SUPPORTING EXPERIENCED FACULTY ON VIDEOCONFERENCING PEDAGOGY THROUGH VIDEOCONFERENCING MEDIATED MENTORING

By

JILLIAN ARDLEY * JALE ALDEMIR **

* Instructional Program Manager, Communication Division, Florida State College, Jacksonville, Florida, USA.
** Assistant Professor, Early Childhood Education, University of North Carolina Wilmington, Wilmington, North Carolina, USA.

ABSTRACT

Faculty mentoring in higher education aims to scaffold mentee to adjust to the new work setting, build social relations with others, and improve instructional skills in the same physical environment. However, this process could be problematic in institutions serving in satellite campuses with geographically spread faculty body. The purpose of the current study is to educate experienced faculty on telecasted pedagogy by utilizing Videoconferencing Mediated Mentoring (VMM) model. Three full-time and one adjunct faculty participated in the study at a Southeastern North Carolina University. Data was collected through mentor's and mentees' weekly logs, and interview with mentees. Integrity of quality instruction, instructional transformation, multiplicity, establishing new collaborations and alliances, and advocacy were emerging themes from the data.

Keywords: Videoconferencing, Teleconferencing, Faculty Mentoring.

INTRODUCTION

The concept of higher education has evolved so rapidly in the 21th century that universities can extend their reach to anywhere on earth through technology. As much as such development is very exciting for any institution that desires to increase knowledge, enrollment and revenue, and extend its influence beyond the bricks and mortars of their campuses, it also brings some complexities. These complexities can jeopardize academic programs' existence unless they are addressed in innovative ways. Those complexities include, but are not limited to, infrastructure, professional preparedness of faculty, and quality of course delivery in diverse formats. Therefore higher education institutes who have quality programs with limited student acceptance rates and participation must consider new ways of staying viable in an atmosphere where economic feasibility is important to the continuation of smaller or unique programs.

The higher education institution where the current study took place attempted to extend its reach to different parts of the state by creating small satellite campuses. The purpose was to attract students to diverse and unique programs created by the institute. However, because of a new university-wide mandate to increase the minimum enrollment requirements for a class to meet load, many departments with smaller programs had to combine the same courses taught in different locations into one class offering. This was done by assigning an instructor to teach both groups simultaneously via videoconferencing, which posed an important quality assurance problem on the part of the departments with newly combined classes. Even though, each campus location was equipped with a videoconferencing classroom, none of the faculty in satellite campuses had the professional knowledge and skills to teach via videoconferencing technology.

The authors of the study who were the coordinators of the early childhood program in their respective locations, previously launched a pilot to test a model that could be used to educate other new faculty of education colleagues in remote sites on videoconferencing pedagogy through using the same technology (Aldemir, & Ardley, 2014b). Based on the pilot, the purpose of the

current study is to educate experienced faculty in diverse programs on telecasted pedagogy by utilizing Videoconferencing Mediated Mentoring (VMM) model.

Conceptual Framework

Mentoring in the traditional sense is the process in which a person with more knowledge and experience guides a novice who aims to become expert in the same occupation. Working in the same physical environment grants the mentee and mentor with opportunities to exchange ideas face-to-face. The mentee can also receive immediate feedback due to proximity. The mentoring process supports employees, experienced or inexperienced, in reaching their professional goals, advance their professional knowledge and skills, increase their sense of accomplishment, and improve overall retention rate in an institution (Knipelmeyyer, & Torraco, 2007). Faculty mentoring in higher education context aims to develop scaffolds to help mentee adjust to the new environment, build professional social relations with others, and improve instructional skills, which in turn reduce faculty burnout and a higher turnover rate (Bell, & Treleaven, 2011).

The conceptual model of this work is inspired by Kram's Mentor-protegee mentoring model (1983) and Mickhelson's (1997) Research Mentoring for Higher Education. Four phases in Kram's (1983) mentoring theory were adopted to create the steps of Videoconferencing Mediated Mentoring model (Table 1) utilized in this study. Kram describes the first phase where the mentoring process is initiated as the result of an immediate professional need. The second phase is a step further in which the mentor/mentee relationship is cultivated through consistent scaffolding and reflection. In the third phase, the mentee gains independence and mastery, which results in parting the mentor/mentee process. The final phase of Kram's theory is the period in which the relationship between mentor and mentee is reshaped and redefined because the mentor and mentee are now in more equal grounds that mentee has skills to mentor another colleague. Mikhelson's (1997) Research in Higher Education Mentoring process also helped the authors to integrate effective tools in each step of VMM. Her model emphasized three important concepts: 1) Self-assessment of mentee's professional knowledge and skills, 2) Setting clear goals, and learning from mentors that are role models, and 3) Utilizing technology to maintain communication. Both mentoring models supplied the foundation upon which VMM evolved to support experienced faculty within this research.

Faculty mentoring could be problematic in higher education institutions that serve multiple satellite campuses with a geographically wide-spread faculty body (Aldemir, & Ardley, 2014a).

These institutions are in need of innovative ways to support their faculty serving in different campuses, yet maintain high quality education for their students at all campuses. In this context, faculty mentoring is no longer a concept that can only be placed with the narrow parameters of a new faculty/experienced faculty mentoring dyad that is based on the number of years spent in a given field. In contrast, due to changing methodologies and ways of perceiving support and guidance, diverse faculty and staff can guide and mentor others regardless of the seniority criterion. It is very important to understand that the mentoring process can start with a need and eventually evolve into a learning cycle in which new needs are addressed by any experienced colleague or peer.

Videoconferencing technology is an innovation that has been utilized for over a decade for training those who reside at a distance from the main location of an institution (Aldemir, & Ardley, 2014b; Kent, & Simpson, 2010; Knight, Pedersen, & Peters, 2004; Kurt, & Aldemir, 2013; Nudell, Roth, & Saxowsky, 2005; Saurino, et al., 1999). Therefore, this medium has been adopted in the current study to mentor faculty who are stationed at different campuses of the same institution with colleagues who do not meet the seniority criteria as formally noted, but, are willing to cross hierarchal lines to support any instructor in need of support by utilizing their area of expertise.

Methodology

The current study aimed to extend the videoconferencing telecasting practices to other programs in order to investigate the following research question:

How effective is videoconferencing mediated mentoring in educating experienced faculty and disseminating

telecasted pedagogy to diverse faculty?

Research Design

In this study, the researchers utilized the Videoconferencing Mediated Mentoring (VMM) model (Aldemir, & Ardley, 2014b) with a variation due to the experience level of the participants. The variation was detailed in Table 1. The former VMM model is noted in first and second columns of the table whereas the modifications for the professors with some experience in videoconferencing are noted in the third column in the table.

Initially, the mentoring process in this study started with a need to train experienced faculty in new technologies, namely videoconferencing technology. Next, the mentor who is the first author of this study and experienced instructor in videoconferencing pedagogy assisted the mentees in the self-assessment process, and identifying goals that were geared towards learning videoconferencing pedagogy. Videoconferencing technology was also adopted to maintain communication as Mikhelson (1997) suggested, because of the geographic distance between the mentor and mentees. Therefore, the mentoring process evolved with two different uses of videoconferencing technology: 1) Mentoring on videoconferencing pedagogy, and 2) mentoring through videoconferencing technology. This step is the Prior/Preplanning step detailed in Table 1. During the Interim period of the VMM, the mentor involved the mentees in an orientation process, progress-checked through videoconferencing and other means of technology (e.g., email, text messaging, phone calls). The final step, which is Post/After the Course component was to reflect upon and debrief the participants on the entire process.

Participants and Setting

Three full-time faculty and one adjunct faculty participated in the study at a Southeastern North Carolina University: Division chair for teacher education program, a coordinator in the early childhood program, a full-time university professor of religion, and an adjunct religion faculty member. The coordinator in early childhood program was the faculty mentor and the first author of the study due to her previous experience with videoconferencing pedagogy. The other members of the study acted as mentees due to their limited technical training on videoconferencing teaching and methodology.

The study took place in the context of three diverse undergraduate courses. These courses were five-weeks long and occurred once a week for a four-hour period via videoconferencing. The division chair taught a student teaching practicum course transmitted to five satellite locations. The full-time religion professor taught an introduction to religion course to two satellite locations. Finally, the adjunct faculty in the religion department taught an advanced religion course at two remote locations of the same university.

Each videoconferencing room was equipped with Polycom Videoconferencing Codecs Hardware, a 42" TV located in the rear wall, a 60" x 60" projection screen hanging from the ceiling, and an audio system with a microphone at the instructor's podium, and at least six microphones hung above students' desks. The visual system included two cameras, one facing the students and one facing the front of the room. Additional aids in the class included two white boards, a desktop computer, and an ELMO document camera.

Data Collection and Analysis

The data for the study was collected through a mixed data collection method of the mentor's and the mentees' weekly logs, and interviews with mentees. The weekly logs were open-ended in order to collect holistic-inductive data to encourage responses based on real-world experiences of each individual within the study (Patton, 2015). The interview was developed based upon a standardized open-ended interview format to ensure that all interviewees responded to the same sequence of questions on the given topic. The interview questions are detailed in Appendix A. The participants responded to the questions in two ways: typed responses to the questions during the post/after the course component and via a videoconference question session at the end of the study to verify and check responses.

The second author in the study served in the evaluator role because of her previous experience in VMM model. The "Constant Comparative" (Glaser & Strauss, 1999) method

was used to analyze the data to discover the emerging trends and themes from the data sources. The following procedures took place upon the completion of the study:

- The mentor collected the data and independently searched for themes,
- The evaluator also independently reviewed and analyzed the data to discover the emerging trends, and
- The evaluator conferenced with the mentor to discuss and triangulate emerging themes, areas of strengths and challenges noted in the documents (e.g., logs and interviews).

Findings and Discussion

Videoconferencing technology was utilized to mentor the experienced faculty who were new to videoconferencing pedagogy. The VMM model (Table 1) was utilized to mentor the participating faculty. The following themes emerged from the data analysis.

Integrity of Quality Instruction

Faculty within the study previously monitored the integrity of the class via traditional face-to-face teaching format (e.g., testing, respectful feedback and communication among students, and equal access to materials and resources). At the beginning of the study, the participants were challenged to maintain the same quality of instruction within the videoconferencing course delivery mode. For example, one of the participants lamented in his first week log: *"Can't pass out handouts. I have to email the handouts to the students ahead of time. Can't show materials in class effectively. Materials like books or reference material feel like my effectiveness in the classroom is cut in half"*. The VMM model was implemented to support experienced faculty to alleviate the issues noted by the participant and to ensure ethical teaching practices.

During the interim portion (Table 1) of the diverse courses, the challenges related to videoconferencing instruction were noted and addressed. Different modes of technology (e.g., phone, texting, email, and videoconferencing) were utilized to support participants with challenges related to videoconferencing instruction. One of the topics addressed during the week one mentoring session via videoconferencing was the utilization of Moodle. Placing documents on Module, or any online student support platform allows students to use the information at their own will. Moreover, it stops the continuous duplicating of resources due student absences and other issues. Therefore, equal access to any material supplied by the professor was easily accessible after transmission options were discussed within the VMM model.

Instructional Transformation

When working with students through videoconferencing, implicit issues such as student dispositions, personal characteristics of class members, and nonverbal cues must be recognized and dealt with to support relevant adult learning strategies. An example of a student's disposition was noted in one of the participant's distance education classroom:

"One of the students at Washington seems to be quite shy and he is struggling with the nature of critical academic study of the scripture to begin with, so it worries the investigators when they cannot be in his direct presence because they cannot tell anything from the screen as far as his facial expressions and the level of comfort he has with the material. The investigators depend on this information feedback in order to know when and how to push a little bit and when and how they should pull back a bit to allow him time to digest".

The participant felt the best way to facilitate learning was to do a split screen to see remote classroom during power point presentation. This, in his words, allowed him to, "maintain the eye contact requisite when lecturing." The participant congruently believed that, there was more he could do, but he was unsure of best practices. During the debrief after week one of the course, the mentee and the mentor came to a consensus that more discourse between the students and the instructor and less lecture was the best way to involve students. This is especially important when there are those who are willing to sit back and not share their ideas. Thus, leaving the instructor unsure of the comprehension of the learner.

In the beginning of the study, all of the participants discussed their background and how it impacted their teaching. Both religion professors were acting preachers in

their communities. The division chair was a former top administrator in a large public school district. Each of these participants in their non-teaching occupations depended on their oral skills to disseminate content knowledge. Each participant is seen as leaders and experts in their non-teaching roles, which grants them the authority to convey messages in a hierarchical manner. So the ability to share ideas and concepts in a two-way manner is new to the participants of the study. Therefore, changing the percentage of lecturing method within the course to share responsibility of learning was a necessary transformation to incorporate all learning in a more authentic fashion via videoconferencing.

Multiplicity

One of the challenges of a University operating in multiple satellite locations is to find faculty with terminal degrees that can coordinate and teach at each site. The introduction of videoconferencing technology allowed the faculty to reproduce themselves at multiple sites during a given semester. The faculty participants noted that, this type of delivery system allowed the course of study to continue

Timeline	Mentor	Mentee (No prior VC experience)	Mentee (with some previous VC experience)
Prior/pre planning section	The experienced faculty (mentor) is assigned to their respective location.	The adjunct faculty (mentee) is assigned to their respective location.	The full-time faculty (mentee) and the adjunct faculty are assigned to their respective location.
	The mentor receives a technical training from IT prior to course start to learn the features of the videoconferencing equipment in their assigned classroom.	The mentee receives a technical training from the mentor prior to course start to learn the features of the videoconferencing equip -ment in their classroom.	The mentees had previously received technical training on the fundamentals of videoconferencing hardware through the university's IT unit.
	The mentor trains the mentee on overall structure of Moodle online student support system.	The mentee receives training from the mentor on overall structure of the course, syllabus, course expectations, utilizing Moodle online student support system.	The mentees received a training from the mentor to make the activities in their syllabus suitable for students receiving instruction via videoconferencing.
			The mentees received an advance training on the Polycom Video conferencing Codecs system.
Interim/during the course section	Course agenda, lectures, handouts and tests are prepared by the mentor.	The mentee receives the course materials from the mentor prior to each session.	The mentees receive syllabi already developed by the area experts in their respective programs.
	Before each session the faculty mentor communicates to the mentee via phone to discuss the session agenda, instructional strategies, and classroom activities to engage the learners in both sites.	The mentee receives orientation from the mentor on the session agenda prior to each class.	The mentees receive orientation from the mentor prior to the first class, the third class and the final class through videoconferencing.
	The mentor teaches majority of the sessions to the remote site via videoconferencing.	The mentee observes the mentor's instruction.	The mentor checks the progress of mentees via email and face-to-face meetings.
	The mentor models teaching pedagogy appropriate for early childhood education concepts in the context of the course.	The mentee intermittently teaches their class and the remote site (mentor's site).	The mentor played the mediator role for IT challenges and utilization of mobile technology.
	The mentor and the mentee debrief after each session via phone, texting and email.	The mentor and the mentee debrief after each session via phone, texting and email.	
Post/after the course completion section	The mentor completes a survey and share their final thoughts with the mentee and the evaluator after the course ends.	The mentee completes a survey and share their final thoughts after the course ends with the mentor and a researcher.	The mentees and the mentor debrief after the course ends and reflect on the issues as well as positive outcomes of videoconferencing.
	The evaluator takes logs and surveys and analyzes findings from the mentor's data.	The evaluator takes the logs and surveys and analyzes the findings from the mentee's data.	Interviews were completed during face-to-face debriefing.
			The evaluator takes and analyzes findings from the mentor's and mentees' data.

Table 1. Videoconferencing Mediated Mentoring (VMM) Model-Revised

with quality instructors at each site without any interruption. The mentor participant noted due to smaller number of students enrolled in a course, videoconferencing allowed multiple sites to be combined to fulfill the minimum number of students required to offer a course. Without this ability, classes could not be offered and students would have to wait for others to enroll to complete their program of study. Subsequently, the instructors could not meet the credit hour requirements per their contract. Hence, Professors reproducing themselves in multiple locations through videoconferencing expands the impact of their instruction beyond the physical borders of the classroom and the amount of the student population that they can support at other sites.

Establishing New Collaborations and Alliances

Because of the remote locations of many campus sites, the different specialties of faculty, and the diverse needs of their learners, the faculty do not have the opportunities to collaborate on projects across different departments similar to brick-and-mortar institutes at one site. However, new enrollment requirements and the need for innovative course delivery methods obligated each participant in this study to explore options outside of their departments' general method of teaching. The first author of this study noted that, her colleagues were having similar enrollment challenges and proceeded in sending an invitation to the faculty to participate in the videoconferencing study. This prompted a discussion across the departments, and respectful feedback and ideas among the interested parties were shared about teaching in nontraditional delivery modes. All ideas and concepts about pedagogical practices of teaching adult learners were reviewed and modified with support to fit the framework of teaching via videoconferencing. VMM which was previously piloted and implemented by one program (Aldemir, & Ardley, 2014a) has now been presented as an effective model to assist faculty in other programs to disseminate course delivery at multiple sites. The key to collaboration was based on the other participants' desire to sustain their program and participate in research that supported more effective ways of teaching their nontraditional learners. Programs with small student enrollment responded readily to the invitation to conduct VMM. VMM supported collaboration across the departments because the ultimate goal of each program in higher education is to enroll, teach, and graduate students.

Advocacy

Luna and Cullen (1995) states that "Mentoring, whether practiced informally or formally, advances the concept of individual and institutional empowerment by supporting employees' growth (p.13)". VMM began first with a need in a specific department and the underutilization of the videoconferencing technology at the multiple sites. After a pilot of VMM (Aldemir, & Ardley, 2014b), participants of the first study advocated the use of videoconferencing technology in the college. This led the participants of the current study to advocate the usage of the videoconferencing technology throughout the university. As stated by a participant, *"we need to use our resources effectively to support learning university-wide in all programs offered in the sites. If we do not use our videoconferencing rooms, we are letting a teaching platform to go to waste"*. Therefore, this member communicated his points to his division's technology committee and advocated to retrieve the budget allocated for updating the videoconferencing technology. Marek (2009) argues that, higher education is beyond discussing which delivery method is best (traditional versus distance education), but should rather resolve issue of preparing faculty professionally to use technology while maintaining quality of teaching. Such actions demonstrate a change in the mind-set at the institutional level in regards to the financial/fiscal benefits of teaching diverse courses within this platform.

Limitations of the Study

Qualitative research focuses on participants' practices, behaviors, and perceptions of the researched activities, processes, and structures within their normal social setting. This type of research also includes intense scrutiny of the subjects such as the participants' responses to videoconferencing usage in their individual classrooms. Furthermore, qualitative research provides a holistic view, through the participants' own words and perceptions, of

how they understand, account for and act within these situations (Miles, & Huberman, 1984). However, since the data is collected via a prescribed set of questions, and the participants are colleagues of the researchers, two issues may occur. First, there is little flexibility in narrowing the questions to the specific individuals' understanding of the context and circumstances which can constrain or limit the relevance of questions and responses (Patton, 2015). Second, the interviewer, who is also a part of the given culture, must guard against using their prior knowledge of the participants when gleaning themes and consistent strands noted throughout the research.

Conclusion

The aim of this study has been to teach experienced faculty members how to use appropriate telecasting pedagogy to present course information via Videoconferencing Mediated Mentoring (VMM) model. It is evident that, participants needed a designated mentor to support them in achieving the appropriate telecasting behaviors of this 21st century broadcasting tool, videoconferencing. Therefore, by utilizing colleagues who were a part of the given school culture with previous experience, participants were able to gain new insights on how broadening their teaching platform could support diverse learners appropriately at distant locations. Next steps would include developing learning circles or study groups to support other faculty with an interest in broadening their pedagogical practices in this area. Thus, the advocacy strand and the integrity of quality instruction strand are important areas to foster at any institute that is on the cusp of changing their way of doing instruction to support diverse learners at multiple locations via videoconferencing.

Qualitative tools such as reflective weekly logs lead to an exploration of telecast pedagogy in terms of related puzzles, issues, and challenges. VMM was an effective guide to facilitate positive action and outcomes for the participants. As noted in the study, by using this model, new alliances were developed and formed. Through these new partnerships, instructional transformation occurred for each instruction. Replication of this model with other faculty experienced in telecast pedagogy could be done, therefore with a variety of disciplines and majors. VMM model could support other colleagues in need of mentors who understand the challenges of supporting students via the multiplicity of the instructor to many sites in an appropriate manner. Further research is needed to see what modifications should be made to the model based on the needs of colleagues in different fields of study and who range in diverse levels of experience.

Institutions should cultivate a culture of support for their existing and experienced faculty as wells as new comers (Marek, 2009). The need to support and defend the rationale for providing a high quality program in higher education in a diverse manner depends on the faculty's willingness to try diverse teaching platforms. These teaching platforms must promote equity and quality within a given program so that all learners have the ability to achieve at the highest level. The VMM model is now seen as a feasible way to introduce experienced and new faculty to the pedagogy of learning through distance education. In the current study, the authors were able to disseminate a previously tested model, VMM in order to educate experienced faculty on videoconferencing technology pedagogy. Through utilizing qualitative tools such as self-assessment and reflection via weekly logs, the mentees made progress toward gaining mastery in videoconferencing territory with the support of Mentors from a different discipline. Such finding advocate for more sharing and support of ideas between disciplines in order to help more students in diverse programs.

References

[1]. Aldemir, & Ardley, (2014a). "Using Videoconferencing Mediated Mentoring to support an adjunct Faculty". *Journal of Teaching and Learning with Technology,* Vol. 3, No. 1, pp. 59 - 71, doi: 10.14434.jotlt.v3n1. 4004

[2]. Aldemir, J. & Ardley, J., (2014b). "Utilizing videoconferencing technology to instruct remote non-traditional teacher education students". *Journal of Educational Technology Systems*, Vol. 42, No. 4, pp. 383-403.

[3]. Bell, A., & Treleaven, L., (2011). "Looking for professor right: Mentee selection of mentors in a forma mentoring program". *Higher Education*, Vol. 61, pp. 545-561. Doi:

10.1007/s10734-010-9348-0

[4]. Glaser, B.G., & Strauss, A.L. (1999). *The Discovery of Grounded Theory for Qualitative Research*. New Brunswick, NJ: AldineTransaction.

[5]. Kent, A.M., & Simpson, J.L., (2010). "Interactive videoconferencing: Connecting theory to practice for preservice teachers". *Journal of Digital Learning in Teacher Education*, Vol. 27, No. 1, pp. 12-21. doi:10.1080/21532974.2010.10784652

[6]. Knippelmeyer, S.A., & Torraco, R.J., (2007). "Mentoring as a developmental tool for higher education". Retrieved from http://search.proquest.com.liblink.uncw.edu/docview/61906480?accountid=14606

[7]. Knight, S.L., Pedersen, S., & Peters, W., (2004). "Connecting the university with a professional development school: Pre-service teachers' attitudes toward the use of compressed video". *Journal of Technology and Teacher Education*, Vol. 12, No. 1, pp. 139-155.

[8]. Kram, K.E., (1983). "Phases of the mentor relationship". *Academy of Management Journal*, Vol. 26, No. 4, pp. 608-25.

[9]. Kurt, G., & Aldemir, J., (2013). "Sharing international perspectives on preschool education: A videoconference experience with graduate students in Turkey". *Energy Education Science and Technology, Part B Social Educational Studies*, Vol. 5, No. 4, pp. 627-634.

[10]. Luna, G., & Cullen, D.L., (1995). "Empowering the faculty: Mentoring redirected and renewed". *ASHE-ERIC Higher Education Report No. 3.* ERIC Clearinghouse on Higher Education, One Dupont Circle, N.W., Suite 630, Washington, DC 20036-1183 ($18 plus $3.95 postage and handling). Retrieved from http://search.proquest.com.liblink.uncw.edu/docview/62543888?accountid=14606

[11]. Marek, K. (2009). "Learning to teach online: Creating a culture of support for faculty". *Journal of Education for Library and Information Science*, Vol. 50, No. 4, pp. 275-292.

[12]. Mihkelson, A. (1997). "A Model of Research Mentoring for Higher Education--An Overview". Retrieved from http://search.proquest.com.liblink.uncw.edu/docview/62547039?accountid=14606

[13]. Miles, M., & Huberman, A. (1984). *Qualitative Data Analysis: A Sourcebook of New Methods*. Sage, Beverly Hills, CA

[14]. Nudell, D., Roth, B., & Saxowsky, D. (2005). "Non-traditional extension education using videoconferencing". *Journal of Extension Education*, Vol. 43, No. 1. Retrieved from http://www.joe.org/joe/2005february/tt3.shtml

[15]. Patton, M. (2015). *Qualitative Research and Evaluation Methods*, (4th ed.). London, England: Sage.

[16]. Saurino, D.R., et al. (1999). "Preparing science teachers using distance learning: Urban and rural students collaborate using video teleconferencing (VTEL) technology". *The Annual Meeting of the National Association of Research in Science Teaching*, Boston, MA.

Appendix A

Interview Protocol

1. What did you like about using this technology with non-traditional students?
2. What were the advantages of using this technology with non-traditional students?
3. What were the disadvantages of using this technology with non-traditional students?
4. Is there anything else that you would like to share about this experience?

ABOUT THE AUTHORS

Dr. Jillian Ardley is an Instructional Program Manager in the Communication Division at Florida State College, Jacksonville, Florida, USA. She is also a part-time faculty member of the Early Childhood Education (ECE) program at the University of Mount Olive (UMO) in Mount Olive, North Carolina where she formerly worked as a coordinator in the ECE program. She has received both her B.S. and M.S. degrees in Elementary Education from Florida A&M University. She also received her Ph.D. in Early Childhood from Florida State University. Both institutes are located in Tallahassee, Florida. Her research interests are (1) using Videoconferencing as an Instructional Tool for Higher Education Learning, and (2) Infusing Culturally Relevant Teaching Practices to Support Higher Education Learners.

Dr. Jale Aldemir is an Assistant Professor of Early Childhood Education at University of North Carolina Wilmington, Wilmington, North Carolina, USA. She holds a bachelor of science in psychological counseling and guidance from Inonu University, Turkey. She earned her master's education and doctorate degree in curriculum and instruction with early childhood education emphasis from the Pennsylvania State University. Her research interests include Technology Integration in Preservice-teacher Education, Preservice-teachers' Belief Systems and STEM Education in Early Childhood Education.