Author: Tomek, Scott A.

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STUDENT:

NAME: Scott Tomek **DATE: 12/11/17**

ADVISOR: (Committee Chair if MS Plan A or EdS Thesis or Field Project/Problem):

NAME: Dr. Carol Mooney, Ed.D **DATE: 12/11/17**

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Committee members (other than your advisor who is listed in the section above)

1. **CMTE MEMBER'S NAME:** Deanna Schultz, Ph.D **DATE: 12/11/17**
2. **CMTE MEMBER'S NAME:** Sally Dresdow, Ph.D **DATE: 12/11/17**
3. **CMTE MEMBER'S NAME:** **DATE:**

This section to be completed by the Graduate School

This final research report has been approved by the Graduate School.

Director, Office of Graduate Studies: **DATE:**

Tomek, Scott A. ***Department of Transportation EMS Instructor Guideline Course: A Hybrid Conference Model***

Abstract

The purpose of this study was to determine if the Department of Transportation Emergency Medical Services Instructor Guidelines course could be delivered in hybrid conference model format to assist in filling the current gap that exists in the availability of this course in Minnesota. Minnesota state statute requires that 50% all initial Emergency Medical Technician and Paramedic courses be taught by an instructor who has completed the course. The research methodology was quantitative in nature using a pre-course and post-course participant survey. Thirty-three students registered for the course of which 28 chose to participate in the study. Students identified that accessibility, flexibility, and convenience was not only what drew them to the course, but what allowed them to take, and complete the course. Further development and offerings of the hybrid conference model must be offered and conducted to fill the gap in instructor course offerings. The hybrid conference model can also serve as the foundation for developing online version of instructor course making it available for and filling a significant gap in educational offerings in rural Minnesota.

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Chapter I: Introduction

Paramedics and Emergency Medical Technicians (EMT) make up the field of Emergency Medical Services (EMS). EMS dates back in the United States (US) to the early 1900's at New Orleans Charity Hospital (City of New Orleans, 2015; National EMS Museum Foundation, 2015a). What most US citizens consider EMS by today's standards began with Dr. Eugen Nagel from the University of Miami's Medical School when he conducted the first paramedic program in the US in conjunction with the Miami Fire Department (National EMS Museum Foundation, 2015b).

Initial and ongoing education for paramedics was first taught by physicians from various specialties such as cardiology, anesthesiology, and later emergency medicine which continued into the late 1970's. As the demand for paramedics and their advanced skills grew, metropolitan areas across the US began offering paramedic training programs of their own. As this occurred, those teaching initial and ongoing paramedic education also began to change. By the early 1980's, nurses with backgrounds in critical care and emergency nursing along with a few paramedics began to teach the majority of the courses, with physicians presenting on specific topical areas. As the paramedic profession fully developed in the late 1990's and early 2000's, another shift occurred and experienced paramedics were now the primary instructors. Though they brought years of clinical experience from the unique operational environment that EMS operates in, most had no background as educators or in education (National Association of State EMS Officials, 2010; National Highway Transportation Safety Administration, 2009a).

Now EMTs and paramedics provide the majority of EMS education, both initial and continuing education. Typically, EMS educators have been those EMTs and Paramedics who had excellent clinical skills, but typically, no formal or college level courses in education or

training and development. They may have had taken a Cardiopulmonary Resuscitation Instructor (CPR-I) or an Advanced Cardiac Life Support Instructor (ACLS-I) course. These courses were already developed with curriculum, lesson plans, slides, and skill validation forms. They were designed so the EMS educator was able to teach the specific course, but did not prepare the EMS educator to lead an Emergency Medical Technician or paramedic courses, develop curriculum, lesson plans, or assessment tools for a specific module of the Paramedic program. This was not a concern for those organizations that teach EMT or paramedic courses since they already anticipated the need to send newly hired instructors to a Department of Transportation (DOT) EMS Instructor Guidelines course. Of concern are those organizations that only teach Emergency Medical Responder (EMR) courses. The current Emergency Medical Services Regulatory Board (EMSRB) discussion leads to the same requirements for EMR instructors that are required for EMT and paramedic instructors. Those organizations will either need to cease teaching or arrange for their instructors to attend a DOT EMS Instructor Guidelines course.

To address this issue nationwide, the National Highway Transportation Safety Administration (NHTSA) which oversees EMS in conjunction with the National Association of EMS Educators (NAEMSE) and the Health Resources and Services Administration (HRSA) developed the "2002 National Guidelines for Educating EMS Instructors" (NHTSA, 2002). These guidelines outlined the minimum knowledge, skills, and abilities (KSA) that entry level instructors and entry level assistant instructors should be able to demonstrate. There were a number of institutions that have offered the instructor course varying from 16 to 40 hours with some further dividing it into sections. For example the National Association of EMS Educators (NAEMSE, 2017) level 1 and level 2 courses are both 24 hours in total length and address all

required DOT instructor content. These courses have been delivered in several different formats from face-to-face (f2f), to online, and hybrid models. There was no intent that the curriculum be delivered in a traditional, f2f lecture format due to the unique EMS operational environment, significant skills, and interventional procedures utilized (National Highway Transportation Safety Administration, 2002).

Though there are three institutions in Minnesota that have offered the DOT EMS Instructor Guideline course, the community or technical colleges are the primary institutions that offer initial EMT and Paramedic programs. Besides academic institutions, many healthcare organizations offer initial EMT training such as for-profit EMS education companies (Allied Medical Training, 2015), not-for-profit EMS systems (Allina Health EMS, 2015), and public safety organizations (Woodbury Public Safety, 2015). In the fall of 2015, there were 125 initial EMT courses being offered throughout the state of Minnesota in both metro and rural areas (EMSRB, 2015). All of these courses were required to utilize instructor(s) to teach at least 50% of the course content (Minnesota EMS Education Programs Act, 2015) who completed the Department of Transportation (DOT) EMS Instructor Guidelines course. Instructors assisting with the remaining part of the course content are encouraged to have completed the DOT EMS Instructor Guidelines course, though currently, there is no minimum standard or requirements for assistant instructors (Minnesota EMS Education Programs Act, 2015). More recently, discussions at the Emergency Medical Services Regulatory Board have centered on the question of; should EMR courses be held to the same instructor standards as paramedic courses? Which vary in length from 56 to 69 college level credits and EMT courses which are nine college level credits in length. Conversely, EMR courses are 40 hours in length and typically taught to police officers and firefighters.

Current EMS instructor qualifications in Minnesota are defined by State Statute 144E.283 (The Office of the Revisor of Statutes, 2016). The EMT instructor must possess a valid certification, registration, or licensure as an EMT, Advanced EMT, paramedic, physician, or registered nurse. They also have to have two years of active emergency medical practical experience. The instructor needs to be recommended by a medical director of a licensed hospital, ambulance service, or education program approved by the EMSRB. The instructor must successfully complete the DOT EMS Instructor course or its equivalent (Instructor Qualifications, 2016). Though the EMSRB defines this in statute, they do not act as a certifying body for EMS instructors. Currently, there is not a national certifying body for EMS instructors.

Statement of the Problem

The State of Minnesota requires that 50% of all initial EMT and Paramedic course content be taught by instructor(s) who have taken the DOT EMS Instructor Guidelines course. Due to the small number of new EMS instructors entering the EMS education field and the lack of current instructors who have completed the DOT EMS Instructor Guidelines course, thus not being credentialed to teach EMT and Paramedic courses. The situation has limited the ability for both private and academic organizations to conduct these courses. This issue presents an even greater challenge to organizations in rural areas of Minnesota.

Purpose of the Study and Research Questions

The purpose of the study is designed to determine if the hybrid conference model is a feasible and effective format for delivering the DOT EMS Instructor Guideline Course in Minnesota. To accomplish this, the following questions needed to be addressed and answered:

1. What were the identifiable challenges and/or barriers of the hybrid conference model to meet DOT EMS Instructor Guideline course completion requirements?

2. What were the challenges and/or barriers identified that prevented students from completing the EMS Instructor Guideline course hybrid conference model?
3. What were the identifiable advantages of the hybrid conference model over the traditional face-to-face and hybrid courses within the EMS Instructor profession?
4. Could the hybrid delivery of the EMS instructor course address the professional development needs for instructors?
5. What were the identifiable advantages to presenting f2f versus videotaping the student's final presentation?

Importance of the Study

Currently, there has not been an attempt to conduct a DOT EMS Instructor Guidelines course with a portion of it online and a portion as part of an EMS conference, let alone at an EMS Educator's conference. Developing a hybrid conference model for the DOT EMS Instructor Guidelines course would significantly help in addressing the current need for EMS instructors to meet the requirements of the EMSRB for EMS instructors in Minnesota. It would also play a significant role in assuring to meet future demands for EMS educator's in Minnesota by guarantying that there would be at least one DOT EMS Instructor Guideline course offered not only every year, but also at the same time of the year. This first hybrid pilot ultimately lays the groundwork for further pilots in developing future delivery models for the DOT EMS Instructor Guidelines course in Minnesota which would make the course accessible to the EMS community throughout the state. The study will also determine which capstone/assessment was chosen by the student and if there was a significant difference in completion rates. Finally, the students chosen method of capstone/assessment and completion rate will then be compared to the students pre- and post- course survey questions regarding technological literacy.

The pilot project will determine if current EMS Educators are interested in developing and presenting topic(s) with learning outcome(s) that meet the DOT EMS Instructor Guidelines course learning outcome(s) for a hybrid course. If there was interest; was there a significant difference in who submitted to present at the conference f2f versus online? The pilot project will determine if the EMS Educators who presented at the conference had any significant challenges in developing and/or tying in their topic(s) to the learning outcome(s) of DOT EMS Instructor Guidelines course module(s) they presented.

Definition of Terms

The following terms will be used throughout this research paper.

Emergency medical responder (EMR). Provides immediate lifesaving care to critical patients who access the EMS system while awaiting additional, higher-level trained EMS responders. EMRs are typically police officers and firefighters.

Emergency medical services (EMS). A system that provides out-of-facility emergency medical care to those with perceived urgent needs (NREMT, 2017).

Emergency medical services educator. An Emergency Medical Technician (EMT) or Paramedic who develops and delivers initial and/or ongoing education to other EMRs, EMTs and Paramedics (NHTSA, 2002).

Emergency Medical Services Regulatory Board. A Minnesota government agency whose missions is to protect the public's health and safety through regulation and support of the EMS system (EMSRB, 2015).

Emergency medical technician (EMT). A member of the EMS team who provides out-of-hospital emergency care; includes certification of EMT-Basic, EMT-Intermediate, and EMT-

Paramedic which identify progressively advancing levels of care (NHTSA, 2002, Appendix XIX, p. 3).

Hybrid course. A course or class that is offered partially online and partially face-to-face as part of a conference (University of Wisconsin, 2015).

National Highway Transportation Safety Administration (NHTSA). The government organization which oversees EMS in the United States of America (National Highway Transportation Safety Administration EMS, 2015).

Paramedic. An allied health professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients (NHTSA, 2007, p. 21).

Upper Midwest states. Consist of Iowa, Minnesota, and Wisconsin (National Oceanic and Atmospheric Administration, 2015).

Limitations of the Study

The limitations of the study were:

1. That it was a non-randomized, convenience sample using only those participants who choose to and are able to complete both the online portion of the course and attend the two-days of the face-to-face portion of the course.
2. That it was limited to the first 30 participants who required completing the DOT IG HCMC that signed-up for the course.

Chapter II: Literature Review

The purpose of the study was to gather data to determine the need and support for the development of a hybrid conference course model for the DOT EMS Instructor Guideline course. Many formats of providing initial EMS instructor education throughout the United States exist, including face-to-face, remote, and/or online formats. Currently, there is not a universal definition as to what is considered a hybrid course, beyond that there is some portion of the course that is conducted remotely, virtually, and/or online. This literature review does not attempt to define a universal definition of a hybrid course but, will focus the unique advantages and unique challenges of a hybrid course over face-to-face, web-based, and online courses. The literature review will first discuss the background of EMT and Paramedic course delivery in Minnesota. Then the literature review will explore eight areas that can directly impact hybrid delivery which are; increased accessibility, less travel time, flexibility, course pace, socialization, content determination, student feedback, and student self-discipline.

Background to EMT and Paramedic Course Delivery

The State of Minnesota requires that 50% of all initial EMT and Paramedic course content be taught by instructor(s) who have taken the DOT EMS Instructor Guidelines course (EMSRB, 2013). Within the EMS community, there is believed to be a small number of new EMS instructors entering the field of EMS education and training each year. Though, this number cannot be quantified due to the EMSRB requiring the organization that the instructor teaches for to retain a copy of the instructor's completion certificate for the DOT EMS Instructor Guidelines course they attended. This makes determining how many current and new EMS instructors there actually are. Also, no one or no organization tracks the number of courses that have been cancelled due to a lack of qualified instructors. Due to this, there is no way to

quantify and/or clearly define how many EMS instructors need or desire to take a DOT Instructor Guidelines course each year and how many are unable to locate one. Looking at two different recent reports it suggests that this is not just an EMS issue in Minnesota, but a national issue in both EMS and healthcare. The recent report released by Senator Al Franken (2015) on critical workforce shortages in healthcare in rural areas showed that due to limited access to healthcare education programs that are not offered "online or through distance education" (p. 12). As a result, individuals must travel long distances to classes and that flexible training with increased use of technology must be explored to address this gap (Franken, 2015). A neighboring state, in Wisconsin, EMS is experiencing similar issues regarding EMS education from lack of preceptors putting pressure on educational organizations "to meet the growing needs of the student population" (Blessing et al., 2012, p. 18).

Face-to face courses have been and continue to be the predominant method of delivering Emergency Medical Service (EMS) education at all levels including initial and ongoing education for EMS educators. There have been a few DOT EMS Instructor Guidelines courses that have been offered as a hybrid course with eight hours online and 16 hours f2f, split over two days (Safety University, 2015). None have been offered as a hybrid conference course model with a portion online and a portion that is offered as sessions/presentations at an EMS conference. This model finishes with an f2f end-of-conference or within 30-day post-conference online capstone presentation. In part, the reluctance of exploring new educational models lies in the lack of education in the very EMS educators the DOT EMS Instructor Guidelines course was designed to reach.

Traditionally, EMS educators have been those EMTs and Paramedics who had excellent clinical skills, but typically, no formal or college level courses in education or training and

development (National Highway Transportation Safety Administration, 2009b). They may have had taken a Cardiopulmonary Resuscitation Instructor (CPR-I) or an Advanced Cardiac Life Support Instructor (ACLS-I) course (American Heart Association, 2017). These courses are already developed with curriculum, lesson plans, slides, and skill validation forms. They are designed so the EMS educator can teach the specific course, but does not prepare the EMS educator to lead Emergency Medical Technician or paramedic courses or develop curriculum, lesson plans, or assessment tools for a specific module or paramedic program. This is not a concern for those organizations that teach EMT or paramedic courses since they already anticipate the need to send newly hired instructors to a DOT EMS Instructor Guidelines course. Whereas, if the EMSRB would implement the same requirements for EMR instructors, those organizations that only teach the 40 hour EMR courses, formerly called first responder will either need to cease teaching or arrange for their instructors to attend a DOT EMS Instructor Guidelines course (EMSRB, 2013).

The day and age has come where courses and classes are offered and delivered in many non-traditional formats (Canada School of Public Service, 2015), though, what is or was thought of as non-traditional is rapidly changing. Non-traditional course delivery is best described as students who are not face-to-face in the same physical space as their instructor. Examples include Certified Public Accountant (CPA) continuing education offered by Checkpoint Learning (2017) which offers courses and lets the participant select from webinars delivered via computer, IPad, or smartphones. Continuing Education Express (2017) offers similar online education options for realtors, but goes even further. They offer continuing education for the realtor based on unique state requirements, specific to one, some, or all states they offer education in. Originally, non-traditional or first generation distance education was often nothing

more than a syllabus, textbook, assignments that were mailed in, perhaps a workbook which was completed at the student's own pace, and then finally there was a final assessment (Moore & Kearsly, 2012). While EB Medicine (2017) for physicians and Elite Continuing Education (2015) for nurses, continue to offer continuing education using first generation distance education tools where participants read selected article(s) and then take a quiz. Both would be considered technologically enhanced first generation distance education courses, utilizing online quizzes and tracking of educational hours.

There is no universal definition as to what is considered to be a hybrid course. Many consider a course where when less than 20% of the education is online is usually considered web-enhanced and when 100% of the education is conducted with no face-to-face interaction in the same physical space occurs, is labeled an online course (Hanover Research Council, 2009; University of Wisconsin-Milwaukee, 2015). A hybrid course can then be defined as a course that is conducted with greater than 20%, but not more than 99% of its content delivered online. Creighton University's paramedic national core curriculum 30 hour recertification (NCCR) course meets the requirements of a hybrid course with 10 hours (33.3%) conducted online and 20 hours (66.6%) conducted f2f (Creighton University, 2017). The hybrid model offers unique advantages over face-to-face, web-based, and online courses, but also poses some unique challenges.

Increased accessibility. Individuals have been looking for alternatives, flexibility, and increased accessibility to learning opportunities than what traditional f2f educational courses have offered for many years (Attack, 2003; Metz, 2010). Now, even traditional college students who may be looking to accelerate the rate of degree completion or the flexibility to work more are seeking out alternatives to traditional f2f courses. It is not only the potential ability to

accelerate completion that makes a hybrid course desirable, but the ability for individuals to participate in courses located significant distances from them (Aspillera, 2010). Additionally, these individuals have full time jobs, families, and other life circumstances that prevent full time enrollment in a traditional school environment.

Hybrid courses can decrease the distance a student has to travel and the time saved in travel, can be used for reading, research, and/or coursework. Distance is defined as a "…separation in time…" or a "…amount of separation between two points…" (Merriam-Webster, 2015a, p. 1). In the Upper Midwest states, the average time to travel a set distance can be significantly increased by freezing rain, ice, and snow from mid-November through early April (National Oceanic and Atmospheric Administration, 2015). A student driving 30 miles to an f2f class in October on dry roads, could have that same trip in the months of November through April take 60 minutes or longer due to typical winter weather and road conditions. The student can also find during those months, that getting to class is either not worth the time or completely impossible due to road conditions.

Hybrid courses offer increased accessibility by offering a middle ground between online and traditional face-to-face education. They allow the instructor to determine what content and how much of the content will be delivered via the web and how much will be delivered face-to-face (Fainter, 2010; Hanover Research Council, 2009; University of Wisconsin-Milwaukee, 2015). The hybrid course allows an instructor in the Upper Midwest states to determine when the f2f classes will take place. That is, a fall course would foreseeably have the f2f portion in the beginning of the semester while road and weather conditions are less extreme. Then, during the more unpredictable months of November and December, the students attend class online. In the spring semester, the f2f and online are reversed, with online occurring early in the semester and

the f2f towards the end. Besides this static model, options such as meeting for the first class session or two f2f, then move to online, with occasional f2f class session interposed. Vernadakis et al. (2010) found that a combination of face-to-face classroom teaching mixed with hybrid lecture instruction "…can provide a slightly more efficient learning environment compared to the traditional lecture instruction (p. 196). Chen (2012) discussed that blended learning environments could facilitate student's learning and that students prefer some face-to-face interactions with students and instructors. Due to the definition of a hybrid course, the options are limited only by the instructor's imagination.

Less travel time. Travel time can be slightly, moderately, or significantly reduced based on how the instructor structures the course. Since travel time is reduced to some degree in all hybrid courses, some portion must be online to be considered hybrid, they do allow the student to use that time for coursework versus traveling to and from class (Metz, 2010b). Students often, even if not encouraged by their instructors, are using digital libraries and the internet to conduct research for their class assignments. Head and Eisenberg (2009) found that "…nine out of 10 ten students turned to online libraries…" for their research needs (p. 23). Thus by combining the time required to travel to and from an f2f class along with the time saved from traveling to a brick and mortar library. Significant time can be saved by the student and reinvested in reading, research, and/ or coursework.

Flexibility. Flexibility is best described in the world of digital education as when and where the student chooses to interact with their class. Hybrid courses allow the student increased flexibility in studying when convenient versus having to be at a set place at a set time (Aspirella, 2010). That is, as Baloglu (2007) described, the student has "…freedom of access…" (p. 5) to choose when and with a laptop computer, where to study. From the comfort of their living room,

a hotel room during a business trip, to the sands of a beach. Beyond just where they can study, it also "…means parents, working students, and professionals on the move have the option of attending classes no matter their work schedule" (Aspirella, 2010, p. 1). The student now "…controls study time…" (Aspirella, 2010, p. 1) more so than they ever have. They may choose to wake early and work on a paper, may slip away for lunch and do class reading, or once their children are in bed asleep, post in online discussions. Though the student does have to realize that there is flexibility, it is to a degree. That is, even in hybrid courses, there are set deadlines for coursework, discussion postings, and may even be live online lectures to attend.

Pace. Hybrid courses allow, at least to some degree, for the student to progress at their own pace (Metz, 2010a). Pace is defined as "…the speed at which someone or something moves" (Merriam-Webster, 2015b, p. 1). Hybrid courses that do have weekly discussion boards and requirements for the students to post and respond (Metz, 2010b) significantly decrease the student's ability to move at their own pace. Whereas, courses that do not have discussion board requirements allow significantly more freedom for the student to progress at their own pace. For example, the student knows what readings are required and when what papers and/or projects are due (University of New Mexico Las Alimos, 2015). This allows students to set their course pace based on when papers and/or projects are due.

Courses without discussion boards allow working students and adults the flexibility to adjust their coursework pace based on their work schedule, family commitments, and/or travel schedule since they do not have discussion board posting deadlines (Crosslin, 2007). The student may choose not to do any coursework during the week due to both work and family, and then, come the weekend, allocate all or a significant portion of the weekend to complete their coursework. Whereas, another student may choose to do course reading in the evenings during

the week and then work on course papers and/or projects on the weekends. Though hybrid courses often allows the student the ability to adjust their coursework pace. There will be some f2f interaction during the course. Thus, the student may at times have to adjust their coursework pace to meet f2f deadlines.

Socialization. Unlike online courses where there is no face-to-face interaction, hybrid courses contain face-to-face content allowing for simulations to take place, group collaborative projects (Kaleta & Garnham, 2001), and ultimately for socialization to occur (Graham, 2005). Socialization is defined as "…the process by which a human being beginning at infancy acquires the habits, beliefs, and accumulated knowledge of society through education and training for adult status" (Merriam-Webster, 2015c, p. 1). Currently, the belief or societal perception is that for socialization to occur during class, students must be f2f. Though, that belief is being challenged (Wegerif, 1998) since the definition of socialization states "…through education and training…" (Merriam-Webster, 2015, p. 1), but it does not state that socialization occurs only f2f.

Socialization may very well occur in the virtual, digital, or online environment. Thorne, Black, and Sykes (2009) found that "…engagement, development, and socialization…" (p. 804) had been taking placing in online gaming communities. This suggests that the belief or societal perception that socialization only occurs f2f may be significantly inaccurate.

Determining content. Determining what content should be delivered online and which content should be presented face-to-face poses two unique challenges. The first unique challenge is determining what or how it is going to be used. Kerres and De Witt considered that the content for a course is designed for three levels of learning, "…consumption and recall…", "…communication…", or "…construction…" (as cited in Gray, 2007, p. 43). Consumption and

recall content is designed for the student to consume and when needed, recalled or regurgitated. This type of information is easily delivered via online or digital format. Communication can be thought of as moving to deeper learning and the information is becoming more complex (Gray, 2007; Hensley, 2005). This level of content needs to be significantly reviewed, since deep learning engages the student "…who actively explores, reflects, and produces knowledge rather recalls…" (Wickersham & McGee, 2008, p. 74) or regurgitates the information. The last level is "…construction…" (as cited in Gray, 2007, p. 43) which is where a student takes the knowledge and applies it or practices it (Gray, 2007). The construction level of learning would be delivered in an f2f class presentation or by being evaluated on a psychomotor skill. Though, with Skype, the ability to upload video into LMS's, and other emerging technologies, it is conceivable, that this level of learning could be delivered digitally or online in selected classes.

The second unique challenge is determining what media will be used to deliver the content during both the online and f2f portions of the course. Which could be delivered by some or all of the following methods; reading assignments, streaming video lectures, threaded discussions, chat sessions, discussion boards, f2f lectures, individual projects, group projects, individual presentations, or group presentations to name a few methods of delivery the content (Schott et al., 2003; Yang & Cornelious, 2005). The media selected will ultimately be determined by the objectives, learning outcomes, length of the course, number of students, percentage of the course that will be online, and the percentage of the course that will be f2f.

For example, threaded discussion for a course of 50 students would not allow "…promptness…" (Edelstein & Edwards, 2002, p. 1) in responding to student's posts. Currently there is no ideal course size in number of students that says threaded discussions should or shouldn't be used in. Berry's (2008) meta-analysis suggest a student to instructor ratio of two-

to-seven students to instructor is the most effective. Since course sizes of two-to-seven students is not typically fiscally possible for most organizations or academic institutions, taking a course of 25 students and breaking them into five discussion groups of five students each, would allow more discussion between students and more promptness in responses by the instructor (Brown University, 2017).

This same course of 50 students in an f2f classroom discussion could be easily managed and "…promptness…" (Edelstein & Edwards, 2002, p. 1) in responding to a student's response, which can be thought of like an online threaded discussion post is no longer an issue. Unlike a threaded discussion, the f2f discussion can be responded to not only by the instructor, but any and all students can also immediately respond to the first student's response. As themes emerge, for example, the instructor could either discuss them as a large group, or allow students to select which theme they would like to explore. Size of discussion groups should be somewhat managed so one group does not just have two students. After a set amount of time, the groups can gather and present on the theme they explored to the class. This allows the instructor to be actively involved in the discussion and ultimately, selecting what is delivered online and f2f, along with the media or method used to deliver the content is the most challenging aspect of developing a hybrid course.

Technology literacy. When students take a web-enhanced, hybrid, or online course, often they are not as technology literate as they believe they are. Technology literacy is defined as "…a general understanding of technology. This understanding may not be comprehensive, but it must be developed enough so that a person can function effectively in a technology-dependent society where rapid technological change is the norm" (Garmire & Pearson, 2006, p. 32). This poses a unique challenge for the instructor since the lack of technology literacy may

not be identified until the student has started the course and begins to experience problems (Jones et al., 2011). This can be compounded if the instructor is not as technology literate as they believe they are or lack literacy in one of the programs or technologies being used (Moore, 2010; Wilson & Hendrick, 2011).

Surveys, such as the one conducted by the Office of Institutional Research and Assessment with Evergreen students, demonstrated that areas and potential areas of student difficultly with technology during a course was identifiable (Office of Institutional Research and Assessment, 2004). If trends are identified before or at the start of a course, there is then time to either not use a specific technology if it is not needed or required for use during the course. If the technology is required, for example, the student must do a final presentation using PowerPoint. They either use resources to assist those students who may not be familiar with the use of it or if there is a significant number who do not know how to use it. If consistently in the course there are significant numbers of students who do not know how to use a specific technology which can be, but is not limited to presentation software, lecture capture tools, or online collaboration tools (University of Washington center for Teaching and Learning (2015a), then a course in that technology should become a prerequisite.

Student feedback. Student feedback can be immediate during the online portion. For example, immediate grading and feedback on multi-choice exams. The student can say they understand the material, but unlike face-to-face interaction, the instructor cannot see the confused look on the student's face or the hesitation in the student's answer (Ware, 2011). Feedback on certain types of exams or quizzes can be almost immediate, if not immediate (Iahad et al., 2004), such as true and false and multi-choice questions. Whereas, papers, projects, questions via e-mail, cannot be returned immediately, many instructors now hold virtual office

hours which are posted online (University of Washington Center for Teaching and Learning, 2015a) to be able to give students direct feedback on papers and projects versus e-mail. Some instructors are now using "…Doodle's MeetMe Pages…" and "…Google Hangouts…" (Brigham Young University Center for Teaching and Learning, 2015). For example, Google Hangouts, allows an instructor and up to 10 students to use a Skype type platform where individual or live group discussion can be held (Google, 2015). The two most significant challenges facing student feedback is not so much the technologies, but first, the student expectations. That is, they send a question via e-mail and expect an answer immediately (University of Washington Center for Teaching and Learning, 2015b). This poses a unique challenge for instructors since many have virtual office hours and return e-mails at that time, and some instructors, just do not return e-mails (Weiss & Hanson-Baldauf, 2008).

Self-discipline. Hybrid courses, much like online courses, require significant self-discipline of the student (San Bernardino Valley College, 2015; University of Idaho Distance and Extended Learning, 2015). Unlike being in class on Tuesday nights and having to have an assignment ready to present the following week, hybrid and online courses make it easy for a student to have real-life issues take priority over the course and put off reading and assignments (Waschull, 2005). This can lead to a student significantly falling behind until they reach a point where they cannot catch up (Davis & Ralph, 2001). Daymont and Blau (2008) found that online students did as well as students in f2f classes. The optimum way of avoiding the issue of student self-discipline, may be alternating weeks or alternating two weeks f2f, followed by two weeks online and alternating during the length of the course. These f2f week(s) could be considered reset week(s). Potentially heavier demands on students as far as assignments or group work, and when they move back to the online portion, more reading and prepping for the next f2f

session(s). The significant challenge facing instructors with student self-discipline is, it is one component that the instructor has no control over.

Developing a Hybrid Model of Instruction for EMS Educators in Minnesota

The Department of Transportation (DOT) Instructor Guideline (IG) Hybrid Conference Model (HCM) or DOT IG HCM combines components of both online education and f2f education. With a significant portion of the course online, it allows increased accessibility by allowing the participant to access the course wherever they have internet access. This also gives the participant flexibility in when they do the course work and allows them to work at their own pace. The only requirement is that they have the online content completed by the time they participate at the conference. The online portion also allows participants to use travel time for course work versus having to drive to and from a brick and mortar classroom. By requiring the participants to attend the conference as part of the course, it brings them together in a more traditional brick and mortar environment where f2f socialization can occur. The three challenges of this pilot will be determining the content for the online portion versus the f2f portion, not knowing the technological literacy of the participants until the course begins, and how much self-discipline each participant has in completing online course work. Chapter three will present the research methodology used in the study.

Chapter III: Methodology

The purpose of this research study was to determine if the Department of Transportation (DOT) EMS Instructor Guideline course could be delivered in a hybrid conference model. The course consisted of 23 modules that were delivered either online and/or face-to-face at the Teaching and Learning Conference (TLC) and a capstone (final) module that could be presented either online or face-to-face at the TLC (Appendix C). To accomplish this study, the following questions needed to be addressed and answered:

1. What were the identifiable challenges and/or barriers of the hybrid conference model to meet DOT EMS Instructor Guideline course completion requirements?
2. What were the challenges and/or barriers identified that prevented students from completing the EMS Instructor Guideline course hybrid conference model?
3. What were the identifiable advantages of the hybrid conference model over the traditional face-to-face and hybrid courses within the EMS Instructor profession?
4. Could the hybrid delivery of the EMS instructor course address the professional development needs for instructors?
5. What were the identifiable advantages to presenting f2f versus videotaping the student's final presentation?

The research methodology was quantitative in nature using a pre-course and post-course participant survey. The quantitative research method was selected since it allows the attitudes, opinions, and other defined behaviors of the participants to be transformed into useable statistical data. The methodological choice was guided by the need to understand the technology literacy level of, expectations of, and the needs of the participants.

Subject Selection and Description

The population of this were Department of Transportation (DOT) Instructor Guideline (IG) Hybrid Conference Model (HCM) conference participants. The sample were participants who volunteered to be part of this study. Participants were self-selected by registering for the DOT IG HCM and therefore, age, sex, ethnic background, years as an EMS provider, and years as EMS educator are completely random and determined by conference participants. Participants had to be EMTs or paramedics, typically who want to or who currently teach EMT, paramedic, and other EMS related courses. There was no compensation for participants involved in the study or promise of successful completion of the course for participating in the study.

Instrumentation

Two types of instrumentations were used. First, a pre-course participant survey was be administered to all participants (Appendix A). Second, a post-course participant survey was administered to all participants (Appendix B). Due to the time frame of the conference, no pilot tests or reviews of the surveys were conducted. The pre-course survey looked to explore and identify the participant's exposure to online and/or hybrid courses, how much time they were anticipating to spend on all course work, why they chose this hybrid course, the primary type of EMS course/class they teach, and what they were expecting to gain from the course. The post-course survey looked to explore and identify any barriers or challenges to the use of the learning management system (LMS) used. Additionally, the survey was to determine how much time the participant spent on average per week working on coursework and compare that to what the participant anticipated. The surveys would also determine what, if any part of the course, was identified as the most challenging portion of the coursework. Lastly, the findings would reveal if

there was a correlation on what participants were expecting to gain from the course and if that expectation was met.

Due to being a pilot, four criteria were chosen to determine what content would be delivered online versus face-to-face at the conference. The first criteria was, do any of the DOT EMS Instructor guideline module topics have to be delivered online? That is, did the course developer and director subjectively believe that participants would benefit from one or more module topics being presented in an environment where there was more presenter/participant interaction? The second criteria was, would not only the DOT EMS Instructor guideline participant, but general conference participants be interested in attending a session on a given topic, such as Legal Issues or Ethics for examples? The third criteria was, what DOT EMS Instructor module topics had been submitted by presenters as conference topics? The fourth criteria was, were there any members of the Teaching and Learning conference planning committee that were qualified to present on a module topic? Determining face-to-face content poses a unique challenge and is a priority when developing the hybrid conference model since online content is driven by what will be presented f2f at the conference.

Data Collection Procedures

An initial consent to participate form was emailed to all of the self-selected participants. This was followed by a 10 question online, pre-course survey using Qualtrics was sent after receiving the participants signed consent to participate form. A 15 question online post-course survey using Qualtrics was sent to all participants once the course was completed. The pre and post-course surveys used both a Likert scale and multiple answer survey questions. All surveys were to be collected via email and prior to sharing any data, participants were de-identified and assigned a number so as to compare pre- and post-course surveys. This also insured participant

responses were anonymous. Original data and de-identified data will be stored in two different locations on a secure server. After 90-days post-course, all identified data will be deleted. There will be no follow up survey sent out after the initial survey to increase response rate if the response rate is low.

Data Analysis

Surveys will compare pre- and post- course answers. Descriptive statistical analysis using mean, median, standard deviation, and frequency counts will be used to determine if there was a significant difference between those participants who presented f2f at the end of the conference versus those participants who presents within 30-days post conference and uploaded their presentation into the LMS. Due to the DOT IG HCM being conducted with the state-wide Teaching and Learning Conference, participants attend from EMS and academic organizations from across the state. Due to the small size of some of these EMS organizations located in rural areas, an online option was given to allow participants to attend one day of classes at the conference, thus potentially reducing strain on these smaller, rural EMS organizations potential staffing issues. Then, once they return home, uploading their final 10 minute presentation into the LMS for evaluation. The students chosen method of capstone/assessment and completion rate will then be compared to the student's pre- and post- course surveys to determine if there is a correlation with their technology literacy. The data will be placed in a spreadsheet to determine if there is a statistical difference in those that are technologically literate presenting their capstone via uploading into the LMS versus those that are not technologically literate.

Limitations

The number of students in the pilot study is limited to those who elect to take the course, attend the conference, and participate in the research portion.

Summary

The research study is designed to determine if the hybrid conference model is a long-term feasible and effective format for delivering the DOT EMS Instructor Guidelines course in Minnesota. Pre and post-conference participant surveys were used to assist in determining the feasibility and effectiveness of the hybrid conference model.

Chapter IV: Results

The purpose of the study was to determine if the hybrid conference model could be a long-term feasible and effective format for delivering the DOT EMS Instructor Guideline Course in Minnesota. To accomplish this, the following questions needed to be addressed and answered:

1. What were the identifiable challenges and/or barriers of the hybrid conference model to meet DOT EMS Instructor Guideline course completion requirements?
2. What were the challenges and/or barriers identified that prevented students from completing the EMS Instructor Guideline course hybrid conference model?
3. What were the identifiable advantages of the hybrid conference model over the traditional face-to-face and hybrid courses within the EMS Instructor profession?
4. Could the hybrid delivery of the EMS instructor course address the professional development needs for instructors?
5. What were the identifiable advantages to presenting f2f versus videotaping the student's final presentation?

The research methodology was quantitative in nature using a pre-course and post-course participant survey. The quantitative research method was selected since it allows the attitudes, opinions, and other defined behaviors of the participants to be transformed into useable data. The methodological choice was guided by the need to understand the technology literacy level, expectations, and needs of the participants. Additionally, four areas centering on course development and delivery would assist in answering the four research questions. These were, first, to determine if there were modules that were offered online that would have been more effectively delivered face-to-face (f2f). Second, the researcher sought to determine if there were modules that were offered face-to-face that would be more effectively delivered online. Third, to

determine if there were online modules that posed unique challenges including content, assignment, or technology to the participants. Fourth, to determine if there was a statistical difference in completion rates between participants presenting the capstone f2f at the conference versus self-video with upload into the learning management system (LMS) within 30-days post-conference.

To accomplish this a 10 question pre-course survey was administered electronically using Qualtrics and e-mailed to all participants prior to the course and was completed by all 28 participants. Following the completion of the course, a 15 question post-course survey was administered electronically, which was completed by eight participants. A second post-course survey was e-mailed to the participants who did not initially complete the post-course survey. However that did not result in any additional surveys being completed. Responses were analyzed using descriptive statistics which aim to summarize a sample. Total post-course survey responses were cross-tabulated and percentages responding to each statement were calculated.

Description of the Respondents

Participants in the study had varying years of teaching experience. Their provider certification levels included EMRs, EMTs, Advanced EMTs, and paramedics. There were 61% of the participants at the EMT certification level, 36% at the paramedic certification level, and none at the EMR certification level. Fourteen of the participants taught for a not-for-profit EMS service, six taught for a public safety organization (police, fire, or EMS), seven that at the time were not teaching, one was teaching at a two-year college, and one responded other. Sixteen participants were EMTs, one was an Advanced EMT, 10 were paramedics, and one responded other.

Pre-Course Survey Data Analysis

This section will present the pre-conference survey results. The following questions were asked of the participants and their responses accompany the questions. A statement that the research had been approved by the University of Wisconsin-Stout Internal Review Board as required by the code of federal regulations Title 45 Part 46 was added as a text block at the beginning of the survey.

Survey question 1. How many online (no face-to-face component) or hybrid (online with face-to-face component) courses have you take prior to this course? Of the 28 repondents that repsonded, 68% had taken 5 or more online courses (refer to Table 1). This suggested a high degree of familiarity with one or more online learning platforms. The survey question did not attempt to determine what type of online courses they had taken or learning platforms exposed to, that is; a video, webinar, in-service training/education using Moodle, or a formalized online course through an academic institution using Angel, Desire to Learn (D2L), or another learning platform.

Table 1

Online or Hybrid Courses Taken Prior to This Course

Response	N	Percentage
None	3	10.7%
1-2	5	17.8%
3-4	1	3.6%
5 or more	19	67.9%
Total	28	100%

Survey question 2. Survey respondents were asked how would they rate their expereince using a number of different technologies? Nine categories were selected that reflected technologies that a lack of familiarity with them, was anticipated to create a challenge to completing assignements and/or the participants capstone project (refer to Table 2). Based on the nine categories, six were considered crucial. These included experience with use of/with a computer, word processing, learning management system (LMS), uploading documents into a LMS, e-mail with attachements, and Powerpoint. It was found that 60% of respondents had either average or above average experince in the six crucial categories.

Table 2

Experience Using Technology

Response	Above Average	Average	Limited	None
Computer	8	18	1	0
Microsoft Word or word processing program	9	16	1	1
Learnin Management System (LMS)- Moodle, D2L, or similiar	3	15	1	1
Uploading documents into LMS	4	13	2	0
E-mailing with attachments	12	14	2	0
Microsoft PowerPoint	8	15	3	2
Filming using digital video recording	0	13	13	2
Filming using cellphone	3	18	5	2
Uploading video into LMS	0	11	12	5

Survey question 3. Survey respondents were asked how much time did they anticipate spending reading and doing projects each week for the couse? Four options were given to the participants with six expecting to spend one to two hours a week, nine expecting to spend three to four hours a week, eight expecting to spend five to six hours a week, and five expecting to spend more than six hours a week (refer to Table 3).

Table 3

Time Anticipated Spending Reading and Doing Projects Each Week For This Course

Response	N	Percentage
1-2 hours	6	21.4%
3-4 hours	9	32.1%
5-6 hours	8	28.6%
>6 hours	5	17.9%
Total	28	100%

Survey question 4. Survey respondents were asked what was the main reason for taking the course? Eight options were given from which too select with the ability to choose more than one (refer to Table 4). Professional development was the overwhemling reason for taking the course. This was followed by flexibility in delivery (part online and part at the conference) and cost or affordability. Following that, convience of location and time offerred tied for fourth place. Only five responded that it was required for their job.

Table 4

Main Reason for Taking This Course

Response	N	%
Professional development	20	33.33%
Flexibility of delivery (part online and part at the conference)	10	16.66%
Cost or affordability	9	15%
Convience of location	6	10%
Convience of time offerred	6	10%
Required for job	5	8.33%
Preference for face-to-face instruction	2	3.33%
Other	2	3.33%
Total	60	100%

Survey question 5. Survey repsondents were asked what was thei certification level? 16 repsonded EMT, 10 responded paramedic, one responded Advanced EMT, and one responded other (refer to Table 5).

Table 5

EMS Certification Level

Response	N	Percentage
EMR	0	0%
EMT	16	57.1%
Advanced EMT	1	3.6%
Paramedic	10	35.7%
Other	1	3.6%
Total	28	100%

Survey question 6. Survey respondents were asked what type of organization do you currently teach for? Nine options were given from which to select (refer to Table 6). Twelve were teaching for a not-for-profit (healthcare/EMS) organization, two for a not-for-profit (non-healthcare/EMS) organization, six were teaching for a public safety (police, fire, EMS) organization, one was teaching at a two-year collge, and seven were not teaching at the time of the course. None of the participants selected teaching at a technical college, a four-year university/college, the military, or a for-profit organization.

Table 6

Organization Currently Teaching EMS Courses

Response	N	Percentage
Two-year college	1	3.5%
Technical college	0	0%
Four-year college/university	0	0%
Not-for-profit healthcare (healthcare EMS)	12	42.5%
Not-for-profit healthcare (non-healthcare EMS)	2	7%
Public safety (police, fire, EMS)	6	22%
Military	0	0%
For-profit organization	0	0%
Currently not teaching	7	25%
Total	28	100%

Survey question 7. Survey respondents were asked if their final presentation would be face to face or submited via video? Tenty two participants selected they would present face-to-face at the end of the conferece (refer to Table 7). Whereas, only six selected they would submit via video within 30 days post-conference.

Table 7

Final Presentation

Response	N	Percentage
Face-to-face at the end of the conference	22	78.57%
Submitted via video within 30 days post-conference	6	21.43%
Total	28	100%

Survey question 8. Survey respondents were asked what they expected to gain, learn, or walk away with following the course? Four options were listed and participants could select more than one (refer to Table 8). Twenty seven respondents answered the question, one respondent did not answer the question, and all respondents selected only one option. Eighteen of the respondents were looking for increased knowlwdge in developing curriculum, outlines, and lesson plans. Five of the respondents were looking for increased knowledge in developing and presenting their presentations. One of the respondents was looking for increased knowledge in the use of educational technology. Three participants selected other.

Table 8

Expected Gain, Learn, or Walk Away With Following the Course

Response	N	Percentage
Increased knowledge in developing curriculum, outlines, and lesson plans	18	66.7%
Increased knowledge in developing and presenting your presentation	5	18.5%
Other	3	11.1%
Increased knowledge in the use of educational technology	1	3.7%
Totsl	28	100%

Survey question 9. Survey respondents were asked what were their thoughts when they first saw or heard about the DOT EMS Instructor Guidline course being offerred as of the EMS Teaching and Learning Conference? Ten (10) repsonded they were extremely interested, 13 were very interested, and five were interested (refer to Table 9).

Table 9

Thoughts About the DOT EMS Instructor Guideline Course Being Offerred as Part of the EMS Teaching and Learning Conference

Response	N	Percentage
Extremely interested	10	35.7%
Very interested	13	46.4%
Interested	5	17.9%
Total	28	100%

Survey question 10. Survey respondents were asked if the course had not been offerred as the conference in a hybrid format, how would they have found, taken and completed a DOT EMS Instructor Guideline course to meet the requirements of the EMSRB? Fourteen respondents participants responded said that they would have looked for a face-to-face course. Four participants responded that they would have looked for a hybrid course (1 day online, 2 days face-to-face). Four participants responded they would have looked for an online course and another four participants responded they didn't know how they would have taken course (refer to Table 10).

Table 10

If Course Not Offered at Conference in a Hybrid Format, How Would Have Found, Taken, and Completed a DOT EMS Instructor Guideline Course to Meet Requirements of the EMSRB?

Response	N	Percentage
I would have looked for a face-to-face course	14	50%
I would have looked for a hybrid course (1 day online, 2 days face-to-face)	4	14.3%
I would have looked for an online course	4	14.3%
I don't know	4	14.3%
I would not take the course	2	7.1%
Other	0	0%
Total	28	100%

Post-Course Survey Data Analysis

This section will present post-course survey results. Following completion of the course, a 15 question post-course survey was e-mailed to all participants who completed the course. Of the 28 who started, one dropped out due to time requirements conflicting with his personal life and one that asked for an extension due to an illness. Eight particpants repsonded to the post-course survey. A second e-mail was sent to the participants who did not initially complete the post-course survey. That did not result in any additional surveys being completed and submitted. The low return rate of post-course survey allows only inferences to be drawn from them and made in regards to the hybrid conference model.

A statement that the research had been approved by the University of Wisconsin-Stout Internal Review Board as required by the code of federal regulations Title 45 Part 46 was added as a text block at the beginning of the survey.

Survey question 1. Survey question asked the respondents to select one of five options in regards to: did they find learning and using Moodle, the learning management system to be? The response options included (refer to Table 11): I had no problem using it to which five responded. One found it extremely difficult, one found it a little difficult, and one found it easy. None responded difficult.

Table 11

Learning and Using Moodle the Learning Management System

Response	N	Percentage
I had no problem	5	62.5%
Easy	1	12.5%
A little difficult	1	12.5%
Difficult	0	0%
Extremely difficult	1	12.5%
Total	8	100%

Survey question 2. Survey respondents were asked how much time did they spend reading and doing projects each week for the couse? Four options were given to the participants (refer to Table 12). Three repsonded they spent one to two hours a week. Two responded they spent three to four hours a week. One responded they spent five to six hours a week. Two responded they spent greater than six hours a week.

Table 12

Time, on Average, Spent Reading and Doing Projects Each Week for This Course

Response	N	Percentage
1-2 hours	3	37.5%
3-4 hours	2	25%
5-6 hours	1	12.5%
>6 hours	2	25%
Total	8	100%

Survey question 3. This survey question asked respondents if they found the amount of coursework about right, just right, a little more than anticipated, or too much? Three responded that the course work was about right and two responded that it was just right. Two responded that the coursework was a little more than anticipated. One responded that the course work was too much (refer to Table 13). Due to this being the first course offered as a hybrid conference model, a balance between the amount of coursework assigned over the time allotted prior to the conference itself was an unknown. Since the students of this course were all working adults the assumption was made that they have families, day-to-day non-work related obligations, and other responsibilities besides just attending the course.

Table 13

Amount of Coursework

Response	N	Percentage
About right	3	37.5%
Just right	2	25%
A little more than anticipated	2	25%
Too much	1	12.5%
Total	8	100%

Survey question 4. This survey question asked respondents; what did they find was the most challenging portion of the course? Three options were given and the respondent could choose one (refer to Table 14). Four found that the reading was the most challenging. One found that the online coursework was the most challenging, and three found that developing their final presentation was the most challenging.

Table 14

Most Challenging Portion of the Course

Response	N	Percentage
The reading	4	50%
Online coursework	1	12.5%
Developing your final presentation	3	36.5%
Total	8	100%

Survey question 5. This survey question asked respondents if they found the course director accessible and willing to help during the online portion of the course? Five responded yes ans three responded no (refer to Table 15).

Table 15

Course Director's Accessibility and Willingness to Help During the Online Portion of Course

Response	N	Percentage
Yes	5	62.5%
No	3	37.5%
Total	8	100%

Survey question 6. This survey question asked respondents if they found the course director accessible and willing to help during the conference portion of the course? Four responded yes and four responded no (refer to Table 16).

Table 16

Course Director's Accessibility and Willingness to Help During the Conference Portion of Course

Response	N	Percentage
Yes	4	50%
No	4	50%
Total	8	100%

Survey question 7. This survey question asked respondents what they like about the course (refer to Table 17). Three options were given to the respodents and they could select more than one. Five selected accesibiity, seven selected flexibility, and one the combination of online and face-to-face components.

Table 17

Likes About the Course

Response	N	Percentage
Accessibility	5	38%
Flexibility	7	54%
Combination of online and face-to-face components	1	8%
Total	13	100%

Survey question 8. This survey question asked respondents if they faced or experienced any challenges and/or barriers to completing the online coursework? Six responded that had not had any challenges and/or barriers to completing the online coursework. Two responded that they had challenges and/or barriers to completing the coursework (refer to Table 18).

Table 18

Challenges and/or Barriers Faced or Experienced Completing the Online Coursework

Response	N	Percentage
No	6	75%
Yes	2	25%
Total	8	100%

Survey question 9. This survey question asked respondents if they faced or experienced any challenges and/or barriers to completing the capstone/final project? Six responded that had no challenges and/or barriers to completing their capstone/final project. Two responded that they had challenges and/or barriers to completing their capstone/final project (refer to Table 19).

Table 19

Challenges and/or Barriers Faced or Experienced Completing Capstone/Final Project ?

Response	N	Percentage
No	6	75%
Yes	2	25%
Total	8	100%

Survey question 10. This survey question asked respondents if they faced or experienced any challenges and/or barriers to completing the face-to-face portion of the conference? All eight responded that had not had any challenges and/or barriers (refer to Table 20).

Table 20

Challenges and/or Barriers Faced or Experienced Completing the Face-to-Face Portion of the Conference

Response	N	Percentage
No	8	100%
Yes	0	0%
Total	8	100%

Survey question 11. This survey question asked respondents if the course met what they were expecting to gain from the course? Five responded yes it did and three responded no that it did not (refer to Table 21).

Table 21

Course Expectations Met from the Course

Response	N	Percentage
No	3	37.5%
Yes	5	62.5%
Total	8	100%

Survey question 12. This survey question asked respondents should EMS expand and/or continue to offer the DOT EMS instructor course in a hybrid conference format? Seven responded yes. One responded no, unless it is bought down to a beginner's level (refer to Table 22).

Table 22

Should EMS Expand and/or Continue its Offering the DOT EMS Instructor Course in a Hybrid Conference Format?

Response	N	Percentage
No	1	12.5%
Yes	7	87.5%
Total	8	100%

Survey question 13. This survey question asked respondents what they were expecting to gain from the course? Four response options were given and they could select more than one response (refer to Table 23). Five responses indicated that they were expecting to gain increased knowledge in developing curriculum, outlines, and lessons plans. Five responses indicated that they were expecting to gain increased knowledge in developing and presenting their presentations. Three responses indicated that they were expecting to gain increased knowledge

in the use of educational technology. Two responses of other which were; how to best teach EMS and tips on different ways to teach.

Table 23

Expected Gains When Enrolled in the Course

Response	N	Percentage
Increased knowledge in developing curriculum, outlines, and lesson plans	5	33.3%
Increased knowledge in developing and presenting your presentations	5	33.3%
Increased knowledge in the use of educational technology	3	20%
Other	2	13.4%
Total	15	100%

Survey question 14. This survey question asked respondents if the DOT EMS instructor course should be offered as an online course with no face-to-face component? Six responded yes and two responded no (refer to Table 24).

Table 24

Should EMS Offer the DOT EMS Instructor Course as an Online Course?

Response	N	Percentage
No	2	25%
Yes	6	75%
Total	8	100%

Survey question 15. This survey question asked respondents if they thought there were ways to improve the course? Four responded no. Four responded yes, but did not free text what they would be or how to improve the course (refer to Table 25).

Table 25

Do You Think There Are Things That Could Improve This Course?

Response	N	Percentage
No	4	50%
Yes	4	50%
Total	8	100%

Pre and post-course surveys were used in this research project, but due to the low return rate on the post-course surveys. Comparisons, analysis, and conclusions between the two surveys can be generalized to a degree, but should not be considered conclusive.

Chapter V: Discussion, Conclusion and Recommendations

The purpose of the study was to determine if a hybrid conference model was a feasible and effective format, long-term, for delivering the DOT EMS Instructor Guideline Course in Minnesota. To accomplish this, the following questions needed to be addressed and answered:

1. What were the identifiable challenges and/or barriers of the hybrid conference model to meet DOT EMS Instructor Guideline course completion requirements?
2. What were the challenges and/or barriers identified that prevented students from completing the EMS Instructor Guideline course hybrid conference model?
3. What were the identifiable advantages of the hybrid conference model over the traditional face-to-face and hybrid courses within the EMS Instructor profession?
4. Could the hybrid delivery of the EMS instructor course address the professional development needs for instructors?
5. What were the identifiable advantages to presenting f2f versus videotaping the student's final presentation?

Discussion

This pilot project demonstrated that there are nine key factors to conducting a successful hybrid conference course. Which are increased accessibility for participants along with less travel time for both participant and instructor. Flexibility of when and where to study along with the participant being able to control the pace of their progression timed to capstone presentation date. Though the majority of the hybrid conference model course is conducted online, socialization between participants still occurs, though it is at the conference. Time must be allocated in course development to determine what content will be delivered online versus face-to-face at the conference along with adequate feedback to the participants during the course. If

the participant does not have basic technology literacy and/or self-discipline, they may find difficulty in completing the course. More in depth review of each of these areas is explored.

Increased Accessibility

Hybrid courses offer increased accessibility by presenting a middle ground between online and traditional face-to-face education (Welker & Berardino, 2005). They allow the instructor to determine what content and how much of the content will be delivered remotely and what will be delivered face-to-face (Fainter, 2010; Hanover Research Council, 2009; University of Wisconsin-Milwaukee, 2015). Specific to this study, the hybrid course delivery allowed an instructor in the Upper Midwest states to determine when the f2f classes will take place. That is, a fall course would have foreseeably had the f2f portion in the beginning of the semester while road and weather conditions are less extreme. Then, during the more unpredictable months of November and December, the students attend class online. In the spring semester, the f2f and online are reversed, with online occurring early in the semester and the f2f towards the end. Besides this static model, options such as meeting for the first class session or two f2f, then move to online, with occasional f2f class session interposed. Due to the definition of a hybrid course, the options are limited only by the instructor's imagination.

Less travel time. Travel time can be slightly, moderately, or significantly reduced for the student and the instructor alike, depending on how the instructor structures the course. Since travel time is reduced to some degree in all hybrid courses, with significant content delivered remotely, a requirement to be considered hybrid, allows the student to use that time for course work versus traveling to and from class (Metz, 2010). Students often, even if not encouraged by their instructors, are also using digital libraries and the internet to conduct research for their class assignments. Head and Eisenberg (2009) found that "…9 out of 10 ten students turned to online

libraries…" (p. 23) for their research needs. Therefore, by combining the time required to travel to and from an f2f class along with the time saved from traveling to a brick and mortar library, significant time can be saved by the student and reinvested in reading, research, and/ or coursework. Thus, accessibility to a course or class and its associated content and resources has become an engager for those individuals pursuing initial, ongoing, and career enhancement education today.

This study incorporated 28 participants who were or where going to begin teaching EMS courses and were going to obtain their DOT EMS Instructor Guidelines course completion requirement through the hybrid conference model with a pre-course and post-course participant survey. First, a pre-course participant survey was administered to all participants (Appendix A). Second, a post-course participant survey was administered to all participants (Appendix B). Due to the time frame of the conference, no pilot tests or reviews of the surveys were conducted. The pre-course survey looked to explore and identify the participant's exposure to online and/or hybrid courses, how much time they were anticipating to spend on all course work, why they chose this hybrid course, the primary type of EMS course/class they teach, and what they were expecting to gain from the course. The post-course survey looked to explore and identify any barriers or challenges to the use of the learning management system (LMS) used.

The pre-course data showed that 14 or half of the participants would have looked for a f2f course if the DOT EMS Instructor guideline course had not been offered as a hybrid course. Eight of the participants would have looked for some other form of hybrid course or sought out a traditional f2f course. Four did not know if they would have pursued taking the DOT EMS Instructor course and two stated they would not have taken the course. When participants were asked why they were taking the course, participants cited convenience second after professional

development. This would suggest that an online version of the DOT EMS Instructor course should be developed and piloted.

Flexibility. Flexibility is best described in the world of digital education as when and where the student chooses to interact with their class. Hybrid courses allow the student increased flexibility in studying when convenient versus having to be at a set place at a set time (Aspirella, 2010). That is, as Baloglu (2007) described, the student has "…freedom of access…" (p. 5) to choose when and with a laptop computer, where to study. From the comfort of their living room, a hotel room during a business trip, to the sands of a beach. Beyond just where they can study, it also "…means parents, working students, and professionals on the move have the option of attending classes no matter their work schedule" (Aspirella, 2010, p. 1). The student now "…controls study time…" (Aspirella, 2010, p. 1) more so than they ever have. They may choose to wake early and work on a paper, may slip away for lunch and do class reading, or once their children are in bed asleep, post in online discussions. Though the student does have to realize that there is flexibility, even in hybrid courses, there are set deadlines for coursework, discussion postings, and may even be live online lectures to attend.

The post-course survey asked the question; what did you like about the course? Participants had three choices to select from; accessibility, flexibility, and combination of online and face-to-face components. Participants could select more than one response. Flexibility was identified as what the participants liked about the course. This was followed closely by accessibility. Participants reflected in the post-course survey what the literature supports: students, regardless if they are taking a class while pursuing a degree or for professional development, want flexibility. Being able to pursue coursework when and where they choose is an important factor for an adult learner. Students also want accessibility not only to the course,

but to resources related to the course, such as online libraries, work areas, and discussion areas. The post-course survey only had eight participants respond and a second mailing did not result in any additional survey returns. To mitigate this low return rate in the future, the release of the course completion certificate will be tied to the submission of the post-course survey.

Pace. Hybrid courses allow, at least to some degree, for the student to progress at their own pace (Mertz, 2010b). Pace is defined as "…the speed at which someone or something moves" (Merriam-Webster, 2015b). Hybrid courses that have weekly discussion boards and requirements for the students to post and respond significantly decrease the student's ability to move at their own pace (Metz, 2010b). Courses that do not have discussion board requirements allow significantly more freedom for the student to progress at their own pace. For example, students know what readings are required and when what papers and/or projects are due (University of New Mexico- Las Alimos, 2015). This allows students to set their course pace based on when papers and/or projects are due.

Courses with discussion boards allow a more class like discussion, while courses without discussion boards allow working students and adults the flexibility to adjust their coursework pace based on their work schedule, family commitments, and/or travel schedule. The student may choose not to do any coursework during the week due to both work and family, and then, come the weekend, allocate all or a significant portion of the weekend to complete their coursework. Another student may choose to do course reading in the evenings during the week, and then, work on course papers and/or projects on the weekends. Though hybrid courses often allows the student the ability to adjust their coursework pace. There will be some f2f interaction during the course. Thus, the student may at times have to adjust their coursework pace to meet f2f deadlines.

Participants in the study identified flexibility and convenience of times offered or the ability to work on course material when and where they chose to as significant factors of the hybrid conference model. In the context of this study, there was only one hard deadline for the course which was the due date for the Capstone project. Though there were deadlines established for assignments during the course if the participant wanted timely feedback on them, and all assignments were a part of the Capstone. Feedback would still be given after the deadline, but would not necessarily be timely. Most participants kept a fairly consistent pace during the course, though there were those that were consistently early and late with assignments. Discussion board questions were posted and participant's responses where typically one to two sentences, responses to posts were minimal to none, and no true discussions were ever truly established. It was unclear if this was due to a lack of understanding about discussion boards and/or a lack of very specific expectations, and/or having never used discussion boards? Another possibility of lack of discussion board use may be related to participants seeing the discussion board as decreasing their flexibility and accessibility during the course, insomuch that they would have to have X read and/or completed by a certain date to make their discussion board post. This appears to be supported by participants identifying that the readings for the course were the most challenging part of the course.

Socialization. Unlike online courses where there is no face-to-face interaction, hybrid courses contain face-to-face content allowing for simulations to take place, group collaborative projects (Kaleta & Garnham, 2001), and ultimately for socialization to occur (Graham, 2005). Socialization is defined as "…the process by which a human being beginning at infancy acquires the habits, beliefs, and accumulated knowledge of society through education and training for adult status" (Merriam-Webster, 2015). There is a belief or societal perception is that for

socialization to occur during class, students must be f2f. Though, that belief is being challenged (Wegerif, 1998) since the definition of socialization states "…through education and training…" (Merriam-Webster, 2015), but it does not state that socialization occurs only f2f.

Socialization may very well occur in the virtual, digital, or online environment. Thorne, Black, and Sykes (2009) found that "…engagement, development, and socialization…" (p. 804) had been taking placing in online gaming communities. This suggests that the belief or societal perception that socialization only occurs f2f may be significantly inaccurate.

The concept of socialization appeared to hold true with participants of the course. Though they did not engage in the discussion boards, 22 of the 28, or 78% of the participants identified that they intended to present their capstones face-to-face at the conference. Twenty of the 28 or 71% of the participants actually presented their capstone face-to-face at the conference. This appeared to be due to participants not being sure if they would have their presentation completed and/or not having time to prepare or rehearse their presentation to deliver it live at the conference.

Determining content. Determining what content should be delivered online and which content should be presented face-to-face poses two unique challenges. The first unique challenge is determining what the content is going to be used for or how it is going to be used. Kerres and De Witt considered that the content for a course is designed for three levels of learning, "…consumption and recall…", "…communication…", or "…construction…" (as cited in Gray, 2007, p.43). Consumption and recall content is designed for the student to consume and when needed, recalled or regurgitated. This type of information is easily delivered via online or digital format. Communication can be thought of as moving to deeper learning and the information is becoming more complex (Gray, 2007; Hensley, 2005). This level of content

needs to be significantly reviewed, since deep learning engages the student "…who actively explores, reflects, and produces knowledge rather recalls…" (Wickersham & McGee, 2008, p. 74) or regurgitates the information. The last level is "…construction…" (as cited in Gray, 2007, p. 43) which is where a student takes the knowledge and applies it or practices it (Gray, 2007), such as using PowerPoint in a lecture or in EMS, demonstrating a psychomotor skill. The construction level of learning more than likely would be delivered in an f2f class or evaluation. With videoconferencing software such as Skype, the ability to upload video into LMS's and other emerging technologies, it is conceivable that this level of learning could be delivered digitally or online in selected classes.

The second unique challenge is determining what media will be used to deliver the content in both the online and f2f portions of the course. Reading assignments, streaming video lectures, threaded discussions, chat sessions, discussion boards, f2f lectures, individual projects, group projects, individual presentations, or group presentations to name a few (Schott et al., 2003; Yang & Cornelious, 2005) are methods of delivering the content. The media selected will ultimately be determined by the objectives, learning outcomes, length of the course, number of students, percentage of the course that will be online, and the percentage of the course that will be delivered f2f.

For example, threaded discussion for a course of 50 students would not allow "…promptness…" (Edelstein & Edwards, 2002, p. 1) in responding to student's posts. Currently there is no ideal course size in number of students that says threaded discussions should or shouldn't be used in. Berry's (2008) meta-analysis suggest a student to instructor ratio of two-to-seven students to instructor is the most effective. Since course sizes of two-to-seven students is not typically fiscally possible for most organizations or academic institutions, taking a course

of 25 students and breaking them into five discussion groups of five students each, would allow more discussion between students and more promptness in responses by the instructor.

This same size course of 50 students in an f2f classroom discussion could be easily managed and "…promptness…" (Edelstein & Edwards, 2002, p. 1) in responding to a student's response, which can be thought of as the same as an online thread discussion post, is no longer an issue. Unlike a threaded discussion, the f2f discussion can be responded to not only by the instructor, but any and all students can also immediately respond to the first student's response. As themes emerge, for example, four themes emerge from the discussion, the instructor could either discuss them as a large group, or allow students to select which theme they would like to explore. Size of discussion groups should be somewhat managed, so one group does not just have two students. After a set amount of time, the groups can gather and present on the theme they explored to the class. This allows the instructor to be actively involved in the discussion and ultimately, selecting what is delivered online and f2f, along with the media or method used to deliver the content is the most challenging aspect of developing a hybrid course.

The three levels of course content that Kerres and De Witt described, "…consumption and recall…", "…communication…", or "…construction…" (as cited in Gray, 2007, p. 43), were used in the design and delivering of course content. Textbook readings, which were considered for consumption and recall, were used for all modules of the course, with the exception of module 24 which was the capstone. There were also no-narrated PowerPoint slides available for the more visual learners to review along with current, best practice articles, literature, and research papers. These were all done online, and/or via textbook, and/or available via hyperlinks.

Projects were assigned throughout the course which were all parts of the capstone. Students were required for example, to write and submit your learning topic, submit your learning objectives, submit your learning outline, and select the media for your capstone. These followed the concept of communication since it required the participants to explore and reflect on the textbook and module readings. The project also required deeper thinking as they began to develop their learning outline and determining the most appropriate media to use to deliver their educational topic.

The projects throughout the course were all components of the capstone which required participants to develop a 30 minute presentation with partial delivery to the rest of the class. The participant's capstone could be either cognitive or psychomotor, with a cognitive presentation being delivered by lecture, case discussion, or similar method and psychomotor being delivered by simulation or skill-based. The capstone followed the concept of construction as the participants took the knowledge from the course and applied it to developing their presentation which could either be presented face-to-face at the conference or recorded and delivered online and/or digitally via YouTube or thumb drive.

Technology literacy. When students take a web-enhanced, hybrid, or online course, often they are not as technology literate as they believe they are. Technology literacy is defined as "…a general understanding of technology. This understanding may not be comprehensive, but it must be developed enough so that a person can function effectively in a technology-dependent society where rapid technological change is the norm" (Garmire & Pearson, 2006, p. 32). This poses a unique challenge for the instructor since the lack of technology literacy may not be identified until the student has started the course and begins to experience problems (Jones et al., 2011). This can be compounded if the instructor is not as technologically literate as

they believe they are or lack literacy in one of the programs or technologies being used (Moore, 2010; Wilson & Hendrick, 2011).

Surveys, such as the one conducted by the Office of Institutional Research and Assessment with Evergreen students, demonstrated that areas and potential areas of student difficultly with technology during a course was identifiable (Office of Institutional Research and Assessment, 2004). If trends are identified before or at the start of a course, there is then time to either not use a specific technology if it is not needed or required for use during the course. If the technology is required, for example, the student must do a final presentation using PowerPoint or similar software. Resources need to be available to assist those students who may not be familiar with the use of this type of software. Specific technology which can be, but is not limited to; presentation software, lecture capture tools, or online collaboration tools (University of Washington Center for Teaching and Learning (2015) depending on student needs, a course in that technology should become a prerequisite.

Overall, technology literacy or lack thereof, was not a significant issue during the online coursework portion of the course. On the post-course survey, two of the eight (25%) respondents replied that one had a little difficulty and one replied extreme difficulty with learning and using the learning management system (Moodle). This falls within the range identified in the pre-course survey technology replies where the range of experiencing using various technologies ranged from 7% with limited knowledge of e-mail, 32% with limited to no knowledge (experience) with learning management systems, to 61% with limited and/or no knowledge of how upload video into a learning management system.

Student feedback. Student feedback can be immediate during the online portion, for example through immediate grading and feedback on multi-choice exams. The student can say

they understand the material, but unlike face-to-face interaction, the instructor cannot see the confused look on the student's face or the hesitation in the student's answer (Ware, 2011). Feedback on certain types of exams or quizzes can be almost immediate, if not immediate (Iahad et al., 2004), such as true and false and multi-choice questions. Whereas, papers, projects, questions via e-mail, cannot be returned immediately, and many instructors now hold virtual office hours which are posted online (University of Washington Center for Teaching and Learning, 2015b) this allows the instructor to give students direct feedback on papers and projects versus e-mail. Though some instructors are now using "…Doodle's MeetMe Pages…" and "…Google Hangouts…" (Brigham Young University Center for Teaching and Learning, 2015). Google Hangouts, allows an instructor and up to 10 students to use a Skype type platform where individual or group live group discussion can be held (Google, 2015). The two most significant challenges facing student feedback is not so much the technologies, but first, the student expectations. That is, they send a question via e-mail and expect an answer immediately (University of Washington Center for Teaching and Learning, 2015b). This poses a unique challenge for instructors since many have virtual office hours and return e-mails at that time, and some instructors, just do not return e-mails (Weiss & Hanson-Baldauf, 2008).

Student feedback during the online portion did succumb to one of the two significant challenges facing student feedback which was identified by the University of Washington Center for Teaching and Learning (2015), which was the participant expecting an immediate response to their email and/or feedback on their assignment, even when the assignment was two or three weeks post due date. The other challenge, was they did not like the feedback given to them. To the point that one went to their service director, who then filed a complaint. This poses a potential new set of challenges in investigating such a complaint. When feedback is given with

comments such as; what do you think about adding a few more learning objectives, you may want to consider rewarding your objectives like this, with an example given. In this study all of the feedback was designed to assist the participant in not just completing the course, but having a 30 minute presentation that they could present at their organization.

Self-discipline. Hybrid courses, much like online courses, require significant self-discipline of the student (San Bernardino Valley College, 2015; University of Idaho Distance and Extended Education, 2015). Unlike being in class on Tuesday nights and having to have an assignment ready to present the following week, hybrid and online courses make it easy for a student to have real-life issues take priority over the course and put off reading and assignments (Waschull, 2005). This can lead to a student significantly falling behind until they reach a point where they cannot catch up (Davis & Ralph, 2001). Though Daymont and Blau (2008) found that online students did as well as students in f2f classes, the students thought they did not do better. The optimum way of avoiding the issue of student self-discipline, may be alternating weeks or alternating two weeks f2f, followed by two weeks online, alternating during the length of the course. These f2f week(s) could be considered reset week(s). Potentially heavier demands on students as far as assignments or group work and then, when they move back to the online portion, with more reading and prepping required for the next f2f session(s). The significant challenge facing instructors with student self-discipline is, it is one component that the instructor has no control over.

As the course progressed, it became evident that there were those who were self-disciplined and those who were not. Due dates for assignments were posted with the intent to keep the participant on course and pace to meet the conference capstone date. The due dates allowed for timely feedback on each assignment. The assignments were not graded, but each

had been designed to be a connecting piece of their capstone. Overall, assignments were turned in before, on, or a day or two post due date. There were consistent participants, albeit few, that would submit their assignment up to two weeks or longer post due date.

Limitations of the Study

The following were limitations of the study:

1. The study was a non-randomized, convenience sample using only those participants who choose to and are able to complete both the online portion of the course and attend the two-days of the face-to-face portion of the course.
2. The study was limited to the first 25 participants who required completing the DOT IG HCMC that sign-up for the course.

Conclusions

Due to the initial and ongoing interest in the months leading up to the hybrid DOT EMS Instructor guideline course, the number of participants grew from the allotted 20 to 33, of which 28 participated in this research study. The five that did not participate, registered for and began the course after the pre-course survey and IRB waiver had been sent to the participants. A waiting list was started which reached an additional 12 participants due to continued interest in the course. This brought the number of those participating in the hybrid conference model to 45. These numbers supported the hypothesis that there was a significant need for a hybrid conference model, there was significant interest beyond what was anticipated, and also suggested that there was a lack state-wide of DOT EMS Instructor guideline course offerings. Due to the demand for and waiting list for the course, the course should no longer be considered a pilot course, but be added as part of the Teaching and Learning Conference. The following challenges and barriers

should be explored and addressed, advantages exploited, and recommendations followed to further develop this course.

The two challenges that were encountered during the course centered on participants submitting assignments on time by the due date and not reading course materials. Participants submitting their assignments late not only slowed down the feedback process, but then decreased the amount time the participant had to complete and meet the next assignment due date. Though not wide spread, some participants would not thoroughly read course materials which led to time spent answering unnecessary questions. No barriers to completing the course were identified. One participant dropped the course due to personal/work related issues and one participant asked for an extension due to illness.

EMS instructors require eight hours of continuing education every two years which may be obtained via any media, medium, or method. Besides the Teaching and Learning conference that is held each spring, there is no formalized and/or ongoing program or organization that offers continuing education for EMS instructors. Since no barriers were encountered during the course, it was determined that with slight modification, the online portion could be used as continuing professional development education to meet some or all continuing education needs of EMS instructors.

Two identified advantages of the hybrid conference model over the traditional face-to-face and hybrid courses within the EMS Instructor profession. First, the Teaching and Learning conference is held over two to three days every April. This guarantees that there will be at least one DOT EMS Instructor guideline course in Minnesota every year. The second advantage is, since the conference is held every April, allows organizations and individuals to plan work and/or personal schedules well in advance.

Participants have the option of presenting their capstone f2f at the conference or video uploaded online, they are encouraged to present f2f. Participants are encouraged to present f2f at the conference due to three advantages of f2f versus video uploaded online. First, they receive immediate feedback from the evaluators that are observing and evaluating their presentation. The video upload option has one evaluator evaluating the presentation not in real-time, and then email the participant with comments. Second, the participant can ask questions and/or for suggestions from the evaluators in real-time. Utilizing the video upload option, the participant must wait for feedback from the evaluator and then email the evaluator with any questions. Third, presenting f2f at the conference allows for socialization to occur, other participants to attend the presentation and ask questions, and provides an opportunity for the presenter to not only network, but show their abilities to others which can lead to teaching opportunities.

Recommendations

Based on the findings of this study, the following recommendations are made:

- The course allows no more than 20 participants.
- Develop a waiting list for those who do not get into the course. This would assist in determining the need/demand for an "online only" option for the DOT EMS Instructor Guideline course to be offered in addition to the hybrid conference model.
- Articulate to participants that there are due dates for assignments that must be met so timely feedback can be given and explore what consequences should be imposed.
- Explore upgrading to a learning management system that can handle more data and storage. This would be required for an online only course due to the amount of data that would need to be uploaded for the capstones.

- Due to the low return rate on the post-course surveys, consideration should be given to having to receive them which then triggers the release of the course completion certificate.
- Move to an e-textbook which could decrease the expense of the textbook by 75-80%.
- Explore expanding the course to include an online only version with a rolling start which would address the needs of all organizations. Along with addressing the challenges of rural organizations ability at times due to staffing issues, to send individuals to the conference.
- Explore developing an interactive e-textbook specifically for TLC DOT EMS Instructor course.
- Begin developing additional course coordinators so course availably does not lie with one individual.
- This study should be replicated once the above recommendations are implemented.

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Appendix A: Pre-course Student Survey

Name:

1. How many online (no face-to-face component) or hybrid (online with face-to-face component) courses have you taken prior to this course?
    - None
    - 1-2
    - 3-4
    - 5 or more

2. How would you rate your experience using the following technologies (Above average, average, limited, or none)?
    - Computer
    - Microsoft Word or word processing program
    - Learning Management System (LMS)- like Moodle, D2L, Angel
    - Uploading documents into LMS
    - E-mailing with attachments
    - Microsoft PowerPoint
    - Filming using digital video recording
    - Filming using cell phone
    - Uploading video into LMS

3. How much time do you anticipate spending reading and doing projects each week for this course?
    - 1-2 hours
    - 3-4 hours
    - 5-6 hours
    - > 6 hours

4. What is the main reason you are taking this course? (You may select more than one answer).
    - Convenience of location
    - Convenience of time offered
    - Flexibility (part online and part at conference)
    - Preference for face-to-face instruction
    - Cost or affordability
    - Professional development
    - Required for job
    - Other

5. What EMS certification level are you currently?
    - EMR
    - EMT

- Advanced EMT
- Paramedic
- Other

6. The organization that you currently teach EMS courses for is a(n)?
    - Two-year college
    - Technical College
    - Four-year college/University
    - Not-for-profit (healthcare/EMS)
    - Not-for-profit (non-healthcare/EMS)
    - Public safety (police, fire, EMS)
    - Military
    - For-profit organization
    - Currently not teaching

7. Will your final presentation be?
    - Face-to-face at the end of the conference
    - Submitted via video within 30- days post-conference

8. What do you expect to gain, learn, or walk away with following this course? (may choose more than one)
    - Increased knowledge in developing curriculum, outlines, and lesson plans
    - Increased knowledge in developing and presenting your presentations
    - Increased knowledge in the use of educational technology

9. What were your thoughts when you first saw or heard about the DOT EMS Instructor Guideline course being offered as part of the EMS Teaching and Learning Conference?
    - Extremely interested
    - Very interested
    - Interested

10. If this course had not been offered at the conference in a hybrid format, how would you have found, taken, and completed a DOT EMS Instructor Guidelines course to meet the requirements of the EMSRB?
    - I don’t know
    - I would not take the course
    - I would have looked for a face-to-face course
    - I would have looked for a hybrid course (1 day online, 2 days face-to-face).
    - I would have looked for an online course
    - Other

Appendix B: Post Course Student Survey

1. Did you find learning and using Moodle, the Learning Management System to be?
    - I had no problem
    - Easy
    - A little difficult
    - Difficult
    - Extremely difficult

2. How much time, on average, did you spend reading and doing projects each week for this course?
    - 1-2 hours
    - 3-4 hours
    - 5-6 hours
    - > 6 hours

3. Did you find the amount of coursework/homework?
    - About right
    - Just right
    - A little more than anticipated
    - Too much

4. What did you find the most challenging portion of the course?
    - The reading
    - Online coursework
    - Developing your final presentation

5. Did you find the course coordinator accessible and willing to help during the online portion of the course?
    - Yes
    - No

6. Did you find the course coordinator accessible and willing to help during the conference portion of the course?
    - Yes
    - No

7. What did you like about the course? (May choose more than one)
    - Accessibility.
    - Flexibility.
    - Combination on online and face-to-face components.

8. Did face or experience any challenges and/or barriers to completing the online coursework?
    - No
    - Yes

9. Did face or experience any challenges and/or barriers to completing your capstone/final project?
    - No
    - Yes

10. Did face or experience any challenges and/or barriers to completing the face-to-face portion of the course at the conference?
    - No
    - Yes

11. Did the course meet what you were expecting to gain from the course?
    - No
    - Yes

12. Should EMS expand and/or continue its offering the DOT EMS Instructor course in a hybrid conference format?
    - No
    - Yes

13. What were you expecting to gain when you enrolled in the course? (May choose more than one).
    - Increased knowledge in developing curriculum, outlines, and lesson plans
    - Increased knowledge in developing and presenting your presentations
    - Increased knowledge in the use of educational technology

14. Should EMS offer the DOT EMS Instructor course as an online course? (No face-to-face component).
    - No
    - Yes

15. Do you think there are things that could improve this course?
    - No
    - Yes

Appendix C: DOT EMS Instructor Guidelines Course Syllabus

DOT EMS Instructor Guideline Course Syllabus

Course Overview

This Department of Transportation Instructor Guideline Course Hybrid Conference Model (DOT EMS IG HCM) complies with the 2002 DOT National Guidelines for Educating EMS Instructors. This hybrid course will include the 23 modules of the DOT EMS IG course along with a final evaluation capstone presented either face-to-face (f2) or virtually, post-conference.

The course combines online coursework and f2f coursework at the Teaching and Learning conference. This course is designed to prepare you as an entry-level EMS educator/instructor.

Required Text

Foundations for the Practice of EMS Education. Brady, 2006, *Melissa Alexander*

Course Materials

Other course material will be found in each module if there is additional material.

Instructor

Scott Tomek, MA, Paramedic

Phone

651-491-4481

Email

Stomek28@gmail.com
Or
Scott.tomek@allina.com

Office Location

Virtual

Office Hours

Virtual: Scheduled; Mon. – Sun. 10 am to 10 pm.

Via e-mail or phone.

Resources

- 2002 National Guidelines for Educating EMS Instructors, *DOT, online. Link in Moodle.*
- *Education Program Compliance Manual, EMSRB, online. Link in Moodle.*

Learning Outcome(s)

The participant will be able to perform as an entry-level EMS educator and be able to:

- Prepare course materials.
- Prepare the learning environment (classroom, lab, skills, and simulation).
- Present a lecture.
- Lead a psychomotor skill(s) presentation.
- Evaluate student performance during psychomotor skill(s), simulation, or written evaluation(s).
- Finalize course paperwork post-course.

Course Schedule

Module	Subject	Reading(s)/Assignment(s)/Project(s)
1	Introduction	**Foundations** Chapters 1 & 2
2	Roles & Responsibilities	**Foundations** Chapter 5 & 20
3	Administrative Issues	**Foundations** Chapter 4 **EMSRB Compliance Manual** **Conference Presentation:** From the Ground, up…Developing a Comprehensive Program Curriculum for Student Success.
4	Legal Issues	**Foundations** Chapters 3 & 4 **JEMS:** Liability Basics for Instructors
5	Ethics	**Foundations** Chapter 3 & 4 **Discussion Board Questions**
6	Learning Environment	**Foundations** Chapter 18 **Conference Presentation:** Dealing with Difficult Students.
7	Learning Styles	**Foundations** Chapter 6 **Conference Presentation:** Differentiated Instruction: It's My Way or The Highway- Not!
8	Domains of Learning	**Foundations** Chapter 7
9	Goals and Objectives	**Foundations** Chapters 9 & 10 **Project:** Goals & Objectives for capstone
10	Lesson Plans	**Foundations** Chapter 16 **Project:** Lesson plan for Capstone
11	Presentation Skills	**Foundations** Chapters 15 % 16 **Conference Presentation:** Presentation Skills (beginning level) or PowerPoint for the Modern Student (advanced)
12	Evaluation Techniques	**Foundations** Chapter9s) 14, 13 optional **Conference Presentation:** Inter-rater Reliability

13	Facilitation Techniques	**Foundations** Chapter 17 **Conference Presentation:** Can My Students Read
14	Communication/Feedback	**Foundations** Chapters 17 and 18 **Conference Presentation:** Good Job! Who's next?
15	Motivation	**Foundations** Chapters 6 and 8 **Conference Presentation:** Motivational Course Design for Learning and Performance
16	Teaching Thinking Skills	**Foundations** Chapter 9 **Conference Presentation:** Pedagogical Prowess: Teaching Thinking Skills
17	Teaching Psychomotor Skills	**Foundations** Chapter 19 **Conference Presentation:** Learning Through Repetition and Simulation
18	Affective Domain	**Foundations** Chapter 7 **Conference Presentation:** EMS Strong: Advancing a Profession
19	Discipline	**Foundations** Chapters 3 and 18
20	Remediation	**Foundations** Chapter 14
21	Cultural Awareness	**See Moodle Module**
22	Teaching Resources	**See Moodle Module**
23	Research	**Foundations** Chapter 13 **Conference Presentation:** Truth and Tall Tales of Testing
24	Situational Evaluation Tool	**Capstone: f2f or Online**

Project/Assignment

Project/Assignment	**Due Date**
Presentation Topic/Title	Open
Learning Outcome	Previous assignment completed
Learning Objectives	Previous assignment completed

Lesson Outline	Previous assignment completed
Lesson Plan	Previous assignment completed
Supporting materials (PowerPoint, handouts, equipment, etc.	Previous assignment completed
Final Presentation	Previous assignment completed

Participant Expectations

It is the expectation that the participants will do assigned readings, explore links to online resources, post answers to discussion questions and respond, to have assignments and/or projects done by due dates, and if presenting at the conference, to have presentation done and bring any needed teaching tools.

It is also expected that the participants will conduct themselves as EMS professionals and interact with participants and instructor in a respectful, polite, and non-confrontational tone in f2f and during online interactions.

Assessment

There is no final exam for this course. Successful candidates will have fully participated in the course, discussions, and assignments/projects. Participants will prepare and present a final Capstone presentation which may include lecture and/or skills, and/or simulation. The Capstone may be presented face-to-face Friday afternoon following the Teaching and Learning Conference or videoed and uploaded into Moodle within 30-dats post conference.

Attendance is required both days at the Teaching and Learning Conference to successfully meet the requirements of this course.

Academic Honesty

Academic honesty and integrity are integral to the academic process It is expected that each student will assume responsibility for his/her work and that materials submitted in fulfillment of the course requirements must represent the participants' own efforts. The participant will give credit to anyone's material that is used, modified, or initial concept/theory the participants' presentation may borrow from.

Access and Accommodations

Access and accommodation is limited due this being a pilot study and will be assessed on an individual basis.

Academic Support Services

The course curator will assist participants throughout the course.

Instructor's Philosophy for the Course

My philosophy for this course is as follows:

- We are adult learners that bring a vast array of EMS, educational, and teaching experience.

- We learn by doing and this course is designed to and follows that belief. There will be discussions, but the majority of assignments and/or projects are designed to build upon the previous assignment(s) and lead you to developing your Capstone presentation.
- I am here not as an instructor, but as a Curator and Guide to help you not to just complete this course, but more importantly, for you to leave with your Capstone presentation and begin a successful journey as an EMS Educator.
- I will make myself available to help you succeed in this course.