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A Case Study On Faculty Perspectives In Fostering Inquiry Skills And Cultural Influence In Higher Education Classrooms

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A CASE STUDY ON FACULTY PERSPECTIVES IN FOSTERING INQUIRY SKILLS AND CULTURAL INFLUENCE IN HIGHER EDUCATION CLASSROOMS

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ABSTRACT

Higher education in India is considered an essential part of nation-building because education is emphasized as the key driver for the development of the country. With the recognition of the importance of education, the Indian government shows a strong desire to develop a system of higher education to match with global competition in producing citizens who are highly trained technical personnel. Students must be active recipients in classrooms to become global citizens and to be able to foster the creation of knowledge rather than be mere passive recipients (Altbach, 2012). The purpose of this qualitative case study was to examine and understand the instructional practices at a selected institute of higher education in India. Specifically, this study was intended to obtain the perceptions of faculty in fostering inquiry skills and considering culture while teaching in higher education classrooms. To this end, this study examined these perceptions in terms of utilizing laptop technology. This study revealed the instructional strategies used by the faculty at the selected institute of higher education, faculty understanding of the key instructional strategies, and the impact of using these identified key instructional strategies. Furthermore, this study investigated the current instructional practices, factors affecting the use of these strategies, and ways to improve to practice new instructional strategies. In conclusion, this study indicated three areas where improvements must occur to provide engaging learning opportunities for students. Additionally, this research indicated the need for training and professional development opportunities to encourage faculty to practice student-centered instructional strategies.

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OVERVIEW OF RESEARCH PROBLEM

India, being one of the developing countries, emphasizes that education is the key driver of the development of the country (Vaish, 2010). Precisely, higher education is considered as an essential part of nation-building (Altbach, 1998). With the recognition of the importance of education, the Indian government shows a strong desire to develop a system of higher education to match with global competition in producing citizens who are highly trained technical personnel (Sebaly, 1973). To compete with the world, Indian higher education has strived to satisfy the student demand to meet the educational needs of the ever-growing population. Within India, the system of higher education is coordinated by the Ministry of Human Resource Development (MHRD) and administered by the University Grants Commission (UGC). The UGC monitors the accreditation mechanism, ensures the quality of education and oversees the infrastructure, and also promotes reforms. Under this governance, the higher education sector in India has 753 universities established under various sectors and 41,435 colleges (UGC, n.d.-a).

To withstand the competition and to advance in the ever-changing scientific and technical world, the fundamental method used in education is to create new knowledge through research (Altbach, 1998, 2012). This fundamental research in science and technical fields results from the questions based on the observations of learners on their surroundings and the interactions they make within and outside these surroundings (Altbach, 1998). In order to encourage learners to form questions, prior research conducted by Hollingsworth and Vandermaas-Peeler (2017)

demonstrated that inquiry learning takes advantage of learners' natural curiosities in classrooms and helps foster inquiry skills. Likewise, research conducted by Ganesh and Kishore (2007) also found that inquiry learning is the best way to facilitate learning, as it takes students' innate curiosities as an advantage.

In addition, amidst the pressure to provide quality education to all the citizens of India, consideration of the cultural backgrounds of learners becomes vital to serving the purpose of the higher education system (Grant & Lei, 2001). Culture in this sense refers to "the beliefs, values, and meanings on which different groups draw to make sense of their world" (Kanu, 2006, p. 4). Similarly, culture is at the center of everything we do within the system of education (Gay, 2018). The cultural diversity of the world is an overarching concept that characterizes the difference in class, gender, ethnicity, socioeconomic status, geographical location, religion, sexual orientation, and age, influencing global, individual, community, workplace, and educational contexts (Cahill, 2001). As a result, to understand educational lives and reforms in terms of social inclusion, culture needs to be given importance, if not the primary reason for reform, since culture shapes our nature of understanding the world (Kanu, 2006). This is especially true in education, as the learners are in the educational setting on a daily and face-to-face basis. Therefore, pedagogy that is culturally responsive and addresses the coexisting cultures within a classroom occurs when there is equal respect for the circumstances and backgrounds of all the learners. This pedagogy incorporates a learning design that includes a wide range of needs, orientations, and interests of its learners (Ginsberg & Wlodkowski, 2009; Wlodkowski & Ginsberg, 1995). Culturally responsive pedagogy (CRP) is a theory that focuses on the role of culture during the learning process and refers "to a more dynamic or synergistic

relationship between home/community culture and school culture" (Ladson-Billings, 1995, p. 467).

Furthermore, researchers and educators show consistent growth in interest that inquiry learning, when assisted with appropriate technology, can be a proper means in helping learners develop higher order intellectual skills. To this end, laptop computer technology usage in classrooms was highlighted in this study. Laptop computers referred to here are a set of mobile computers that are used for network access and computing (Littleton, Scanlon, & Sharples, 2012). This qualitative case study sought to understand the instructional strategies used by the faculty and their perceptions in practicing inquiry learning using laptop computer technology at the selected institute of higher education affiliated to Palamuru University, located in Pebbair, a rural town located in the state of Telangana in India.

Background of Higher Education System in India

Although India strives to establish policies to ensure the quality of higher education and build more institutions to serve the educational needs of its growing population, the prominent method of instruction seems to be teacher-centered, with rote memorization (Agarwal, 2007). The learners are assessed through an age-old examination system based on their knowledge of topics through a closed-book examination that is usually two to three hours long (Krishna & Bhaskara Rao, 2004). In such an examination system, the students are considered geniuses based on how well they memorize the topics rather than their understanding of the topic ("Rote System of Learning," 2008). This system was established due to the influence of the British government during the colonial period in India (Altbach, 2012). Precisely, in 1854, Sir Charles Wood had endorsed that "the form, government, and functions of the University of London should form the basis of university organization in India" (Zachariah, 1993, p. 118). The belief

system behind proposing the implementation of the system was that "an examining university, testing the teaching and learning taking place in affiliated colleges, whatever their religious persuasion, was necessary to maintain standards in colleges that varied so greatly and were so scattered" (Zachariah, 1993, p. 118). However, the weaknesses of the foreign policy implementation displayed a dominant influence on the pedagogical strategies and administration of the colleges. This foreign governance caused the colleges and their faculty and staffs to adhere to "rules and regulations, instead of promoting scholarly activities" (Zachariah, 1993, p. 118). In addition, the mandatory policy that insisted students read and write in the English language, which was culturally foreign to them, resulted in learning by rote. Thus, failure to understand and master the content within the extensive curriculum "fostered memorization of selected sections of the curriculum instead of learning the subject" (Zachariah, 1993, p. 119). Disregarding both cultural backgrounds of the students and their abilities to seek knowledge intellectually resulted in a pedagogical pattern that emphasized recitation of facts rather than discovering new knowledge. Thus, it is critical that the cultural backgrounds of students be considered in pedagogical strategies.

Statement of the Problem

The existing pedagogical strategies within most Indian classrooms seem to encourage memorization of facts and learning by rote (Altbach, 2012; Krishna & Bhaskara Rao, 2004; Zachariah, 1993). With the necessity to become global citizens, students need to be active recipients and to be able to foster the creation of knowledge rather than to be mere passive recipients who regurgitate facts (Altbach, 1998). This lack of active pedagogical processes could be improved with the utilization of technological tools in pedagogical strategies to reform the

current and existing pedagogical patterns by fostering the creation of knowledge by using students' natural curiosities (Hollingsworth & Vandermaas-Peeler, 2017).

In addition, with India being a diverse country, various cultures coexist whose complex identities are characterized by language, religion, ethnicity, caste, and race (Grant & Lei, 2001). According to Chakravarty (2001), there is empirical evidence that demonstrates a lag between education and culture. When there are students belonging to different social-cultural backgrounds within a classroom, assuming that all students learn in a similar way results in lack of understanding of the subject and forms a learning barrier between theory and its relevant application (Chakravarty, 2001).

In the Indian context, despite the advantages that affordable technology brings to the classroom to make learning effective, efficient, and engaging and the Indian government efforts to integrate technology in classroom through committees such as All India Council of Technical Education (AICTE), there seems to be a gap in using technological tools in classrooms to foster learner engagement (Goel, 2006). Moreover, there is an increasing number of students who are aware of and use technology due to technological developments, decreased prices, increased convenience, and access to the web (Davidson, Richardson & Jones, 2014). Recent developments in technology allow teachers and students to have portable computer technology like laptop computers that allow interaction with instructional material and help determine their learning (Zurita & Nussbaum, 2004). However, this availability of technology is not being utilized in Indian classrooms to enhance student-centered pedagogy as it is in Western countries like the United States or Europe (Bandyopadhyay, 2013).

Purpose Statement

The purpose of this qualitative case study was to examine and understand the instructional practices at a selected institute of higher education affiliated to Palamuru University, located in a rural town in Telangana state in India. Specifically, this study was intended to obtain the perceptions of the faculty at the said institute of higher education in fostering inquiry skills. Research showed that inquiry learning encourages students to understand the subject by discovering existing information to form conceptual knowledge about the subject (Ganesh & Kishore, 2007). This construction of knowledge over memorization of facts while learning a subject will help students become more engaged during their learning processes. This creation of knowledge also helps the students apply the conceptual knowledge in practice, bridging the gap between theory and practice (Laurillard, 2012). Specifically, this study focused on the selected affiliated college located in Pebbair, India. This research facilitated an understanding of the faculty perceptions in considering culture while teaching in the said higher education classrooms. To this end, this study examined these perceptions in terms of utilizing laptop technology.

Significance of the Study

This study will be of interest to faculty members, universities, and colleges in fostering inquiry skills and considering student cultural backgrounds by using laptop technology in classrooms. In addition, the UGC members in the Indian higher education system could find this research beneficial. Because colleges and universities in India use the accreditation policies set by the UGC and the MHRD, the findings of this study may be transferable to higher educational institutions across India. This study may be significant to curricular reform and development to improve the quality of education. The study highlights the need for appropriate changes to avoid

rote memorization by making learners actively participate in classrooms instead of being passive recipients of knowledge shared by the instructor.

Research Questions

To examine and understand the instructional practices and to obtain the perceptions of the faculty at the selected institute of higher education located in a rural town in India in fostering inquiry skills, this study was guided by one research question: How do faculty at the selected higher education institution help students foster inquiry skills?

This question was explored through the following subquestions:

1. What are the instructional strategies used by the faculty in the selected institute of higher education classrooms?
2. How do faculty members practice culturally responsive pedagogy to foster inquiry skills at the selected institute of higher education?
3. How do faculty members use laptop technology to enhance inquiry skills at the selected institute of higher education?

Research Design

This current study focused on exploring and describing the instructional practices used by participants in classrooms at the selected institute of higher education. This emphasis on a particular institution pertains to this study to be conducted as a qualitative case study (Stake, 1995). Precisely, an instrumental case study design was used for this study. According to Stake (1995), an instrumental case study is used to understand "something other than understanding a particular participant" (p. 3). The participants in this study were the faculty who currently teach at the selected institute of higher education. I opted for a case study design because of the exploratory nature of this study and to understand the uniqueness of the selected college (Stake,

1995; Yin, 1994). In addition, case study research allows the researchers to explore within a single bounded system using a thorough description of the case (Creswell, 2007). The boundaries that defined this case consist of the location where this research was conducted, which is the selected institute of higher education located in a rural town in India; the participants were chosen according to the number of years worked at the selected institute of higher education and their willingness to explore innovative instructional strategies. The intention of this phenomenological case study was to understand a specific situation through discovery (Stake, 1995).

I conducted interviews with faculty members who are currently working at the selected institute of higher education. I gathered thorough and descriptive perceptions of participants regarding the instructional strategies at a selected institute of higher education in fostering inquiry skills in students, and also practices governing the use of laptop computers in classrooms with emphasis on the cultural impact. I studied the data collected for emerging patterns. Data collection primarily relied on face-to-face, semi-structured interviews. However, collection of documents and physical artifacts was also used for maximizing trustworthiness of this study. The previously mentioned strategies were employed to maximize the trustworthiness of the study to make the study credible, transferable, dependable, confirmable, and authentic. The trustworthiness of a qualitative study is based on the research design, data collection procedures, data analysis, and qualitative report (Hays & Singh, 2012). Data collected were examined by analyzing the emerging themes through a coding process.

Assumptions

This study was developed based on a number of assumptions. It assumed that faculty members at the selected institute of higher education want to make their instructional methods

student-centered. It assumed that an adequate number of faculty members have explored and possess adequate knowledge of inquiry learning, culturally responsive pedagogy, and laptop technology usage in classrooms. It further assumed that the respondents will sufficiently reflect on their replies during the interviews. In addition, I assumed that the pedagogical interests of the faculty members will be aligned with those of others at the selected institute of higher education.

Delimitations and Limitations

There were several delimitations and limitations expected in this study. The participants for this research were not selected randomly because they might not possess the required knowledge regarding instructional strategies. The participant sample was limited to faculty members at the selected institute of higher education located in Pebbair in Telangana state only. This delimitation ensured that representatives from the selected institute of higher education adhere to a common set of teaching strategies and regulated policies and procedures. In addition, the perceptions of only faculty at the selected institute of higher education were considered in this study and did not include perceptions of students or policymakers. One limitation of this study was the availability of limited to no scholarly published articles in relation to faculty usage of instructional strategies, resulting in lower empirical and theoretical information on instructional procedures at the affiliated institutes of higher education in India. Due to the lack of peer-reviewed research articles from India about the pedagogical strategies used to foster inquiry skills and including cultural backgrounds of students, research from the United States was examined in depth.

Definition of Terms

The following terms are defined with an intention to provide a contextual understanding for the readers of this study.

Culturally Responsive Pedagogy. It is a theory that focuses on the role that culture plays during the learning process involving concepts of gender, ethnicity, caste, religion, and social class to create learning environments that improve quality of education ("What is Culturally," n.d.).

Inquiry Learning. It is a learning process in which emphasis is on the process of investigation during problem solving rather than the solution. Moreover, inquiry learning is anticipated for the students to work independently and follow their individual paths to comprehend the subject by retrieving external resources to advance their knowledge. In this type of learning, learners expand their knowledge by practicing questioning, investigating, hypothesizing, analyzing, designing, interpreting, sharing, arguing, and synthesizing (Laurillard, 2012).

Laptop Technology Usage. Usage of laptop technology in college or university-level classrooms serves effective purposes that foster life-long learning skills in students (McKeachie & Svinicki, 2013). In particular, this study focused on the usage of laptop computers in classrooms to encourage students in inquiry learning.

Summary

The higher education institutions in India were built to offer quality education with an intent to produce highly qualified and skilled personnel. These personnel were expected to contribute to establishing India into a developed country from being a developing country. Although these institutions were built with a noble intention, the complex governance policies that are in place to create and reform educational structure in India leave the Indian higher education system to continue to follow the traditional examination system. This system forces the learners to memorize the concepts and reduces the abilities of learners to understand the

concepts. This type of learning discourages faculty from using instructional strategies in classrooms to make learners actively engage in the learning process. In addition, traditional lecture-based pedagogy makes it difficult to consider the culture of the diverse population of students to serve their learning needs. This study examined the faculty perceptions in fostering inquiry skills in students by considering their culture. This study also extended to explore the perspectives in enhancing the previously mentioned skills by using laptop technology at the selected institute of higher education. The next chapter will give a review of literature on the content areas that are concerned with the research interest of this study.

CHAPTER 2

LITERATURE REVIEW

The main purpose of this study was to examine the perceptions of faculty members at the selected institute of higher education, located in a rural town in India, regarding the implementation of instructional strategies in the classroom to foster inquiry learning in students using computer technology like laptop computers. In addition to fostering inquiry skills, the study focused on exploring faculty perceptions on practicing culturally responsive pedagogy. The existing literature that provided a basis for the present study on inquiry learning and culturally responsive pedagogy in the higher education system in India were small in number. Within the scope of this study, the following review of literature was organized into five sections based on the research questions. The first section presents a brief history of Indian higher education system. The second section describes the implementation of inquiry learning in classrooms and is followed by the third section that narrates the implementation of culturally responsive pedagogy. The fourth section discusses instructor perceptions on laptop technology integration in classrooms to foster inquiry and culturally responsive pedagogy. The final section presents the summary of the literature review, which discusses the research gap.

A History of Education in India

Higher education is believed to be one of the routes to modernize developing countries like India (Altbach, 2012). It is through higher education that citizens of any country acquire training necessary for the modern world, develop a sense of unity in the society, and allow

educators and administrators to spread modern attitudes and techniques to younger generations (Rizvi, 2012). In addition, Rizvi (2012) also emphasized that despite the economic and social efforts to achieve national development and progress, without higher education, the development efforts will not be long-term. In any given society, the history of higher education helps determine its role in the society.

From ancient India to modern India, the higher education system has always been given a prominent place in the development, globalization, and modernization of the country in the Indian history. According to the government of India, the history of higher education in India started primarily with ancient institutions like Nalanda Mahavihara translated as Nalanda University, Taxila translated as Takshashila, and Vikramsila Mahavihara translated as Vikramshila University (UGC, n.d.-b). Nalanda University is considered to be one of the first universities which was believed to be founded in the early sixth century (Scharfe, 2002). These ancient universities were said to offer courses in art, construction, languages, swordsmanship, and Vedas (translated as ancient scriptures) to the citizens of India. However, the university in any given country is somehow influenced by the international history of higher education (Rizvi, 2012). In a similar manner, the roots to the current higher education system in India were laid during the British colonial policy.

The system of higher education in India is engrossed in the British colonial past. The British rulers, during their colonial rule in India, established four universities in different states. The organizational patterns of the institutions that were built since then have retained similar structure and pattern to the initial universities. Under the British rule, the universities were established to create poorly trained administrative manpower to run the colonies. For over a century, the purpose of the universities under British rule was not to modernize the country and

help develop trained personnel who are capable of operating an independent country. During the Indian revolt against the British rule in 1857, the British rulers considered higher education as an impetus, and Indian citizens were curtailed from having access to the higher education (Altbach, 2012). The following section gives a brief account of the current higher education system in India and some of the challenges faced by the system.

Current Higher Education System in India

The current system of higher education was established under the British colonial regime around 1823 by Mount Stuart Elphinstone, who focused on establishing schools to educate on English and the European sciences (UGC, n.d.-b). From 1835 to 1854, Lord Macaulay enforced natives to become English scholars, and Sir Charles Wood started "Magna Carta of English Education in India" to create a system of education from the primary school to the university (UGC, n.d.-b). These two occurrences were crucial in colonial India, which resulted in establishing universities of Calcutta (now Kolkatta), Bombay (now Mumbai) and Madras (now Chennai) in 1857 (Agarwal, 2007), followed by the university of Allahabad in 1887 (UGC, n.d.-b).

The initial pattern used to establish universities in India reflects the model of the University of London. This model meant the universities in India were heavily affiliated and served as examining bodies with less intellectual life (Rizvi, 2012). The purpose of the universities in India, according to the British, was mainly intended to offer training to Indian citizens to fill mid-level positions in the bureaucratic government. Thus, the system focused on learning fluent English, recognizing the functions of the colonial government mechanism, and learning to provide loyal service to the colonial administration (Agarwal, 2007). The curriculum in the universities during the British rule was mainly humanistic in nature. The coursework

during this time was less focused on developing intellectual skills or the applied sciences. The citizens who were able to get educated during the colonial period were mostly people belonging to the middle class living in urban cities. These people were attracted to higher education because of the opportunity to get jobs in the government (Rizvi, 2012).

With the publishing of a report on post-war educational development in India by Central Advisory Board of Education, a national system of education was established in 1944, which recommended the formation of the UGC to oversee the work of the three Central Universities of Aligarh, Banaras, and Delhi. Eventually, by 1947, the UGC was given the responsibility of administering and looking after all the then existing universities, which it still continues to do. After independence from the British rule, the Indian government recommended reconstruction of the UGC with a full-time chairperson and other committee members who are subject matter experts. After multiple revisions, the UGC was announced as a body of government of India to administer, coordinate, determine, and maintain standards of university education in India (Agarwal, 2007; UGC, n.d.-b; Vaish, 2010).

Indian higher education has developed after India received independence in 1947 to accommodate the need to serve the economic and technological development challenges (Varma & Kapur, 2010). The Indian higher education system had functioned to respond to societal demands, political pressures, and other external influence to contribute to the knowledge required to survive as a base to serve independent India (Rizvi, 2012). It offered many courses in different fields for its citizens, unlike the universities in the British rule. Despite the fact that some reforms have been made to the curriculum, including courses offered and administration, the initial pattern of instruction and assessment introduced in the mid-19th century remains even

in the current system of higher education in India (Agarwal, 2010; Altbach 2014; Krishna & Bhaskara Rao, 2004; Rizvi, 2012).

Challenges of Higher Education in India

The higher education system in India has a complex structure of operation because of the country's long history, large size, many languages, diverse cultures, and the processes of politics and policies that are complicated in nature (Yudkevich, Altbach & Rumbley, 2015). Although India enjoys one of the rapidly growing economies in the world through trading services that are knowledge intensive, the quality of Indian universities and colleges is deteriorating (Rizvi, 2012). Altbach (2014) pointed to the deteriorating higher education system resulting from poor quality of instruction, along with the absence of sufficient research conducted at the universities and colleges across India.

Despite the fact that the Indian higher education system has developed significantly in the last few decades, Indian students with access to higher education are not granted with adequate intellectual skills they require to survive in the global economy. The kind of education they receive is adequate to prepare them for jobs that are monotonous in nature (Rizvi, 2012). However, with increasing developments around the world in every field, the students should be prepared to become producers of new knowledge and applications and be equipped with critical and creative skills. This global development results in a serious need for the Indian system of higher education to reform its instructional practices and improve research culture within the universities and colleges (Rizvi, 2012). Altbach (2012) insisted that India, with its outdated academic system, cannot prepare students to meet the challenges they are to face in the growing competitive world (Rizvi, 2012).

In 1854, Sir Charles Wood endorsed that "the form, government and functions of the University of London should form the basis of university organization in India" (Zachariah, 1993, p. 118). The belief system behind proposing the implementation of the system was that "an examining university, testing the teaching and learning taking place in affiliated colleges, whatever their religious persuasion, was necessary to maintain standards in colleges that varied so greatly and were so scattered" (Zachariah, 1993, p. 118). However, the weaknesses of the foreign policy implementation displayed a dominant influence on the pedagogical strategies and administration of the colleges. This foreign governance caused the colleges and its faculty and staff to adhere to "rules and regulations, instead of promoting scholarly activities" (Zachariah, 1993, p. 118). In addition, the mandatory policy that insisted students read and write in the English language, which was culturally foreign to them, resulted in learning by rote. Thus, failure to understand and master the content within the extensive curriculum "fostered memorization of selected sections of the curriculum instead of learning the subject" (Zachariah, 1993, p. 119).

Initially, higher education in India was developed with particular tasks of training personnel for secondary level administrative positions. Based on the fact that the Indian university system was founded by the British for specific purposes, and the administrative structure remaining similar even today as it were during the colonialism, it lacks academic independence. Because of the purpose behind establishing the higher education system in India, no particular and uninterrupted period of development was found (Altbach, 2012). With the continued political influence in the Indian higher education system, even after independence, it remains highly political, restricting individuals from having any control over instructional and curricular decisions (Agarwal, 2010).

Institutes of higher education are established with intentions of improving and producing knowledge in various fields (Rizvi, 2012). The abilities of higher education institutions to conduct research and produce valuable information is especially important in the scientific field for the development of any institutions and the nation itself. The same applies to Indian higher education as well. As we have seen in the university model in India, the organizational and intellectual patterns of universities in India are based on the models followed in the West; the higher education system must play a crucial role in India's social, political, and technological advancements like the Western nations. However, the actual scenario is not necessarily the case in practice in the Indian higher education system (Rizvi, 2012).

One of the drawbacks Indian higher education system suffers and receives criticism for is the top-down bureaucratic structure used to form the administration (Altbach, 2012). The same structure is followed at the individual colleges within departmental and laboratory level. In such a stifling administration, the positions of the administrators like department heads, laboratory heads, and principals are unopposed. More often than not, this kind of administration creates extremely stifling working conditions for younger faulty members (Altbach, 2012). This unavailability of academic freedom allows for even less creativity in instructional practices. This results in little-to-no emphasis on research and creative thought at the college level for students (Altbach, 2012).

The Indian higher education system, with very few exceptions, is not research oriented (Altbach, 2012; Guo, 2005). Because of this feature, emphasis is not placed on the institutions to conduct high-quality research as a practice. This also implies that research is not being conducted on the system of higher education itself. Even at the graduate level, the objectives are oriented more toward reproducing the textbook contents rather than emphasizing creative

research work. In addition, negligible amount of focus is placed on training related to research methodologies in many social fields, resulting inevitably in students being unable to conduct effective research work by evaluating research methods (Altbach, 2012). It was highlighted by Altbach (2012) that higher education institutions in India are based on the notion of survival at a minimum level without major concern given to performance, unlike the universities in America, which require publishing research as a major contribution to graduate student performance. This lack of emphasis on research has resulted in the fact that the higher education system in India follows the affiliation system of administration established in the mid-19th century (Krishna & Bhaskara Rao, 2004). In this affiliation system of administration, a centrally located university is responsible for designing the curriculum, syllabus, and instructional material including assessments. These formative assessments created by an external body outside of the college are also responsible for evaluating these student assessments by gauging students' performance based on their abilities to reproduce the textbook content without actually assessing the students' performance in terms of their skills in application (Krishna & Bhaskara Rao, 2004). This results in the survival behavior of students' focusing on surviving the program with passing grades rather than on being involved actively in their learning processes to incur critical skills to conduct research (Krishna & Bhaskara Rao, 2004). On the whole, the university system and many of its affiliated colleges have mainly focused on sharing knowledge rather than finding ways to create and refine the existing knowledge. This peculiar divide between the universities and the few research institutes conducting research creates the inconsistency that the largest and most experienced higher education system in India is barely identified for its superiority in conducting and publishing research globally (Yudkevich et al., 2015).

In addition to the previously mentioned challenges, the lack of research about the system of higher education results in a completely different problem by itself. For example, the lack of information on student or instructor population, instructional practices, and other administrative functioning makes it hard to analyze the system empirically. The lack of available information and research published on the Indian higher education system in terms of social class or regional origins is startling. This lack of information results in making the student and the instructor an unknown subject within a diverse cultural context in which they are located (Guo, 2005). Furthermore, the teachers of colleges and universities are among the most well-educated and articulate groups in the population with the required skill and potential to contribute to the national and higher education development. Faculty at higher education institutions also possess the capacities to influence students' views toward political and social life of the country with their positive attitudes which is significant to the development processes. Despite their capacities and worth to bring reform to the education system, society, and nation in general, a negligible number of studies have been conducted on faculty members and their perspectives toward policies and their involvement in the decision-making process (Guo, 2005; Yudkevich et al., 2015).

Inquiry Learning

Inquiry learning is interpreted as a process in which the learners gain abilities to plan, execute, and interpret a unique investigation (Littleton et al., 2012). Currently, an increased prominence is given to inquiry learning supported with technological tools available to learners because it can "foster the development of higher order thinking skills and offer learners a meaningful and productive approach to the development of their knowledge of the world" (Littleton et al., 2012, p. 1).

Additionally, inquiry-based learning is defined as a process that "involves learners asking questions about the natural or material world, collecting data to answer those questions, making discoveries and testing those discoveries rigorously" (de Jong 2006, p. 532). Furthermore, the National Science Foundation (2008) defined inquiry learning as "an approach to learning that involves a process of exploring the natural or material world, and that leads to asking questions, making discoveries, and rigorously testing those discoveries in the search for new understanding" (p. 2).

Inquiry learning allows learners to be responsible for forming their own hypotheses to investigate and to build the knowledge for themselves, unlike being a passive learner in a teacher-centered lesson (Hakkarainen & Sintonen, 2002). This strategy allows students to reflect on the impact of gaining knowledge about their lives and the contribution of their behaviors toward their learning. This strategy allows the instructors to incorporate elements of learners' personal relevance, choice, and responsibility (Anastopoulou, Sharples, Ainsworth & Crook, 2009). In addition, Wells (2001) characterized inquiry learning as a three-stage process to include researching, interpreting, and presenting.

Inquiry learning emphasizes the process of investigation while solving the problem rather than the solution. It is a learning process that focuses on the process of investigation during problem solving rather than the solution. Moreover, inquiry learning is anticipated for the students to work independently and follow their individual paths to comprehend the subject by retrieving external resources to advance their knowledge. In this type of learning, learners expand their knowledge by practicing questioning, investigating, hypothesizing, analyzing, designing, interpreting, sharing, arguing, and synthesizing (Laurillard, 2012). Furthermore, inquiry learning can be into three levels.

1. *Guided inquiry*, in which the problem is identified and the decision will be made on how to investigate it by the instructor or the designer;
2. *Modified inquiry*, in which the problem is identified by the instructor or the designer but the students will have to decide how to investigate finding out the solution; and
3. *Open inquiry*, in which students identify the problem and design an investigation path to obtain information (Moore, 2005).

Utilizing the previously stated variations of inquiry learning allows instructors to gauge the amount of freedom learners could be given to inquire into subjects of their interest.

In addition, inquiry learning utilizes learners' active participation in their learning processes. To facilitate this kind of learning, learning environments must be designed in which the learners have responsibility of their own learning by dealing with open-ended tasks. When learners are responsible for their own learning, they use the approach of argumentation and inquiry. The intention behind this self-learning process is to allow them to become mindful of their cognitive processes and to develop their metacognitive skills (Memis & Seven, 2015). Tandiseru (2015) suggested that inquiry learning can be used to solve problems by following five steps:

- *Read and think:* This step enhances the learners' abilities in identifying information, forming questions, assessing a scenario, explaining the background, and deciding the appropriate procedures.
- *Explore and plan:* This step enables students to browse for relevant and existing information, determine the information that is beyond their scope of research, organize the related information, and use this information to create a model using a diagram or a table.

- *Select a strategy:* This step helps students in identifying a sequence by using different methods to examine the information by working backwards, logically deducing and categorizing the problem to subdivide a bigger problem into multiple and simplified problems. These methods help students in selecting the best possible way to solve the problem.
- *Find and answer:* This step allows students to predict and estimate in order to find solutions to the problems identified.
- *Reflect and extend:* This final step will help learners to evaluate their solutions, revaluate if necessary, and examine the scenario to determine an alternate solution. These solutions could be further extended by allowing discussion among peers. The peer discussions could be facilitated by manipulating the parameters in a scenario and analyzing the ways these manipulations change the setting and thus effect the resulting solutions.

These steps can be used in problem solving by utilizing the inquiry learning approach. These steps not only allow learners to solve problems in systematic ways but also allow them to be engaged in their learning processes.

Levels of Inquiry Learning

As the purpose of this study was to examine the perceptions of the faculty on fostering inquiry skills, the levels of their guidance in student learning was also sought. According to Moore (2005), three levels of implementing inquiry learning were identified:

- In the first level, the teacher provides the problems and the processes and procedures to solve those problems. It is the traditional teacher-directed procedure. This process is rather easy to predict.

- In the second level, the problem is defined by either the teacher or the textbook. However, the processes and the procedures to inquire is left to students to develop. Through this level, the learners are given an opportunity to discover a solution by themselves through their skills.
- In the third level, students generate inquiries, and the level is self-driven by students. Learners are given the opportunity to design and to discover ways to work toward finding possible solutions to their inquiries.

The three levels along with the type of inquiry learning chosen will allow the instructors to choose the levels of inquiry they allow their students to indulge in during their learning processes.

The learning process that occurs during inquiry serves to bridge the gap between formal and informal knowledge. This process allows learners to utilize the available information and collaborate with peers for explanation and interpretation of the concept. To this end, learning occurs through participating in activities, discussions, and concept mapping (Memis & Seven, 2015). This level of interpretation and analyses of concepts for developing meaningful arguments is achieved through inquiry learning.

Although various advantages are offered through inquiry learning, as mentioned in the previous paragraphs, it presents challenges for both instructors and learners if not utilized properly. For example, learners may find themselves facing difficulties in engaging with the process of inquiry learning, like the inability to form appropriate investigations, issues in designing and running research or experiments, and problems in interpreting data. A key challenge while practicing inquiry learning is to find resources and to support the inquiry processes within and beyond the classroom. In addition to lack of resources and support, other

issues arise while practicing inquiry learning (Littleton et al., 2012). These include motivating learners who are not used to learning strategies other than memorization of facts to see their world with different lenses to identify areas that would allow scientific investigation. Furthermore, engaging learners in the scientific process, integrating inquiry learning with the teaching strategies, and designing new ways to teach concepts would allow investigatory learning (Anastopoulou et al., 2009).

Inquiry Learning Approaches

Inquiry learning process shifts instruction from plain memorization of facts and places emphasis on argumentation for the learners to form the ideas and theories of concepts. The approaches to facilitate inquiry learning focus on the learners' cognitive abilities to construct and critique their ideas. This ability is achieved through active participation in questioning, claiming, and defending using empirical evidence (Hand, Therrien, & Shelley, 2013). In addition, students learn thoroughly when they are using their reasoning skills to defend their propositions. This is because stating an argument requires proposing a set of reasons or evidence to support the claim which enhances the students' abilities to learn deeply and allows potential transfer of knowledge (Staley, 2007).

Inquiry learning encourages students to utilize actively their metacognitive skills by familiarizing them to strategies like observing, summarizing, and making notes. These strategies will help students make connections between their existing knowledge and new knowledge (Veselinov & Nikolić, 2015). Inquiry learning generally streamlines reasoning by minimizing the amount of information to be processed by the students' cognition. This reasoning ability is provided by strategies like implicit rules on effective ways to look for information the learners

are seeking and when to cease the search, as well as by determining ways to interpret the information they collected.

Littleton et al. (2012) highlighted the importance of teachers being prepared for inquiry teaching. They suggested that inquiry learning is a potentially effective method when appropriately supported. This was also conveyed through studies conducted by Chinn and Malhotra (2002) and White and Frederiksen (1998). Recent studies on inquiry learning also suggested that learners find difficulty in applying inquiry learning strategy, especially in forming hypotheses, conducting experiments, collecting the data, and interpreting the evidence (de Jong 2006; Manlove, Lazonder, & de Jong, 2006).

In addition to teachers facing challenges to implement inquiry learning, "learners lack skills in regulating their learning like skills in planning, monitoring and evaluating what they have learnt to apply inquiry learning" (Littleton et al., 2012, p. 3). Research studies highlighted by Littleton et al (2012) suggested that learners will need specific support in:

- Designing relevant experiments (de Jong & van Joolingen, 1998);
- Implementing the designed experiments (van Joolingen, de Jong, Lazonder, Savelsbergh, & Manlove, 2005); and
- Interpretating the results found through the experiments (de Jong & van Joolingen, 1998; White & Frederikson, 2005).

Being aware of the areas where learners need help during the process of inquiry learning will allow instructors to plan and design learning exercises that gear toward successful implementation of inquiry learning.

A need exists to support the development of inquiry skills which can influence the teaching and learning process so that learners develop the skills and understanding they require

to engage in their learning while dealing with issues that interest them. In addition, "students need to be supported to know their progress in an inquiry" (Chinn & Malhotra, 2002, p. 197) and to follow "a pattern of reflection on their research and data collection" (Kuhn & Pease, 2008, p. 515). In addition, the learners also need to be able to collect and select resources appropriate to the context they are working in during data collection. Along with the previous challenges, studies on inquiry learning resulted in further challenges. Some of the challenges faced by the learners are:

- Finding challenges in utilizing the procedures in forming hypotheses, conducting experiments, collecting the data, and interpreting the evidence (de Jong, 2006; Manlove et al., 2006);
- Lacking skills in regulating their planning, monitoring, and evaluating their learning (de Jong, 2006); and
- Needing support for effective collaboration for collaborative inquiry (Linn & Slotta, 2006; Scardamalia, 2002).

In addition, instructors also face a challenge of the ways students learn to be able to facilitate meaningful inquiry learning strategies in classrooms. Scardamalia (2002) suggested that this lack of awareness on student learning is due to most learner perceptions of answers being either right or wrong with lack of importance given to understanding the concepts.

Under these challenging circumstances, instructors find themselves having difficulty with practicing inquiry learning. Newton and Newton (2000) found that most teachers' strategy to teach is stating facts and asking questions about descriptions and facts, with little-to-no attention to encouraging deeper understanding (Littleton et al., 2012). In another study by Watson, Swain and McRobbie (2004), teachers and the students treated scientific inquiry "as a set of routinized

procedures to be completed in order to write a report" (p. 38). This resulted in students being unable to describe their goals of their inquiry and unable to describe their findings. Another study conducted by Furtak (2006) demonstrated that another significant challenge to practicing inquiry learning is due to the lack of allocated time for the instructors to explore the implementation of the strategy, their inadequate understanding of the nature of the concept, curricula that do not allow for freedom, and lack of innovative pedagogical skills.

Research studies conducted by Anastapoulou et al. (2009) and de Jong (2006) on inquiry learning demonstrated that one way in which both teachers and students are supported to aid with the challenges of inquiry learning is by the appropriate use of technological tools (Littleton et al., 2012). The technological usage to improve the inquiry learning processes and to overcome the challenges faced during the implementing of inquiry learning are discussed later in this chapter.

Culturally Responsive Pedagogy

According to Banks (1999), "Culture is in us and all around us, just as is the air we breathe. It is personal, familial, communal, institutional, societal, and global" (p. 16). With the advent of globalization and colonialism, most of the world is now viewed as a coexisting place of multiple cultures (Ginsberg & Wlodkowski, 2009; Joshee & Sihra, 2009; Kanu, 2006; Wlodkowski & Ginsberg, 1995). Similarly, culture is at the center of everything we do within the system of education (Gay, 2018). Culture in this sense refers to "the beliefs, values and meanings on which different groups draw to make sense of their world" (Kanu, 2006, p. 4). Despite the universal presence of culture, it is difficult to grasp as a notion. This is because most of culture is held beyond conscious awareness and is learned and taught without being aware. This results in the fact that cultural existence goes unnoticed by the cultural insiders and the newcomers (Banks & Banks, 2001).

As a result of multicultural coexistence, we notice people who belong to different cultures who identify and think differently not only about themselves but also about others. This multicultural "mix of people goes beyond race, gender, and socioeconomic class but also includes ethnicity, sexual orientation, age, language and disability" (Wlodkowski & Ginsberg, 1995, p. xi). The said variation is applicable in Western countries like the Unites States; however, more cultural variations are involved as we begin to consider non-Western countries. For example, when we consider India as a sub-continent, it has been in existence for centuries, resulting in people of various races, languages, and religions contributing to the Indian civilization. This diverse civilization resulted in the formation of "castes" to differentiate the classes of people based on religious beliefs and languages. Over time, the caste system formed a significant construct that contributed largely to the culture in India, which is observable in the current society (Chakravarty, 2001).

The cultural diversity of the world is an overarching concept which characterizes difference in class, gender, ethnicity, socioeconomic status, geographical location, religion, sexual orientation, and age, influencing the global, individual, community, workplace, and educational contexts (Cahill, 2001). According to Chakravarty (2001), empirical evidence demonstrates a lag between education and culture. As a result, to understand educational lives and reforms in terms of social inclusion, culture needs to be given importance, if not the primary reason for reform, since culture shapes our nature of understanding the world (Kanu, 2006). This is especially true in education, as the learners are in the educational setting on a daily and face-to-face basis.

Multicultural Education

The concept of multicultural education utilizes the factor that cultural and ethnic diversity enriches the nation (Banks & Banks, 1993). It maximizes the means in which "its citizens can perceive and resolve personal and public problems by being culturally sensitive" (Banks & Banks, 1993, p. 2). This diversity also improves a society by offering all of its citizens ample opportunities to experience various other cultures to become more content as human beings (Banks & Banks, 2001).

Amidst the goal to provide quality education to all the learners, considering the cultural backgrounds of the learners becomes vital to serve the purpose of the higher education system (Ginsberg & Wlodkowski, 2009; Grant & Lei, 2001). Education in a diverse and pluralistic community should support and assist students in understanding their respective homes, along with community cultures (Banks & Banks, 2001). Because the learners actively comprehend the environment they are a part of, "the respect they receive from the people around them, and their ability to trust in their own thinking and experience powerfully influence their ability to concentrate, imagine, work and their willingness to continue" (Wlodkowski & Ginsberg, 1995, p. 2). In such a close-knit environment, it is often unlikely for the learners to be motivated to learn when they feel unsafe, disconnected, and disrespected, especially since motivation varies significantly across different cultures and among individual learners (Wlodkowski & Ginsberg, 1995).

Being in a culturally diverse classroom helps students in attaining "deeper self-understanding by viewing themselves from the perspectives of other cultures" (Banks, 2009, p. 5). This also provides students with cultural and ethnic experiences they need to survive in a culture that is not only of their own ethnicity, but also in different ethnic cultures, by providing

them with the skills, attitudes, and knowledge regarding various other cultures. Another crucial factor in a culturally diverse environment is that it accommodates its members to experience less pain and discrimination of some groups of people who belong to different racial, physical, and cultural backgrounds (Banks, 2009).

When given appropriate cultural importance, it is highly probable for the students to master skills on a concept if they could relate it to their cultural experiences. This cultural importance could be situated in an instructional environment when teachers use content that deals with prominent human problems, such as race, ethnicity, and social class. Banks and Banks (2001) stated, "It is important for teachers to realize, however, that for many individual members of ethnic groups, ethnic group membership is not an important part of their personal identity" (p. 3).

Typically, culture in higher education is often simplified or inadequately developed due to the lack of understanding, training, or education. However, we know that the concept of culture and its very nature is complex and multidimensional in reality (Banks, 1999). Some educators view culture as "the inclusion of ethnic content into the curriculum, whereas, others view it as prejudice reduction and some others see it as celebrating ethnic holidays and events" (Banks, 1999, p. 13). An example of a math teacher disregarding the culture was cited by Banks and Banks (2001) as "math was math, regardless of the color of the students" (p. 13).

In addressing the problems to practice cultural influence in instruction, Banks and Banks (2004) suggested five dimensions to culture within educational context. The five dimensions include the following:

1. Content integration is one of the five dimensions that relies on the extent of utilization of real-life scenarios and information from different cultures by teachers. This information

is utilized to demonstrate the important concepts, relevant principles, and respective theories within their course (Banks & Banks, 2004).

2. Knowledge construction emphasizes "teachers helping students to understand, investigate, and determine the inherent cultural assumptions, preconceived frames of references and perspectives, and prejudices within a discipline that impact the techniques of knowledge construction during the learning process" (Banks & Banks, 2004, p. 20).
3. Equity pedagogy is another dimension of culture which exists "when teachers modify their instruction to facilitate the academic achievement of all the learners from diverse cultural, racial, and social-economic groups" (Banks & Banks, 2004, p. 22). This pedagogy also involves utilizing various styles of teaching that are consistent with a variety of styles of student learning who belong to different cultures and ethnicities.
4. Prejudice reduction is the next dimension, which "emphasizes on the features of racial attitudes of learners and ways to modify the instruction methods and instructional materials accordingly" (Banks & Banks, 2004, p. 21).
5. The creation of a school culture that empowers school's social setting and culture encourages students from various cultural backgrounds like race, ethnicity, and social-class toward understanding and tolerance. This empowerment is possible by having discussions among staff themselves and with students regarding racial and ethnic areas (Banks & Banks, 2004).

In addition, Banks and Banks (2004) recommended that to execute the dimensions of culture, reformation of schools and other educational institutions must occur to accommodate students from all social-class, racial, gender, and cultural groups. This reform will give students an equal opportunity in their learning processes while experiencing empowerment in their cultures

(Banks, 2009; Banks & Banks, 2004). In addition to these five dimensions, Banks and Banks (2004) also suggested eight characteristics to implement multicultural education sensitively. The eight characteristics are the following:

1. The teachers and school administrators must have positive attitudes toward all the students and have high expectations for them. They also must attend to them in optimistic and nurturing ways.
2. The formal curriculum should reflect the vivid experiences from various cultures and include perspectives from people who belong to various types of cultures, ethnicities, and genders.
3. The instructional strategies used by the teachers should match the levels of learning that are possible in the existing cultural setting to motivate students.
4. The educators as well as administrators must exhibit respect for the students' native languages and their respective dialects.
5. The learning materials used in the school should include events, scenarios, and concepts from a variety of perceptions, including culture, ethnicity, and race.
6. The assessment and evaluation procedures used in the schools must be culturally sensitive by representing students of all backgrounds in classrooms. This must also extend to classes that are specially designed for students with special needs.
7. The culture within the school and the hidden curricula should reflect cultural and ethnic diversity.
8. The counselors at schools must also motivate students by exhibiting their hope for student success. These expectations must be extended to students who belong to different

races and ethnicities and who speak different languages by helping these students set certain goals and work toward achieving them.

Moreover, Banks and Banks (2001) suggested that when these eight characteristics are followed in reforming and restructuring the school environment and are dutifully implemented, higher academic achievement will be attained despite the differences in learners' genders, ethnicities, cultures, and languages. The attitudes and beliefs that exist among the groups of students will become less biased (Banks & Banks, 2001).

Multiculturalism in Indian Society

India, with its large size, ancient history, and many languages and religions, is a diverse country in the world. It is also the second most populous country in the world with a population of over 1.1 billion people within an area of 1.2 million square miles (Joshee & Sihra, 2009). In the recent national census report published in 2001, of the population, "82% are identified as Hindu, 13% as Muslim, 2.3% as Christian, 1.9% as Sikh, 0.76% as Buddhist, 0.4% as Jain, and 0.01% as Zoroastrian" (Joshee & Sihra, 2009, p. 425).

Despite the existence of many religions and cultures, two communities are central to controversial discussions of cultural pluralism in India. They are Dalits, known officially as scheduled castes (SC), and Adivasis, known as scheduled tribes (ST). These two groups contribute 16.2% and 8.2% of the population the country, respectively. The terms scheduled castes and scheduled tribes are organizational categories. The SC category is used to identify the communal groups known as "untouchables" in the past. On the other hand, different indigenous groups who have denied acclimatization into initial agrarian and industrial societies later are called ST. The people who belong to these two groups use the terms Dalit, literally translated as "downtrodden," and Adivasi, translated as "original dwellers." Another frequently used third

category is called "other backward classes" (OBC). The OBC category is used to encompass a set of groups that have been and remain to be marginalized. In particular, the OBC category includes lower caste Hindus, some categories of Buddhists, Muslim communities, as well as other groups who are identified based on low economic, social, or educational status. The OBC category constitutes about 50% of the total population of the country (National Commission for Backward Classes, n.d.). The current approach to incorporating this vast diversity into the daily life of the nation is based largely on an ideal called participatory pluralism. Based on the ideas of Gandhi, this approach simultaneously builds on and challenges older traditions of pluralism that fostered diversity through separation between groups and a hierarchical ordering of society (Joshee & Sihra, 2009).

Multiculturalism in Indian Higher Education

In India, the term multiculturalism gained significance in the mid-1990s, which is linked to the demographic veracities and ancient traditions (Ali, 2000). Multicultural education is a term that is not frequently used in Indian higher education system. However, cultural pluralism and social equality in education started to take significance as of the establishment of the Constitution in 1951 after gaining independence from British colonial rule and following two major reports on education in 1953 and 1966 (Joshee & Sihra, 2009). The fact that makes multiculturalism in India unique is that diversity is considered as a defining factor of identity as well as democracy. Consequently, the approach toward multiculturalism in India rests on the principles of both "unity in diversity and diversity in unity" (Banks, 2009, p. 352). India follows a practice in which diversity is supported as an important and continuing feature of the society. According to the Indian Constitution, multiculturalism relies on both autonomy and nondiscrimination. The article that describes multiculturalism is called as the "protection of

interests of minorities" within the Constitution in India and emphasizes the right to maintain and improve distinct identities of people belonging to various linguistic, cultural, and religious groups. This article also prohibits discrimination against people of particular race, caste, religion, or language while offering admission into state funded educational institutions (Joshee & Sihra, 2009).

Practicing pluralism within a school may include celebrating holidays associated with all religions in the community (Joshee & Sihra, 2009). This approach necessitates a celebration based on the traditions and practices of the group and encourages all members of the school to participate in the celebration. It also requires an acknowledgement of the pluralism within groups and recognition that cultures are not static; they are constantly being reshaped by their own internal pluralism as well as external forces. Finally, it requires a commitment to addressing inequality between and within groups. While no one would argue that India has achieved the ideal, it is important to note that because of this orientation to multiculturalism, state policy flows from the collective lived experiences of diversity rather than the other way around. Diversity committees are appointed by the Prime Minister who recommend that incentives for educational institutions that would create and maintain diversity among their students and an overhaul of textbooks would both reflect reality and foster the creation of values that support diversity (Ali, 2000).

It is important to note that the learners, instructors, and parents belong to different cultural and social backgrounds. This fact is emphasized by many theoretical conceptions of multicultural education (Vaish, 2010). In addition to the recognition of cultural differences, it is also emphasized that the role of culture must be considered in education. Despite the recognition of importance of cultural influence on education in classrooms, it is still not actively being

practiced due to difficulty in implementing theories in classroom because of political and institutional influence on classroom practices (Allemann-Ghionda, 2001). Although there are initiatives by the Indian government such as Sarva Shiksha Abhiyan (Education for All), cultural differences exists among learners within the society and within classrooms (Mukherjee, 2017).

The typical multicultural environment in India consists of individuals who are diverse in race, language, religion, caste, gender, and socioeconomic statuses. A major role is played in Indian society and in education by allocating benefits based on caste system, including reserving a percentage of privileges to backward castes, which might be seen as similar in concept with affirmative action here in the United States (Chakravarty, 2001). On the other hand, in India, multicultural education emphasizes three main foci: to address the "disadvantages faced by marginalized groups, to encourage the valuing of diversity, and to build a strong national identity" (Joshee & Sihra, 2009, p. 431). Groups associated with the first focus include particularly girls, Dalits, Adivasis, and members of the OBC groups. While all three foci address cultural diversity, the first concerns addressing those cultural traditions and structural conditions that have oppressed minorities, and the second and third are linked more directly to issues of religious and linguistic identity (Joshee & Sihra, 2009).

Misconceptions of Culturally Responsive Pedagogy

Several definitions surround the concept of culture, making it complex and multidimensional. Some of the definitions and misconceptions are discussed here. Culture, as defined by Banks and Banks (1993), consists of "the shared beliefs, symbols, and interpretation within a human group" (p. 3). Culture is the combination of values, interpretations, and perceptions that differentiate one person from another in a modernized society (Banks & Banks, 1993).

With cultural diversity comes cultural differences that might result in learners feeling underappreciated and not respected. Therefore, pedagogy that is culturally responsive and addresses the coexisting cultures within a classroom occurs when equal respect given to circumstances and backgrounds of all the learners, regardless of individual power and status, along with a learning design that incorporates a wide range of needs, orientations, and interests of its learners (Ginsberg & Wlodkowski, 2009; Wlodkowski & Ginsberg, 1995). Culturally responsive pedagogy is a theory that focuses on the role that culture plays during the learning process, involving concepts of gender, ethnicity, caste, religion, and social class, to create learning environments that improve quality of education ("What is Culturally," n.d.). In other words, culturally responsive pedagogy refers "to a more dynamic or synergistic relationship between home/community culture and school culture" (Ladson-Billings, 1995, p. 467).

Furthermore, culturally responsive pedagogy is an approach that focuses on classroom curricula and considers learners' cultural backgrounds (Gay, 2010). It is a practice that attempts to address different learners, validate their cultures, and assert that use of cultural recognition increases student success in classrooms (Ragoonaden & Mueller, 2017). In this practice, teachers are considered to be building interpersonal relationships by being warm, understanding, flexible, supportive, and enthusiastic, yet focusing on providing quality academic experience (Gay, 2010). To summarize, culturally responsive pedagogy is used to embrace students' individual abilities and cultural integrity and their successes in academics by validating, enabling, and empowering culturally diverse students (Gay, 2002a, 2002b, 2010).

One of the major misconceptions while considering culture into pedagogical practices is that when culture is considered, people only observe the physically noticeable characteristics in identifying cultural differences. In other words, when culture is brought up within an

educational context, ethnicity, race, gender, and physical ability are the only anecdotes that are assumed to explain the differences in a learner's experiences, beliefs, interests, expectations, and values. However, physical features do not always define the learner. Culture consists of characteristics that are beyond physically obvious. Non-physical characteristics like family, friends, jobs, organizational ties, and lifestyle are the factors that drive one's behavior (Ginsberg & Wlodkowski, 2009). In addition, other factors like one's personal and unique histories along with psychological traits differentiate a learner from the other members of their own culture (Wlodkowski & Ginsberg, 1995). Thus, it is a significant misunderstanding that merely noticeable characteristics are enough to analyze learners' cultural identities and their behavior.

Ginsberg and Wlodkowski (2009) asserted that the complete definition of cultural identity cannot be found through ethnicity, race, gender, physical ability, socioeconomic status, and sexual identity, in and of themselves. In addition, Ladson-Billings (2014) added that in the current generation there exists a "youth culture" along with the other dominant characteristics, who maintain their own notions of membership, language, and beliefs. In summary, culture is always changing regardless of the setting in which it is being portrayed.

To address the cultural needs of diverse learners, curricular reform must consider culture as inclusive while making changes. Curricular reform in the American education toward including culture started taking place when theorists identified the importance of culture through their theories. Curricular theories on multiculturalism convey that the function of schools is to bring awareness and consciousness, which enables the instillation of knowledge about cultures and power of dominant groups (Pinar, Reynolds, Slattery, & Taubman, 2006). Thus, curricular reform to address the cultural needs of 21st century learners should include culture (Grant & Lei, 2001; Kanu, 2006; Villegas & Lucas, 2002). These efforts to include culture in curricular reform

result in a framework to examine curriculum and historical curricular practices as well as to rethink alternatives for the future (Kanu, 2006).

Role of Culture in Education

It is asserted that culture plays a prominent role in curricular reform to improve and contribute to success within higher education (Kezar & Eckel, 2002). In addition, it is assumed that academic achievement of the culturally diverse learners will be improved when teachers and schools focus on emphasizing classroom instruction to be executed in a way that is responsive to learners' cultural identities (Phuntsog, 1999). Culturally responsive teaching emphasizes certain fundamentals that focus on "respect for diversity to engage the motivation of all learners, creates a safe, inclusive, and respectful learning environment, integrates responsive teaching practices into all disciplines and transforms curriculum to promote social justice and equity in society" (Wlodkowski & Ginsberg, 1995, p. 106).

Furthermore, Wlodkowski and Ginsberg (1995) proposed a framework based on intrinsic motivation for teachers who recognize the significance of connecting instructional content to the learners' cultural backgrounds as a technique to foster student engagement while sustaining their cultural integrity. According to Wlodkowski and Ginsberg (1995), an effective culturally responsive pedagogy should have "respect for diversity; engage motivation of all learners; create a safe, inclusive, and respectful learning environment; derive teaching practices from principles that cross disciplines and cultures; and promote justice and equity in society" (p. 289). To help make the conception of culturally responsive pedagogy framework effective, four motivational conditions have been constituted (Ginsberg & Wlodkowski, 2009). The four conditions, according to Ginsberg and Wlodkowski (2009), are the following:

- To establish inclusion within the learning environment to make it feel respectful for both teachers and learners;
- To develop an attitude that is of favorable nature among students and the teachers during the learning experience;
- To enhance meaning of the content in a manner that matters to learners by including their values and goals in their learning process; and
- To engender competence to help the learners understand that they are effective in learning that of personal value to them.

In addition, certain characteristics of multicultural education were developed along with ways to integrate culture into instructional content.

Characteristics for Faculty Professional Development

With the complex nature of cultural coexistence, educators are required to be aware of and use cultural content in their instruction. Certain characteristics were developed by Villegas and Lucas (2002) to prepare teachers for culturally responsive pedagogy. They suggest that culturally responsive teachers are

1. Socially conscious and understand that the perceptions of reality occurs in multiple ways that are influenced by one's social background;
2. Capable of supporting student views with varied backgrounds, viewing diverse student backgrounds as learning resources instead of seeing these differences as difficulties to overcome;
3. Themselves responsible and capable to bring the changes in educational environment that help school environment to be responsive to students of diverse backgrounds;

4. Acknowledging the way in which the learners build their knowledge and able to promote knowledge construction within students;
5. Acquainted with the student lives outside of school; and
6. Willing to utilize their acquaintance regarding the lives of students in designing instruction that is constructed by taking into account the prior knowledge of students to further enhance students' skills (Villegas & Lucas, 2002).

These six characteristics, when followed by educators while they prepare themselves to be culturally responsive as they provide instruction to learners, make the learners motivated and engaged in their learning process.

Although strategies are developed to be culturally responsive in terms of instructional efforts, some educators might still face problems implementing the strategy. This is because of the importance given to the examination system in India and high-stakes testing within Western countries, educators' low levels of knowledge of cultures, and the heavy reliance on textbooks. In order to provide help for the educators practicing multicultural education to use culturally responsive pedagogy, Banks and Banks (2004) identified four approaches to the integration of cultural content into classroom instruction. These approaches according to Banks and Banks could be delivered at four different levels:

1. The contributions approach focuses on the use of ethnic and cultural artifacts within the curriculum without needing to change the initial curriculum.
2. The additive approach is a technique in which ethnic and cultural concepts, perspectives, and content are added to the existing curriculum without restructuring the curriculum.

3. The transformation approach focuses on changing the basic structure of the existing curriculum and enables the content that allows learners to vide the issues and concepts from various ethnic and cultural perspectives.
4. The social action approach is a technique that consists of all transformative approach features along with including components that foster decision-making skills and problem-solving skills.

These four approaches for the integration of cultural content into the classroom are frequently integrated into classroom instruction to achieve the objectives of contents being taught and to serve the student population better (Banks & Banks, 2004).

Benefits and Challenges of Cultural Integration in Classrooms

The definite benefits that are observed empirically when culturally responsive pedagogy is practiced (Morrison, Robbins, & Rose, 2008). Some of the benefits are

1. Assisting student to succeed in their academics;
2. Helping learners in forming an optimistic cultural identity; and
3. Aiding learners in building critical consciousness regarding social inequities.

Despite the previous benefits, certain challenges occur while implementing the pedagogy that is culturally responsive in nature. The most challenging issue in the current education system is creating a learning environment that sustains the cultural integrity of each student along with improving his or her academic success (Ginsberg & Wlodkowski, 2009; Phuntsog, 1999; Wlodkowski & Ginsberg, 1995). Additionally, instructors, being closest to learners, find themselves in a critical place in providing educational experiences that foster student success and cultural integrity.

Within classrooms, culturally responsive pedagogy importantly focuses on utilizing the cultural backgrounds of the students and their individual experiences as a way to help them learn crucial academic skills like reading, writing, and comprehending (Gay 2010; Ginsberg & Wlodkowski, 2009; Ladson-Billings, 1995; Wlodkowski & Ginsberg, 1995). Undoubtedly, the abilities of teachers and schools in utilizing the cultural backgrounds of the students relies on teachers' skills, knowledge, and attitudes toward improving their abilities in designing classroom atmospheres that are appropriate to help students achieve equality and improve students' academic excellence. Instructors who are aware of accommodating and addressing cultural influence in classrooms while teaching are indeed purveyors of powerful ways to respond positively to culturally diverse students (Villegas & Lucas, 2002).

Despite the recognition of importance of cultural influence on education in classrooms, it is still not actively being practiced due to difficulty in implementing theories in classrooms because of political and institutional influence on classroom practices (Allemann-Ghionda, 2001). In addition, along with the already complex way to inculcate culture into curriculum and classroom practices, the name involving culture for pedagogical styles and curriculum reform is often argued as to what name is appropriate. Few names include culture to identify pedagogy that embraces cultural diversity such as culturally responsive, culturally relevant, culturally significant, and culturally sustaining, making the concept further complicated (Gay, 2002a; Gay, 2010; Ginsberg & Wlodkowski, 2009; Ladson-Billings, 1995; 2014; Wlodkowski & Ginsberg, 1995).

Theoretical Framework for Inquiry and Cultural Learning

The theoretical background of this study included Vygotskian zone of proximal development (ZPD) that supports the inquiry learning strategy and Vygotsky's cultural-historical

activity theory (CHAT). As the central research question of this study aimed to examine the perceptions of faculty members in fostering inquiry learning, Vygotsky's ZPD and CHAT were used as the theoretical framework for this study. CHAT was used because of the various cultural and social backgrounds of the learners and instructors (Vaish, 2010; Villegas & Lucas, 2002). In addition, this study also briefly examined the usage of laptop computers to foster inquiry learning which is supported by Vygotsky's writings that using technical tools to perform labor is the basic condition of human existence (Roth & Lee, 2007). Lev Vygotsky was one of the theorists who focused on the influence of social and cultural impact on learning. At the heart of Vygotsky's research lay the importance of social and cultural impact on learner development along with ZPD, which is more prominently called sociocultural theory in the United States (Miller, 2011).

The work of Vygotsky spanned briefly from 1924 to 1934 and has become influential in the United States since the early 1980s. In his brief 10-year career, he constructed a sophisticated and in-depth explanation about the growth of human consciousness (Gredler & Shields, 2008). He was an outsider in the field of psychology, but his presentation in 1924 led him to join the "Psychological Institute of Moscow University, where he completed his dissertation named 'The Psychology of Art' in 1925" (Gredler & Shields, 2008, p. 6). Although he could not defend his dissertation publicly because of his condition with tuberculosis, he was awarded the degree (Gredler & Shields, 2008).

Vygotsky's writings were at first heavily influenced by Pavlov's reflexology and conditioning, which were purely behaviorist in nature. However, he moved away from these behaviorist ideas and began developing his cultural-historical theory by attempting to comprehend the formation of intelligence by emphasizing its development process (Driscoll,

2004). Bruner and Piaget are two other researchers who focused their studies on the cognitive development of a child. On one hand, Bruner's theory suggested that cognitive development in a child occurs in a step-by-step manner depending on the social environment they are situated in. On the other hand, Piaget's theory suggested that cognitive development in each child occurs through hypothesis testing, a process he framed as assimilation and accommodation. In addition, Piaget said development occurs differently across four stages, namely sensorimotor (birth to age 2 years), pre-operational (age 2 to 7 years), concrete operational (age 7 to 11 years) and formal operational (age 11 years and older) stages. Similar to Bruner's theory, Vygotsky assumed that development of an individual's intellect could not be comprehended without considering the social as well as cultural context within which such development takes place. But unlike Bruner's or Piaget's theories, Vygotsky emphasized the processes of development by excluding specific, and distinct stages of development (Driscoll, 2004). Vygotsky excluded the assumption that a lone principle could narrate the process of intellectual development in humans. Instead, he suggested that "development is much more complex, and volatile as its very nature is changing as it unfolds" (Driscoll, 2004, p. 246). To address the mental functioning of humans, Vygotsky used the Marxian approach of using technical tools for labor activities (Roth & Lee, 2007). Drawing from the use of tools that influence and guide human thinking, Vygotsky assumed that biological along with cultural growth do not transpire in isolation. Thus, he proposed that it is crucial to highlight the social and cultural factors, as they facilitate the human intellect development (Roth & Lee, 2007).

Vygotsky's influential concepts for understanding higher intellectual processes were internalization and ZPD (van der Veer & Yasnitsky, 2011). He suggested that any "higher intellectual function essentially undergoes an external stage in its development because it is

initially a social function" (Driscoll, 2004, p. 248). To this end, he narrated that if a child does not know the meaning of pointing at something that he or she wants until the adult responds by giving the item to the child, he or she would not know that pointing at something help him or her communicate when language is not available to him or her. With the adult's response, the situation becomes a social exchange (van der Veer & Yasnitsky, 2011).

Zone of Proximal Development

In order to comprehend the initial process of skill development, the means Vygotsky identified was to assign tasks to learners that are beyond their prior abilities. This activity helped him in identifying the difference between "a learner's actual intellectual capacity as determined by their individual problem solving, and the higher order of prospective intellectual development as determined using problem solving with adult guidance or by coordinating with more capable peers" (Driscoll, 2004, p. 249). This gap is what he called ZPD. He further defined ZPD as those "functions that have not yet matured but are in the process of maturation" (Robbins, 2001, p. 79).

ZPD highlights the importance of social activity in analyzing the limits of what a learner is capable of doing (Driscoll, 2004). The lower limit of ZPD is set by the existing intellectual level that a child demonstrates, and the upper limit of the ZPD is decided by the instruction processes that occur during play or in formal instruction or at work (Bodrova & Leong, 2001). Concerning ZPD, Vygotsky highlighted that social interactions among the learners may lead to developmental suspensions or abnormal development as well as regular or accelerated development. Through ZPD, Vygotsky conveyed that a social partner's role is crucial in developing intellectual abilities. He proceeded to explain that an ideal partner in such a social interaction is either a peer with higher intellectual capabilities or the teacher. The advanced peer

member will assist in cognitive development within the less advanced peer (Bodrova & Leong, 2001). The similar concept of coordination with an advanced peer is applicable in the process of scaffolding that occurs due to instruction during which the teacher or the more competent peer member functions as an assisting tool for a learner as they build their knowledge. Thus, Vygotsky highlighted that the teacher must not present the information to the learner in a one-sided manner. Nonetheless, a teacher must give the necessary guidance to the learner in building the knowledge that helps them advance from their current intellectual levels to the desired level. This kind of guidance from the instructor would allow the learners to achieve tasks that they could not initially perform on their own; then, when the learners are able to complete the tasks, the guidance can be withdrawn (Bodrova & Leong, 2001). Vygotsky also highlighted that the learner plays an important role by becoming a partner in learning. He suggested that it is not sufficient for the learners just to work with peers or for one peer to control and provide solutions to the other peer. "They must co-construct the solution to a problem or share in joint decision making about the activities to be coordinated in solving the problem" (Robbins, 2001, p. 54).

In terms of implementing ZPD, Vygotsky demonstrated that the kind of instruction strategies that are helpful in students are the strategies in which initially the teacher leads and sustains the discussion, but as the instruction advances, the instructor allows the control over the dialogue to get transferred to students. This instructional strategy is called reciprocal teaching (Robbins, 2001).

Vygotsky's Theory in Inquiry and Cultural Pedagogy

Vygotsky laid out what is probably the most common cause of miseducation as the failure to convert the classroom into a community of discursive inquiry and pointed out the direction in which educators had to go if the situation were to be corrected. It is more helpful to

recognize that some towns which have achieved tremendous intensity in artistic and scientific creativity were communities of inquiry in which discovery and invention everywhere stimulated fresh thinking, resulting in stimulated new discoveries and new inventions (Kozulin, Gindis, Ageyev, & Miller, 2003).

To bridge the gap between intellectual societies that lack in successful creation of communities of inquiry, the ZPD concept could be implemented in instructional strategies by using technological tools and providing a social environment in classrooms for students to develop and improve their skills. ZPD helps in explaining the gap between individual abilities of learners and their performance under guidance provided by advanced peers (Kozulin et al., 2003).

According to Lipman (1996), Vygotsky was keen about understanding thinking as an internalized activity and the origin of our thoughts as external activities. Vygotsky explained the stance of a teacher in a traditional teacher-centered classroom as one of overwhelming authority and the only source of original, independent, and thoughtful display of knowledge. This teacher dominance results in students' tending merely to react and to be hesitant to display any intellectual initiative. The only classroom behaviors that stimulate learners are questions posed by teachers, to which learners provide expected responses. However, Vygotsky suggested that teachers should design a learning environment in which all learners set models for each other and are capable of thinking for themselves thoughtfully and individually rather than waiting always to react to questions from the teacher (Lipman, 1996).

Through his CHAT, Vygotsky suggested that "biological and cultural development do not occur in isolation" (Kozulin et al., 2003, p. 384). It is thus crucial that the social and cultural factors are considered, as these factors assist in the development of human intellectual skills.

Along with the recognition of cultural differences, it is also emphasized that the role of culture must be considered in education. One of the ways to address cultural diversity is by enforcing multicultural education within curriculum (Pinar et al., 2006).

In summary, CHAT is used as the framework to support the cultural influence in classrooms because of the focus on the diverse societies in India. In addition, Vygotsky's ZPD is used as the theoretical background to support inquiry learning. These two concepts, along with Vygotsky's theory of using an external tool to support a child's cognitive development, were used as the conceptual framework for this case study.

Laptop Technology Use in Classrooms

A consistent growth of interest is found among the researchers and educators that inquiry learning, when assisted with appropriate technology, can be a proper means in helping learners develop higher order intellectual skills. Additionally, inquiry learning processes allow learners to develop their intellectual skills in meaningful and productive ways (Littleton et al., 2012). To this end, laptop computer technology usage is highlighted in this discussion. Laptop computers referred to here are a set of mobile computers that are used for network access and computing. Technology integration in classrooms in general serves a variety of productive functions. In particular, technology integration in college or university-level classrooms serve effective purposes that foster life-long learning skills in students (McKeachie & Svinicki, 2013). For instance, providing an interactive learning space to collaborate with fellow students and instructors regardless of the geographical distance seems impossible without technology. Some of the purposes served by technology in the classroom are the following:

- Provides learning environments for actively engaging in and out of the classroom;

- Allows students to experience the content beyond text-based description which addresses specific learning goals;
- Allows students and instructors to look for information beyond textbooks through the Web; and
- Helps instructors teach and students learn and be prepared for the technological advancements in the 21st century.

Despite the advantages, technology integration in classrooms may mean different applications to every instructor. To some instructors it can mean using PowerPoint or classroom response systems as a part of their lectures; on the other hand, to some instructors it might mean delivering lectures through podcasts or "vodcasts" (video recordings of their class), and to others it means designing interactive web-based interactive learning modules to teach content (McKeachie & Svinicki, 2013). Instructors who utilize appropriate technology in their instructional processes provide an opportunity to foster differentiated instruction to transform their classrooms into dynamic learning environments. In addition, research showed that integrating technology requires specific strategies to help students become lifelong learners (Pitler, 2007).

Many types of technology could be integrated in classrooms, such as learning management systems, presentation software and tools, assessment tools, and student response systems, to foster inquiry and culturally responsive learning. In addition to these technology tools, Web 2.0 tools are the most advanced and rapidly developing. Before considering integrating technology into a classroom, careful planning and attention are required to analyze the need for using a technology tool based on the goals and objectives as well as how a technology tool can help students' learning process (McKeachie & Svinicki, 2013). With careful

planning based on the objectives of the course, technology integration can enhance the learning process, help students understand the concepts, and encourage academic achievement of the students by increasing their motivation to learn, providing opportunities for collaborative learning, and assisting the advancement in their critical thinking and problem-solving skills. In addition, integrating technology into classrooms will allow the classroom to be a more student-centered than teacher-centered environment (Pitler, 2007).

Moreover, technology usage in classrooms facilitates immediate and constructive feedback to every individual learner, serving the major purpose of culturally responsive pedagogy (Maaruf & Siraj, 2013). In addition, instructors have the freedom to design their instruction to meet students' needs by individualization, students can feel more confident to voice their opinions by choosing to be anonymous, and technology provides a more engaging and motivating learning environment by incorporating images, audio, video, and symbols (Pitler, 2007).

In the Indian context, despite the advantages that affordable technology brings to classroom to make learning effective, efficient, and engaging and the Indian government efforts to integrate technology in classrooms through committees such as All India Council of Technical Education (AICTE), a gap exists in using technological tools in classrooms to foster learner engagement (Goel, 2006). Although efforts are made to make technical education current to keep up with the ever-growing technical world, certain factors limit its implementation. Some of the factors that impact the usage of technology in classrooms in India are lack of technical support, unstable learning environments, resistance from instructors, socioeconomic status of students, and economical backgrounds of various states (Bandyopadhyay, 2013; Cerisier & Popuri, 2011; Dalal, 2014; Goel, 2006; Parthasarathy & Ananthasayanam, 2012).

To revisit the concept of inquiry learning, it is a technique in which the students' knowledge regarding a subject occurs through engaging in learning that is driven by questions and conducting an investigation that is open-ended in nature, allowing them to advance their intellectual skills as well as practice them (Edelson, Gordin, & Pea, 1999). Additionally, inquiry learning is used to motivate learners by increasing their natural curiosity and constructing new knowledge based on their existing knowledge, interests, and skills. Blumenfeld and her colleagues made the case that it is possible the learners are more motivated to interact in projects that they consider to be of interest and value to them, are able to accomplish, and in which the focus of the instructor is on guiding the students toward learning instead of focusing on their performance on tests. Therefore, inquiry learning focuses on supporting students so that they can take an active role in driving inquiry processes (Blumenfeld et al., 1991). Considering the role that technology plays in enhancing student and teacher motivation, Blumenfeld and her colleagues identified six potential contributions, namely to

1. Enhance interest;
2. Facilitate access to information;
3. Support the creation and manipulation of data representations;
4. Structure and guide the process;
5. Diagnose and correct errors; and
6. Help manage complexity and aid the production of reports (Blumenfeld et al., 1991).

Along with these contributions offered by inquiry learning to the learning process, inquiry learning is considered as an educational approach with a long intellectual pedigree. It was also highlighted that implementing inquiry learning can occur by utilizing technological resources

and designing instructional activities along with learning environments that allow maximum use of students' existing skills and their curiosities (Littleton et al., 2012).

Many empirical research studies have been conducted to demonstrate the utilization of technological tools to help teachers in fostering inquiry learning in classrooms. For example, Edelson et al. (1999) conducted a research study on the utilization of technologies that allow visualization to support inquiry learning in the geosciences. Their aim was to assist learners in developing an assimilated understanding of science by focusing on building their knowledge regarding scientific concepts, a clear understanding of using scientific tools, media, and the learners' inquiry skills (Edelson et al., 1999).

On the one hand, many research studies opposed the usage of technological tools in classrooms. For example, Cuban (2001) conducted extensive research on school reform and concluded that teachers were not given a chance to contribute their view on the usage of technology in classrooms. He also advocated the importance of remaining skeptical about the inevitability of the technological influence on the future of schooling. On the other hand, other researchers, like Sawyer (2006), see technology as central to the transformation of schooling. Alongside these findings, a body of research investigates the specific support for delivering inquiry learning by the judicious and thoughtful use of technology. Edelson et al. (1999) stated that

> all of the fundamental properties of computing technologies can offer benefits for inquiry learning, such as the ability to store and manipulate large quantities of information, to present and permit interaction with information in a variety of visual and audio formats, to perform complex computations, to support communication and expression, and the ability to respond rapidly and individually to users. (p. 395)

A considerable history of the use of technologies exists to support inquiry learning. Technologies that have been developed specifically to support inquiry learning have been focusing on

1. Providing tools that help model phenomena and procedures that replicate for the real world (van Jooligen et al., 2005);
2. Visualizing and analyzing quantitative data (Wormstead, Becker, & Congalton, 2002);
3. Exchanging information despite the distance (Wormstead et al., 2002);
4. Allowing and supporting discussion (Weinberger & Fischer, 2006); and
5. Providing access to varying data through digital collections and online libraries (Linn, Clark, & Slotta, 2003).

The previous examples are a few instances where the researchers have found technological influence as being helpful in practicing inquiry learning classrooms.

In addition, recent developments in technology allow teachers and students to be in classrooms equipped with portable computing devices like personal digital assistants, laptops, netbooks, and other mobile technologies that allow interaction with instructional material and help evaluate learners' learning processes (Zurita & Nussbaum, 2004). These technological devices in combination with teachers' available pedagogical expertise and existing resources help manage the flow of a lesson and direct a classroom. Zurita and Nussbaum (2004) conducted a study in which they produced a similar result, describing classroom technology like laptop computers that assist teachers in facilitating interactions by encouraging students to solve problems individually, reach a group agreement, and then demonstrate their results to the class (Littleton et al., 2012).

Technology Usage Propositions in Indian Higher Education

To promote student-centered learning, a group of educators and educational reformers in India promoted the possibility to move away from teacher-centered instruction to instruction that fosters the habit of inquiry in the learning process (Bedi, Singh, & Srivastava, 2001). This migration toward student-centered learning is possible due to the usage of computer technology in classrooms that are equipped with Internet to allow students to explore and investigate. This intervention will achieve reconciliation between learning that takes place inside and outside of classrooms through these computer technologies like laptops in India (Bedi et al., 2001). Bedi et al. (2001) in India believed that the task of creating individual and group specific educational opportunities to foster student-centered strategies like inquiry learning is really not that difficult. The Internet allows one to develop any interest and determine the pace and content of learning for oneself. Tailored content can easily be created by modifying the standard educational materials as required. Furthermore, the availability of all kinds of content is non-perishable on the Internet. Education products are pure information products, and with digital technology, the cost of replication is nearly zero. So, one can freely build on the relevant experience of others. One can choose any set of students and schools to associate with and dig deeper into one's areas of interest; one can participate in multiple learning communities.

Bedi et al. (2001) also suggested that children respond best to learning processes that are built around the things of interest in their environment. Access to networked resources on the Internet allows the unlimited information available to be data-mined and collated to a specific, chosen context. Given a context that is familiar to learners, the learners will not have to be persuaded to explore the Internet's resources on the concepts. The use of technology in education should focus on enabling students, along with teachers and parents, to use technology

to improve learning. Bedi et al. emphasized that education system should become more open to experimenting with giving children more opportunities to own their learning. Children listen to and relate to their peers attentively. It is believed that the new education system will have a large component of peer-to-peer, communication-based learning, promoting socio-cultural learning within classrooms. It will make possible the creation of a learning environment suited to a particular child, in the context of his or her situation, inclination, culture, and ecology (Bedi et al., 2001).

It is also important to highlight that the ability of giving learners ownership over their learning through inquiry and culturally responsive learning gives a crucial position to the teacher (Bedi et al., 2001). Their role will change to being facilitators for identifying the special context for each group and individual learner, helping to create a customized learning environment for each student (Bedi et al., 2001; Laurillard, 2012).

In summary, incorporating contemporary mobile technology such as laptops in inquiry and culturally responsive pedagogy has the advantages of foregrounding the social nature of inquiry, including team-based collaborations. The technological tools also help assignments of inquiry roles by allowing collaboration to distribute the expertise in teams, interactive environments for analyzing data from research inquiries and defensible argumentation from evidence, and communication tools for research report writing. The said tactics form the basis for the sophisticated implementation of both the pedagogies that are backed theoretically by ZPD and socio-cultural theories.

Summary

This literature review provided an overview of the literature on history of Indian higher education. The review focused on inquiry learning and the usage of technology to address issues

related to achieving student-centered pedagogy to move away gradually from teacher-centric instructional strategies. In addition to inquiry learning and technological influence in its implementation, the review also included sections regarding multicultural education in general and about the case of multicultural education in India. The necessity behind the limited literature regarding the instructional practices was the existence of limited-to-no empirical research available about pedagogical patterns used in affiliated institutes of higher education in India. Through the gap in literature, it was evident that research needs to be carried out in exploring the instructional and pedagogical practices used in India's affiliated institutes of higher education. This study examined practices within one of the affiliated institutes of higher education in an attempt to provide a bridge to fill the gap in literature. The following chapter will examine the methodology used to conduct this study.

CHAPTER 3

METHODOLOGY

This case study was pursued to examine and understand the faculty perspectives on fostering inquiry skills at the selected institute of higher education by using laptop computers and practicing culturally responsive pedagogy in classrooms. This chapter provides information regarding the methods that were used to accomplish the research and provides discussion on the participants. Additionally, this chapter explains the processes which were employed in data collection, the instruments, and the characteristics used to validate and evaluate the data.

Method and Design

This study on faculty perceptions was an instrumental case study which was conducted to discover and describe the instructional practices used by the participants at the selected institute of higher education classrooms. According to Stake (1995), an instrumental case study is used to understand "something other than understanding a particular participant" (p. 3). This scenario might require choosing several participants to accomplish the purpose of understanding a single case. In this case, the instructional practices at the selected institute of higher education were explored by studying multiple instructors rather than just one. Creswell (2007) suggested that a qualitative design would be pertinent when a study is to be accomplished through data collection by employing various methods in a natural setting in which the lead investigator is the crucial instrument. In addition, qualitative study is appropriate when it uses inductive and deductive logic that focuses on the perspectives of participants thoroughly and comprises a design that is

emergent and evolving in nature. A qualitative case study is also reflective and interpretive in nature and presents a universal picture. Because of the need to understand the case better, a qualitative design was chosen for this study. Additionally, I was the principal data collection instrument. The collected data originated from multiple sources that included participant interviews, field notes, and other relevant artifacts (Creswell, 2007). A case study was used for this study because the goal was to emphasize on exploring the case for a detailed description and utilize multiple data collection resources, such as interviews, documents, and physical artifacts (Yin, 1994).

Research Questions

To examine and understand the instructional practices and to obtain the perceptions of the faculty at the selected institute of higher education located in a rural town in India in fostering inquiry skills, this study was guided by one research question: How do faculty at the selected higher education institution help students foster inquiry skills?

This primary research question was studied through the following subquestions:

1. What are the instructional strategies used by the faculty in the selected higher education classrooms?
2. How do faculty members practice culturally responsive pedagogy to foster inquiry skills at the selected institute of higher education?
3. How do faculty members use laptop technology to enhance inquiry skills at the selected institute of higher education?

Participants

The participants for this study were selected using convenient and purposeful sampling (Creswell, 2007). The focus of this study was to discover the instructional strategies the participants use and the perceptions they hold about the implementation of computer technology, such as laptop usage in classrooms. In addition, this study focused precisely on practicing culturally responsive pedagogy to foster inquiry skills in students to enhance their learning experience. The goal was to bridge the gap that exists in the literature regarding the instructional practices implemented at the selected institute of higher education. To conduct this study, the participants recruited were informed about this research prior to seeking their agreement to share their professional experiences as well as their individual perceptions (Merriam, 2009). Therefore, faculty members who were employed at the selected institute of higher education during the course of research were asked to provide their perceptions about the usage of laptop computers in classrooms to foster inquiry skills by addressing cultural impact.

Participants for this study included faculty members who were willing to provide their perceptions regardless of their age; department; and educational, cultural, or technological backgrounds. For the purpose of discovering the instructional strategies used at institutions, in-depth knowledge about the instructional strategies used at the selected institute of higher education is required. The participants recruited were expected to have a minimum of one post-graduate degree in their respective fields and have at least three years of continued teaching experience at the selected institute of higher education.

According to Creswell (2007), the researcher can use more than one strategy in a single case study for selecting and recruiting the participants. The selection of participants primarily relied on purposeful and convenience sampling. Purposeful sampling allows for the researcher

to select participants and the research site for the study because the recruited participants "can purposefully inform an understanding of the research problem and central phenomena of the study" (Creswell, 2007, p. 125). This strategy will allow the researcher to decide if the sample will be consistent with the data needed for the research. In addition, a convenience sample will allow the researcher to choose qualified participants and the research site "in a way that will enable the easy collection of data" (Creswell, 2007, p. 126). These sampling strategies were entailed in identifying participants who had met or exceeded the requirements of the study to provide necessary information in relation to the research.

Participants for this study were identified via references provided by the staff at the selected institute of higher education. After the approval of my study, an email was sent to the person of contact at the selected institute of higher education to receive contact information of faculty members who were available during the data collection time period. I contacted the faculty members using the contact information provided by the initial contact person at the selected institute of higher education through phone calls to recruit the participants. During the phone call, I introduced myself to the faculty members, and a briefing of the research study was given. The participants were given the option to choose the place and time to conduct a face-to-face interview. According to Creswell (2007), the participants were encouraged to select the interview location to be at the research site to maximize the prospect of visualizing the critical data within the location that were the focus of the study.

The scope of this case study was to examine and understand the instructional strategies used at the selected institute of higher education. It involved collecting data from the participants extensively and intensively to achieve particularization rather than generalization (Stake, 1995). Creswell (2007) suggested that a case study will provide ample opportunity to

understand the case in depth when a sample of at least four or five participants are involved. With this number, sufficient information will be provided to "identify themes as well as allow the researcher to conduct cross-case theme analysis" (Creswell, 2007, p. 128). To meet this scope of research, the sample size included a minimum of 10 participants to conduct interviews for collecting detailed and in-depth descriptions of the instructional practices. The participants were asked to convey the instructional strategies as they are implemented in the classrooms, as well as their perceptions while implementing them, through interview questions for thorough understanding.

Instrumentation

The instrumentation that is designed for data collection of this case study included a set of interview questions for a semi-structured interview. The interview questions focused on the perceptions of the faculty at the selected institute of higher education on instructional strategies they practice. The participants were chosen based on their teaching experiences at the selected institute of higher education and included those who had been teaching for a minimum of three years and had a basic knowledge of various instructional strategies. Prior to interviewing, the participants were engaged in exercises that allowed ease while building rapport between the researcher and the participants. These exercises included indicating why their institute was selected, how the study could be helpful to bridge the gap in the literature, and how their participation is appreciated. All participants were notified that the nature of the participation was voluntary. Participants received interview questions in advance, and also the nature of the study was explained. Additionally, the purpose of the research was reiterated for clarification at the beginning of the interview. Face-to-face interviews at locations of the participants' choosing were audio recorded with their permission. I also gathered artifacts that the participants

considered were significant for the study. The participant interviews lasted for at least an hour for them to give their answers to the questions in detail. The participants were reminded that their participation was voluntary, they did not have to answer any question that they did not feel comfortable answering, and the audio recording could be ceased at any time they wish. Participants received my phone number that I used during the data collection along with my e-mail address to share any additional information they thought that I should know after the interview has been conducted. The interview protocol utilized in this study included four sections (Appendix F). The introduction included three questions regarding the participants' demographic information. All questions in these sections were open-ended. The inquiry learning section consisted of six questions regarding the use of inquiry learning. The cultural influence section included three questions probing their understanding of cultural influence in classrooms. Finally, the instructional strategy sections included seven questions that addressed existing instructional strategies.

Data Collection Procedures

According to Yin (1994), six different sources can be used to collect data for case studies. The six different sources are "documents, interviews, physical artifacts, participant observations, direct observations, and archival records" (Yin, 1994, p. 79). To meet the purpose and scope of the case study, interviews, documents, and physical artifacts were employed to collect evidence at the research site.

The purpose of the interviews was to investigate the current usage of instructional strategies and practices by the faculty members at the selected institute of higher education. According to Hays and Singh (2012), interviewing has guided research studies in education and clinical settings for a long time and continues to be prominently used for conducting research on

social phenomena. The interview is one of the prominent sources to collect information for a case study (Yin, 1994). In particular, semi-structured interviews are one of the commonly used methods to collect data because this type of interview allows the interviewer to conduct the interview in a conversational manner and ask probing questions based on the interviewees' responses (Hays & Singh, 2012). The semi-structured interview method was used in this study because of the requirement to seek detailed data about participants' views and perceptions on the research questions. The interview questions for this study on instructors' perceptions were mainly open-ended, focusing on collecting data addressing the research questions. The interview was semi-structured and included other probing questions based on the responses of the participants. The interview questions were emailed to the participants ahead of time so they could get an idea of what the questions were going to be. The participants were offered written consent forms to sign that described the study briefly (Stake, 1995). Interviews were conducted in a face-to-face manner in India at the research site and were recorded using an audio recorder. Audio recording was used for obtaining the exact words used by the participants. In addition, a summary of the participant's interview was provided to each participant for an accuracy review. Participants were briefed about the study during the interview in addition to the briefing provided in the consent form. In addition, participants were also notified regarding the information on their rights to withdraw from the study. During the interview, I essentially listened to the participant; documented time, day, and details of the interview; identified any answers requiring further elaboration; and asked for clarification when required.

Collection of physical artifacts was another data collection method to gather evidence at the research site. According to Yin (1994), physical artifacts include, but are not limited to, "technological devices, tools or instruments, work of art, or some other physical evidence" (p.

90). Physical artifacts were collected and used for observing the research site as a part of the field visit to explore the instructor perceptions on the instructional strategies used at the selected institute of higher education. Field notes were collected as a part of the physical artifacts method. Field notes were defined as "written records developed within an observational period which are descriptive and reflective in nature" (Hays & Singh, 2012, p. 228). The purpose of the field notes was to summarize any gaps in the interview as well as the documents and artifacts. The data collection included an analysis of the interview and the summary notes of the documents and artifacts provided in the study.

The last form of data collection used for this case study were documents. According to Yin (1994), the use of documents is an important way to "corroborate and augment evidence" (p. 81) from the research site and the participants. To fulfill the scope of this case study, I requested syllabi, instructor manuals, and other related instructional documents.

Storage and Confidentiality

The Institutional Review Board (IRB) mandates that information about the participants of the research should be maintained confidential (Clandinin & Connelly, 2000). Confidentiality was assured by not correlating the participants' responses and their original identities. All members who were participating in the research study were notified that their responses would be kept confidential throughout the process of data collection. Participants were informed about their rights regarding confidentiality when a request was made for them to participate preceding the interview and also during the member-checking phase. To guarantee confidentiality, every participant was given a list of pseudonyms from which to choose, which were generated in randomnames.com, a name generator. All other identifiers related to the interview or the participant were removed. Participants were notified prior to the interview not to disclose any

identifiable information. If any identifiable information was recorded during the interview, it was not be transcribed. Any identifying information on physical and electronic artifacts were removed. All physically collected data-like documents and any other artifacts were kept in a locked drawer in a locked closet at my place of residence in Hyderabad, India. Electronic documents collected during the interview and the interview recordings were protected in a password-secured and locked folder. The locked folder was saved on my personal laptop that is password protected. All the collected data will be kept for three years on the encrypted folder in an encrypted laptop after the completion of research. The data will then be destroyed. The collected data were also backed up and stored in a password-protected and encrypted thumb drive which was secured at the residence of the primary investigator in a locked safe different from the location of residence during data collection. If any participants formally withdrew from the study, the data collected from them were deleted, destroyed, or returned and were not stored or analyzed.

Data Analysis

This case study research consisted of perceptions of faculty members at the selected institute of higher education on fostering inquiry skills by using laptop computers. Precisely, this study shed light on the usage of laptop computers in classrooms while considering the cultural backgrounds of students. According to Merriam (2009), analysis of the data was accomplished by bringing together all evidence from the data collection strategies employed by the researcher. The data collection techniques employed for this case study were interview transcripts from audio recordings, field notes from physical artifacts at the research site, and documents provided by the participants.

The case study database was compiled into Qualitative Data Analysis (QDA) Miner Lite. QDA Miner Lite is a free version of a qualitative and mixed method data analysis software program. This software was used to organize, store, categorize, and analyze the data through a visual and interpretive lens. QDA Miner Lite software was selected because it allowed for managing data in the form of audio, video, documents, and other forms. In addition to data management, it also allowed color coding the data while coding which helped identify emerging codes. Furthermore, this software also allowed visualization of the findings.

Data Analysis Strategies

The data analysis process utilized a strategy called "data analysis spiral" (Creswell, 2007, p. 150). Data analysis was started with managing the collected data. The audio data were saved into computer files, transcribed into text, and saved appropriately. The transcripts were read multiple times in their entirety to comprehend interviewees' perceptions before breaking it into parts. According to Stake (1995), since an instrumental case study was employed as a method for this research study, categorization and coding helped the researcher to understand the phenomena of the case. Memoing and margin notes were employed while analyzing the transcripts, documents, and physical artifacts collected at the research site during the field visit.

Thematic analysis was used to analyze the data that were collected at the research site (Boyatzis, 1998). In this analysis method, data were classified, described, and then interpreted into themes and subthemes. Detailed descriptions of data continued to exist in its original location. The process of coding consisted of cross-checking the data collected from all the participants with one another and grouping similar information. Additionally, these small groups of similar data were given a code. These codes were then studied to form a broad theme. I used a qualitative data analysis software tool called QDA Miner Lite to check the themes identified by

me. As suggested by Hays and Singh (2012), to verify the credibility of the transcribed data, member checking was employed. The verified data were then comprehended based on the codes and themes created to extract the possible answer for the posed research questions (Creswell, 2007). In conclusion, the analyzed data were exemplified by using figures and tables as necessary.

Standards of Evaluation

The validity of a qualitative study is the truthfulness and trustworthiness of the findings and conclusions from the study based on which the participant voice is heard to express his or her perceptions on the context being studied (Hays & Singh, 2012). The trustworthiness of a qualitative study is based on the research design, data analysis, and qualitative report.

In addition, the researcher plays a key role in the quality and trustworthiness of a qualitative study. Researcher presence along with the participant experience might influence the study (Berg & Smith, 1988). In the current study sought to describe the current instructional strategies and the perceptions of instructors in fostering inquiry skills by integrating technology in classrooms, the researcher's role was to be an observer and inquirer who asked and sought information from the participants and their teaching environments.

According to Lincoln and Guba (1985), five criteria for trustworthiness are credibility, transferability, dependability, confirmability, and authenticity. The strategies that were used to maximize the criteria for trustworthiness in this study were triangulation of data and sources, member checking, and field notes and memos (Hays & Singh, 2012). Data triangulation techniques were used to increase the credibility of qualitative case study research (Lincoln & Guba, 1985). Data triangulation is a method that focuses on "procuring different sources of the same information" (Lincoln & Guba, 1985, p. 305). Data and source triangulation were achieved

by observing physical artifacts, like technological tools at the research site, audio recordings from the interviews, and documents like syllabi collected from the participants. The documents and artifacts provided by the participants also maximized credibility, confirmability, and authenticity (Hays & Singh, 2012). Member checking was another strategy that was employed to maximize the credibility of the study (Creswell 2007; Hays & Singh, 2012; Stake 1995). Member checking in this study was selected to portray the intended meanings of the participants accurately during theming (Hays & Singh, 2012). I conducted member checking by returning the written findings, analyses, and conclusions to the participants in the study to test the accuracy and credibility of the information shared by them (Creswell, 2007; Lincoln & Guba, 1985). I transcribed the interviews, summarized them, and checked for accuracy with the participants to confirm if their intended meaning was captured. Field notes and memos were maintained throughout the data collection period at the field to provide a rich description of the research setting to achieve transferability (Creswell, 2007; Hays & Singh, 2012). I used both descriptive and reflective field notes to record objective facts and details along with my responses and reaction to them. These field notes were especially used while collecting data through examining physical artifacts within the classrooms and other instructional spaces like labs.

Personal Statement

As a qualitative researcher, primary investigators should be straightforward about their biases (Creswell, 2007). Social science research, in general, seeks to investigate the researchers' biases before they investigate others so that the researcher is aware of the tradeoffs of the methods chosen. This places the researcher at the heart of the social inquiry (Berg & Smith, 1988). Researchers must therefore acknowledge their personal and professional experiences as learners and serve as instructors in different educational environments (Creswell, 2007). I was a

student in the Indian education system and am a current student and an instructor in the American education system. I had actively sought information on trends in educational technology and innovative instructional strategies as a part of the doctoral program's coursework. I also used this knowledge in implementing the strategies and provided technological tools whenever a teaching opportunity was provided.

I worked as a teaching assistant and an instructor to explore and implement strategies that are technology oriented, which also encourages learner engagement within the learning process. Because of these experiences, this study was biased by my belief that fostering inquiry learning skills using laptop computer technology by considering cultural backgrounds of students is beneficial to make learning engaging, effective, and efficient.

Summary

In conclusion, this research study was conducted to examine and describe the faculty perspectives at the selected institute of higher education in fostering inquiry skills to address the central research question. In addition, this case study also explored instructional strategies to practice culturally responsive pedagogy. Furthermore, this study discovered the usage of laptops in classrooms to implement said instructional strategies. This research was an instrumental case study which was qualitative in nature. Participants were purposefully selected through convenience sampling to collect data that provide information needed for addressing the central research question and the sub-questions. The data collection for this study was guided by a series of semi-structured interviews, physical artifacts, and documents. Trustworthiness of the study was addressed by employing data triangulation techniques like member checking, document and artifact analysis, and thick description. The data collected were hand-coded and were compared with the themes identified by QDA Miner Lite, a qualitative analysis software

program. IRB standards regarding securing and storing the data were followed to secure all types of data collected.

CHAPTER 4

FINDINGS

The current case study was designed to facilitate an understanding of the current instructional strategies at the selected institute of higher education. In addition, this study included faculty perceptions of using inquiry learning, considering cultural influence in classrooms, and using laptop technology for instructional purposes. The existing pedagogical strategies within most Indian classrooms encourage rote memorization of facts (Altbach, 2012). The reason instructors and students favor memorization of content rather than engaging in learning activities is the examination system that requires students to memorize most of the content to be able to perform well in closed-book examinations (Krishna & Bhaskara Rao, 2004). However, to thrive in a competitive world and become global citizens, students need to be active participants in the classroom rather than passive recipients of information. This active engagement in classrooms is necessary for fostering the creation of knowledge rather than content memorization (Altbach, 2012). The lack of active pedagogical processes can be improved by practicing student-centered instructional strategies and by using technological tools in classrooms. Student-centered instructional strategies, such as inquiry learning, can help foster the creation of knowledge by using students' natural curiosities (Hollingsworth & Vandermaas-Peeler, 2017). Research showed that inquiry learning encourages students to understand the subject by discovering existing information to form conceptual knowledge about the subject (Ganesh & Kishore, 2007). This construction of knowledge over memorization of facts while

learning a subject will help students become more engaged during their learning processes. This creation of knowledge also helps students apply conceptual knowledge in practice, bridging the gap between theory and practice (Laurillard, 2012).

Given the reality that India is a diverse country, various cultures coexist whose complex identities are characterized by language, religion, ethnicity, caste, and race (Grant & Lei, 2001). According to Chakravarty (2001), empirical evidence demonstrates a lag between education and culture. When students belong to different social-cultural backgrounds within a classroom, assuming that all students learn in a similar way results in lack of understanding of the subject and causes a learning barrier to form between theory and its relevant application (Chakravarty, 2001).

In the Indian context, a gap exists in the use of technological tools in classrooms to foster learner engagement (Goel, 2006). This gap exists despite the advantages that affordable technology bring to the classroom and the Indian government's efforts to integrate technology in the classroom. Moreover, an increasing number of students are aware of and use technology due to technological developments, decreased prices, increased convenience, and access to the web (Davidson et al., 2014). Recent developments in technology allow teachers and students to have portable technology such as laptop computers that allow interaction with instructional material and help determine their learning (Zurita & Nussbaum, 2004). However, this availability of technology is not being utilized in Indian classrooms to enhance student-centered pedagogy as it is in Western countries such as the United States or Europe (Bandyopadhyay, 2013).

The purpose of this qualitative case study was to understand the instructional practices at a selected institute of higher education affiliated to Palamuru University and located in a rural town in the state of Telangana in India. Specifically, this study included obtaining the

perceptions of faculty on fostering inquiry skills. All faculty members were from the same institute of higher education. One primary research question guided my examination and understanding of the instructional practices through obtaining the perceptions of faculty: How do faculty at this selected institution help students foster inquiry skills?

This question will be explored through the following subquestions:

1. What are the instructional strategies used by the faculty in the selected institute of higher education classrooms?
2. How do faculty members practice culturally responsive pedagogy to foster inquiry skills at the selected institute of higher education?
3. How do faculty members use laptop technology to enhance inquiry skills at the selected institute of higher education?

These questions are based on the following key concepts of the study: Vygotsky's ZPD, sociocultural theory, and usage of external tools. The interview protocol (Appendix F) was developed around these key concepts and the research questions.

Themes and Subthemes

This chapter includes descriptions of the major themes and subthemes identified through analyzing interview transcripts, field notes, instructional documents, and other artifacts. I thoroughly describe these themes and subthemes later in the chapter. A thorough analysis of the collected data resulted in six major themes:

1. Current instructional strategies,
2. Understanding of the key instructional strategies in this study,
3. Aspired impact of using the key instructional strategies,
4. Current practices of the key instructional strategies,

5. Factors affecting the usage of the key instructional strategies, and
6. Usage of new instructional strategies.

Each of the primary themes consisted of multiple subthemes.

Subthemes for Theme 1

The first theme to emerge was that of current instructional strategies used at the selected institute of higher education. Theme 1 consisted of two subthemes: (a) instructional strategies used and (b) perspectives on the current instructional strategies. This theme consisted of the descriptions of commonly used instructional strategies and infrequently used instructional strategies. This theme also included a focus on the perceptions of faculty on the instructional strategies they use in classrooms.

Subthemes for Theme 2

The second primary theme consisted of faculty understanding of the four major concepts of this research. Theme 2 consisted of four subthemes: (a) understanding of inquiry learning, (b) understanding of cultural influence, (c) understanding of culturally responsive pedagogy, and (d) understanding of laptop usage.

Subthemes for Theme 3

The third primary theme consisted of the faculty perceptions of the aspired impact these instructional strategies and tools would have on their teaching as well as student learning. Theme 3 consisted of three subthemes: (a) impact of practicing inquiry learning, (b) impact of using culturally responsive pedagogy, and (c) impact of using laptops. These subthemes explained the aspired impact of the usage of key instructional strategies in classrooms.

Subthemes for Theme 4

The fourth primary theme consisted of the current practices of inquiry learning, culturally responsive pedagogy, and laptop usage in classrooms. Theme 4 consisted of three subthemes: (a) current practice of inquiry learning, (b) current practice of culturally responsive pedagogy, and (c) current usage of laptops. These subthemes indicated the faculty current usage of the key instructional strategies at the selected institute of higher education.

Subthemes for Theme 5

The fifth primary theme included the factors that would influence and resist the implementation of the key strategies. Theme 5 consisted of two subthemes: (a) influencing factors and (b) resisting factors. These subthemes indicated influencing and resisting factors which result from faculty, students, administration, and parents.

Subthemes for Theme 6

The sixth primary theme included faculty perceptions of adapting to new instructional strategies. These new strategies would help transform their students into skilled individuals. The final theme consisted of two subthemes: (a) areas of improvement and (b) efforts to bring improvement.

Table 1 shows a summary of the themes.

Table 1

Summary of Primary and Subthemes

Theme	Theme Name	Subthemes	Brief Description of the Theme
1	Current Instructional Strategies	a) Instructional Strategies Used b) Perspectives on the Current Instructional Strategies	The current instructional strategies that are being used at the selected institute of higher education
2	Understanding of the Key Instructional Strategies in this Study	a) Inquiry Learning b) Cultural Influence c) CRP d) Laptop Usage	Faculty understanding of the four major concepts of this research
3	Aspired Impact of Using the Key Instructional Strategies	a) Practicing Inquiry Learning b) Using CRP c) Using Laptops	Faculty perceptions on the aspired impact these instructional strategies and tools would have on their teaching as well as student learning
4	Current Practices of the Key Instructional Strategies	a) Inquiry Learning b) CRP c) Laptop Usage	Current practices of inquiry learning, CRP, and laptop usage in classrooms at the selected institute of higher education
5	Factors Affecting the Usage of the key instructional strategies	a) Influencing Factors b) Resisting Factors	The factors that would influence and resist the implementation of the key strategies
6	Using New Instructional Strategies	a) Areas of Improvement b) Efforts to Bring Improvement	Faculty perceptions on improving their instructional strategies to adapt to the new instructional strategies

Note. CRP = Culturally Responsive Pedagogy.

Key Research Subquestions and Identified Themes

In this section I explain the interrelationship between the key research questions and the six identified themes. The primary research question was explored through the three subquestions. The themes related to each subquestion are as follows.

- Subquestion 1 is related to theme 1, theme 3, and theme 6.
- Subquestion 2 is related to theme 2, theme 3, theme 4, theme 5, and theme 6.

- Subquestion 3 is related to theme 2 and theme 5.

Figure 1 is an illustrative tree diagram demonstrating the interrelation between the primary research question, subquestions, interview questions, and themes.

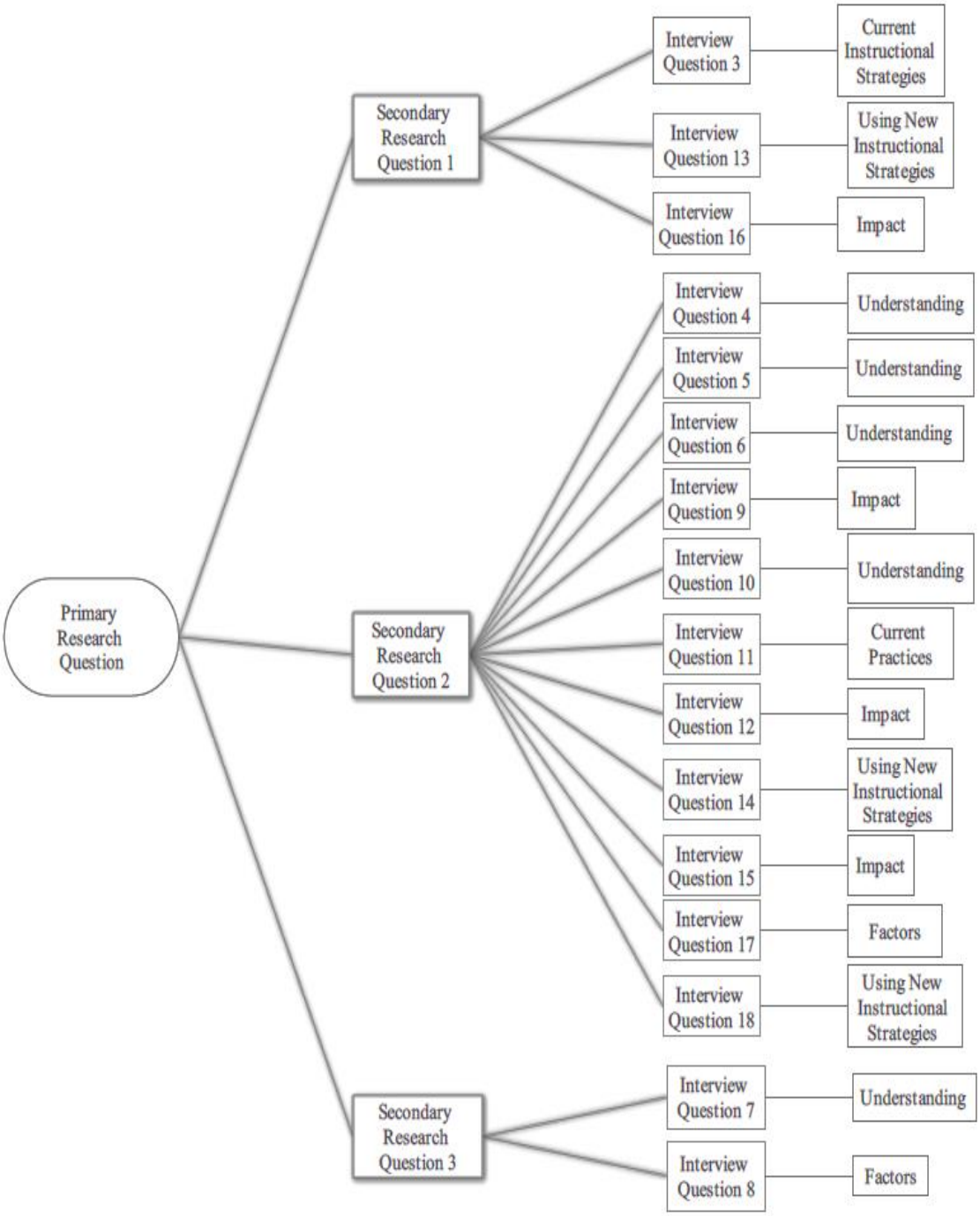

Figure 1. Illustrative tree diagram of the research elements.

Description of the Research Site

The present case study research was conducted at a private institute of higher education located in a rural town called Pebbair in the state of Telangana in southern India. The selected institute of higher education was established in 2005 with a vision to impart quality education. The institute offers Bachelor of Education (B.Ed.) and Diploma in Elementary Education (D.El. Ed.) degrees. Structurally, this institute itself is affiliated to Palamuru University located in the city of Mahabubnagar in the state of Telangana. However, the diploma is affiliated to the School of Education and to the State Council of Educational Research and Training (SCERT) located in the city of Hyderabad in the state of Telangana. The difference in affiliation is important to note because of the change of standards and policies that differ among affiliated universities.

The vision of this institute is to equip individuals by actively engaging them in their community to help build an educated society. This institution's leaders aim to develop competent students with good value systems to face the challenges of the continuously changing world. This institute's leaders also value academic excellence and student discipline as core principles. In addition, they strive for equality by intensively nurturing students with low intellectual caliber. For example, they extend and demonstrate care to help the students succeed in their academic as well as professional lives.

Infrastructure of the Research Site

The infrastructure of the research site is significant because it will help in understanding the educational environment of this case study. In this section I describe the physical context of the location of data collection and its available facilities to highlight the unique differences in facilities from Western countries' facilities.

- *Lecture hall.* The lecture halls are spacious, well-ventilated rooms equipped with double desk furniture for students and a blackboard for the faculty to write with chalk.
- *Library.* The college library is in a large room with iron racks placed in aisles to house books, national journals, periodicals, newspapers, and magazines. It is also equipped with a computer, a printer and a photocopier machine for the benefit of students.
- *Psychology lab.* The knowledge of educational psychology initiates the teacher to understand learners' cognitive abilities. Students who aspire to be teachers learn to understand cognitive abilities through hands-on experiences using various psychology testing materials.
- *Technology lab.* Modern teaching strategies involve the usage of multimedia packages and audiovisual tools such as the slide projector, overhead projector, display monitors, tape recorders, television, and computers. This lab is available for the students to use technological tools to learn about various teaching strategies using these tools.
- *Science lab.* The physics, chemistry, and biology laboratories are equipped with necessary apparatus, equipment, chemicals, and specimens to help students understand how to make learning more meaningful as teachers by linking theory and practice with these resources.

In addition, the campus also has an open ground for organizing co-curricular activities and celebrating national festivals and events.

Description of the Participants

A total of 14 participants were invited to participate in this case study. Out of the 14 participants, four faculty members declined to participate. Among the 10 faculty members who volunteered to participate, seven were male and three were female. Participants were all current

faculty members at the selected institute of higher education. All the participants had similar educational and work backgrounds. All of the participants had mandatory degrees, which are Bachelor of Education (B.Ed), Master of Education (M.Ed), and at least one post-graduate (PG) degree such as Master of Arts (M.A) or Master of Science (M.S) in their areas of teaching. One of the participants holds a doctoral degree in education, and one other participant is currently enrolled in a doctoral degree in education. All the participants had a minimum of three years of teaching experience at the selected institute of higher education. However, the overall teaching experience of the participants varied from five to 20 years. The participants were diverse in terms of cultural and religious backgrounds. Six of the participants were Hindu, two were Muslim, and two were Christian.

All the participants mentioned that the regional language was used to teach their courses. In other words, the medium of instruction that is used at the selected institute of higher education was Telugu which is the native language in the state of Telangana. The participants asked for translation when the interview questions and consent forms were given to them. In addition, they said that they had used a dictionary or contacted their peers who were more knowledgeable in English vocabulary to comprehend the questions. Participant demographic information was collected during the interview. Pseudonyms were used to protect their identities. Table 2 is a summary of participant demographic information.

Table 2

Summary of Participants

Participants	Sex	Education	Total Teaching Experience	Current Institute Experience
Abhi	Male	B.Ed, M.Ed, M.Phil, M.S Botany, M.S Chemistry	17	9
Azad	Male	B.Ed, M.Ed, M.A Hindi Language, MA Sociology, M.S Zoology	4	4
Harry	Male	B.Ed, M.ED, M.A Telugu Language, M.Com	8	5
Harsha	Male	B.Ed, M.Ed, B.S in Botany, Zoology & Chemistry, M.S Zoology, M.A Education	4	3
Honey	Female	B.Ed, M.Ed, M.S Mathematics	3	3
Lucky	Male	B.Ed, M.Ed, M.S Mathematics	9	5
Manny	Male	B.Ed, M.Ed, M.A Philosophy, M.A Political Science, M. Phil in Education, Ph.D Education	12	6
Marty	Male	B.Ed, Bachelor of Law, M.Ed, MA Pedagogy, Master of Library Information Science,	5	5
Mary	Female	B.Ed, M.Ed, M.A English	13	3
Sara	Female	B.Ed, M.Ed, M.S Mathematics, M.A in Hindi Language	10	4

Note. B.Ed = Bachelor of Education; M.Ed = Master of Education; M.Phil = Master of Philosophy; M.S = Master of Science; M.A = Master of Arts; M.Com = Master of Commerce; Ph.D = Doctor of Philosophy.

Description of Themes

The following section is organized around six primary themes along with subthemes for each primary theme. The themes and subthemes were identified after coding the data based on

essential elements of the study such as the conceptual framework and categorizing the codes as they evolved.

Primary Theme 1: Current Instructional Strategies

This primary theme was focused on the instructional strategies that are currently being used and faculty perspectives on using them at the selected institute of higher education. The interview transcripts revealed that most of the participants used the lecture and lecture/demonstration methods predominantly.

Subtheme 1: Instructional Strategies Used

The participants revealed that the most commonly used instructional strategy in classrooms is the lecture method. While explaining about the instructional strategies that are currently being used at their institute, one participant, Harsha, said, "Teaching strategies change from year to year, but the lecture and lecture/demonstration methods are the most common methods that we use." Similarly, Manny stated, "Almost all the lecturers including me use lecture and lecture/demonstration method." Along with the lecture method or lecture/demonstration method, the faculty highlighted that they use other instructional strategies based on the subject matter they are teaching. For example, Honey said, "For teaching math, I use inductive/deductive methods, lecture, and lecture/demonstration methods." In addition, the participants also revealed that they use student-centered strategies to engage students during instruction. To emphasize the use of student-centered strategies, Lucky said, "To use more student-centered methods, I use different strategies like problem-solving activities, scientific method, and heuristic method to engage students and ask them to share their perspectives in the classroom." Two of the participants also suggested that they assess student needs by asking them questions before they choose a particular instructional strategy to use. To assess student

needs to determine teaching strategies, Sara explained, "I use teaching strategies based on my students' needs. After meeting my students, I almost get to know them and plan my strategy based on their knowledge." Mary said, "When I start a new topic to teach, I ask students to tell me what they already know about the topic. I do this to evaluate the knowledge level of my students." Expanding on the similar strategy of assessing student prior knowledge, Azad shared,

> My policy is to teach a new concept based on the knowledge most of my students already possess. I chose this policy because if I teach the whole content, the student may just listen to it and forget about it as soon as he/she leaves the classrooms. There is no cognitive action or knowledge construction that is taking place when they simply listen to my lecture. I would make the concept simpler by asking the students, "What do you know about this concept? Have you heard about it before? If so, how do you think this topic is related to the information you already know?", and other questions that probe their knowledge to form connections between what they already know and what they are about to learn.

One participant mentioned that students in this institution use objectives and specifications indicated by the affiliating university while teaching any subject matter. Despite the strict guidelines on teaching the subject matter based on the objectives and specifications, they provide freedom to students to share their regular experiences to gear their day-to-day activities into learning a new concept. In regard to this strategy, Harry said, "This [strategy] helps me to guide [students] through a concept using their own examples. I try to be more of a guide than a teacher to motivate them and learn meaningfully."

In addition, one of the participants highlighted that rapport building exercises were used to assess student needs and choose teaching strategies that involve pairing students with one

another to allow them to discuss a topic. In explanation of this type of strategy, Mary said that she uses student-centered strategies stated above to make the students feel comfortable and welcome to ask any questions when they do not understand any topic.

The commonly used instructional strategies as described by the participants are as follows.

Lecture method. All the participants revealed that the lecture method was the most commonly used instructional strategy at their institute. Abhi said, "Lecturers predominantly use lecture method in most teaching environments in India, and the tools they are allowed in classrooms are a blackboard and chalk." Sara said, "I use the lecture method to teach concepts in which learner acts as a passive receiver of information." Harry said, "I start by defining the concepts and background to the subject through lecture." Harry added,

> Once the subject has been introduced, I will use deeper examples and use humor in classes to make my class fun and engaging for students. I use a lot of examples when I teach and I also ask them to share their examples to make my class interactive. I also use examples from movies so they can relate to the concept easily.

Azad explained lecture method as an instructional strategy that is used regardless of the number of students. He further added,

> I can use the lecture method when there are 100 or 1,000 students without using blackboard. A perfect example of this would be political leaders giving a speech. In the lecture method, we would not know whether a student is listening or understanding the concept. The goal of the lecturer in the lecture method is to focus on completing the lesson as much as the time allows within the given time period. Lecture method will not consider whether students are engaged in the classroom or even interested to listen to the lecture.

All the participants shared that they predominantly used the lecture method and described the methods in a similar way to Azad. They all shared the belief that the lecture method is easy to practice without having to put emphasis on students' understanding the concept thoroughly.

Lecture/demonstration method. The other most commonly used instructional strategy is the lecture/demonstration method. The participants described this strategy as a step beyond lecture that involves using physical artifacts related to the subject matter such as pictures drawn on the blackboard, maps, substances and other subject-related artifacts. To explain this strategy, Sara said, "In lecture/demonstration method, I use tools like diagrams, charts, and devices used in the real-life implementation of a concept to teach." Marty shared, "I use lecture/demonstration by showing maps and globes to explain geography." To further explain this concept, Azad added,

> Lecture/demonstration method uses blackboard to explain concepts by writing some important information like objectives, characteristics, and other crucial information that is pertinent to the topic being discussed. Due to this demonstration, the students will be able to pay attention to the important information being highlighted. This will allow students to gain interest to learn and memorize important information. In this method, we observe students to check if they are paying attention to the information. When we are using the lecture method, we do not focus on students paying attention. But in demonstration, we can gain students' attention with our body language, voice level, and also by writing and drawing on the blackboard.

Lucky added that this demonstration aspect of lecture/demonstration methods allows the concept of learning by doing. He highlighted that students are not a mere passive audience during

classroom instruction during a demonstration. They are able to grasp the concept by seeing, feeling, and experiencing the concept through demonstration. Lucky further described,

> If I only use the lecture method, students are only able to learn theoretical knowledge without ever knowing how to practice. If I include how to use the theoretical knowledge into practical application through demonstration, students will be able to learn the practical applications as well. If they start to learn in a practical way, they get curious to find out what would happen next or if I change parameters and other curious questions.

In addition, the participants highlighted that as a part of a demonstration, they take advantage of the lab facilities available to demonstrate the concepts, when possible, to engage students actively in the classroom. Regarding demonstration, Abhi highlighted that through demonstrations it is more likely that the students will be able to remember the subject matter because they are experiencing the concept along with the lecture.

Infrequently used strategies. The participants revealed other infrequently used strategies at the selected institute. Infrequently used strategies were the instructional strategies that faculty members used rarely in classrooms. These seldom-used strategies included laboratory/experiment method, discussion method, project method, debates, scientific method, microteaching, macroteaching, role-play method, activity method, heuristic method, and inductive/deductive method.

Three participants mentioned that they used the discussion method as a part of their classroom instructional strategies. They described that they use discussion in pairs and/or small groups, which allowed students discussion amongst themselves. The participants who used the discussion method suggested that they use issues within their community as discussion topics. The participants also shared that they used discussion method to allow students to engage

actively in classrooms and share their knowledge with their peers. To describe the implementation of discussion method in the classroom, Mary said,

> If my students are not aware of the topic at all, in some cases, I divide them into groups and suggest that they brainstorm and come up with questions. By doing this, I am giving an assurance to the student that he/she belongs in my class and also I am helping them make friends with the advanced peers.

One participant highlighted that controlled debates are used as a form of discussion in classrooms to foster critical thinking among students. The participants also revealed that they use group discussion and controlled debates. Precisely, these methods were used to facilitate learning about topics related to current events in their community. In addition, most of the participants highlighted that examples from day-to-day life are used to explain new content. When teaching mathematics, Harry explained that using examples helps students to understand the concept during the problem-solving process. Harry added, "By solving an example, they are given an opportunity to understand the impact of concept in solving problems effectively."

One participant highlighted the use of the scientific method in the classroom as a student-centered strategy. The scientific method, according to Lucky, involved identification of the problem, hypothesis formation, collecting data, and exploring problem-solving techniques. This technique was explained as a strategy that is similar to inquiry learning. He added, "This strategy is used to bring out the creativity, ideas, and perspectives to apply their theoretical knowledge to test whether their ideas are right or wrong and how they can modify their idea or hypothesis to get the right solution." The factor that was emphasized while explaining about scientific method was the shift of focus from teacher to the student. In this strategy, Lucky said that the instructors act as guides during problem solving and help the students in analyzing their

errors and in correcting their procedure to get to the right solution. Lucky revealed that "the trick here is being a guide to help [the students] when they need us rather than being a teacher who is sharing information."

Two other strategies that a participant introduced were microteaching and macroteaching. In these strategies, the instructors use external faculty or advanced peers in the classroom to teach a concept. Manny explained macro teaching as a method in which an external faculty member is invited to a class as a guest speaker to teach a chapter based on the tools and strategies used by the external faculty member. Manny added that using this strategy gives an opportunity to learn a concept from a different faculty member with a different perspective. He added, "This strategy will allow students to gain a different perspective on the subject matter because they are taught by an external teacher who is different from their regular faculty member." In addition, microteaching is a concept in which a student is given an opportunity to teach a concept to the rest of the class. Manny pointed out, "Microteaching allows students to pay keen attention to the topic they teach to their peer."

In addition, the role-play method was also highlighted as an instructional strategy. Harry explained the role-play method as learning by experiencing/living the events of a certain incident. Harry added, "By using this method, students are learning the concept by seeing and doing an activity themselves. It is a combination of multiple instructional strategies like role-playing and learning by doing."

The instructional strategies that faculty use infrequently in classrooms, as explained by participants, are found to be the strategies that the instructors use to practice student-centered strategies. Participants mentioned that they use these instructional strategies whenever possible to move away from teacher-centered teaching.

Activity-based instruction. The participants revealed that when possible they use activities in their instruction to make the instruction more engaging and allow students to participate actively in the learning process. They highlighted that science-related subjects especially are taught using activities in classrooms and/or labs. Mary explained her way of using activity-based instruction as a strategy to get students' attention. She explained,

> If I notice that the students are losing their attention, I engage them in a quick activity to bring their attention back to the topic of discussion. These activities include giving fun examples, asking questions, changing the topic, or asking them to take out a different author textbook and many other small yet effective activities.

Although activity-based instruction is student-centered and focuses on student learning, practicing this strategy is not always feasible. This drawback arises because the strategy requires specific activities to teach concepts, but not all subjects can be taught using activities.

Experiment method. Similar to the activity method, the experiment method is also a strategy based on the subject matter. All the participants revealed that they use the experiment method whenever possible and take advantage of the labs to conduct an experiment. Lucky, one of the participants, called the experiment method the "laboratory method." He stated,

> Laboratory method is a strategy in which I take students to the labs to conduct experiments. This method is especially helpful in physical sciences courses to teach them how reactions occur. This is another strategy to improve practical skills in applying their knowledge. This method helps students to verify the information they are given. In this method, we encourage students to find the answers by themselves instead of giving answers to them.

Thus, the experiment method is yet another instructional strategy that is used only when appropriate because not all subjects can be taught through experiments.

Project method. Project method is a student-centered strategy that was highlighted by almost all the participants as a frequently used instructional strategy. To explain the implementation of project method in classrooms, Sara explained,

> In project method, I give a concept title to students and I will ask them to study as much as they can about that particular class and come prepared to share their information with the class the next day. This way they find the resources they have to read about the concept and I will narrate my understanding of the topic in the class after getting cues from the students. I use the project method in the same way as inquiry learning as well.

According to Honey, project method is an extension to the demonstration method. She combines these two strategies to give an opportunity for students to follow examples used in demonstration and help students in applying their knowledge. Honey explained, "I give an assignment or a project for them to read and collect information around them. This helps them transfer their theoretical knowledge to practical applications." The participants highlighted that the project method allows the students to practice the knowledge they gained in classrooms in real-life application. They also emphasized that this application of the theoretical knowledge into practical scenarios motivates learners to seek more practical knowledge.

Heuristic method. Another strategy highlighted by one participant is similar to inquiry learning and is called heuristic method. Azad explained heuristic method as a strategy in which an instructor gives a question and allows the students to explore possible ways to find a solution to the assigned question. Azad explained the strategy using an example:

> If I consider teaching population education to students, on national population day, which is on July 11th, we give the topic to students by asking, "What is the significance of population day?, Why does the population grow?, What are the reasons for its growth?, How will you find information on these questions?, What is your opinion on increasing population?, and What will be your suggestion to reducing population?" We give them further cues by discussing the measures that the government has taken to limit population growth. Through these cues, we activate student thinking by asking probing questions like "What are your insights to reduce population growth?" and "What are your opinions about the policies in place?" We give students the questions and ask them to inquire about the concept to answer the questions.

Azad also explained that through heuristic method, students are allowed an opportunity to research using the resources provided for them to find solutions to the question assigned to them by the instructor. The heuristic strategy is similar to the guided inquiry in which instructors guide the students toward finding solutions to specific questions.

Inductive/deductive method. Two of the participants explained another strategy that is mostly used to teach mathematics called the inductive/deductive method. This method is not necessarily a student-centered instructional strategy. To explain this strategy, Honey said,

> In the inductive method, I explain to students a concept using what they already know to help them solve a complex problem. I build the problem-solving issue on what they already know. We solve problems as an example for them and give an activity for them to solve a problem in the class. We use mind-mapping strategy to retrieve their knowledge they learned in their previous classes and help them link that knowledge to

> solve the current problem. In the deductive method, we explain a complex topic first and then solve a problem for them and then ask them to use the strategy to solve problems.

The participants described the inductive/deductive teaching strategy for teaching problem solving that allows students to learn the logic behind solving problems. One of the two participants who explained this strategy, Azad, suggested that, when needed, this strategy allows the instructor to individualize the instruction when explaining concepts. Azad explained,

> In the inductive method, we use examples to explain complex topics. For example, we cannot give a first grader a 10th-grade textbook and expect him/her to understand the content because it is out of the context for the first grader. Thus, explaining complex topics by using a simple example is one of the best ways to explain content to students. In deductive methods, we teach complex topics first and then move on to explain simple topics. Because of its complex nature first, this is not quite the method we use to teach content to students. Because there are always intellectually less-advanced students in classrooms, for these students to pick up the content, we must administer pretest, posttest, and other formative tests to help them understand the concept. These intellectually backward students need more time to understand the concepts. That is why this deductive method in which we move from complex topics to simple topics does not help students who are slow in processing the content that is being taught. Hence, the deductive method is more of a theoretical concept we are aware of, but it is not useful in practice.

It was highlighted that the inductive/deductive strategy is especially used to teach mathematics or any other courses that involve solving problems. The participants highlighted that this strategy, when combined with examples, is one of the methods they use to help all students in the

classroom learn problem solving despite their intellectual ability because it is a thorough, step-by-step method.

Subtheme 2: Perspectives on Current Instructional Strategies

Most participants conveyed that they use teacher-centered strategies despite knowing students may not always be engaged through lecture. When asked about perspectives on the instructional strategies the faculty members use, Abhi said,

> We lack in producing competitive students most of the time compared to other developed countries because the only learning that takes is learning that is based on rote memorization. They focus only on targeted learning, meaning students are always told, "You must read, learn, and write the answers properly."

Another participant, Harry, highlighted that within the current system and environment, the teacher has the power in classrooms and students serve as passive listeners. He said,

> I was just lecturing, giving priority, and paying attention to the students who are always active in class, never paying attention to students who are quiet or struggling, and practicing to be a person sharing knowledge without really thinking whether the students are learning. To be more succinct, it used to be autocratic with the faculty member having the ultimate power in the classroom.

Almost all the participants conveyed that the instructor plays a dominant role in the classroom and is viewed as a person to share all the information in a one-way direction. Regarding lecture/demonstration method, Harry added, "The faculty used to be, 'It is my way or the highway,' or another analogy could be, 'You have to listen to what I say.'"

Abhi also added,

> I go to classrooms, stand in front of the students, teach a lesson, and leave the classrooms. I believed that I taught well, and when I would ask students if they understood the topic, they would say they did. They would take notes while I was teaching, and if I would give a test on the topic I taught, they would write exactly what was taught to them or the notes I gave them while teaching. That led me to believe that my students understood the topics well and were excellent and that they would get good marks. Lecturers are like a sage on the stage and whatever the teacher says is correct. He/she is also predominant in classrooms. Whatever the teachers share is what the students think is right. Students do not question or feel motivated to learn anything new.

Lucky shared his perspective on using the lecture/demonstration method, explaining that they use the lecture method because of the time crunch and the amount of syllabus they have to complete to prepare students for the exams. He said,

> A faculty member must be able to teach enough theoretical concepts and be able to use an activity to teach the practical part too. Through lecture we can cover many concepts in one hour, but with the demonstration the faculty must be careful in managing time in the classroom to cover the syllabus along with practical activities. Using the lecture/demonstration, there is only a little amount of the information that a faculty can cover within the limited time available during a class period.

Harsha explained that using student-centered strategies affects student learning greatly. Regarding activity-based learning, he said, "I engage students in their learning process through activities. This allows them to learn deeply and remember the concepts for a long time, unlike lecture method." He added,

> No matter what strategy we [instructors] use, we have to make sure that students are learning deeply. Sometimes despite the usage of these [new instructional] strategies, results might be good. In those cases, we cannot defend the new system. So, I believe that we have to improve the strategies based on the ability of the student needs. Make changes based on students' needs and develop our strategies to teach.

The participants conveyed that they realized the benefits of using student-centered instructional strategies, but they also conveyed that the curriculum, time, and the administration do not always allow the instructors to use strategies other than lecture. They also mentioned that sometimes the subject matter itself obstructs the usage of student-centered strategies.

Table 3 shows a summary of the commonly used and infrequently used instructional strategies at the selected institute of higher education. This finding reveals the instructional strategies used at the selected institute of higher education.

Table 3

Instructional Strategies Used at the Selected Institute of Higher Education

Instructional Strategies Used	Infrequently Used Instructional Strategies
Lecture Method	Laboratory/Experiment Method
Lecture/Demonstration Method	Discussion Method
	Project Method
	Debates
	Scientific Method
	Microteaching
	Macroteaching
	Role-Play Method
	Activity Method
	Heuristic Method
	Inductive/Deductive Method

Thus, the first theme to emerge was that of the current instructional strategies used at the selected institute of higher education. This theme consisted of the descriptions for commonly

used instructional strategies and infrequently used instructional strategies. This theme also focused on the perceptions of faculty on the instructional strategies they use. The participants identified the strategies that were purely teacher-centered and the strategies that were student-centered. They expressed that student-centered strategies are the methods that will encourage and motivate their students to learn meaningfully. However, three of the participants conveyed that students have a fear of passing the exams, and they only expect to pass the exams by memorizing the content. In summary, lecture and lecture/demonstration methods are the predominantly used instructional strategies. Despite being aware of the other instructional strategies, participants tend to use the aforementioned methods because of the ease with which these methods can be used and the lack of student interest to engage in active ways of learning.

Primary Theme 2: Understanding of the Key Instructional Strategies

The analysis of interview responses revealed that the faculty members at the selected institute of higher education had different levels of understanding of the instructional strategies addressed in the research questions. Three participants mentioned that they had learned about the said instructional strategies when they were students themselves. Some other participants shared that they had learned about different instructional strategies out of their personal interest. This theme was classified into four subthemes, or categories, to focus on the understanding of each strategy.

Subtheme 1: Understanding of Inquiry Learning

The participants revealed that they had an understanding of the inquiry learning concept. All participants except Mary mentioned that they learned about various instructional strategies as a part of their B.Ed degree coursework. Mary stated, “I was not aware of this until I became a teacher.” The participants were not aware of the term *inquiry learning* but were able to identify

the term when it was translated into the regional language, which is Telugu. When the term was translated, the participants shared their understanding of inquiry learning. Most of the participants shared a similar understanding of student-centered instructional strategies. They believed that inquiry learning allows learners to be active in the learning process and the faculty member to transform from teacher to facilitator.

In terms of understanding inquiry learning, all participants revealed that they use inquiry learning when a potential opportunity arises for students to use their curiosity to learn a new topic based on their prior knowledge as well as the resources available to them. Explaining inquiry learning, Sara said, "I believe that inquiry learning is when we learn a topic with our own curiosity without anybody's help." Furthermore, Manny said, "Inquiry learning allows students to gain practical knowledge, which will help them transfer their theoretical knowledge to the practical application, which will give them authentic learning opportunities." Manny further added,

> I believe that learning can occur in many ways. For example, learning can occur in groups or individually, and by reading, watching others, and doing some activity among many others. Inquiry learning is very crucial because we may learn information that might be correct or wrong, but when we learn that by finding the information ourselves, we will find originality in our learning. We use various techniques to find information like looking up books, asking others, and finding resources to look for information.

One of the participants, Manny, compared inquiry learning with the investigation that police departments use to solve a case. He shared that when he gives students assignments that involve inquiry learning, he uses the investigation method that detectives or police use to help students understand the strategy. Another participant, Azad, shared that to foster inquiry

learning, the faculty member must create a learning environment in which students are welcomed and feel welcomed to ask questions. He said, "Students will be able to construct knowledge in a meaningful way when they ask questions to understand a concept thoroughly." He further added that his passion is the reason behind his motivation to learn about new instructional strategies that will engage students in classrooms.

Another participant, Sara, shared her experience with inquiry learning by sharing her past experience:

> When I was a B.Ed student in another rural area, we were given a broad topic like the impact of tobacco on people, and we were divided into groups to go to the nearby areas and interview people to know about the awareness of the impact of smoking on human health. We chose our questions regarding how they are getting addicted, how it impacts their life, and what we can do to raise awareness among these illiterate people. We go to people and ask questions prepared by my group and collect data. I also used inquiry to collect data for my thesis research as a part of my M.Ed degree. My area of focus was on why some students are lagging in learning math.

Another participant, Azad, conveyed his understanding of inquiry learning by comprehending it with the heuristic method. He said, "In this [heuristic] method, the instructor gives a question or topic to the student and asks students what they already know about the topic and what they can find out about the topic." Harsha, on the other hand, highlighted that inquiry learning can only be implemented with specific topics and subjects. However, he also revealed that he seizes any learning opportunity which will engage the student in inquiry learning. He added, "I use [inquiry learning] to help my students gain knowledge on the concept deeply and improve their ability to question to find more information."

Harry and Honey shared that they gained an understanding of inquiry learning because of the Continuous Comprehensive Evaluation (CCE), a national-level program introduced by the central government in India to bring change in the way students learn by memorization to pass the final closed-book exams at the end of the academic year. Harry and Honey explained that the CCE model was designed in the 2012–2013 academic year to improve the learning experience for students. They highlighted that the purpose of the CCE system was to create learning outcomes for measuring the performance of the students at regular intervals. Harry and Honey said that they use formative assessments at regular intervals to assess student performance. Harry shared, "Through this [CCE] model, the government has set some mandatory guidelines and policies on how faculty should teach and how to help [students] learn." In addition, Harry and Honey also shared that the CCE model mandates that 20% of a student's grade should include hands-on learning activities. This requirement allows faculty members to use instructional strategies other than the lecture method to engage students in learning activities in classrooms.

Subtheme 2: Understanding of the Cultural Influence

All participants shared that culture plays an important role in everyone's individual and academic life. One participant, Manny, expressed that culture is a part of life and that the culture brings out the authenticity of individuals in terms of their beliefs, whether the person is a student or a faculty member. When explaining culture, Harry used a French psychologist's views to explain culture and its influence on people by saying,

> I would like to use the philosophy shared by a French psychologist, Albert Russo. He said that when humans are born, they are born free of all the inequalities, but as they grow up in a certain culture, the child tends to get influenced by the atmosphere in which

> he/she grows up. For example, rainwater is pure water, but it changes its purity depending on where it accumulates. Just like water, humans are born free of opinions, but they form these opinions due to the environment around them.

In addition, cultural variations in students result from caste, religion, familial, socioeconomic, financial, intellectual capacity, and health-related statuses. All participants also shared that one of the significant factors that influence their instruction is the intellectual capacities of the students. In explaining this intellectual capacity, Sara said, "We notice students who are intellectually advanced and intellectually backward with some ranging in between these two extremes." Furthermore, most participants shared the common belief that religion and caste are the top cultural factors that are deeply rooted in Indian society. Explaining the cultural influence in classrooms, Marty said, "I notice students who belong to the same caste tend to sit together and neglect everyone else." All participants suggested they see this cultural divide among their students both in and outside of classrooms.

Subtheme 3: Culturally Responsive Pedagogy

An analysis of the interview transcripts led to the conclusion that the term culturally responsive pedagogy was foreign to the participants. When the meaning of the term was explained to the participants, they all conveyed that they have courses on inclusive education as a part of their education degree coursework. Other than the courses the faculty took as part of their degree requirement as students, the faculty do not have any formal training on cultural support or influence in classrooms. Explaining the strategies to consider cultural influence in classrooms, Harsha said,

> We have students who come from tribal regions [and] have language slang that is different despite language and religion being the same. We have to be aware of these

different slangs and culture within religion and tribes to be able to understand student behavior to be able to teach a student in a respectful manner.

Adding to the concept of inclusive education in classrooms, Mary added that instructors must treat all students equally. All participants also shared that when students need extra attention, they give that extra attention during their office hours so the students who need help will not feel embarrassed and so other students need not lose interest while the instructor is explaining the concept to one student. Explaining this idea, Mary said, "We should give them [the students who need help understanding concepts] extra time to listen and talk to them about their personal issues after class or after schools so that they feel they belong and that the instructor cares for them." Six other participants shared a similar idea of giving extra attention to students with lower intellectual capacity. They summarized that all it takes for the student to succeed in a diverse classroom is a bit of attention and affection from the teacher, which may change a student's life. The faculty also added that receiving formal training about cultural influences in classrooms and modifying their instruction to include cultural influences in pedagogy would help them understand the value of practicing CRP in classrooms.

Subtheme 4: Understanding of Laptop Usage

The participants revealed that they associated laptops as one of the Information and Communication Technologies (ICTs). Participants all shared a common opinion that the world is advancing technologically at a rapid rate and that education systems should keep up with the technological trends to prepare students for the technological world. All the participants shared that their institution does not use laptops or computers for pedagogical purposes. Despite the unavailability of laptops, all participants shared a common understanding of using laptops for instructional purposes. Manny said,

> Using laptops in classrooms for teaching and learning purposes is very helpful for both students and faculty. If not providing laptops to everyone, if there is a willingness to start using laptops, we can come up with ways to share a laptop among three or four faculty or students.

Mary, Abhi, and Sara highlighted that both students and faculty could benefit from using laptops with internet connectivity for teaching and learning purposes.

In summary, the interview transcripts revealed that all the participants have an understanding of the key concepts of this case study research. Some participants had learned about these concepts as a part of their coursework when they were getting their degrees, and some shared that they had learned about the concepts out of their personal interest. In terms of using laptops for instructional purposes, all participants shared that they do not use laptops in classrooms because neither students nor faculty members have the resources to use laptops.

Primary Theme 3: Aspired Impact of Using the Key Instructional Strategies

The third theme shows the faculty perceptions on the impact of using inquiry learning, culturally responsive pedagogy, and laptops in the classroom. While exploring faculty perceptions on the aforementioned concepts, it became clear that using new instructional strategies and technological tools would have an impact on student learning and faculty teaching. Participants shared their views on the impact the specified strategies would have on their students and themselves. This theme consisted of three subthemes: (a) impact of practicing inquiry learning, (b) impact of practicing culturally responsive pedagogy, and (c) impact of using laptops.

Subtheme 1: Practicing Inquiry Learning

All participants revealed that practicing inquiry learning would have an impact on their teaching as well as their students' learning. All participants shared that by practicing inquiry learning, students would be curious to learn about the concepts more deeply, thus resulting in a higher probability of improving active learning opportunities for students. Participants also shared that inquiry learning motivates and allows faculty to learn various perspectives of the same concept to be thoroughly prepared in order to guide students toward their inquiry. Considering the impact inquiry learning would have on students, Lucky said, "[Students] develop problem-solving skills. I try to find out the issues students are facing in their inquiry process. We help them identify their own problem and help them solve their problem genuinely." Azad added, "Students will proceed to become educated and responsible citizens who will assist in developing the country and help reform the educational system to help further generations get a quality education."

All the participants shared that along with developing problem-solving skills, students will be able to find answers by conducting research instead of waiting for someone to come along to find answers for them. They shared that the students are actively engaging during the learning process when they find information to support their solutions to the questions. Participants shared that when students are actively engaging in their learning process, there is a higher probability that they will remember the concepts well.

One participant shared that teachers will be able to notice the change in student engagement and performance when students actively engage in the learning process. Abhi explained by saying, "[Students] will not follow the content or instructions blindly if we plan to implement inquiry learning strategy appropriately." The participants shared that practicing

inquiry learning helps the students become comfortable in answering rather than shy away out of the fear that they might be wrong. Participants also highlighted that some students show enthusiasm in using inquiry learning because they get to use resources and design their own solutions to find answers to the problems. One of the participants, Abhi, added, "By practicing inquiry learning, students will develop scientific behavior and start to consider scientific evidence to evaluate their knowledge."

Faculty also shared their perspectives on the impact inquiry learning would have on their teaching. All participants shared that their responsibilities will be increased tremendously when they practice inquiry learning. Azad shared an example of the increase of responsibilities by saying,

> If I give an assignment to a student to conduct some research and they show up with incomplete work, I should take the responsibility to follow up on the progress of the students to make sure that they understood the requirements of the project and explain to them if they are not fully aware of the instructions. This way we will be able to measure learning outcomes and help students learn in a meaningful way.

Participants shared that practicing inquiry learning will also help them update themselves on both content and the instructional strategies to help their students get ready for the globalized world that is technologically advancing every day. Participants also highlighted that practicing inquiry learning will help them become lifelong learners while at the same time helping students to become lifelong learners. By practicing this strategy to become lifelong learners and motivating the students to become lifelong learners, Mary highlighted that her communication with students also will be improved. She added, "I will get to know my students better than I would get to know them if I were just lecturing." The participants also shared that practicing

inquiry learning brings out the creativity in students in identifying problems and finding out ways to find solutions to their questions.

In addition to the benefits of practicing inquiry learning, participants shared the importance of planning to practice inquiry learning. Manny highlighted the importance of planning while implementing inquiry learning by saying,

> Planning is very important to implement inquiry learning in classrooms. It may be easy to implement it sometimes, but sometimes it is very difficult to implement inquiry learning. That is why planning ahead of time on the part of faculty is very crucial to implement inquiry learning.

Participants also shared that through proper planning to practice inquiry learning, they will be able to assess the knowledge of the students so they can modify their instructional strategies based on students' prior knowledge. This modification in their instruction based on students' prior knowledge helps the students understand the content in a meaningful way.

Subtheme 2: Using Culturally Responsive Pedagogy

All the participants revealed that they do not practice culturally responsive pedagogy; however, they practice equality and inclusive education rather than practicing culturally responsive pedagogy for instructional purposes. Mary said, "By practicing equality education, students will understand each other, build friendships, and take the lead to initiate conversation and help each other." On the other hand, some participants suggested that the cultural and religious beliefs are so deeply rooted in India that no matter the many efforts put forth by the faculty or the administration, there will not be any impact on students. Harry said,

> Despite the efforts we put in, our efforts are destroyed by these cultural differences. There is not much impact on the students because they are raised in such an environment where they do not identify the need to update or change their cultural nuances.

Sara was more hopeful about the impact when she said, "Following [culturally responsive pedagogy] does bring positive change in student behavior. Sometimes the change may not be evident, but some students might find this helpful and feel motivated." Some of the participants suggested that they use individualized instruction to help students learn better who are struggling in their classes. The faculty also expressed that practicing culturally responsive pedagogy or resolving a cultural conflict does not always result in fruitful results. Honey said,

> When we try to resolve a regional conflict between students, they may criticize the faculty. This kind of behavior may occur because the students do not like to have their inappropriate behavior pointed out. If I tell them not to do something, they may get upset and start talking in a negative way about me. I will try to guide them toward equality, but sometimes students might not receive my effort for a positive cause in a positive way.

On the other hand, Mary said, "Some students who do benefit will become more responsible and treat teachers with respect. These students will be motivated to learn more and discuss their perspectives with instructors freely."

When asked about the impact of practicing culturally responsive pedagogy on their teaching, the participants conveyed a need to be more responsible by knowing the needs of their students and the students' backgrounds and being prepared to serve the needs of all the students equally. While discussing the impact of culturally responsive pedagogy on teaching, Abhi said,

> To practice culturally responsive teaching, I as a teacher have to work extra hard to provide knowledge equally to all my students because not all students receive the

knowledge I share in the same way. For this reason, I have to be prepared to change my approach and use various other approaches beyond the approach I am accustomed to teaching to help all the students who are not able to understand the concept when I teach it the first time around. I will have to shift my teaching strategy to meet the end goal of making sure the content I am teaching is reaching all students. I will face problems implementing such instruction because there are always intellectually backward students, irregular students, and students who are more worried about meeting their day-to-day needs who do not respond to any kind of instruction in the classroom despite the efforts of teachers.

However, all the participants stressed the importance of planning to practice culturally responsive pedagogy to give students opportunities that can help them discuss culture-related topics openly among themselves. The participants also suggested that they should be able to intervene in controlling these discussions, encouraging input from students who choose to remain quiet instead of students who tend to talk more. This intervening also requires planning regarding delivering the content and choosing the instructional strategy that involves all the students.

Subtheme 3: Using Laptops

Transcript analysis revealed that all the participants are interested in using laptops for instructional purposes. They highlighted the impact the usage of laptops would have on students and their teaching as well.

The impact of using laptops on student learning revealed both positive and negative perceptions from the faculty members. On the positive side, the participants mentioned that the students will be able to learn by having the luxury of accessing information at their fingertips and

thus will be able to understand concepts better by accessing multiple sources of different perspectives about the topic. When the students are curious about a topic, they will benefit from having a laptop with Internet to browse information for which they are looking. Harsha said, "If students use laptops with an Internet connection, information is readily available to them. With easier availability of information, it becomes easier to find information for inquiry learning." However, all the participants also revealed that laptops might be distracting despite the benefits they can provide because it is easy to get caught up in the amount of information and all the other unnecessary information students might be browsing.

In summary, analyzing the interview transcripts revealed that practicing inquiry learning, exercising culturally responsive pedagogy, and using laptops has both positive and negative impact on student learning as well as faculty teaching. One prominent finding throughout this theme was the increase in the responsibilities of the faculty members to practice these strategies in a meaningful way. Accordingly, participants highlighted the need for planning ahead in terms of implementing all three concepts in order to have a positive impact upon using them.

Primary Theme 4: Current Practices of the Key Instructional Strategies

This theme includes discussion of current usage of the key concepts of this research. The second and third themes revealed participants' understandings and the impact the concepts would have when practiced. Theme 4 includes descriptions of current practices involving the three key instructional strategies. This theme consisted of three subthemes to identify the current usage of (a) inquiry learning, (b) culturally responsive pedagogy, and (c) usage of laptops.

Subtheme 1: Inquiry Learning

During the discussion regarding inquiry learning, all the participants conveyed that they used and practiced inquiry learning in some form or the other. All participants shared their

methods of practicing inquiry learning. However, not all participants practiced the strategy in the classroom. Abhi said, "I practice inquiry with my son. I ask him to look for answers, search, and find them himself." He added that he encourages his son to engage in an inquiry by saying, "You may or may not find the correct answer, but you will find many things along the way, just like the treasure hunt game." In addition, all the participants shared a similar perspective regarding practicing inquiry learning. Participants said they have started using the strategy as a part of the CCE model, which required faculty to give activities to engage students in the active learning process by allowing the students to practice theoretical skills rather than be passive listeners. Most of the participants shared that they practiced guided inquiry learning through the project method. Harry explained,

> In the CCE model, the ultimate goal is to improve [students'] ability to question during their learning process. If I help students ask questions without any fear or embarrassment, they will start asking questions. I practice inquiry by giving a problem to students and ask[ing] them to give their views on solving the given problem. I also give students time to brainstorm and then ask them to share their ideas. When they start to brainstorm and ask questions, they will also be motivated to find answers to their questions. I always encourage my students to ask questions for the same reason.

In addition, some participants shared that they give projects about community-related issues to encourage the students to find an issue and collect data to find the results. One participant, Harsha, shared his recent project on high school dropouts and the reason behind the dropout numbers in their village. He shared that he helps students by giving them cues on who to approach and where to go to collect data and the students get to do the rest of the project. He highlighted that practicing inquiry learning helps students learn the questioning ability. In

addition, Harsha mentioned that if the students face problems figuring out information, the faculty members act as a guide to give them options so they can seek information from relevant personnel who can help them in their quest for information.

On the other hand, Marty shared that he will not tell the students to follow a similar method to gain a deeper understanding of a topic. He explained his way of practicing guided inquiry by saying,

> I will find out what are the ways in which they will learn better and provide them with opportunities in my class to help them. I will review their method and give them feedback on whether they could improve their method in ways that could help them perform better or memorize well. I will give them tips on how to study, how to present the information that they have learned, and how to manage time while writing exams.

Marty further added, "I will give assignments that the students can do with the resources they have." All the participants also conveyed that they give projects that allow students to use the minimal resources available to them and engages students to practice inquiry skills within their community.

Subtheme 2: Culturally Responsive Pedagogy

The analysis of the participant interviews indicated that almost all participants were not aware of the term culturally responsive pedagogy but possessed the knowledge about how culturally responsive pedagogy is practiced. They conveyed that they practiced equality education instead to address cultural influence in the classroom~~s~~. Two participants conveyed that they do not practice any strategies influenced by culture, as their courses require them to be more analytical in solving problems. Harry said,

> In my subjects, I do not really touch on cultural aspects, so I do not include cultural influence in my instructional strategies. Even if I have to include culture in the classroom, I will state facts and prepare the students to understand that I am just sharing facts and do not intend to offend anyone.

The rest of the participants revealed that they practiced culturally responsive pedagogy by sharing knowledge with all the students equally at first. They individualized their instruction by paying close attention to students who are intellectually backward. They helped these students to succeed in academics by explaining the concepts using further elaboration. Sara said, "When I teach, I aim to teach at this average level, keeping in mind both the extremities so not to lose advanced [students] totally and while aiming my instruction towards less-advanced students." Mary shared, "When I practice this equality in the classroom while teaching, I do not expect that all students understand me and follow my intentions." Abhi and Sara shared a similar perspective as Mary and Sara, and Abhi added, "I give a little more attention to explain the concepts, giving them an extra test to evaluate their knowledge and help them improve after school hours so that they do not feel embarrassed in front their classmates."

All the participants highlighted that to practice equality within their organization, they follow unity in diversity by having all the students wear a uniform dress. This practice was the outstanding perception of practicing culturally responsive pedagogy. Harry said,

> Indian culture is known for its sustainability in terms of dressing, traditions, and treating each other like family, which is noticed in rural areas, and coming together to help each other in times of need. In addition, our schools and some of the colleges strictly follow the dress code to achieve equality by having all the students wear the same dress

> regardless of their economic background. This is one subtle way of implementing equality among all the students and practicing unity and diversity.

However, two participants shared that they teach Indian culture as a part of their coursework. They both shared that they involve students from different religious backgrounds to share their experiences and cultural practices in the classroom. By practicing this strategy, these participants highlighted the importance of engaging students in the classroom as well as giving voice to the students' experiences. Marty said,

> We give extra classes to students who cannot catch up with the rest of the class after school hours on a one-on-one basis. We will try to get information from students on what issues the students are facing. I teach a course on culture myself, so I make sure I cover all the positive and negative points in all the cultures.

In terms of practicing culturally relevant events, all the participants shared that they either allow all the festivities or they do not celebrate any at all. Honey said, "We cannot allow one group of students their celebrations while denying students' requests on celebrating one particular religious event. We have to either allow or deny for every religion."

Subtheme 3: Usage of Laptops

The participants revealed that they do not use laptops for instructional purposes. However, participants mentioned that they teach their students using ICTs, if available. Harsha said that this knowledge is purely theoretical without any resources for students to gain practical understanding or skills for using ICTs.

In summary, the participants' interviews revealed that they used inquiry learning and culturally responsive pedagogy in one form or the other, never really knowing these exact terms. They practiced inquiry learning through the project method. The interviews showed that

participants used guided inquiry to help students identify a problem and research to find a solution to the problem. In addition, culturally responsive pedagogy was practiced by following the "unity in diversity" motto by having all students follow a uniform dress code. Furthermore, they practiced culturally responsive pedagogy by paying extra attention to students who struggle, in the form of extra classes after school hours. However, it was apparent that their institute did not use laptops or any technological tools for instructional purposes.

Primary Theme 5: Factors Affecting the Usage of the Key Instructional Strategies

Participant interview analysis revealed that the faculty members believed various factors influenced the practice of inquiry learning, culturally responsive pedagogy, and laptop usage in classrooms. All participants indicated that improving and adapting new instructional strategies produces skilled students, which will increase participants' reputations as faculty and will increase the reputation of the institute as well. In relation to reputation and student success, Sara said,

> Bringing these changes would obviously help students, improve their results, and bring recognition and increase the reputation of the institution as a whole. We all know that all students and their parents want to send their children to reputed colleges rather than to the colleges that barely survive. So, bringing about these changes with positive application results in increased enrollment as well.

Harry added, "When these changes are implemented, there is a high probability that students and faculty will be more responsible towards their respective jobs and perform well." After the transcript analysis, it became apparent that these factors could be classified into two subthemes. These two subthemes were (a) influencing factors and (b) resisting factors.

Subtheme 1: Influencing Factors

The participants revealed that the curriculum, the syllabus, textbooks to be used, and the instructional strategies are designed by the affiliating universities on behalf of the central and state governments. This kind of affiliation system leaves few choices for the individual faculty, the students, or the administration of individual institutes. Despite the lack of opportunity to be a part of the decision-making process in these major design issues, the participants expressed that in some ways they could reform their classrooms to practice student-centered strategies. The participants shared that these influencing factors could rely on the faculty, students, administration of the institute of higher education, and the parents of the students.

Faculty. The participants shared that if the faculty members are motivated to help their students become skilled citizens, faculty members can take initiative to bring change in certain ways. Azad said, "To fulfill my desire to design and create these [active] kinds of learning opportunities for students, I must be willing to come up with innovative ways to provide practical knowledge to the students." Abhi added that he motivates himself to use innovative instructional strategies

> by considering asking questions like why other countries that are ahead of us and have already started using different teaching methods and adapted technological tools improve teaching strategies; why and how they are moving so fast; why they collect information on what needs changed; and why we are slow and behind on catching up with the rest of the world.

The participants shared the common belief that the key influencing factors from faculty are their genuine willingness to provide meaningful learning opportunities for students and to produce students who are skilled citizens.

Administration. The faculty shared their view that the administration has a major role in bringing reform because they have the ultimate control over what changes could take place within their institute. They conveyed that providing minimum resources to the faculty and students is the major influencing factor from the administration to bring reform in instructional strategies.

Students. Participants also shared that students will be motivated to learn meaningfully if they are provided with resources and engaged in learning opportunities in which they take an active part. In terms of influencing factors for using inquiry learning, Abhi said, "Students will feel amazed at the various other concepts they learned or various ways to get to a solution. They might be motivated to go deeper to gain further knowledge regarding the subject when they find it useful." Manny added that students develop interpersonal relationships to help each other during active learning processes by saying, "We sometimes notice that students who are intellectually forward in classrooms tend to help students who are backward."

Parents. Participants shared that parents also have a say in the factors that influence instructional reform. In regard to parent influence, Harsha said, "If we can ensure that we can help our students learn meaningfully using new strategies and through the usage of laptops, parents might even be willing to bear the expenses even if it was expensive." Mary added, "Parents will be happy that their children are learning in a technologically equipped school if we implement these technological advancements in classrooms"

Subtheme 2: Resisting Factors

All the participants revealed factors that resist the usage of different instructional strategies. They shared different resisting factors that arise due to faculty members, administration, students, and parents.

Faculty. Participants suggested that the major resisting factor for faculty in practicing student-centered teaching was the convenience of using teacher-centered strategies. Abhi shared, "Some faculty members do not focus on discovering any new methods because of their belief, 'Why use any new methods when the lecture method is working just fine?'" The participants also shared that lack of awareness of new instructional strategies, lack of resources, and lack of professional development opportunities to explore new instructional strategies are other major resisting factors. Participants highlighted that the lack of formal training in cultural influence or practicing student-centered instructional strategies has prevented them from using and understanding new instructional strategies in classrooms. Abhi further added, "Student resistance is what affects using instructional strategies. Lecturers are interested, but students do not pay attention to activities or focus on learning by participating in activities." Azad explained one crucial resisting factor for faculty not showing interest in adapting laptops in the classroom:

> Students might get accustomed to simply copying information from the Internet and pasting the information as part of their assignments. As there are no rules on plagiarism, this habit destroys the purpose of using laptops to research the concept while working on their assignment.

Administration. All the participants highlighted that a major resisting factor from the administration is the financial burden that any reform will cause in terms of providing resources and opportunities for students and faculty.

Student. Participants shared that the students in their institute are used to rote memorization and expect to be "spoon fed." They highlighted that the students simply ask for ready-made material that they can read and memorize answers to questions to write on the exams and pass. Abhi added,

> Students are interested in theoretical knowledge but not practical knowledge. They are only interested in passing all the exams and getting their degrees but not interested in gaining practical knowledge. They do not show any interest in seminars, presentations, or participating in any learning activity during the course other than memorizing the content to pass the exams. They focus on memorizing the content only for written exams. That is the major problem in education here.

Abhi further added that despite the instructor's interest to implement new instructional strategies in classrooms, the resistance comes from students who are more used to memorizing concepts. He shared that students often ask, "Why do we need to engage in inquiry when we are supposed to study what is given in the textbooks and write to pass the exams? Let us have the content to pass the exams." The participants commented that if their efforts in using new instructional strategies encounter resistance from students fearing exams, their motivation to use new instructional strategies will be lost.

Parents. Participants revealed that the major and the only resisting factors from parents were their lack of knowledge in using technological tools and their financial backgrounds. Participants shared that their institute is located in a rural area where most students come from illiterate and poor families, which is a major roadblock in terms of technological improvement.

In summary, participants shared their perspectives on the influencing and resisting factors to bring any instructional changes. They conveyed that these factors depend not only on faculty or students but also on the administration of the institute and the parents. Despite some influential factors like faculty and students' interest in engaging in active learning, because of the location of the institute, participants believed that the resistance occurs due to lack of awareness and resources. Participants also highlighted the influence of state and central governments in

designing curriculum and assigning textbooks as a resisting factor that creates a stifling environment for faculty to make changes to their instruction. Another resisting factor that was stressed was the importance of exam results to the administration and fear of exams in students.

Primary Theme 6: Using New Instructional Strategies

The last theme evolved from the faculty perspectives on using new instructional strategies to help students become skilled individuals with abilities to succeed in their careers. This theme consists of two subthemes: (a) areas that need improvement to bring changes and (b) the efforts that were put forth to bring improvement.

Subtheme 1: Areas of Improvement

This subtheme resulted from the participants' views on the potential improvement that must take place in various factors to enable adoption of new instructional strategies to help students improve their skills. These areas of improvement varied broadly. One predominant improvement factor that all participants highlighted was the government's intervention in designing curriculum, instructional strategies, and textbooks. All participants emphasized that the government must change for the individual institutes and faculty to change and that a multitude of things has to change to improve instructional strategies. Participants also shared the belief that the education system has to change. Sara commented on the affiliating system and its bureaucratic system by saying that colleges in India are administered centrally by an affiliating university which in turn is administered by central and/or state governments. She emphasized that the change has to start from the top-level administration to implement changes at the individual colleges. She added, "We change when the college and its management changes."

In addition, Harry shared his opinion that the universities must design and follow strict guidelines in updating the system regularly. When visiting staff from a university supervise their

affiliated colleges, the visiting staff must follow strict guidelines to evaluate the college environment to improve the learning spaces and management rather than neglecting the basic facts by following illegal measures like accepting bribes and disregarding the issues that must be noticed and updated.

Sharing a similar perspective, Harsha added that it is not possible to change instructional methods when the syllabus is designed centrally at the affiliating university according to the guidelines set at central or state-level governments. He emphasized that because of this bureaucratic system, the entire state has to follow the same method designed by the state government.

The participants also shared their opinions regarding the stifling environment in choosing textbooks for students. Abhi shared his perspective on government designing the textbooks, arguing that there should be an effort to involve students in activities. He said,

> The change must start with changing textbooks. These textbooks are designed in such a way to provide material that is ready made in nature. These days there is a slight change in the way these textbooks are designed. This textbook material must be designed to encourage students to read the material themselves, get acquainted with the content, and allow them to learn by experimenting. In addition, these materials must allow students to conduct experiments and/or research to find answers by themselves. We need to focus on what is necessary for students to learn in an active way instead of following the same textbooks that were designed 20 years ago. For example, we are still using the same textbooks design in the early 2000s to teach students in 2018. So, I believe that changes should be made in textbooks to accommodate more scientific-based information and to adapt to the changing world. I also believe that the information should be purely

> scientific rather than the content being influenced by the government. The textbook design should focus on what content must be included to help students survive in the current society and help develop their society and their country.

The participants reported that the faculty needed training on instructional strategies with respect to student cultural backgrounds. In addition to the factors that could be improved to bring changes to the instructional strategies used at their college, the participants revealed other major factors contributing to improving the instructional environment that must come from faculty, administration, and students.

Faculty improvement. In terms of faculty improving their instructional strategies, participants revealed that the content must be updated to suit the changing world. They shared that the instructors cannot continue to use the strategies and content that were used in the 1990s and expect the students to thrive in the world that is changing rapidly. In order to prepare students for the competitive world, participants shared that they must be able to teach students that going to college just to get a degree is not enough; instead, students must be enlightened that learning to make a difference in their career after college is the crucial factor to succeed. In sharing a similar opinion, Lucky added,

> We have to develop students and make them aware of how to use the resources available to them. We have to provide resources like the up-to-date library and minimum resources in classrooms. We also have to help students to ask for needs from the management. If students ask, the management may take immediate action rather than teachers suggesting [actions] to the management. Give incentives to students for their efforts, organize events to respect all the students' cultures, and organize extra-curricular activities to encourage students to motivate them in participating in events both in classes

> and in society. Give support to students to participate in activities to improve society and recognize them for their efforts.

In addition, the participants also shared that to bring any major reforms in the education system, people need to change their way of thinking. All individuals must be open to change and willing to adapt to the changing world to embrace reforms for the further development of society.

Administration improvement. All participants highlighted that the infrastructure of the institutes must change to transform the instructional strategies. Participants shared that the administration of the institute must improve the infrastructure to provide resources to encourage faculty to use student-centered strategies. During the discussion on administration involvement in improving infrastructure, Abhi said,

> There is a 100% need for change in the classroom infrastructure and setting. If the classroom infrastructure remains like this, we will never be able to change any instructional strategies. The classroom design must be changed. Classrooms must be designed to incorporate technology in classrooms for both teaching and learning purposes. Resources must be readily available to students.

The perspective that change only occurs when resources are available to bring about change is important because it was shared by all participants. Participants also shared that the administration should consider providing formal training for faculty to encourage them to practice student-centered instructional strategies. Participants emphasized that the administration must provide training, resources, and support to practice pedagogy that is responsive to cultural differences in classrooms.

Student improvement. Some participants added that along with the faculty and administration, students must be willing to engage in active learning processes. Regarding student improvement, Abhi said,

> Students are not ready to take initiative to learn through inquiry. They only want ready-made material to learn and write in the exams. If any different question or problem is given out of the norm for the students to solve, they feel that it is very complex. They ask the faculty to give them the solution to the problem along with how to solve it. They start questioning why they need to find solutions by themselves when lecturers can provide them with solutions without the extra effort of researching, figuring out what procedures might help to solve the problem, and finding the solution.

Abhi further added that this attitude of depending on the faculty for information must be improved in students to help them become more active learners.

Subtheme 2: Efforts to Bring Improvement

The participants shared their perspectives on bringing the change in instructional strategies. Some efforts the participants suggested were that the administration should encourage faculty and students through incentives and encouragement. Other suggested efforts to bring improvement included helping fellow faculty members learn and use new instructional strategies. Furthermore, suggestions for improvement from parents and potential employers were also a focus. In addition, participants pointed out that the faculty must be given opportunities for professional development, a democratic voice, and opportunities for decision making. Mary highlighted the importance of formal training in learning about student-centered instructional strategies. She emphasized that attending any formal training on practicing new instructional strategies will help them practice new strategies in their classrooms. She also stressed the

importance of formal training on practicing cultural influence for pedagogical purposes in classrooms. She shared that without the training on any of the student-centered instructional strategies or on cultural support in classrooms, the faculty would not be able to practice any new strategies. Mary shared that these professional development opportunities do not always have to be expensive but should be considered by the administration. Mary added,

> To see if there is a need in our institution in the first place, we need to see if other institutions are doing anything new. Having a field visit for faculty helps them to learn about different kinds of classroom strategies that other colleges are using. This way we will know what other institutions are doing and discover our own ways to improve. They call this campus excursion for faculty where they get to go to different institutions for a day to observe campus, their facilities, their classrooms, and their teaching as well.

In terms of faculty involvement in the decision-making process, Harsha said, "To get the attention of the university-level decision makers is an impossible task as an individual faculty member. [The task requires] developing intercollegiate relationships between cities and districts and eventually taking it to university level to ask for opportunities to share their opinions." In terms of updating the existing system, Harsha further added,

> When there is a change in syllabus or evaluations, there will be meetings at the university level. During these meeting, opportunities should be given for individual faculty to represent real-time classroom issues [and] to speak and share their perspectives at the university-level meetings.

In summary, the faculty recommended three essential changes. The first was that the government should change to bring about new instructional strategies. The second was that incentives should be implemented to encourage faculty and students to use student-centered

strategies. The final recommendation was that professional development opportunities and resources should be provided to encourage faculty to move away from teacher-centered instructional strategies.

Summary

In conclusion, this research indicated six themes relevant to the existing instructional strategies and faculty perceptions in using the key instructional strategies highlighted in this study. The first theme to emerge was the existing instructional strategies at the selected institute of higher education. This theme consisted of all instructional strategies used by the faculty and their perceptions on using these strategies. The second theme explored the faulty understanding of the key instructional strategies, which were inquiry learning, culturally responsive pedagogy, and usage of laptops. The third theme revealed the impact of using the aforementioned strategies on student learning and their teaching. The fourth theme was focused on the current practices of the key instructional strategies highlighted in this study. The fifth theme showed the factors that influence and resist the usage of new instructional strategies. Finally, the sixth theme showed the faculty perspectives on areas of improvement and efforts that will help improve the existing instructional strategies to provide meaningful learning opportunities to students.

CHAPTER 5

INTRODUCTION TO INTERPRETATIONS AND IMPLICATIONS

This chapter includes the key findings, implications for practice, and recommendations for future research regarding the instructional strategies. In addition, I summarize here the faculty perspectives on practicing inquiry learning and considering cultural influence in classrooms. This chapter is organized into four major sections. The first section is a discussion of the relationship of this study's findings with previously cited literature. The second section is a discussion of implications for practice and recommendations for future research, followed by the limitations of this study in the third section. The fourth and final section is a summary of this study.

This case study research showed the current instructional practices, along with faculty perceptions on fostering inquiry skills, practicing culturally responsive pedagogy, and using laptop technology in classrooms. The data analysis process included coding the interview transcripts and grouping the codes into categories. I used these categories to identify themes and subthemes. As a result of using Creswell's (2007) data analysis spiral, the analysis of the collected data resulted in six themes: (i) current instructional strategies, (ii) understanding of the key instructional strategies in this study, (iii) aspired impact of using the key instructional strategies, (iv) current practices of the key instructional strategies, (v) factors affecting the usage of the key instructional strategies, and (vi) usage of new instructional strategies.

Relationship of the Results to Previous Research

In this section I compare and contrast the study's findings with the existing literature. Similarities and differences existed between the perceptions of faculty captured by this study and the studies that were conducted previously. Additionally, the study's findings revealed many gaps between the two. This section includes a critical analysis of the gaps, similarities, and differences between the findings of this study and the literature. The discussion is organized in a fashion identical to the six primary themes revealed in the findings.

Theme 1: Current Instructional Strategies

The first primary theme showed the current instructional strategies used extensively and other infrequently used strategies along with the faculty perceptions on using these strategies. All the participants in the current study suggested that higher education is one of the means to develop the country by producing skilled individuals to prepare them for jobs. Regarding the importance of higher education for the development of the country, Altbach (2012) highlighted higher education as a way to modernize developing countries which is similar to this finding. Many studies on the Indian higher education system indicated that the current system of education continues to follow the same pattern of instruction and assessment (Krishna & Bhaskara Rao, 2004; Rizvi, 2012). One participant, Harsha, revealed that the most commonly used instructional strategy is the lecture method, in which the instructors teach a concept theoretically to all the students. In this method of instruction, the role of the student is to be a passive listener.

Despite lecture method being the predominantly used instructional strategy as revealed by this finding, the participants suggested the use of student-centered instructional strategies, a suggestion that differed from those of the participants in previous research by Agarwal (2007)

and Rizvi (2012). The lack of available research on current instructional strategies resulted in the gap within the cited literature. The participants affirmed that research was not their primary focus while delivering instruction, so neither faculty nor students participated in research related activities (Rizvi, 2012). Additionally, no evidence of research being conducted is found to determine the selection and use of instructional strategies. One participant emphasized that lack of research-related activities resulted in using passive instructional strategies such as the lecture method. The studies conducted by Guo (2005) and Yudkevich et al. (2015) indicated the lack of emphasis on research in higher education in India and the fact that one of the largest higher education systems in the world barely focuses on conducting and publishing research.

As the selected institute of higher education is an affiliated institute, their syllabi, textbooks, and instructional material are designed by the affiliating university. These curricular designs by most of the affiliating universities are further governed by the state and central government organizations. As a result of this design, the emphasis of instruction is placed mostly on passing the exams, and instructors are under pressure to complete the instruction on the content given in the textbooks in time for students prepare for written exams (Krishna & Bhaskara Rao, 2004). The necessity to perform well in exams by memorizing the content appeared to be the reason for students favoring the lecture method rather than engaging in learning activities. Abhi revealed that the students only want to pass the exams by memorizing the content.

According to the participants, the predominantly used instructional strategies were lecture method and lecture/demonstration method. It was apparent that the faculty members were aware of the need to practice student-centered instructional strategies to help students engage in learning activities. Participants stated that many factors result in the failure of practicing

student-centered strategies. I discuss these factors in theme 5. One of the main factors hindering the faculty from practicing student-centered strategies is the top-down bureaucratic structure of the education system. This bureaucratic structure resulted in creating a stifling instructional environment for the instructors with no intellectual freedom, as highlighted by Altbach (2012). However, participants revealed that they indeed use student-centered instructional strategies, albeit less frequently. The infrequently used instructional strategies revealed by the participants included laboratory/experiment method, discussion method, project method, debate method, scientific method, microteaching, macroteaching, role-play method, activity method, heuristic method, and inductive/deductive method.

The faculty reported that they use the aforementioned student-centered instructional strategies to assess the prior knowledge of the students and to deliver the instruction. As revealed by Mary, through rapport-building exercises such as asking questions, the instructor will get to know students' prior knowledge. This knowledge is then used by the instructor to divide the students into groups that allow students with advanced intellectual abilities to share their knowledge with students who are less advanced. This idea of assessing students' knowledge and pairing them with advanced peers is the main idea behind Vygotsky's ZPD. The use of this strategy helps students learn problem solving with the help of their peers. Educators use the same strategy to comprehend skill development in students (Robbins, 2001). Some of the participants shared their perceptions that using the lecture method is convenient but that it is purely teacher-centered. However, lecture does not help in identifying student needs and/or engaging the students in learning activities. Abhi shared that he practices other student-centered approaches out of his personal interest to help students and to move away from teacher-centered approaches.

In summary, theme 1 was the identification of frequently used and infrequently used instructional strategies. In the literature review chapter, I clarified that limited or no identified literature were found on the instructional strategies used in the higher education classrooms within the affiliated institute setting and that faculty members do not have academic freedom to use new instructional strategies (Altbach, 2012). Thus, it is noteworthy that through this finding I have addressed a gap in the literature and reported some of the current instructional strategies. Through this finding, faculty members have revealed many other instructional strategies that are used to engage students in the learning process. This information is crucial to the knowledge base on instructional strategies that are practiced in Indian higher education classrooms.

Theme 2: Understanding of the Key Instructional Strategies in this Study

Inquiry learning is focused on the process of investigation during problem solving rather than the solution (Laurillard, 2012). It includes engagement of the learners in active learning processes such as asking questions, collecting data, discovering answers, and testing discoveries (deJong, 2006). All the participants had similar understandings of inquiry learning. Sara stated succinctly that inquiry learning occurs when the student learns about a topic out of curiosity. Sara's statement supported Hollingsworth and Vandermaas-Peeler's (2017) results, suggesting inquiry learning is used to motivate learners by increasing their natural curiosity and constructing new knowledge based on their existing knowledge, interests, and skills. All the other participants were in agreement that inquiry learning encourages students to ask questions and to find solutions. According to Moore (2005), this process of allowing students to ask questions and find solutions can be facilitated in three ways depending on the guidance provided by the instructors. These three levels are guided inquiry, modified inquiry, and open inquiry (Moore, 2005). However, the participants highlighted that they only use guided inquiry in their practice,

as they do not have plenty of resources and time available to them to be able to indulge in full-fledged open inquiry.

All participants' responses were congruent with the general definition of cultural influence that culture is deeply rooted in every person and influences the beliefs of students and faculty. The participants' perspectives regarding cultural influence are supported by Vygotsky's socio-cultural theory stating that the social and cultural factors are influential factors that shape the development of human intellectual skills (Kozulin et al., 2003). Harry stated Russo's philosophy while explaining about culture. He stated that, according to Russo, when humans are born, they are born free of all the inequalities, but as they grow up in a certain culture, the child tends to be influenced by the atmosphere in which he or she grows up. This statement is similar to Vygotsky's theory that a child's intellectual development is dependent on the social and cultural factors of the environment. The study conducted by Joshee and Sihra (2009) conveyed a similar account that culture in India comprises of various languages, religions, castes, and economic and educational backgrounds. Sara highlighted that in the Indian context, students come from various backgrounds which vary in caste, religion, family, socio-economic status, financial status, intellectual capacity, and physical ability. However, considering the cultural backgrounds of students while designing course curricula was not mentioned.

The participants clearly mentioned that they are not aware of the strategy culturally responsive pedagogy but mentioned that they follow certain strategies to maintain equality among students in classrooms. They suggested that they follow the principle "unity in diversity." This policy of "unity in diversity" was introduced in 1951 by the constitution in India to emphasize the fact that diversity is considered a defining factor of identity as well as of a democracy (Banks, 2009, p. 352). Through this policy, discrimination against people of a

particular race, caste, religion, or language while offering admission into state-funded educational institutions is strictly prohibited. The participants highlighted that to follow the unity principle, their institution follows the uniform dress code for all their students. This dress code is followed by all the students regardless of their caste, religion, or socio-economic status, according to Harry. The participants added that receiving formal training on cultural influence in classrooms and modifying their instruction to include cultural influence in pedagogy would help them understand practicing culturally responsive pedagogy in classrooms. The studies conducted by Ginsberg and Wlodkowski (2009) on culturally responsive pedagogy indicated that professional development opportunities must be provided to the instructors to practice pedagogy that is culturally responsive. However, the participants highlighted that other than the courses the faculty took as part of their degree requirements when they were students, they do not have any formal training on cultural support or influence in classrooms.

Regarding inquiry learning, research studies suggested that when this strategy is combined with appropriate technology, it can be a proper means in helping learners develop higher order intellectual skills (Littleton et al., 2012). In this study, the participants revealed that with the use of technological tools like laptops and computer with Internet connectivity, they will be able to practice inquiry learning successfully. This usage of technological tools for instructional purposes was introduced to them through an added course on ICTs in education. The participants revealed that they have theoretical knowledge of using ICTs. However, they emphasized that they do not possess practical knowledge of using these tools in classrooms. Furthermore, the participants strongly believed that computer technology must be used in classrooms to prepare students for a technologically advanced world. McKeachie and Svinicki (2013) revealed that when appropriate technological tools are paired with instructional strategies

and the instructional content, students will be able to learn to form deeper understanding. In relation to this connection between technological tools and instructional strategies, Sara shared that using laptops will be beneficial to both faculty and students because of the need to thrive in their technologically advancing fields. Mary highlighted through the usage of laptops, students will be able to engage actively in classrooms, experience content beyond text-based descriptions, and look for information beyond a single textbook using the internet.

In summary, all participants had an understanding knowledge of the key elements in this research except for culturally responsive pedagogy. The participants practiced the strategy by creating a school culture congruent with culturally responsive pedagogy in an educational context that showed respect for students coming from all backgrounds (Banks, 1999). They also indicated the usefulness of practicing inquiry learning and the usage of laptops in practicing inquiry learning successfully.

Theme 3: Aspired Impact of Practicing the Key Instructional Strategies

The findings showed that the impact of practicing and/or using the key research elements could be categorized into three groups. The three subthemes were (a) impact of practicing inquiry learning, (b) impact of practicing culturally responsive pedagogy, and (c) impact of using laptops.

The participants revealed that inquiry learning allowed their students to engage in their own learning activities. They further explained that students would be curious to learn about the concepts more deeply, resulting in a higher probability of providing active learning opportunities for students. This finding affirms earlier research on inquiry learning that shows students are responsible for forming their own hypotheses to investigate and to build knowledge for themselves, rather than being passive learners in a teacher-centered lesson (Hakkarainen &

Sintonen, 2002). For example, Lucky said that students would develop problem-solving skills through inquiry learning. Similarly, Abhi revealed that students would be able to develop scientific behavior and start to consider scientific evidence to evaluate their knowledge, as suggested by Tandiseru (2015). In addition, participants highlighted their extensive use of the second level of inquiry, in which the problem is defined by the teacher or the textbook and the rest of the inquiry is left to the students (Moore, 2005). Participants mentioned that they act as guides during the inquiry learning process, a role which Vygotsky suggested is ideal for developing the intellectual ability of a student (Bodrova & Leong, 2001).

Participants also mentioned that their responsibilities would increase tremendously when they practice inquiry learning. Harry said practicing inquiry learning in the classroom would motivate him to update himself on the latest knowledge regarding the content he teaches. Mary said the amount of knowledge and creativity she gains from practicing inquiry learning is beyond what a textbook can provide and that this knowledge comes not only from the resources but also from her students. Along with an increase in responsibilities in classrooms, Manny said that planning would become crucial to implement inquiry learning successfully. This added responsibility in planning is also in line with the challenge the instructors would face to facilitate meaningful inquiry learning strategies in classrooms (Scardamalia, 2002). Scardamalia (2002) found that planning inquiry learning projects presented challenges in finding appropriate resources and collaborating with other faculty and community.

Participants conveyed that they have students who belong to various cultural backgrounds. Participants suggested they do not practice culturally responsive pedagogy as much in relation to the caste, religion, or socioeconomic differences, but that they do practice similar culturally responsive pedagogy strategies to help students who are intellectually

backward. This finding supports previous research on the knowledge construction, one of the five dimensions of practicing culturally responsive pedagogy in classrooms, as suggested by Banks (1999). Reform aimed at giving students equal opportunity in the learning process have taken effect in terms of intellectually less advanced students rather than culturally backward students (Banks & Banks, 2004). Despite following this dimension of culturally responsive pedagogy, participants conveyed that little-to-no impact on students is found because the students have been raised in environments where they do not identify the need to update or change their cultural nuances, said Harry. However, Sara said practicing culturally responsive pedagogy would have a positive impact on student behavior even though the impact might not be evident. She said hopefully that through the efforts of the instructor, at least one student might feel a sense of belonging in the classroom and feel motivated.

Participants suggested that using technological tools in classrooms helps improve the learning environment for both faculty and students. This finding incorporates the results of the study conducted by McKeachie and Svinicki (2013) suggesting technology integration in college- or university-level classrooms serves effective purposes and fosters life-long learning skills in students. All participants suggested that using technology in classrooms would have a positive impact on student learning and also on faculty teaching. For example, Harsha commented that students could use laptops with Internet connection, which would allow them to access readily available information. This usage of laptops to influence and assist in student learning is an example of Vygotsky's principle of using tools to facilitate human intellectual development (Roth & Lee, 2007). With the easier availability of information, it becomes easier to find information for inquiry learning. However, all the participants also revealed that laptops might be distractive despite the benefits laptops can provide because it is easy to get caught up in

the amount of information and other unnecessary information students might be browsing. On the other hand, participants also suggested that having technological resources is not enough to improve the learning environment, but that successful usage also requires planning. This suggestion is a confirmation of Pitler's (2007) literature regarding the proper use of technological tools for instructional purposes.

In summary, the findings from this case study were in accordance with the results of the studies cited in the literature review chapter. Gaps existed in the literature considering culturally responsive pedagogy in higher education in the Indian context. The participants were not aware of the strategy culturally responsive pedagogy, and they highlighted that student cultural backgrounds are not specially considered while designing curricula. As the curricula are designed centrally at the affiliating university in the context of the current case study, the faculty do not have any control over the curricular design.

Theme 4: Current Practices of the Key Instructional Strategies

The existing gap in the literature regarding instructional strategies did not allow for detailed literature on current instructional practices. The sections cited in the literature review were regarding the general system of education and did not highlight the specific instructional practices. The findings revealed that all the participants used inquiry learning as a part of the new government-recommended curricula to engage all the students in active learning. Specifically, the government encouraged inquiry rather than focusing the student attention entirely on the exams. This program designed by the government was called the CCE. According to the participants, this program was implemented in the 2012–2013 academic year. Before 2012, Abhi said, the instruction used to be mostly teacher-centered, but now, with the efforts of central and state governments, and organizations like NCERT, the system and the

mindset of people is being changed through CCE program. The focus has slowly shifted from teacher- to student-centered instruction in India.

Specifically, schools and colleges are given a curriculum that is child-centered in nature. The purpose of this system is to create learning outcomes to measure the performance of the students at regular intervals, Azad said. Through this CCE curriculum, 80% of the final grading consists of the marks in the final examination, and the remaining 20% of the final grading comes from the grades in class activities and projects. The participants shared that they are using inquiry in one form or the other due to the change in the curricula that requires assessing students at a regular interval using formative evaluations. The participants also revealed that they practice inquiry learning through a project method, heuristic method, or scientific method. Harry said that in project method he gives a problem to students and asks them to brainstorm to come up with possible ways to find solutions, thereby guiding the students to discover their solutions. This method is called modified inquiry, defined by Moore (2005) as a method in which the problem is identified by the instructor or the designer but the students will have to decide how to investigate the solution. This method also reflects Vygotsky's ZPD because a learner's knowledge of problem solving is being assessed before providing guidance to solve the problem (Driscoll, 2004).

Regarding practicing culturally responsive pedagogy, the participants suggested that they practice the principle "unity in diversity" to achieve equality education at the selected institute of higher education (Banks, 2009). However, it was noted that despite the efforts to bring equality among students, faculty, and administrators, it is not easy to practice equality because of the deeply rooted caste, religion, and region-based differences among the people. The difficulty in practicing equality is in alignment with the findings of Allemann-Ghoinda (2001) indicating that

political and institutional influences act as roadblocks to practicing cultural theories in classrooms. The participants mentioned that they practice individualized instruction for students who are struggling and intellectually backward when asked about culturally responsive pedagogy. On one hand, Ginsberg and Wlodkowski (2009) and Gay (2018) stressed the importance of providing professional training to instructors on practicing culturally responsive pedagogy in classrooms. On the other hand, in reality, participants highlighted that the lack of formal training on cultural influence or practicing student-centered instructional strategies prevents the faculty from using culturally responsive pedagogy strategies in classrooms. All the participants stated that they do not use any technology at the selected institute of technology. They all expressed interest to use laptops at their institute, but they conveyed they do not foresee using laptops in classrooms in the near future.

In summary, the participants' current practices of the key research elements of the study were not completely in accordance with the cited literature, especially in regard to culturally responsive pedagogy, because of the curricular design system of the higher education system in India. The participants also highlighted that the lack of training on cultural influence and professional development opportunities on instructional strategies prevent them from using new instructional strategies. It was apparent that their institute did not use laptops or any technological tools for instructional purposes. However, they highlighted that they practiced inquiry learning through project method because of the CCE model. Participants revealed that guided inquiry was used to help students identify a problem and research to find a solution to the problem. In addition, participants practiced culturally responsive pedagogy, following the unity in diversity motto by having all students follow a uniform dress code. Furthermore, they practiced culturally responsive pedagogy by paying extra attention to students who struggle, in

the form of extra classes after school hours. Other than these two strategies, no other strategies that reflect a sensitivity to diversity of culture or exploration of cultural backgrounds of students were found in the data.

Theme 5: Factors

The fifth theme regarding the factors revealed influencing and resisting factors on practicing the key instructional strategies in this study. One major influencing factor identified was that improving and adapting new instructional strategies produces skilled students, which will increase the participants' reputations as faculty as well as the reputation of the institute.

Participants revealed that the influencing factor for practicing inquiry learning is the active learning opportunity that this strategy provides not only to learners but also for the faculty. This finding incorporates the results of the study conducted by Veselinov and Nikolić (2015), which suggested that inquiry learning helps students make the connection between their existing knowledge and new knowledge and allows them to solve problems effectively. All the participants revealed that to implement any new system or strategy in the selected institute of higher education, both influencing and resisting factors majorly come from students and faculty. For the technology usage strategy, the resisting factors also come from the administration and the parents.

One of the major resisting factors, as suggested by the participants, was the lack of student understanding of engaging in learning activities. The students face issues with problem solving and tend to resist. The reason for their resistance results from the fact that the learners are not used to learning strategies other than memorization of facts (Littleton et al., 2012). Students mainly face issues with inquiry learning because of the lack of motivation to engage in active learning. In addition, their resistance springs from their fears of not being able to reach

the right solutions. It was suggested that students face problems with designing experiments, implementing the experiments, and interpreting the results (Littleton et al., 2012). Abhi also mentioned that students face problems in forming questions, identifying a possible method to solve the problem, and developing a solution. Participants revealed that students are used to information being handed to them and that they tend to give excuses when faculty members ask them to engage in the inquiry learning process, which is opposite to what they are used to doing. Krishna and Bhaskara Rao (2004) pointed out this fear of exams and the importance given to the exams in the higher education system in India. Abhi mentioned that when he gives any activity that involves inquiry, some students ask questions like "Why do we need to engage in inquiry when we are supposed to study what is given in the textbooks and write to pass the exams?" and "How can I construct my problem; how do I write my problem; how do I collect data?" He also mentioned that these students give excuses like "There are no resources to find information," "Nobody is giving me the information, so I was not able to collect any data," and "It is a very long and time-consuming process."

The lack of understanding about instructional strategies also applies to the faculty due to lack of professional development opportunities to learn about new instructional strategies. Furtak (2006) demonstrated that a significant challenge to practicing inquiry learning is due to the lack of allocated time for the instructors to explore the implementation of the strategy, their inadequate understanding of the nature of the concept, curricula that do not allow for freedom, and lack of innovative pedagogical skills. Harry said that some faculty might have an understanding of many engaging instructional activities, but these are all based on theory without any practice to implement in classrooms. Azad mentioned that the faculty should be creative and willing to create learning opportunities for engaging students in the learning process. This

requires planning, said Abhi. The participants highlighted that the faculty need training on instructional strategies and considering student cultural backgrounds for pedagogical purposes in classrooms.

De Jong (2006) provided evidence that using technological tools could serve many purposes in classrooms to engage students in learning processes. Participants mentioned that despite the push to make technical education current to keep up with the ever-growing technical world, certain factors limit its implementation. The factors that limit the use of technology in classrooms in India are lack of technical support, unstable learning environments, resistance from instructors, socioeconomic status of students, and economical background of various states (Dalal, 2014; Parthasarathy & Ananthasayanam, 2012). Participants highlighted that the administration and parent resisting factors especially result from the expensive nature of laptops. Participants highlighted that the selected institute of higher education is located in a rural area with students coming from poor and illiterate families. For example, Honey noted the lack of external funding to improve the infrastructure of the institute to accommodate technology in classrooms. The participants conveyed that the administration has a major role in bringing the reform because they have the ultimate control over what changes could take place within their institute. They conveyed that the major influencing factor that the administration could have on bringing reform in the instructional strategies is by providing a minimum of resources to the faculty and the students. The faculty also highlighted that lack of training in using technological tools is also a resisting factor for use of laptops in classrooms.

In summary, the participants conveyed that these factors depend not only on faculty or students but also on the administration of the institute and the parents. Despite some influential factors, such as faculty and students' interests in engaging in active learning, because of the

location of the institute, the participants believed that the resistance occurs due to lack of awareness and resources. The influence of state and central government organizations in pedagogical decisions of the universities and colleges was also highlighted as a resisting factor. Another resisting factor stressed was the importance of exam results to the administration and fear of exams in students.

Theme 6: Perspectives on Using New Instructional Strategies

Anastapoulou et al. (2009) and de Jong (2006) demonstrated in research studies on inquiry learning that one way in which both teachers and students are supported amid the challenges of inquiry learning is by the appropriate use of technological tools and faculty professional development regarding practicing inquiry learning. Participants in this study also suggested that the faculty need to attend more professional development seminars, trainings, and workshops to improve their knowledge and update themselves about instructional strategies and to start practicing the strategies that they have learned at professional development events.

Participants highlighted that the faculty must be given opportunities for professional development, a democratic voice, and opportunities for decision making. Ginsberg and Wlodkowski (2009) and Gay (2018) highlighted this requirement to provide professional development opportunities and formal training to help faculty in practicing cultural and student-centered strategies in classrooms. Mary highlighted the importance of formal training in learning about student-centered instructional strategies. She emphasized that attending any formal training on practicing new instructional strategies will help faculty practice new strategies in their classrooms. She also highlighted the importance of formal training on practicing cultural influence for pedagogical purposes in classrooms. She shared that without training on any of the

student-centered instructional strategies or on cultural support in classrooms, the faculty would not be able to practice any new strategies.

Participants suggested some of improvements that were not mentioned in the cited literature due to the existing gap in the literature. In addition, curricular reform to address the cultural needs of 21st-century learners should include culture (Villegas & Lucas, 2002). These reform efforts to include culture in curricular reform result in a framework to examine curriculum and historical curricular practices as well as to rethink alternatives for the future (Kanu, 2006). Participants in this study shared that the government's intervention in designing curriculum should change and revealed that individual faculty from affiliated institutes must also be invited to participate during the decision-making processes regarding curricular and instructional reforms. In addition, participants added, universities must design and follow guidelines in updating the system regularly. As a part of universities supervising their affiliated colleges, visiting staff must follow strict guidelines to evaluate the college environment to improve the learning spaces and management rather than following illegal measures such as accepting bribes to disregard the issues that must be noticed and updated. Participants also suggested that the administrations at the individual affiliated colleges must not treat their institute as a mere business but should make an effort to provide resources and professional development opportunities to help faculty and students through incentives and recognition. Participants also shared that the administration should consider providing formal training for faculty to encourage them to practice student-centered instructional strategies. They also emphasized that the administration must provide training to practice pedagogy that is responsive to cultural differences in classrooms.

In summary, faculty predominantly shared the perspective that to bring change in the instructional strategies, the government must change. They also highlighted that incentives are necessary to encourage faculty and students to use student-centered strategies. Furthermore, professional development opportunities and resources must increase to encourage faculty to move away from teacher-centered instructional strategies. An additional finding of this study is that participants also shared some other improvements that are necessary at the affiliated institute of higher education.

Reflection on the Theoretical Framework in the Findings

In the following section, I focus essentially on the reflection of the theoretical framework in the findings of the current case study. The theoretical framework employed for this study relied heavily on Vygotsky's theories. The Vygotskian theories used to form the theoretical framework of this study were ZPD, CHAT, and usage of external tools to perform various activities. An analysis of the data for a relationship with the theoretical framework indicated that some findings reflected the theoretical framework. However, some results did not reflect the theoretical framework.

The findings that reflected Vygotsky's ZPD were found in the participants' descriptions of the discussion method. Discussion method was described as an instructional strategy in which instructors pair an intellectually forward student with a counterpart to help the backward student to understand a concept. The idea behind pairing students is to help students develop problem-solving skills (Robbins, 2001). The participants highlighted that the social and cultural factors are considered influential factors that shape the development of human intellectual skills, reflecting Vygotsky's CHAT. The findings also indicated that faculty act as guides during the

inquiry learning process, which, according to Vygotsky's theories, is the ideal role of a teacher for developing the intellectual ability of a student.

In addition, findings that did not reflect Vygotsky's theories included the strategies faculty use often in classrooms and the lack of using technological tools for learner development. Faculty emphasized that they use lecture predominantly in classrooms due to students favoring memorization of content rather than active engagement in classrooms. Faculty also highlighted that they do not use cultural influence for pedagogical purposes because the cultural beliefs are deeply rooted in classrooms. The participants highlighted that the students do not positively accept an instructor's attempts to explain the importance of respecting all the cultures in classrooms. Furthermore, the lack of use of tools to help students engage in active learning does not reflect the theoretical framework.

Implications for Practice and Future Research

The findings of this study have significant implications on the instructional strategies used at the selected institute of higher education. The results of this study show the current instructional strategies used at the selected institute of higher education. The study also indicates the areas where improvements must take place to provide engaging learning opportunities for students and encourage faculty to indulge in student-centered learning activities.

As noted in Bodrova and Leong's (2001) writing on Vygotsky's research, the role of the faculty member must change from sharing facts to serving as a guide in achieving higher intellectual capabilities in students. The results of this study reveal the expectation of faculty in their willingness to participate in major decision-making processes in terms of curricula, instruction, and textbooks. This willingness to be involved in the decision-making process can be encouraged by allowing the interested faculty from affiliated colleges to participate in

decisions regarding reforms within the Indian higher education system. This not only improves the teaching environment for students but also allows the faculty some room to adapt new instructional strategies to engage students in student-centered strategies such as inquiry learning.

The administration at the individual affiliated institutes of higher education should provide necessary resources to faculty and students to motivate and engage them in student-centered learning approaches. As revealed by the participants, the administration must also provide them with professional development opportunities by sending them to attend conferences, seminars, and workshops to learn about innovative instructional practices and allow them to practice by conducting evaluations on their progress. As the participants revealed, the affiliating universities must employ and provide inspecting staff with strict evaluation criteria to assess affiliated institutes so no room exists to abuse the system while inspecting all the affiliated institutes. The inspecting officer must visit the entire facility and provide genuine reports to both the affiliating university and the affiliated institutions. By following a strict protocol, the affiliated institutes will pay attention to the infrastructural issues that do not allow faculty and students to engage in student-centered activities. This infrastructural improvement as suggested by the participants was the availability of an ICT lab for students to practice using technological resources in their learning process. Even if the decision-making processes and infrastructure are improved, the participants mentioned that the individual faculty must be willing to practice student-centered learning activities and motivate students to engage in their learning processes.

Suggestions for Future Research

Although this qualitative study revealed various current instructional strategies and in-depth faculty perceptions on the current and new instructional strategies, more studies must be published to bridge the gap that exists in the literature. This necessity to fill the gaps in literature

is important to form a comprehensive solution to improve the practice of student-centered instructional strategies and integrate technology for the benefit of faculty and students, who must be prepared to become skilled labor ready for a technologically advancing world. More research and/or case studies must be conducted to add to the body of knowledge and assist in breaking down the barriers of traditional teacher-centered instructional strategies. Considering the CCE program was highlighted as a source for starting to use student-centered strategies, studies on the CCE's design and effectiveness would be beneficial to the body of literature on instructional strategies in higher education classrooms in India. Equally important is the highlighted lack of training and professional development opportunities for faculty. More studies must be conducted to investigate the professional development and formal training opportunities provided to faculty at affiliated institutes of higher education in India. These studies on professional development opportunities for faculty might further be extended to faculty at universities. In addition, these studies might be extended to affiliated institutes and affiliating universities across the nation in India.

This study was conducted at a specific affiliated college in a rural area in the state of Telangana. Perspectives from other areas of the state, region, or nation would add to the perspectives of faculty who teach at the affiliated institutes of higher education. This study could be extended to student perspectives on existing instructional strategies and their expectation on instructional reform. Further studies could be developed using or building on this research. Additional research might include the study of the perspectives of the administration regarding the student-centered instructional strategies. In addition, student perspectives can be studied using a quantitative study of the use of different instructional strategies other than teacher-centered instructional strategies. A quantitative study on student opinions regarding new

instructional strategies can be used to generalize the student perspectives on practicing student-centered learning strategies. Furthermore, these studies with varying participants can be extended to the university level to obtain generalizable results regarding affiliating universities and their role in improving instructional and curricular practices.

Limitations

Several limitations inhibited this study. The most significant limitation was the nonrandom nature of the sample. The purpose of the nonrandom sample was to ensure that the participants possessed the required knowledge about the key elements of this study. The nonrandom nature of this study makes it nongeneralizable. Second, only faculty perceptions at the selected institute of higher education were considered for this study. This study did not include perceptions of students or policymakers. Third, the language barrier that existed was a limitation which resulted in the participants' inabilities to comprehend the research question or the research content thoroughly. Fourth, the faculty members did not have any formal training on cultural influence in classrooms for pedagogical purposes. A fifth limitation was the availability and willingness of all the faculty at the selected institute of higher education to participate in the study. In other words, some faculty members were not available to participate in this study despite their enthusiasm to share their knowledge because of their unavailability at the research site and lack of proper resources such as Internet or telephone services that would have allowed them to participate in the study. Sixth, the restricted amount of interview time might have limited the amount of data the participants shared. This limited time may have prevented proper data saturation. Seventh, implications of this study may only be transferable to other affiliated institutes in India and may not be applicable to universities or other higher

educational settings. Lastly, these results are not generalizable, as each affiliated institute is administered by different governing bodies.

Summary and Conclusion

This study produced six main findings, which revealed the faculty perceptions and existing instructional strategies used at a selected higher education institution in India. Based on the findings, participants in this qualitative case study were using various instructional strategies in classrooms that included inquiry learning as one of their strategies. However, participants were using the lecture method as the frequently used instructional strategy. In addition, it appeared that despite the many factors encouraging faculty to use new instructional strategies, significant and continuing factors prevented them from practicing new instructional strategies. One major factor that prevented faculty members from practicing new instructional strategies or instructional resources was the influence of affiliating universities and the government in designing curriculum and textbooks. Other factors included lack of resources, training, time, and the importance given to exams in the higher education system in India. Finally, this study indicated the areas of improvement within the system of affiliated institutes that could provide engaging learning opportunities for students. Further research is required to include administration and student voices to obtain a more complete understanding of instructional practices at the selected institute of higher education. Equally important is the need for additional research in studying other populations at a similar setting or at a larger university in India. Finally, additional researchers might explore the use of instructional strategies that actively engage students in their learning process.

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APPENDIX A: TRANSCRIPT OF TELEPHONE CALL FOR SCHEDULING A PERSONAL MEETING

Hi. My name is Mounika Ragula. How are you doing? I am a doctoral candidate at Indiana State University, and I am in the primary stage of my research for dissertation. I am studying in the Department of Teaching and Learning pursuing a doctoral degree in Curriculum, Instruction, and Media Technology. I am conducting qualitative research as a part of my doctoral degree, and I am calling you to know if you would agree to participate in my study. To be specific, I am requesting for an opportunity to meet with you to discuss my study and schedule an interview with you to collect data for my research.

If you agree to meet with me, we can schedule an appointment to meet and discuss my research. This meeting would allow me to explain my research and provide you with other documents for you to review to help you decide whether to participate. The documents I will provide will have questions that I will ask on a scheduled interview date and informed consent that will explain you of your rights as a participant. In addition, you should know that all your responses will be confidential. Pseudonyms will be given to you to ensure confidentiality. Would you be interested in meeting with me in your office on your college campus?

[If answered no] Thank you for your time.

[If answered yes] Thank you for your willingness to meet with me. What would be a convenient date and time for me to meet with you? Thank you again for giving the opportunity, time, and

date for this meeting. If you wish to contact me, please call me at +91 99891 20029 or e-mail me at mragula@sycamores.indstate.edu. I look forward to meeting you on _____ .

APPENDIX B: TRANSCRIPT OF OFFICE VISIT FOR INVITATION TO PARTICIPATE

Hi. My name is Mounika Ragula. How are you doing? Before we start, I would like to thank you for responding to my call and agreeing to meet with me. To reiterate, I am a doctoral candidate at Indiana State University and I am in the primary stage of research for my dissertation. I am studying in the Department of Teaching and Learning pursuing a doctorate in Curriculum, Instruction, and Media Technology. My dissertation topic is about fostering inquiry skills and cultural influence in classrooms by exploring the existing instructional practices and usage of laptops in classrooms. I would like to know if you would agree to participate in my study. Particularly, I am seeking for an opportunity to conduct an interview with you about the instructional practices at your institute and perceptions of the student-centered instruction, usage of laptops in classrooms, and your perception on this type of instruction in your college and higher education in India.

If you are willing to participate, I can give you a list of the interview questions that I will ask during the interview. In addition, I would like to restate that all responses you give me during the interview will be kept confidential. Pseudonyms will be used to ensure your confidentiality.

Would you be willing to participate in an interview for this research study?

[If answered no] Thank you for your time.

[If answered yes] Thank you for agreeing to participate. What would be a convenient date and time for the interview?

May I have your e-mail address and phone number for me to send you the informed consent letter and the interview questions? If you need to contact me, please call me at +91 99891 20029 or e-mail me at mragula@sycamores.indstate.edu. I look forward to meeting you on _____.

APPENDIX C: CONFIRMATION OF SCHEDULED INTERVIEW

Dear _____ ,

Thank you for taking time to meet with me despite your busy schedule today. I appreciate your willingness to participate in this research. I want to confirm that we have agreed to meet at (time) on (day), (date) (month), (year) at (location). Attached please find a letter of informed consent. I ask that you read over this letter prior to the interview. If you have any questions about the letter, the interview, or the research, please feel free to contact me or to ask me at our appointed interview time.

Additionally, I have included a copy of the questions that will asked during the interview for your review. As stated in the consent letter, you have the complete freedom to decline answering any question.

Thank you again for your willingness to participate.

Thank you,

Mounika Ragula

APPENDIX D: LETTER OF CONSENT

CONSENT TO PARTICIPATE IN RESEARCH

A Case Study on Faculty Perspectives in Fostering Inquiry Skills and Cultural Influence in Higher Education Classrooms

You are requested to participate in a research study conducted by Mounika Ragula and Dr. Georgianna Duarte, from the Department of Teaching and Learning at Indiana State University. This research study is a requirement for partial fulfillment for a doctoral degree. Your participation in this study is completely voluntary. Please read the information given below and ask questions regarding anything you do not understand about this research study before making a decision on participating in this study.

You are being requested to participate in this research study because you have the professional experience as a faculty member at your college with a minimum of three or more years of continued teaching experience at the same college. Nineteen other participants with similar characteristics are being requested to participate in this research study from the selected institute of higher education.

PURPOSE OF THE STUDY

The purpose of this qualitative case study will be to examine and better understand the instructional practices at the selected college of education. Specifically, this study intends to obtain the perceptions of faculty at your college of education in fostering inquiry skills.

Research shows that inquiry learning encourages students to understand the subject by discovering existing information to form conceptual knowledge about the subject. This construction of knowledge over memorization of facts while learning a subject will help students become more engaged during their learning process. This creation of knowledge also helps the students apply the conceptual knowledge in practice, bridging the gap between theory and practice. Specifically, this study will be focused on your college of education located in Pebbair in the state of Telangana in India. This research will facilitate an understanding of the faculty perceptions in considering culture while teaching in classrooms. To this end, this study will explore these perceptions in terms of utilizing laptops for pedagogical purposes in classrooms.

PROCEDURES

If you are willing to participate in this research study, you will be requested to follow the steps given below:

1. Take part in a face-to-face interview in which you contribute your perceptions of fostering inquiry learning, cultural influence of students, and their usage of laptop computers in classroom. You will also be asked to share your perception of the impact these strategies will have on the instructional strategies that are already being practiced at your college. The interview will be audio recorded and will not exceed 60 minutes. The interview will be proceeded by following a pre-defined list of questions given a week prior to the interview.
2. You will also be asked to share any physical artifacts, including but not limited to syllabi, instructional manuals, and other instructional material that you seem fit to describe your practiced instructional strategies.
3. After the interview has been translated, transcribed, and then analyzed, you will be requested to provide your input to ensure the accuracy, credibility, validity, and transferability of the study.

IMPENDING RISKS AND DISCOMFORTS

There are no predictable risks or discomforts accompanied with your participation in this study.

IMPENDING BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study will be of immense interest to faculty members, universities, and colleges in fostering inquiry skills and considering student cultural backgrounds by using laptop computer technology in classrooms. In addition, the University Grants Commission (UGC) members in the Indian higher education system could find this research beneficial. Because colleges and universities in India use the accreditation policies set by the UGC and the Ministry of Human Resource Development (MHRD), the findings of this study may be transferable to institutes of higher education institutions across India. This study may be significant to curricular reform and development to improve the quality of education. The study highlights the need for appropriate changes to avoid rote memorization by having learners actively participate in classrooms instead of being passive recipients of knowledge shared by the instructor.

CONFIDENTIALITY

All information that is collected in relation to this study which can be recognized with your identity will be kept confidential and will only be disclosed with your permission or as mandated by law. Confidentiality will be ensured by not linking individual responses of the participants with their identities. Pseudonyms will be used to ensure confidentiality. Each member will be requested to choose a pseudonym from a list of pseudonyms generated in a name generator, randomnames.com. All other identifiers such as names, dates, or any other identifiable information will also be removed. All physically collected data will be kept in a

locked folder that will be placed in a locked drawer in my study room at my residence in Hyderabad.

Similarly, the data will be locked in my residence in Terre Haute, Indiana in the United States of America when I return to the states after data collection. Electronic documents, transcripts, and recordings will be kept in a password-protected zipped folder. This folder will then be encrypted which allows further protection of the files, and they can be accessed with my login information and the password I use for encryption. The password-protected and encrypted zipped folder will in turn be kept on a password-protected Dell laptop. The laptop not only maintains firewall security but will encrypt the already locked files and folders. All the collected data will be secured for three years after the research is completed which will then be destroyed. In addition, the collected data will be backed up in a password-protected flash drive and will be kept at the primary investigator's home in a locked safe.

PARTICIPATION AND WITHDRAWAL

Your participation in this study is completely voluntary and your choice. If you volunteer to be a part of this this study, you may still withdraw from the study at any time prior to the interview or during the interview without any consequences of any kind. Additionally, you have the right to refuse to answer any questions that you do not feel comfortable answering. You will have 15 days to withdraw from the study completely after the interview has been conducted. If you choose to withdraw from the study within 15 days, you may simply contact me via email or telephone call to convey your decision to withdraw. Once you inform me of your decision to withdraw from this study, I will not analyze the data collected from you, and your data will be destroyed.

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about this research, please contact:

Mounika Ragula, Principal Investigator

001 918 257 0696 (US) or +91 99891 20029 (India)

721 3rd Ave, Terre Haute, IN, USA 47807(Address in the US)

23-25/2 Jyothinagar Colony, Hyderabad, India 500032 (Address in India)

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Dr. Georgianna Duarte, Faculty Sponsor

Endowed Professor, Department of Teaching and Learning

Bayh College of Education, Indiana State University

001 (956) 433-1163

401 N. 7th St. Terre Haute, IN 47809

Georgianna.Duarte@indstate.edu

RIGHTS OF RESEARCH SUBJECTS

If you have any queries regarding your rights as a participant in this research study, you may contact the Institutional Review Board (IRB) Indiana State University (ISU) by postal mail at Indiana State University, Office of Sponsored Programs, Terre Haute, Indiana, USA 47809. You may also contact IRB at ISU by telephone at (812) 237-3088, or e-mail the IRB at irb@indstate.edu. You will be given the chance to discuss any questions regarding your rights as a participant with a member of the IRB. The IRB is an independent committee that consists of members of the university community, as well as members of the community not connected with ISU. The IRB has reviewed and approved this study.

If you are willing to participate in this research study, please sign one copy of this letter and return it to the researcher.

Professionally,

Mounika Ragula

Doctoral Candidate in Teaching and Learning, Indiana State University

_____ _____ _____

(PRINT NAME) (SIGNATURE) (DATE)

APPENDIX E: PROTOCOL TO INTIATE SUBJECT INTERVIEW

Thank you again for agreeing to participate in this research study. Before we start, I have a few necessary formalities that I need to follow. First, here is a paper copy of the informed consent letter that I emailed to you when we scheduled this interview. I need to collect this physical copy of informed consent after you have read and signed it.

Did you have an opportunity to read it?

(If answered “no”, allow them an opportunity to read it)

(If answered “yes”, proceed)

Do you have any questions about any of the information contained in this letter?

(If answered “yes”, answer their question(s) as appropriate)

(If answered “no”, proceed)

Did you sign it, so I can collect it back from you?

(If answered “no”, allow them an opportunity to sign it)

(If answered “yes”, collect the signed consent and proceed)

Do I have your permission to proceed?

(If answered “no”, stop and determine/resolve the nature of the objection)

(If answered “yes”, proceed)

Great! Next, I would like to seek your verbal statement that you are completely aware and are agreeing to the recording of this interview. Is that OK?

(If answered “no”, stop and determine/resolve the nature of the objection. If the reason for the objection cannot be ameliorated, inform the participant that I can easily accommodate their desire and ask if it is ok to take written notes.)

(If answered “yes”, proceed)

Thank you. I will begin the recording now.

(Start ‘record’)

For the sake of the recording, can you please confirm your willingness to participate in this study?

(Pause for reply)

Thank you. Can you also please confirm your willingness to be recorded?

(Pause for reply)

Thank you. Can you please confirm that you have received and signed a paper copy of the consent letter and the questions?

(Pause for reply)

Thank you again. Finally, can you confirm that you received the questions?

(Pause for reply)

Finally, I want to reiterate that you have the right to cease this interview at any time or refuse to answer any question for any reason. I also want to notify you that your participation and your details will be maintained confidentially. You can facilitate the confidentiality of this interview by avoiding the use of any identifiable information during its course.

(Begin interview questions)

APPENDIX F: INTERVIEW PROTOCOL

Introduction

1. Can you tell me about yourself and your background?
2. What do you teach? When did you start teaching at this institution?
3. Describe your current instructional strategies.

Questions on Inquiry Learning

4. What is your understanding of inquiry learning?
5. What are your past experiences with inquiry learning?
6. How did you come to using the said instructional strategies if you have used them before?
7. How do you perceive using laptops in classrooms to foster inquiry learning?
8. What forces do you perceive as driving and resisting the adoption of laptops for teaching and learning purposes at this institution?
9. What is the impact of practicing inquiry learning on your students and on your teaching?

Questions on Cultural Influence on Classroom Instruction

10. What is your understanding of cultural influence in the classroom?
11. How do you practice culturally responsive pedagogy in the classroom at this institution?
12. What is the impact of practicing culturally responsive pedagogy on students and your teaching?