CHAPTER 2

REVIEW OF THE RELATED LITERATURE

2.1 Introduction

The phrase review of literature consists of two words, review and literature. The term "review" means to view carefully repeatedly and literature means the knowledge, information related to that field.

The review of the literature in educational Research provides us with the means of getting the information in our particular field of knowledge. Until researcher learnt what are the studies already undertaken and what remains still to be studied, he /she cannot develop a research project that will contribute to further knowledge in our field. Thus, the literature in any field forms the foundation upon which all the future work must be built. If we fail to build this foundation of knowledge provided by the review of the literature, our work is likely to be shallow and nave. Although the importance of a thorough review of literature is obvious to everyone, because the insight and knowledge gained by the review inevitably lead to be a better designed project and greatly improve the chances of obtaining important and sufficient result.

The review of related literature is a key step in the research process. According to Wood and Haber (1995) literature review is an extensive, systematic and critical method reviewing the most important published scholarly literature on a particular topic. The major purpose of reviewing the literature is to determine what has already been done that relates to one's problem. Another important function of review is that, it points out research strategies, specific procedures, and necessary instruments that have and have not been found to be productive, in investigating one's problem. Familiarity with previous research also facilitates interpretations of the results of the study. Finally, these reviews give information that can either support or challenge the conclusions of the investigator's research and therefore provide clues for later research.

This chapter presents a review of studies on online and face to face mode of learning.

2.2 Studies Related to online and face to face mode of learning.

Since the proliferation of online education in the mid to late 1990s, numerous research studies have been conducted regarding online learning and its comparison to traditional classroom learning regarding student achievement (Nguyen, 2015; Russell, 1999; Russell, 2001; Wilson & Allen, 2011). The long-held assumption is that traditional classroom learning leads to better student performance, but results from the research suggests that equivalent learning activities occur in both online and traditional classroom settings. Russell (2001) analyzed 355 research reports that compared the relationship between delivery modes and student outcomes and found no statistically significant differences. Neuhauser (2002) compared two sections of the same course, one online and one face-to-face, taught by the same instructor using the same instructional materials and found no significant differences in test scores, participation grades, or final grades, which suggests that online and traditional classroom settings are equally effective. A meta-analysis from 86 studies and student outcome data of more than 15,000 students showed a strong positive correlation suggesting that online education proves to be an effective form of instruction (Shachar& Neumann, 2003).

In a meta-analysis, Sitzmann, Kraiger, Stewart, and Wisher (2006) compared the effectiveness of WBI and CI based on the results of 10,910 learners. Across all studies examined, the results that both WBI and CI were equally effective in teaching procedural knowledge, which refers to the steps needed to perform a task, but WBI was 6% more effective than CI in teaching declarative knowledge, which relates to remembering facts and accessing and applying knowledge (Sitzmann et al., 2006). Allen, Mabry, Mattrey, Bourhis, and Titsworth (2004) previously examined the effectiveness of distance education, including various methods of instruction, relative to traditional classroom instruction. They found little distinction between distance education and traditional classroom instruction, with only a slight difference favoring distance education on the basis of student performance.

Summers, Waigandt, and Whittaker (2005) *examined differences between* online and traditional classroom learning in an undergraduate statistics course and found no significant difference in student performance in either learning context. Allen, Bourhis, Burrell, and Mabry (2002) conducted a meta-analysis and concluded that no significant differences exist in student performance in either online or traditional formats. Other researchers suggest that online learning can be as effective as traditional learning (Zhao, Lei, Yan, Lai, & Tan, 2005) and that there is no statistically significant difference between online and traditional learners (Bernard et al., 2004). They found that pedagogy and sound instructional practice facilitated student learning and served as a predictor of student achievement (Johnson, 2008) and that online pedagogical approaches can prove as effective as traditional classroom methods (Ledman, 2008).

Sheridan (2006) and Van de Vord and Pogue (2012) suggest faculty are concerned that online instruction is more time-consuming than traditional face-to-face instruction. According to Van de Vord and Pogue (2012), online courses include more time in and out of the classroom for the instructor. Sheridan (2006) noted that faculty members who teach online courses spend more time preparing and administering their courses than traditional faculty members do.

Students with disabilities is another group with questions about whether or not online learning addresses their needs. Dramatic increase in the number of students with disabilities accessing postsecondary education (i.e. Lazar and Jaeger (2011) state that 40% of student population in the United States colleges are students with disabilities) has created a concerted effort to identify and address the barriers these students encounter. Research has found that people with differing abilities use the Internet and technologies well below the rest of the population because they encounter many types of barriers. According to Lazar and Jaeger (2011), "The main reason for this is not a lack of interest or education, but that the Internet is inherently unfriendly to many different kinds of disabilities" (p. 70). Regardless of these challenges and barriers, people with specific kind of disabilities have benefitted from the use of technology. The Internet now provides opportunities to learn, communicate, and interact online to students with

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particular types of physical challenges. Specifically for those who are unable to travel due to their disability, the use of Internet provides an enormous benefit while promoting social inclusion and access (Lazar and Jaeger, 2011). Another area of interest of extensive discussion in the literature is related to the benefits and challenges of student interactivity or engagement in online courses. The methods of participation experienced by students in online learning are significantly different from those experienced in F2F classroom settings. Interactions with faculty and peers are largely, if not exclusively, text based, and they usually occur through discussion boards, emails, and chat rooms (Reisetter, Loralee, &Korsuka, 2007; Arslanyilmaz&Sullins, 2013; Sturges, 2013; Kirmizi, 2015). These kinds of interaction may be beneficial to learners because they offer more time to process ideas and provide an informed response to the questions or problems posed. While this structure of learning could assist students to have a stronger academic focus, they could also have an impersonal experience, as this mode of delivery does not provide many opportunities for personal interaction. For this reason, the success of online learning experience is largely attributed to embedding of this "interactive dimension" (Reisetter, Loralee&Korsuka, 2007, p. 57).

According to Wang (2007); Arslanyilmaz, and Sullins (2013);Kirmizi (2015), online interaction in learning occurs when students interact with course content and with instructors and peers. Well-designed interactive learning tasks tend to promote student interaction with instructors and peers and increase student involvement with course content. Students benefit from providing explanations rather than receiving them. In this form of interaction, students are encouraged to pose questions about an issue in order to find an explanation to their inquiry. "Such proactive learning engages students in a higher level of thinking than the reactive type of learning" (Wang, 2007, p. 18). In addition, Wang states that assessment, including assigning a grade to collaborative learning tasks, positively relates to students' learning. Furthermore, Jackson, Jones, and Rodrigues (2010) find that significant factors that enhance student learning and satisfaction are instructors' prompt responses, clarity of expectations, and accessibility of content. Overall, Carr (2000); Frederickson, Picket, & Shea (2006); Jung, Choi, Lim, and Leem (2002) agree that student interaction with instructors and peers play a pivotal

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role in student learning success. The authors emphasize the importance of student participation and level and quality of collaboration with peers and instructors.

An interactive online lecture has been discussed as an effective way to engage students in course content. However, lecture slides that are simply posted on a web page, otherwise useful in a traditional classroom, do not encourage engagement and interactive communication (Grosso, Teresa &Grosso, 2012). To help students become engaged in an online lecture, the instructor must be both a content expert to guide students in their knowledge acquisition and a facilitator of the learning process. Reisetter, Loralee, and Korsuka (2007) state that online participants value "the expert voice" (p. 65). Some online learners thought that having a knowledgeable instructor was especially powerful "because it led to clearly focused content that could be lacking in a traditional setting" (p. 65). Successful facilitation involves incorporating questions into online lectures, which is proven to be an effective way to make lectures interactive and to increase student engagement with course content. "Since the importance of questioning in the classroom is well documented, it must also be extended to online classes as well" (Grosso, Teresa, &Grosso, 2012, p. 57).

Alongside interactive lectures, online discussions, and various assessment methods used to ensure the quality of a learning process, group work has been recognized as one of the key educational tools in the online environment (O'Neill, Scott &Conboy, 2011; Roberts &McInnerney, 2007). Morgan, Bruce, and Williams (2009) discuss the benefits and challenges of group projects in online classes, emphasizing the importance for instructors to support students by "developing ground rules, providing information on group work skills and roles, supporting effective communication, and facilitating social task development" (p. 293). If carefully considered and implemented, the authors' recommendations could be a valuable solution to the group work challenges in the online learning environment. For online group work to be productive, it is also important to recognize the importance of professional development for faculty who implement this type of instructional strategy in their teaching. Faculty may benefit from training opportunities that focus not only on the technical components of online

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teaching (Glowa, 2009), but also on effective content development and building skills that help to manage "the unique social context of the online classroom environment" (Kanuka, Heller &Jugdev, 2008, p. 40).

Introverts (I) tend to be slow to volunteer in the classroom, hesitate in sharing their ideas with others, and need privacy (Keirsey and Bates 1984, 101). Introverts might perform better in online courses than FTF courses and find online courses more effective for their learning. Keirsey and Bates (1984, 121–128) classify four learning-style groups: sensation/perceiving (SP), sensation/judging (SJ), intuition/thinking (NT), and intuition/feeling (NF). The NT learning-style person loves to trade ideas with others and develop their own ideas. He/she focuses on technology and tends to be an independent learner. He/she is comfortable with a logical, didactic presentation of material and follows up on independent learning. James and Gardner (1995) suggest that, consequently, independent-learning students will find online learning more effective. The NF learning-style person has a built-in desire to communicate in a personal way with others. He/she likes two-way exchanges and likes personal feedback on whatever he/she produces. He/she likes interaction and participation in groups. He/she learns from the discussion method. He/she is especially responsive to learning in small groups, and to courses in which the instructor responds to and accepts the ideas of the class members. Even though there are some inconsistencies between the learning style descriptions and some attributes of online methodology, it appears that NT and NF learning styles may fit well with online learning; consequently, it was hypothesized that the SPor SJ-style person would find the online learning less effective and might not succeed as well. The more successful online students would be more likely to be either the NF or NT type rather than the SP or SJ type.

Diaz and Cartnal (1999) suggest that if there are no differences in learning styles, then the learning activities used in the FTF classroom may be just as effective for the online course. Therefore, if it is found in this study that the learning styles are not significantly different between online and FTF groups, then the same learning activities should be effective for both groups as perceived by the students; and, consequently, the hypothesis would be that there is no significant difference in effectiveness of the learning activities

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between the two groups, and the differences in the outcomes are not a result of the learning styles. A visual learner might find online learning more effective than an auditory learner, and, consequently, the learner's preference might influence the outcome.

Rice (2006) found that online teaching strategies make best use of the unique potential of the online environment when they are highly interactive and based on a constructivist model that encourages students to be active, independent learners. In a meta-analysis comparing achievement, attitudes, and retention between FTF and distance courses, Bernard et al. (2004) found that active learning (problem-based formats with collaboration among students) fostered better achievement and attitudes, though only in asynchronous (e.g., Web-based) formats.

A study completed by Aragon et al. (2002) evaluated learning in the online and "traditional" classroom, and found no significant differences between the methodologies.

Online learning is a subset of a collection of learning tools collectively referred to as flexible learning. To date two primary pedagogies have been associated with these learning environments: student-centered learning and experiential learning. Student-centered involves negotiation between the learner and the instructor as to how learning proceeds in the "classroom." Experiential learning allows the learner to exhibit a degree of control over the situation and determines the degree by which he or she becomes involved. Further, experiential learning has a degree of correspondence between the learning environment and the real environment where daily work is conducted (Thorpe, 2000) and can be successfully used for teaching cognitive concepts as well as preparing learners in academic and work settings to develop conceptual, judgmental and cognitive skills so important in today's workplace (Bartley, Kupritz& Powers, 2003).

Social presence is a key component in online education and has a direct impact in many ways on the development of a learning community and interaction in online environments (Kehrward, 2008; Swan, Garrison, & Richardson, 2009). The term social presence was created in 1976 by Short, Willams, and Christie, to describe social effects that are primarily influenced by the extent of individuals' participation in particular occasions. It is a

communicator's sense of awareness of the presence of another individual through interaction (Short et al., 1976). In the context of online learning, social presence is defined as "the ability of participants in a community of inquiry to project themselves socially and emotionally, as 'real' people (i.e. their full personality), through the medium of communication being used" (Garrison et al, 2000, p. 94). Garrison and colleagues (2000) in their theoretical model identified three indicators of social presence – expression of emotion, open communication, and group cohesion. Considering the asynchronous nature of most online environments, it is necessary for online learners to develop social bonds, which enables them to feel secure and open to communicating with their peers. In such environments, social interaction and communication can grow and be sustained around a common goal and purpose among students themselves and between students and their instructors (Garrison et al., 2000).

Following a collective case study and interviews that were done by accessing online students' dialogical process, Kehrward (2008) defined social presence as "an individual's ability to demonstrate his/her state of being in a virtual environment" (p. 94), where individuals were willing to engage in exchanges and communications that were related to learning activities such as posting messages, responding to others, participating in the group work, etc. The nature of the social presence is that individuals are "being present" in the cyber environment to the extent that they are often visible and performative. Moreover, for individuals to develop a presence in an online environment, they have to demonstrate their abilities, their pursuits of opportunities, and their motivation to establish and maintain an ongoing participation (Kehrward, 2008).

Yuan and Kim (2014) see both social and teaching presence as valuable influences in the development of a learning community. A high measure of social presence, they argue, "enhances learning interaction, fosters the development of critical thinking skills, improves learning performance, and leads to greater satisfaction with a course" (p.223). Teaching presence, on the other hand, is viewed as an important factor in balancing social and cognitive presence to improve learners' academic outcomes. Employing the factor analysis methodology, Shea and Bidjerano (2009) demonstrated that

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cognitive presence may be influenced by social presence with the level of comfort in online discussion, and "lower level of comfort with online discussion is strongly correlated with lower levels of cognitive presence. When students see their instructors taking an active role in fostering online discussions on relevant issues, they also report higher cognitive presence" (p. 551). Social presence, on the other hand, mediates teaching and cognitive presence (Swan et al, 2009).

Many researchers have defined what a learning community looks like in an online environment and have stressed its importance from different perspectives. Yuan and Kim (2014) stated that a learning community was the creation of a sense of belonging by a group of learners, where learners trusted one another, constructed knowledge, shared useful information, established connections by getting to know one another, set up common objectives for learning, and believed that heir needs would be fulfilled. Cox and Cox (2008) contended that asynchronous, threaded discussions can be effective in creating a collaborative learning environment as well as interpersonal and group dynamics.

Online learners benefit greatly from online learning communities in the following ways: (1) because of their connectivity with one another, they are able to share knowledge and fulfill common goals, which can reduce students' dropout rates; (2) the relationship and interaction between the instructor and learners and among peer learners can increase student performances and their satisfaction of the course; and (3) learners can receive supports and help from their peers, and at the same time they can add their knowledge base through their interactive actions (Yuan & Kim, 2014). Yuan and Kim (2014) provided the following guidelines for the development of an online learning community:

• The effort to build a learning community should start at the beginning of a course and continue throughout the term. • Both students and instructors should be involved in building the learning community. • Asynchronous and synchronous technologies should be both used to create a shared space in which students and instructor interact. • Various strategies should be employed to stimulate discussions. • Both task-oriented discussions and

social interactions should be encouraged. • Students should be assigned tasks that require collaboration.

Numerous studies have illustrated the strong correlation between social interaction, sense of community, and their roles in achieving success in online learning (e.g., Brindley et al, 2009; Bryant & Bates, 2015; Cox & Cox, 2008; Ke, 2010; Sadera, Robertson, Song, &Midon, 2009; Sher, 2009; Whipp& Lorentz, 2009; Yang, Yu, Chen, &Huang, 2014). Typically, there are three types of interaction: (1) student-instructor interaction; (2) student-student interaction; and (3) student-content interaction (Sher, 2009). The interactions between students and the instructor can be asynchronous or synchronous, with the instructors delivering the information, facilitating the learning, answering questions, and providing feedback. At the same time, individual students can take the initiative to ask questions or to contact the instructor for extra help or specific needs. The interactions among students provide them with a way to exchange information and ideas among themselves. This can occur between individual students, in group projects and group discussions, in case studies, etc., and can stimulate collaboration, the sharing of knowledge and skills, and student learning. The student-content interaction refers to the way that students get information and course materials, which can be in the form of texts, videos, audios, computer programs, web resources, etc. (Sher, 2009).

To ensure the establishment and growth of effective social interaction, Kehrwald (2008) has identified three pre-conditions – ability, opportunity, and motivation – which he says should be structured through design and facilitation that can "(a) promote productive interactions; (b) prevent learners from being overwhelmed by the demands of interaction within large groups; and (c) balance the needs for both flexibility and structure" (p.97).Based on their exploratory study of three online instructors, Whipp and Lorentz (2009) have suggested that to maintain effective interaction, instructors in online courses ask challenging questions, probe for elaboration and explanation, provide timely, clear, and concise responses to students' help-seeking, offer direction and guidance of discussions to prompt all students to participate, focus on specific issues in discussions, and summarize contents weekly. Furthermore, they observed effective online instructors were those who

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projected a strong social presence with frequent acknowledgements, timely feedbacks, friendly greetings, using first names, and expressions of emotion and empathy. In that way, instructors maintained a supportive learning environment by monitoring group dynamics, inviting students to seek help, and contacting non-participants.