learning of both online and face-to-face (F2F) or web based study etc. The teaching of E-Learning is possible either by using World Wide Web (WWW) network or by Compact Disks (CD-ROM). Some common web based delivery methods that are used for higher learning/ education systems are:

Web based delivery methods	
Print	• E-text • Textbooks • E-zones
Video	• Streaming video • Video tape • Satellite transmission • Cable
Audio	• Streaming audio • Audio tape
Review and Exams	• Electronic • Interactive • Paper

Communication	• Asynchronous communication
	  o Emails
	  o Threaded discussion
	  o Web log
	  o forums
	• Synchronous communication
	  o Chat
	  o Videoconferencing
	  o teleconferencing

Table 4: Web based delivery methods http://www.worldwidelearn.com/elearning-essentials/elearning-types.html

Advancement in technology such as printing machines, postal services, telecommunication, telephone, radio, television and recently the internet, mobile technology and virtual environment have been a driving force in promoting alternative methods of learning. (Shachar & Neumann 2003) These new methods have become essential

modes to deliver online learning/ distance learning to all. With regard to developing countries, online/ distance learning through alternative methods will be suitable option to engage underprivileged people in basic literacy, who otherwise cannot afford 'traditional classrooms' (Shachar & Neumann 2003) for getting basic or further education.

5. Readiness for Online/ distance learning method for Higher Education (HE)

The term 'distance education' used to describe the geographical distance between teacher and learners (Gallagher and McCormick, 1999) or any medium of exchange, where communication between instructor and learners cannot be possible face-to-face (f2f) and they need either print media or other technological tool to communicate among themselves. (Jordan, Algozzine, and Spooner, 1999; Perraton, 1988; Keegan, 1986; Garrison and Shale, 1987, as cited in Sherry, 1996 and also Moore and Thompson, 1997, as cited in Spooner, 1999) Online/ distance learning experts questioned conventional methods of teaching by calling it "Residential based model" of education (Blustain, Goldstein, and Lozier, 1999; Drucker, 1997), as cited in O'Malley (1999); where students attend classes at allotted timings and at familiar locations. According to them, the notion of tradition classroom confines learning within school or college's boundaries where as learning can takes place "anywhere," at "anytime," in "any pace" (Shachar & Neumann 2003) which is possible to achieve through the Online/ distance learning delivery method only. On the other hand, Phipps and Merisotis (1999) question the Online/ distance learning delivery method, as they claim, 'there is a relative paucity of true, original research dedicated to explaining or predicting phenomena related to distance learning'. (Phipps and Merisotis, 1999:2) The notion of Online/ distance learning got acceptance with the commencement of radio, television, telecommunication, print and other technological media; and during the 1990s with the advancement and significant growth of 'computer mediated learning technology' i.e. two-way interactive audio and video exchanges, 'web- based synchronous communication' and 'internet web based instructions' both online and offline interaction was made possible. (Phipps and Merisotis, 1999; Ponzurick et al., 2000; Sherry, 1996; Wernet et al., 2000; Setaro, 2000 and (Alavi, Yoo & Vogel, 1997; Rahm & Reed, 1997; Arbaugh, 2000)

6. The appropriateness of Online/ distance learning method at Higher Education level

'*Students who self-select into online courses tend to be independent learners and prefer conceptual learning styles. Students that prefer traditional classrooms tend to be more dependent, exhibiting a preference for social and applied learning styles' (Diaz & Cartnal, 1999: 132)*

Despite the well-built criticism against Online/ distance learning, as Phipps & Merisotis (1999) state that 'technology cannot replace the human factor in education'; many educators are reviewing the option of choosing Online/ distance learning method as a common tool for teaching and learning at higher education level. (Mondy, Noe, and Premeaux, 1999; Dessler, 1997; Westwood, 2001) This method of instruction will certainly enable the tutors to reach to the relevant audience including educators, full-time students, part time learners and other stakeholders.

Online/ distance learning has appeared as 'new delivery method in education' (Shachar & Neumann 2003) which has changed the physical environment of massive building into virtual environment. In addition, with the increasing accessibility of Distance Education' curriculum and experts for all types of training and development, not only to students but also to business people and others, that endorses the popularity of this mode around the globe. (Shachar & Neumann 2003).

Now a days, Online/ distance learning method is preferred over traditional way of training the people. (Blustain, Goldstein, and Lozier, 1999; Drucker, 1997 as cited in O'Malley, 1999 and lavi, Yoo & Vogel, 1997; Rahm & Reed, 1997; Arbaugh, 2000) 'Traditional campus classroom instructor system' was transformed into larger, much bigger, better and flexible interactive technology i.e. World Wide Web using innovative forms of instruction at 'decentralized' locations. (Ponzurick et al., 2000; Hall, 2002) 'Technology mediated learning' (Webster and Hackley, 1997) facilitates students in many ways such as cost of different courses of higher studies, information that can be shared to multiple stakeholders around the globe in order to seek expertise. Though the notion of Online/ distance learning is a century old phenomenon, (Phipps and Merisotis, 1999; Ponzurick, Russo, and Logar, 2000; Sherry, 1996; Wernet, Olliges, and Delicath, 2000) and this notion was mostly opted for higher education studies including college and university education; thus far it has not transformed college or university level teaching to its fullest even in developed countries. (Phipps and Merisotis, 1999; Ponzurick, Russo, and Logar, 2000; Sherry, 1996; Wernet, Olliges, and Delicath, 2000)

7. **Online/ distance learning and quality assurance in Higher Education Studies**

Many Online/ distance learning practitioners, educational technologists, and stakeholders including students and their parents questioning about the efficacy of learning using distance learning mode.(Bangert-Drowns and Rudner, 1991) Students who use Online/ distance learning mode are generally older, employed and pay their own tuition fee. Those students who use face-to-face (f2f) mode of learning are either dependent on their parents or caretakers financially.(Fox, 1998)

According to 'traditional' school of thought, unlike Online/ distance learning, face-to-face (f2f) method of learning has all its merit where teacher students' interaction, along with traditional instructional program and assessment has major impact on students' learning. (Bangert-Drowns and Rudner, 1991)

During 1952 and 1992, extensive researches were conducted on Online/ distance learning to compare and examine its efficacy both in terms of planning, development and implementation with face-to-face (f2f) mode of instruction; but the outcomes from the research study informed not much difference between Online/ distance learning and traditional mode of teaching in classrooms. (DeSantis, 2002)

Noble (1997) is a critic of Online/ distance learning and name this virtual or online learning as "digital diploma mills"; (Phipps & Merisotis, 1999) preferred traditional learning to Online/ distance learning. Phipps and Merisotis" (1999) reported while reviewing the Online/ distance learning programs:

'*With few exceptions, the bulk of these writings suggest that the learning outcomes of students using technology at a distance are similar to the learning outcomes of students who participate in conventional classroom instruction. The attitudes and satisfaction of students using distance education also are characterized as generally positive. Most of these studies conclude that, regardless of the technology used, distance education courses compare favourably with classroom-based instruction and enjoy high student satisfaction'.*

Gallagher and McCormick (1999) as cited in Shachar & Neumann (2003:4) focused on four domains to examine the effectiveness of Online/ distance learning initiatives:

1. '*Student attitude and satisfaction regarding delivery of coursework';*
2. *'Interactions of students and faculty during delivery of coursework';*
3. *'Student outcomes in distance education coursework'*; and
4. '*Faculty satisfaction with delivery and coursework'.*

In Addition, Spooner *et al.* (1999) as cited in Shachar & Neumann (2003:4) also analyzed Online/ distance learning studies based on the following two comparative factors as:
1. *'Cognitive factors, i.e. amount of learning, academic performance, achievement, and examination and assignment grades'*; and
2. *'Other factors i.e. student satisfaction, comfort, convenience, and communication with instructor, interaction and collaboration between students, independence, and perceptions of effectiveness'.*

8. **Comparison between Online/ distance learning and Face-to-Face(F2F) modes of learning at Higher Education level**

Wegner *et al.,* (1999), Dellana, C., and West, (2000) and Russell (2002) examined various studies on Online/ distance learning and concluded *'no significant difference phenomenon'* between Online/ distance learning as compared to traditional mode of education and teaching & learning. Another research study proved that 'Students using technology through Online/ distance learning have similar learning outcomes to students in the traditional classroom setting'. (Beare 1989; McCleary & Egan 1989; Sonner 1999)

Though Wegner *et al.*(1999), Dellana, C., and West, (2000) and Russell (2002) proved that there is 'no such significant difference phenomenon' between Online/ distance learning and Face-to-face(F2F) modes of learning. In later years Unal, Z. (2005) conducted a research study to capture the contrast between two modes of learning; his meticulous findings between the two showed the following comparison:

Comparison between Online/ distance learning and Face-to-Face (F2F) modes of learning

Classroom based learning Conventional mode of learning	Online learning Non-Conventional mode of learning
The course was a success	The course was a success
Very satisfied from the course and instructor	Very satisfied from the course, instructor and course website
Course content was appropriate to their major and level	Course content was appropriate to their major and level
The course improved their computer knowledge and skills	Discussion board was the main tool for them to learn
Posting materials online helps them to review	They did not have any technical problem reaching the course website
Instructor help is a main factor to success	Instructor answered questions promptly
Step by step instruction helps them learn effectively	The layout of the course on the course website was very useful and help them to navigate easily
They enjoyed *online projects especially Web-Quest and Web-lesson*	The course handbook was a big help and a must for the future online course
If this course offered online, the students should be informed before enrolling the course to make right decision	
Most of them would not take this course, if offered online	

Table 5: Comparison between Online/ distance learning and Face-to-Face (F2F) modes of learning (Unal 2005)

Even the tutor belongs to conventional method promoted non-conventional methods of education delivery to attract students towards learning. It is indeed difficult to restrict the learner with traditional mode of learning only especially at the higher education level with such a fast pace moving world along with global pressure in present times.

9.   Use of technology in developing and developed countries

The major shift from traditional learning method to distance/ online learning mode is due to increasing use of technology both in developing and developed countries. As Wetzel (2009) pointed out that 'non traditional' adults are the driving force of bringing alternative education delivery methods, furthermore, based on April 2001 study of internet hosts and users: a regional representation, almost 17.8% people from Asia only use internet for formal or informal exchanges, which is the second highest after North America. Though the below figures have been restricted to year 2001 and today the numbers must have increased three to four times high, however, it is clearly evident that today online mode of learning is not seen as matter of choice, rather it has become as 'only choice' that also complements the traditional classrooms today as illustrated by Unal (2005).

Internet Hosts and Users by Country: A Regional representation

Internet Hosts and Users by Region		
Region	*Internet host (000)*	*Internet users*
Africa	*265 (0.2%)*	*2,901 (0.7%)*
Asia	*8,929 (7.86%)*	*70,073 (17.8%)*
Europe	*20,309 (17.9%)*	*89.066 (22.6%*
Oceania	*2,062 (1.8%)*	*17,227(4.0%)*
Central America	*467 (0.4%)*	*1,538 (0.4%)*

South America	*1,264(1.1%)*	*16,593 (4.2%)*
North America	*80,299 (70.7%)*	*194,556(49.3%)*
Total	*113,595(100%)*	*394,573(100%)*

Table 6: Telecordia Internet Sizer Site http://www.netsizer.com/

10. Conclusion:

Wetzel (2009:1) believes that Adults themselves are the driving force of bringing non- conventional education delivery methods in higher education (HE).'Adult education is changing to meet student demands by offering flexible schedules, expansion of online degrees, increasing financial opportunities etc'.

In Wetzel's paper 'Adults Influence Change in Continuing Education: *Higher Education(HE) is being redefined by 'Non-Traditional Students',* he advocates that students who intend to seek Higher Education and do not want to follow the path of college studies immediately after high school are actually the creator of 'non-conventional education delivery methods to continue their higher education studies. (Wetzel 2009)

He propagates that all those students who pursue college studies immediate after finishing higher school are actually 'Traditional' students, thus 'traditional' students support traditional education delivery methods and 'Non-Traditional' students promote 'Non-Conventional Education Delivery Methods to pursue their higher education studies. (Wetzel 2009)

References

Academic Council (2001).Degree of Flexibility: An Issues paper on flexible learning and delivery at Murdoch University Report of the Working Party on External Studies and Flexible Delivery, available on-line at http://www2.murdoch.edu.au/admin/cttees/ac/1.%20Preamble

Al-Jarf, A. & Sado, R. (2002). Effect of online learning on struggling ESL college writers. San Antonio, TX: National Educational Computing Conference Proceedings. (ERIC Document Reproduction Service No. ED 475 920).

Allen, M., Bourhis, J., Burrell, N., and Mabry, E. (2002). Comparing Student Satisfaction with Distance Education to Traditional Classrooms in Higher Education: A meta-analysis. *The American Journal of Distance Education, 16*, 83 – 97.

Altan, M. Z. & Trombly, C. (2001). Creating a learner-centered teacher education program. Forum, 39(3), 28-35

Arbaugh, J. (2000). Virtual classroom versus physical classroom: An exploratory

Bangert-Drowns, R. L., and Rudner, L. M. (1991). *Meta-Analysis in Educational Research. ERIC Digest.* ERIC Clearinghouse on Tests Measurement and Evaluation: Washington, DC. ED 339 48.

Bartlett, T. (1997). The hottest campus on the Internet. *Business Week*, 3549, 77-80.

Beare, P. L. (1989). The comparative effectiveness of videotape, audiotape, and telecture. *The American Journal of Distance Education* 3(2), 57-66.

Becker, B. J., and Hedges L.V. (1984). Meta-analysis of cognitive gender differences: A comment on an analysis by Rosenthal and Rubin. *Journal of Educational Psychology 76*, 583 – 587.

Becker, G., S. 1964. Human Capital: A Theoretical and Empirical Sen, A. (1999) *Development as Freedom* Oxford, Oxford University Press.

Beller. M. & Or, E. (2003). Learning technologies at the service of higher education:

Blundell, R., L. Dearden, C. Meghir and Sianesi, B 1999) Human capital investment: the returns form education and training to the individual, the firm and the economy, IFS Working Paper

Blustain, H., Goldstein, P., and Lozier, G. (1999). Assessing the New Competitive Landscape. In Richard N. Katz and Associates (Eds.) *Dancing with the Devil.* San Francisco: Jossey-Bass.

Bothun, G. D. (1998). Distance education: Effective learning or content-free credits? *Cause/Effect*, 21(2), 28-31, 36-37.

Brown, G. & Wack, M. (1999). The difference frenzy and matching buckshot with buckshot. Technology Source, May/June.

Cavanaugh, C. S. (2001). The Effectiveness of Interactive Distance Education Technologies in K-12 Learning: A meta-analysis. *International Journal of Educational Telecommunications, 7*(1), 73 – 88.

Clark, T. (1983). Attitudes of higher education faculty toward distance education: A national survey. *The American Journal of Distance Education*, 7(2), 19-31.

Cook, C., Heath, F., and Thompson, R. (2000). A meta-analysis of response rates in Web- or Internet-based surveys; *Educational and Psychological Measurement 60*,(6), 821.

Day, T., Raven, M. R. & Newman, M. E. (1998). The effects of world wide web instruction and traditional instruction and learning styles on achievement and changes in student attitudes in a technical writing in an agri-communication course. Journal of Agricultural Education, 39(4), 65-75.

Dellana, S., Collins, W., and West, D. (2000). Online education in a management science course – effectiveness and performance factors. *Journal of Education for Business, 76,* 43 – 48.

DerSimonian, R., and Laird, N. (1986). Meta-analysis in Clinical Trials. *Controlled Clinical Trials 7,* 177 – 188.

DeSantis, C. (2002). *eLearners.com.* Retrieved November 2, 2002, from: http://elearners.com/

Diaz, D., Cartnal, R. (1999). Students' learning styles in two classes: online distance learning and equivalent on-campus. College Teaching, 47(4), 130-135.

Dick, W., Carey, L., & Carey, J. O. (2001). The systematic design of instruction (5th Edition). New York: Addison-Wesley Educational Publishers, Inc.

Dillon, C. & Gunawardena, C. (1995). A framework for the evaluation of distance learning. *Academy of Management Journal*, 40(6), 1-21.

Dobrin, J. (1999). Who's teaching online. ITPE News, 2(12), 6-7.

Drucker, P. (1989). *The new realities.* New York: Harper and Row. Shachar & Neumann ~ Differences Between Traditional and Distance Education Academic Performances: A meta-analytic approach

Fitzpatrick, R. (2001). *Is distance education better than the traditional classroom?* Retrieved July 31, 2001 from http://www.clearpnt.com/accelepoint/articles/r_fitzpatrick_060101.shtml.

Fleiss, J. L., and Gross, A. J. (1991). Meta-analysis in epidemiology, with special reference to studies of the association between exposure to environmental tobacco smoke and lung cancer: A critique. *Journal of Clinical Epidemiology*, *44*, 127 – 139.

Fox, J. (1998). Distance Education: is it good enough? *The University Concourse*, 3(4), 3-5.

Freeman, V. S. (1995). Delivery methods, learning styles and outcomes for distance medical technology students. (Doctoral Dissertation, University of Nebraska-Lincoln, 1993).

Gagne, M. & Shepherd, M. (2001). Distance learning in accounting. T. H. E. Journal, 29(9), 58-62.

Gallagher, P., and McCormick, K. (1999). Student satisfaction with two-way interactive distance education for delivery of early childhood special education coursework. *Journal of Special Education Technology 14*(1) 32 – 47.

Gardner, L., Sheridan, D. & White, D. (2002). A web-based learning and assessment

Garrison, D. R. (1989). *Understanding distance education: A framework for the future.* New York: Routledge.

Garrison, D. R., and Shale, D. (1987). Mapping the boundaries of distance education: Problems in defining the field. *American Journal of Distance Education, 1*(1), 7 – 13.

Hall, B. (2002). *FAQs About E-Learning.* Brandon-Hall.com. Retrieved November 2, 2002 from: http://www.brandon-hall.com/

Heberlein, T., and Baumgartner, R. (1978). Factors Affecting Response Rates to Mailed Questionnaires: A quantitative analysis of the published literature. *American Sociological Review, 43,* 447 – 462.

Huang, H. (2002). Student perceptions in an online mediated environment.

Hunter, J. E., and Schmidt, F. L. (1990). Methods of Meta-Analysis: Correcting error and bias in research findings. Newbury Park, CA.: Sage.

Hunter, J. E., Schmidt, F. L., and Jackson, G. B. (1982). Meta-analysis: Cumulating research findings across studies. Beverly Hills; CA.: Sage.

Inayatullah, S & Gidley, J. (2000). *The university in transformation: Global perspectives*

Jeffries, M. (n.d.) *IPSE – Research in Distance Education.* Retrieved July 28, 2001 from http://www.ihets.org/consortium/ipse/fdhandbook/resrch.html.

Johnson, M. (2002). Introductory biology online: Assessing outcomes of two student populations. Journal of College Science Teaching, 31(5), 312-317.

Johnson, S. D., Aragon, S. R., Shaik, N., & Palma-Rivas, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments. Journal of Interactive Learning Research, 11(1), 29-49.

Johnstone, S.,Zuniga, R., Markwood, R. (1994). Student and faculty survey responses and analysis. In R. Markwood & S. Johnstone (Eds.), New pathways to a Degree: Technology Opens the College (1st ed., pp. 131-147). Boulder, CO: Western Interstate Commission on Higher Education.

Jones, E. (1999). A comparison of all web-based class to a traditional class. Texas, USA. (ERIC Document Reproduction Service ED 432 286).

Jüni, P., Holenstein, F., Sterne, J., Bartlett, C., and Egger, M. (2001). Direction and impact of language bias in meta-analyses of controlled trials: empirical study. *International Journal of Epidemiology, 31*, 115 – 123.

Kearsley, G. (2000). Online education: Learning and teaching in no cyberspace. Belmont, CA: Wadsworth.

Kearsley, G.,Lynch, W,& Wizer, D. (1995). The effectiveness and impact of computer conferencing in graduate education. Educational Technology, 35(6), 37-42.

Keegan, D. (1986). *The foundations of distance education.* London: Croom Helm.

Keegan, D. (1996). *Foundations of distance education. (3rd Ed.).* London: Routledge. Shachar & Neumann ~ Differences Between Traditional and Distance Education Academic Performances: A meta-analytic approach

Kekkonen-Moneta, S. & Moneta, G. (2002). E-learning in Hong Kong: Comparing

Khamis, A. (2005:4) in *Higher Education in Developing Countries - Draft Paper*,

Kozma, R. (1994). Will media influence learning? Reframing the debate. Educational Technology Research and Development, 42(2), 7-19.

Law, J.,Hawkes, L., & Murphy, C. (2002). Assessing the on-line degree program. In R.S.Anderson, J, F, Bauer, & B.W.Speck(Eds), Assessment strategies for the on-line class: From theory to practice (Vol. 91, pp. 83-89) San Francisco: Jossey-Bass

Leasure, A.R., Davis, L., Thievon, S.L. (2000). Comparison of student outcomes and preferences in a traditional vs. world wide web-based baccalaureate nursing research course. Journal of Nursing Education, 39(4), 149-154

Lemura, L., Von-Duvillard, S., and Mookerjee, S. (2000). The effects of physical training of functional capacity in adults: Ages 46 to 90: A meta-analysis; Journal of Sports Medicine and Physical Fitness Training 40(1), 1 – 10.

Liu, Y. (2003a). Improving online interactivity and learning: A constructivist approach. Academic Exchange Quarterly, 7(1), 174-178.

Liu, Y. (2003b). Taking educational research online: Developing an online educational research course. Journal of Interactive Instruction Development,

Lockee, B., Burton, J., and Cross, L. (1999). No Comparison: Distance education finds a new use for "no significant difference." *Educational Technology, Research and Development, 47*(3), 33 – 43.

Lynch, L. and Black, S. 1995 Beyond the incidence of training: Evidence from a national employers survey' NBER Working Paper NO 5231

Machtmes, K., and Asher, J. W. (2000). A meta-analysis of the effectiveness of tele-courses in distance education. *The American Journal of Distance Education, 14*(1), 27 – 46.

Maki, P. L. (2001). From standardized tests to alternative methods: Some current resources on methods to assess learning in general education. *Change*, 33(2), 28-31.

Marzano, R. J. (2003). Using data: Two wrongs and a right. Educational Leadership. 60(5), 56-60.

McCollum, K. (1997). A professor divides his class in two to test value of online instruction. Chronicle of Higher Education, 43, 23.

McCombs, B. L. & Whisler, J. S. (1997). Learner-centered classroom and schools: Strategies for increasing student motivation and achievement. NASSP Bulletin 81, 1-14.

McCombs, B. L. (1997). Self-assessment and reflection: Tools for promoting teacher changes toward learner-centered practices. NASSP Bulletin, 81, 1-14. Retrieved March 24, 2003, from http:library-cat.citadel.edu

McDonald, J. P. (2003). Teachers studying student work: Why and how? Phi Delta Kappan. 84(2), 121-127.

Merisotis, J. P., & Phipps, R. A. (1999). What's the difference? outcomes of distance vs. traditional classroom-based learning. *Change*, 31(3), 12-17

Miller, S. & Miller, K. (2000). Theoretical and practical considerations in the design of Milton Keynes: Open University.

Mondy, R. W., Noe, R. M., and Premeaux, S. R. (1999). *Human Resource Management* (7th Ed.) Prentice Hall.

Moore, M. G., and Thompson, M. M. (1997). The effects of distance education (Rev. ed.). *ACSDE Research Monograph, 15*. The Pennsylvania State University, PA.: American Center for the Study of Distance Education.

Naidu, Som. "Applying Learning and Instructional Strategies in Open and Distance Learning." *Distance Education* 15, no. 1 (1994): 23-41

Nakos, G., Deis, M. & Jourdan, L. (2001). Students' perceptions of on-line courses:

Navarro, P., Shoemaker, J. (1999). The power of cyber learning: An empirical test. Journal of Computing in Higher Education, 11(1), 33.

Nesler, M. S., Hanner, M. B., Melburg, V., & McGowan, S. (2001). Professional socialization of baccalaureate nursing students: Can students in distance nursing programs become socialized? Journal of Nursing Education, 40(7), 293-302

Newlin, M., Wang, A., and Kosarzycki, M. (1998). Who succeeds in Web-courses? Paper presented at the meeting of *1998 EDUCOM,* Orlando, FL.

O'Malley, J., and McCraw, H. (1999). Students Perceptions of Distance Education, Online Learning, and the Traditional Classroom. *Online Journal of Distance education Administration, 2*(4). Retrieved September 19, 2003 from: http://www.westga.edu/~distance/omalley24.html

Orwin, R. G. (1983). A fail safe *N* for effect size in meta-analysis. *Journal for Educational Statistics, 8,* 157 – 159.

Parent, Daniel. 1999. ''Wages and Mobility: The Impact of Employer-Provided Training.'' Journal of Labour Economics 17:298–317

Pascarella, E.T.,Terenzini, P.T. (1991). How college affects students: Findings and insights from twenty years of research. San Francisco: Jossey-Bass.

Perkins, D. (1994). Thinking-centered learning. Educational Leadership. 51 (4), 84-85.

Perraton, H. (1988). A theory for distance education. In D. Sewart, D. Keegan and B. Holmberg (Eds.) *Distance education: International perspectives* (p. 34-45). New York: Rutledge.

Phipps R. & Merisotis J. (1999). What's the difference? A review of contemporary research on the effectiveness of distance learning in higher education. Washington, DC, USA: The Institute for Higher Education Policy.

Ponzurick, T., Russo France, K., and Logar, C. (2000). Delivering Graduate Marketing Education: An analysis of face-to-face versus distance education. *Journal of Marketing Education 22*(3), 180 – 187.

Rahm,D. & Reed, B. (1997). Going remote: The use of distance learning, the World

Rastogi, P.N. 2000. Sustaining enterprise competitiveness – is human capital the answer? Human Systems Management, 19: 193-203.

Research on the effectiveness of distance learning in higher education. Institute of

Rosenthal, R. (1979). The "file drawer" problem and tolerance for null results. *Psychological Bulletin 86*, 638 – 641.

Rossi, P., and Wright, S. (1977). Evaluation research; an assessment of theory, practice, and politics. *Evaluation Quarterly 1*, 5 – 52. Shachar & Neumann ~ Differences Between Traditional and Distance Education Academic Performances: A meta-analytic approach

Russell, T. (2001). The "No Significant Difference Phenomenon". Retrieved July 23, 2001 from the World Wide Web: http://teleeducation.nb.ca/nosignificantdifference/

Russell, T. (2002). "The No Significant Difference Phenomenon" as reported in 355 research reports, summaries and papers – a comprehensive research bibliography on technology for distance education. Retrieved July 20, 2003 from: http://teleeducation.nb.ca/nosignificantdifference/

Russell, T. L. (1999). The no significant difference phenomenon. Office of Instructional Telecommunications, North Carolina State University, USA.

Ryan, R. C. (2000). Student assessment comparison of lecture and online construction equipment and methods classes. T. H. E. Journal, 27(6), 78-83.

Saba, F. (1999). Is distance education comparable to "traditional education"?. Retrieved August 10, 2001 from the World Wide Web: http://www.distance-educator.com/der/comparable.html

Schulman, A.H., Sims, R.L. (1999). Learning in an online format versus an in-class format: An experimental study. T.H.E. Journal, 26(11), 54-56.

Schultz, T. W. 1961. Investment in human capital. *Am. Econ. Rev.* 51:1-17.

Sherry, L. (1996). Issues in Distance education. *International Journal of Educational Telecommunications, 1*(4), 337 – 365.

Sherry, L. (1996). *Issues in distance learning.* Retrieved July 7, 2001 from http://www.cudenver.edu.public/education/edschool/issues.html

Smeaton, A., Keogh, G. (1999). An analysis of the use of virtual delivery of undergraduate lectures. Computers and Education, 32, 83-94.

The Institute for Higher Education Policy (2000). Quality on the line: Benchmarks for success in Internet-based distance education. Washington, DC, USA.

Thorpe, M. (1988). *Evaluating Open and Distance education.* Essex, UK: Longman.

Tomlinson, C. A. (2000). Reconcilable differences? Standards-based teaching and differentiation. Educational Leadership, 58(1), 2-6.

Verduin, J. R., Jr. & Clark, T. A. (1991). *Distance education: The foundations of effective practice*. San Francisco: Jossey-Bass.

Volery, T. (2001). Online education: An exploratory study into success factors.

Vuori, T. (2001) From traditional and on-line delivery of university education to a flexible learning environment, 7-14.

Wade, W. (1999). Assessment in distance learning: What do students know and how do we know that they know it? The Higher Education Journal, 27(3), 94-100.

Waits, T., & Lewis L. (2003). Distance education at degree-granting postsecondary institutions: 2000-2001. U.S. Department of Education. Washington, DC, USA: National Center for Education Statistics (NCES Pub 2003-017).

Webster, J. & Hackley, P. (1997). Teaching effectiveness in technology-mediated

Wernet, S., Olliges, R., and Delicath, T. (2000). Post-course evaluations of *WebCT* (Web course tools) classes by social work students. *Research on Social Work Practice, 10*(4), 487 – 503.

Westwood, R. (2001). Developing an E-Learning Strategy for Your Organization. *PeopleTalk Magazine.* BC Human Resources Management Association.

Willis, B. (1993). *Distance education: A practical guide*. Englewood Cliffs, NJ: Educational Technology Publications.

Winograd, K. (2002). Vision-seekers: The makings of a collaboratory. Converge. 4(12), 20-21, 50