

A Summary of the Foundations of Distance Education

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I. Introduction

Over the past ten years, technologies used for distance learning have grown exponentially. These technologies have changed the face of traditional education as more and more research is being conducted in the area of distance education. Today's learners are more technologically savvy; therefore educators need to continue to design and develop instruction which is pedagogically sound to enhance learning regardless of the technology being used. This paper will present a summary of distance education – its history, definition, theories, related research and various communication tools.

II. Definition of Distance Education

What is Distance Education? Numerous definitions of varying perspectives have been presented by different researchers for Distance Education. It has also been defined differently at different points in its evolutionary history. Mugridge (1991) referred to distance education as “a form of education in which there is normally a separation between teacher and learner and thus one in which other means - the printed and written word, the telephone, computer conferencing or teleconferencing, for example - are used to bridge the physical gap” (p. 313). Schlosser & Simonson (2009) wrote that distance education is defined as “institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors” (p. 1). Desmond Keegan provides a comprehensive definition of distance education which includes the following criteria as its characteristics (as cited in Simonson, Smaldino, Albright & Zvacek, 2011, p. 36):

1. The quasi-permanent separation of teacher and learner throughout the length of the learning process

2. The influence of an educational organization both in the planning and preparation of learning materials and in the provision of student support services
3. The use of technical media
4. The provision of two-way communication
5. The quasi-permanent absence of the learning group throughout the length of the learning process

Garrison and Shale (1987), on the other hand, postulated that distance education consists of three important criteria:

1. Distance education implies that the majority of educational communication between (among) teacher and student(s) occurs noncontiguously.
2. Distance education must involve two-way communication between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process.
3. Distance education uses technology to mediate the necessary two-way communication (p. 11).

These are just some of the many definitions proposed for distance education. The most fundamental similarity or characteristic of the definitions previously cited for distance education is the separation of the learner and the instructor, the use of electronic media, and two-way communication. The separation is both a time separation and geographical separation. Simonson et al. (2011) note that distance education makes it possible to bring “learners and the content of instruction together no matter where each is located.” (p. 27). In addition, to bring learner and instruction together, some form of technology is used to present the instructional materials to learners. These basic elements have not changed even though the definition has evolved over the years, and according to Simonson et al. (2011), “technology advances are a

major influence for change in distance education” (p. 59). Thus, the underlying framework for distance education is that it provides wide access to educational opportunities that would not otherwise be possible.

III. Historical Perspectives

The historical perspectives shed light on the evolution of distance education over the years. It also brings into perspective the reason the field is constantly being redefined as technology has grown more sophisticated and the cost has decreased. The first widespread use of distance education occurred with the development of reliable postal mail service in the 1800’s (Nasseh, 1997; Simonson et al., 2011). This came in the form of correspondence courses. After which educational radio stations received licenses to deliver distance education courses in the United States (Nasseh, 1997; Simonson et al., 2011). Television also played a role in distance education, and by the 1930’s educational television programs were being broadcasted (Nasseh, 1997; Simonson et al., 2011). By 1969, Open University changed the way distance education was practiced all over the world. One of the largest, most influential Open Universities was founded in Great Britain (Nasseh, 1997; Simonson et al., 2011). Cable and Satellite television delivery of educational programs began in the 1980’s and focus quickly shifted to fiber-optic communications because it allowed for the expansion of live, two-way, high quality audio and video systems. However, because of the high cost of fiber-optic systems, distance education turned towards computer mediated communications (Simonson et al., 2011). Finally, in the mid-80’s, with the explosive growth of the Internet, both credit and non-credit courses started being offered online (Simonson et al., 2011).

The following list provides a synopsis of social, political, economic and technological contributing factors which led to the expansion of distance education:

- Development of reliable postal mail service systems (Nasseh, 1997; Simonson et al., 2011)
- Industrial revolution which led to the need for instruction in mining and the prevention of mining accidents (Simonson et al., 2011)
- Invention of Phonograph (Simonson et al., 2011)
- University extension movement (Nasseh, 1997; Simonson et al., 2011)
- World War I and II (Nasseh, 1997)
- Distance Universities such as the United Kingdom's Open University (Nasseh, 1997; Simonson et al., 2011)
- Educational opportunities for women and their participation in distance education (Nasseh, 1997; Simonson et al., 2011)
- Escalating cost of traditional education (Nasseh, 1997)
- University expansion of programs
- Growth of “career-oriented activities” (Nasseh, 1997)
- Technology (i.e. instructional radio, television, cable and satellite, computer/internet) (Nasseh, 1997; Simonson et al., 2011)

Consequently, being familiar with the history of distance education is important because as Simonson et al. (2011) comments, “the history also shows that advances in technology have promoted key changes in distance education” (p. 58). Additionally, it “reveals both diversity and an ongoing change in its practice” (Simonson et al., 2011, p. 58).

IV. Theories of Distance Education

Theory is an important part of, not only distance education, but learning in general. Theory provides a framework for making predictions about the field of practice. According to Simonson

et al. (2011), “theory is important to the study of distance education because it directly impacts the practice of the field” (p. 41). A variety of theories have been proposed to describe distance education. The major theories for distance education have been classified into three groups:

1. Theory of Independence and Autonomy
2. Theory of Industrialization of Teaching
3. Theory of Interaction and Communication

Table 1 below summarizes the key concepts relating to distance education theories (Simonson et al., 2011, pp. 41-53).

Summary of Traditional Distance Education Theories		
Theory	Theorist	Key Concepts
Theory of Independent Study	Charles Wedmeyer	Emphasis on learner independence and adoption of technology to implement independence
Theory of Independent Study and Theory of Transactional Distance	Michael Moore	Emphasis on the amount or degree of learner autonomy (i.e. “autonomous” or “nonautonomous”) and the distance between teacher and learner (i.e. transactional distance)
Theory of Industrialization of Teaching	Otto Peters	Distance education viewed as an industrialized form of teaching and learning (i.e. as a Product, mass production, assembly lines, division of labor, centralization and standardization of instruction). Ultimately leading to standardized delivery of content and formats.
Theory of Interaction and Communication	Borje Holmberg	Emphasis on the core of teaching with the interaction between learner and teacher. Also emphasis on emotional involvement along with student motivation which facilitates learning. Notably, this theory is open to traditional learning theories such as behaviorist, cognitive, and constructivist.

Table 1: Summary of Traditional Distance Education Theories

Simonson's theory of equivalency is an emerging theory which presents some interesting approaches for distance education. The equivalency theory states that distance education is not identical to traditional education, but it is equivalent. The basis for Simonson's equivalency

theory is that learning experiences should be equivalent, rather than identical regardless of whether the learner is in a traditional or distant setting (Simonson et al, 2011). Compared to the traditional theories summarized in Table 1, the theory of equivalency focuses on the design of learning modules to provide experiences of equivalent value to distant learners. Therefore, instructional designers need to provide a “variety of equivalent instructional approaches” for students (i.e. both traditional and distant) to learn from (Simonson et al., 2011, p. 53). Most importantly, Schlosser and Simonson (2009) state that “instructional design procedures should attempt to anticipate and provide the collection of experiences that will be most suitable for each student or group of students” (p. 27). Therefore it is imperative that instructional designers adopt appropriate procedures to support instructional methods for different types of learners, in order to enhance their learning experience and outcomes, regardless of their learning style.

V. Research Related to Distance Education

From a research perspective, researchers examine the purposes and situations for which distance education is best suited, and the practical applications for distance education. Ruey (2010), addressed two research questions in his article on “*A Case study of Constructivist Instructional Strategies for Adult Online Learning*”: (1) “what and how do online adult learners benefit from a constructivist-based online course”, and (2) “what improvements are identified that will help strengthen the constructivist-based course in the future” (p. 709). The study examined two classes in an 18-week online graduate level course, over a two semester period, offered at the University of Taiwan. Ruey (2010) referenced the works of constructivist theorists such as Piaget, Vygotsky and Dewey, thereby using constructivist learning theory as a guiding framework for the study. The online course was designed with constructivist instructional principles and included five learning activities such as synchronous and asynchronous sessions,

posting of weekly reports for peer review and discussion, and design and completion of a group project. Results from the study showed that the majority of learners showed positive attitudes towards interactive and collaborative learning, a change in learning habits towards self-directed learning, were able to relate concepts taught in the class to their real-life practice, and learned from each other's experiences. This is a good example of how the findings of a study can provide useful insights and practical applications for designing and implementing effective instructional strategies to facilitate learning in an online environment, using constructivist principles.

Ahern (1994) conducted a study on the effects of two different delivery technologies on the nature of student interaction in online education systems. Two studies were conducted, each focused on a different instructional delivery method. One study focused on the use of synchronous two-way video and audio between two remote sites, and the second study focused on an asynchronous computer-mediated communication (CMC) software interface. Results from the first study showed a high level of teacher-student and student-student interaction, while results from the second study showed that students using the graphic-based interface posted significantly more messages than those using the text-based interface. Based on the results, the authors demonstrated that for synchronous and asynchronous online education systems to be effective, the quality of the instructional design is important. In addition, this research focused on the interaction of multiple technologies rather than on the impact of one technology, and therefore it is easy to see how different technologies can be designed in practice to encourage more interactions in online education systems.

Both Ruey (2010) and Ahern (1994), demonstrate the importance of research in the field of distance education, in addition to its relevance for practical applications.

VI. Communication Tools

There are many communication tools available for distance education. How we communicate can have an impact on learning outcomes. Therefore it is important to understand the characteristics of the mode of communication in distance learning. There are two modes of communication: asynchronous and synchronous. Asynchronous communication is used to facilitate collaboration between individuals and among groups in distance learning environments, where as synchronous communication facilitates collaboration between individuals and among groups in real-time.

Typically, synchronous communication promotes conversational, face-to-face interactions and a sense of community in an online learning environment. It contributes to the building of interactive relationships between students, the instructor and their peers. In addition, it makes the learning experience more personal for the student, and facilitates real-time, classroom discussion and/or training for students. Examples of two synchronous communication tools on the market today are Fuze Meeting and Vyew.

In asynchronous communication there is no face-to-face interaction. However, students have the ability to post content, collaborate with each other, and connect with their teacher(s) in meaningful ways. Examples of two asynchronous communication tools on the market today are Edmodo and Podio.

It is important that instructors choose the appropriate communication tool(s) when designing distance education instruction. Therefore, from a technical perspective, instructors should consider the following three criteria when choosing communication tool(s) for instruction:

- Usability – ease of use.

- Accessibility – accessible to all users (i.e. users should be able to access the tool from various devices and anywhere, anytime, anyplace).
- Compatibility – compatible with multiple devices and equipment.

VII. Conclusion

In effect, good teaching practices are fundamental to the instruction of distance education. Therefore, as stated previously, instructional designers should adopt appropriate procedures to support instructional methods for different types of learners, in order to enhance their learning experience and outcomes.

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