

**An analysis of demographic data and educational experiences that predict  
student success on the funeral service National Board Examination**

by

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## ABSTRACT

Using graduate surveys, which ascertained demographic data and educational experiences of the graduates, funeral service National Board Examination (NBE) scores, program curricula, and annual accreditation reports, this study investigated the relationship between educational experiences of funeral service graduates and their corresponding NBE scores. The sample consisted of 213 graduates of accredited programs who graduated and completed the NBE during 2009. The sample was evaluated to insure it was a representative sample of the population. In addition to descriptive statistics, comparative analyses and multiple regression analyses were conducted to determine differences between values of variables under investigation and to determine if any variables (educational experiences) could predict success on the NBE.

The study discovered that various educational experiences within this vocational program were not consistently offered to students among the accredited programs. The study also found significant differences between NBE scores of online and on-campus graduates. Finally, in keeping with other studies related to indicators of success on national licensing examinations, the study concluded the best predictor of success on the NBE was the graduates GPA during the program of study.

## CHAPTER 1. INTRODUCTION

Funeral directors and/or embalmers throughout the country are required to become licensed in order to practice the profession of funeral directing in every state except Colorado. For many of them, to become licensed they must complete a program of study in an accredited mortuary science or funeral service program. All programs are accredited by the American Board of Funeral Service Education (ABFSE). The accreditation authorizing agent is the Committee on Accreditation (COA), which has the responsibility and authority to adopt standards for accreditation. Numerous standards that have been adopted regulate areas such as the administration of the program, the curriculum, library resources, faculty credentials, and program planning and evaluation. Included in the planning and evaluation standard is a requirement that each graduate, as a condition of graduation, must take (though accreditation does not require the student to pass) the National Board Examination (NBE) which is administered by the International Conference of Funeral Service Examining Boards (ICFSEB). An additional standard requires accredited programs to maintain at least a 60% pass rate on the NBE for the graduates of that program. If a program has three consecutive years in which the pass rate falls below the required 60%, that program is placed on “show cause” and must present a valid argument before the COA why the accreditation should not be removed.

Although distance learning has been around for a number of years, programs offering mortuary science or funeral service education have only recently entered into the realm of online education. In 2009, according to the ABFSE (2010c), 9 out of the 56 accredited programs offered the program completely online or as distance learning. This has caused a great deal of misunderstanding among the membership of the ABFSE as it relates to the

standards that should govern all programs including the distance learning programs. Over the past 3 or 4 years, the programs that do not offer distance learning have out-voted programs with distance learning when considering standards that serve to limit the role of distance learning among the membership.

### *Statement of the Problem*

During the 2008 and 2009 spring meetings of the COA of the ABFSE, the COA voted to remove the accreditation of three programs. At the April 2009 meeting, the COA placed five programs on show cause or probation or continued the program on show cause due to the 60% pass rate standard. All five programs are subject to future votes of the COA. Because of this standard, the 56 remaining programs throughout the country put emphasis on the NBE, in particular maintaining a pass rate above 60% each year.

Although there are nearly 50 accredited programs that have had no adverse action taken against them by the COA, there is also distrust by some in the profession about the quality of education found in mortuary science/funeral service programs. “While there is almost universal agreement that mortuary education is currently missing the mark, there is little consensus on what needs to be done” (“More is Less,” 2007, p. 2) summarizes the thoughts of some in the profession. According to a recent editorial piece “schools [do] not meet a criterion of valuable and appropriate educational subject matter that meets the needs and scope of today’s trends and purposes” (“Faculty and Students Respond,” 2010, p. 24). These criticisms have been voiced to educators for years, and when pressed for what is lacking, the most common answer is the graduates have a lot of “book knowledge” but lack practical skills required in the profession. This study provides the only national study of

educational experiences in mortuary science/funeral service education and the impact of these experiences on the NEB.

Others have found fault with distance education, as was sarcastically stated in the *Funeral Monitor*: “‘Distance learning’ . . . [is the] way to go in the 21<sup>st</sup> century: Virtual learning in solitary confinement for [funeral director] wannabes” (“More is Less,” 2007, p. 1). The past executive director of the ABFSE articulated the value of online education as a transformational tool:

What is this new educational phenomenon that is driving change in higher education?

It is variously referred to as distance learning, distributed learning, web-based learning or electronic learning. Regardless of what it is called, it is transformative in its impact. (Connick, 2000, p. 63)

This study provides the only research in existence that compares the student success of mortuary science/funeral service graduates who earned their degree online and those who earned their degree in a traditional classroom.

#### *Significance of the Study*

This study is the first of its kind to focus on the educational experiences to which students are exposed in funeral service/mortuary science programs throughout the country. Although Poston’s (1987) study looked at predictors of student success on the NBE, it focused only on the graduates of one funeral service program, which was located at Southern Illinois University. Since 1987, the demographic of students has changed. Around the time of Poston’s study, approximately 75% of all students in mortuary science/funeral service programs were male (ABFSE, 2006) and over 90% were Caucasian (Taylor, 2007). Since around 2000, female students have made up over 50% of all new enrollees in mortuary

science/funeral service programs (Taylor), and Caucasian students account for approximately 65% of the enrollees in mortuary science/funeral service programs (ABFSE, 2009a). The age of new students enrolling in mortuary science/funeral service programs has changed to the point that today, although 36% of new students are between the ages of 17 and 22, approximately 30% of the new students are over the age of 30 (ABFSE, 2008).

Additional changes since 1987 include an increase in the number of programs throughout the country, the development of distance learning, the type of college that offers funeral service/mortuary science degrees, and the lack of funeral-related work experience prior to entering the funeral service/mortuary science program. From 1971 to 2007, the number of programs or colleges that offered degrees or diplomas in mortuary science/funeral service grew from 21 to 54 (Taylor, 2007); there are currently 56 accredited programs. The type of college offering accredited programs has changed from primarily private to predominantly public. In 1971, 13 of the 21 colleges or programs were private. In 2007 only 11 were private, single-purpose programs and the remaining 43 were located in public community colleges and universities (Taylor). The final change that has occurred, which necessitated this study, is the development of online or distance education. In 1987, distance education may have existed in a limited form consisting of correspondence courses. Today, 22 of the 56 institutions reported they offer distance education courses as part of their program with 9 offering the entire program online (ABFSE, 2009a).

#### *Purpose of the Study*

The primary purpose of this study was to survey students to determine the characteristics and instructional experiences which lead to student success on the NBE. A secondary purpose was to determine if there is a statistically significant difference in the

NBE scores of students who completed their program of study online versus those students who completed a traditional, face-to-face, program of study. The final purpose was to inform funeral service/mortuary science educators throughout the country on those educational activities that result in greater learning of the curriculum as measured by the NBE. By studying the activities that are included in mortuary science/funeral service education, this study provides a research-based measure of the extent to which experiential learning is included in this vocational program.

### *Research Questions*

This study sought to answer the following questions:

1. What are the demographic characteristics among the 2009 graduates of programs accredited by the American Board of Funeral Service Education?
2. What are the educational experiences among the 2009 graduates of programs accredited by the American Board of Funeral Service Education?
3. Are there any statistically significant differences between the National Board Exam scores (science section, arts section, and individual subjects) for students who completed the program of study in different educational environments (online versus traditional and cohort versus noncohort)?
4. To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs of study predict student success on the arts section of the National Board Examination?
5. To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs

of study predict student success on the science section of the National Board Examination?

### *Theoretical Perspective*

Nearly three-quarters of a century ago, Dewey (1938) theorized that “all genuine education comes about through experience” (p. 25) and posited “the fundamental unity [of progressive education] . . . is an intimate and necessary relation between the processes of actual experience and education” (p. 20). This belief in the importance of experiential learning is no more important than in the areas of vocation education. For mortuary science/funeral service programs, one may reasonably conclude that, due to the nature of the program, experiential learning is vital to student success. This study investigated a variety of experiences that are offered in mortuary science/funeral service programs to determine which educational experiences, if any, predict success for graduates who take the NBE. By studying the various activities, the study identified the experiences that provide the highest quality educational success. This is in keeping with Dewey’s (1938) belief that not all experiences are educational and that “it is not enough to insist upon the necessity of experience . . . [it] depends upon the *quality* of the experience which is had” (p. 27). By including a variety of experiential learning variables, the study determined which one(s), if any, provide the highest quality education.

Given that Dewey probably never imagined a time when students would be learning via a technology such as the Internet, this study also considered differences between online and traditional students. Dewey (1938) described the traditional educational model as one of “learning from texts and teachers” (p. 19) but concluded “young people in traditional schools do have experiences; and secondly, that the trouble is not the absence of experiences, but

their defective and wrong character” (p. 27). This study sought to determine if the quality of mortuary science/funeral service online education, which consists primarily of experiences that involve learning from texts, teachers, and online lessons, is equal to those educational methods that include learning from texts, teachers, and in-class white boards.

### *Definitions of Terms*

*American Board of Funeral Service Education (ABFSE)*: The organization of accredited mortuary science and funeral service programs in the country.

*Arts score*: The scaled score out of 100 earned by a graduate on the arts section of the National Board Examination.

*Arts section*: The portion of the National Board Examination that contains 150 scaled, graded questions in seven subjects: funeral directing, funeral law, business law, sociology and history, merchandising, psychology, and accounting and computers.

*Committee on Accreditation (COA)*: The committee under the umbrella of the ABFSE which is charged with the determination and enforcement of accreditation standards.

*Experiential learning*: The learning process that combines direct experience that is meaningful to the student with guided reflection and analysis (Kolb, 1984).

*International Conference of Funeral Service Examining Boards (ICFSEB)*: The organization, with representatives from the 49 state licensing authorities as well as the general public and the accredited mortuary science/funeral service programs, responsible for administering the National Board Examination.

*National Board Examination (NBE)*: The exam administered to graduates of mortuary science/funeral service programs, which is a requirement of licensure in most states.

*Program of Study (POS):* A set of coursework in the field of either mortuary science or funeral service education. For the sake of this study, general education courses are not included in the program of study.

*Science score:* The scaled score out of 100 earned by a graduate on the science section of the National Board Examination.

*Science section:* The portion of the National Board Examination that contains 150 scaled, graded questions in six subjects: embalming, restorative art, chemistry, pathology, microbiology, and human anatomy.

*Show cause:* The status of a program accredited by the ABFSE, whereby program representatives must appear before the COA to justify the reason accreditation should not be withdrawn.

*Student success:* The passage of the arts and/or science portions of the National Board Examination by earning a 75% on each section.

#### *Delimitations*

This study was delimited to graduates who completed a program of study in an accredited mortuary science/funeral service program during 2009. This delimitation was used so that the NBE scores could be compiled and studied in aggregate.

When determining student success on a national standardized exam, many variables could be included; this survey focused primarily on variables that relate to experiential learning through funeral-related professional and educational activities. The survey could have included other well-known factors of student success, such as persistence, but because the survey was given only to graduates, every participant in the population had persisted to graduation. Additionally, student engagement is addressed minimally with the inclusion of a

select few survey questions that relate to classroom instruction. The questions used are similar to those used on the National Survey of Student Engagement and Community College Survey of Student Engagement, which enable institutions to evaluate their effectiveness in a variety of areas of student engagement. This study did not focus on student engagement, as there are national processes in place through which a program or institution can gain a clearer picture of student engagement. The primary focus of this study is on the instructional and professional engagement of funeral service education. The activities considered as professional engagement are those activities that would be taught only in funeral-related programs, such as assisting with funerals, embalming, reconstruction of the facial features of deceased human remains, and transferring human remains to funeral homes.

#### *Limitations*

This study is limited in the following areas: the population is a small; third parties were depended upon to provide the names and e-mail addresses of graduates; the instrument utilized was voluntary in nature; there was a delay between graduation and completion of the survey; and the National Board Exam is the only measure of success utilized by the accrediting body. In 2009, there were only 1,381 persons who were first-time takers of the science portion of the NBE, only 1,386 first-time takers of the arts portion of the NBE, and a total of only 1,278 graduates from funeral service/mortuary science programs in the entire nation (ICFSEB, 2009). Many of the graduates took both the arts and science portions if the exam as required by the COA. With this small population, the sample size was also relatively small. The contact information for the participants was obtained from graduate lists provided by 33 of the 56 programs that are accredited by the COA. This study was further limited by the selection of the participants. The study did not include a structured randomization

process, but included graduates who were reported by the accredited institutions and who self-selected to participate in the study.

Another limitation of this study is the use of a snapshot in time in conjunction with Astin's (1991) Input–Environment–Outcome (I–E–O) model, which is described in Chapter 3. Astin identified this drawback in that the I–E–O model “normally requires the collection of longitudinal (input and outcome) data over a period of time before tangible results can be produced” (p. 116). This limitation was minimized by the use of a survey instrument that did not ask for a response to input variables that may have changed during the program of study as all input variables were well-defined demographic data and not subject to changes.

Because the graduates who were surveyed completed their programs in 2009, there was a delay between graduation and the time the survey instrument was sent to each graduate. The accredited programs submitted their annual reports in mid to late February 2010, and the survey instrument was not sent to graduates until March and April 2010. This could have been nearly a year after graduation for many of the graduates. Thus, a limitation of the study was the time between graduation and completion of the survey instrument.

Because all the data in the experiential learning portion of the survey were reported by the graduates themselves, the data are subject to the interpretation and memory of the graduates. So a limitation of the study is that the survey responses are self-reported and subjective based upon the graduates' perspectives of the activities they had during the program of study.

The final identified limitation is the use of the score(s) on the NBE as the sole measure of student success in a mortuary science/funeral service program of study. There are many measures of student success in higher education in general and funeral service/

mortuary science, specifically. There are no national data on job placement or on the employer's perspective of the quality of skills that graduates gain from the accredited programs. Although employer ratings of the graduate's skills would provide a good measure of the student success of a program, the likelihood of getting the information from both graduates and then their employer is very small.

### *Summary*

This study attempts to add to the literature on the correlation between experiential learning and student success in higher education but looks specifically at the vocational program of mortuary science/funeral service. It also attempts to expand the knowledge base for differences between online and traditional programs of study, again from the perspective of a specific vocational program—funeral service/mortuary science. The dearth of literature in the field of mortuary science/funeral service makes this study essential for the programs accredited by the ABFSE. Chapter 1 outlined the significance and purpose of the study, which is to understand the educational experiences that predict student success on the NBE.

Chapter 2 provides an outline of literature relating to experiential learning and characteristics of the program of study, including whether students took the program as a cohort, and the delivery format—online or traditional. It also outlines the literature relating to experiential learning in vocational programs other than mortuary science.

Chapter 3 outlines the research methods employed in the study, including a list of variables, the survey design, and participant selection. Also addressed in this chapter are the analyses of the data obtained. Descriptive statistics and multivariate statistics, including sequential multiple regression analyses, were used to examine the educational experiences and their impact on a graduate's score on the NBE.

In chapter 4 is a description of the results of the descriptive and comparative statistics and the multiple regression analyses of the data for the research questions.

Chapter 5 comprises a discussion of the implications of the results for accredited funeral service/mortuary science programs, throughout the country as well as for the ABFSE policy, and offers suggestions for future research.

## CHAPTER 2. REVIEW OF THE LITERATURE

This review of literature is divided into four sections. The initial section is a review of mortuary science/funeral service education to familiarize the reader with what has sometimes been a marginalized program of study in higher education. Next is a review of literature on the theoretical framework of experiential learning, beginning with Dewey's (1938) belief in experiential learning and concluding with a review of critics who have challenged experiential learning theorists. The next section addresses online education, including a focused discussion of how experiential learning can be applied to online education. The final section describes other factors including cohort scheduling, full-time status, and other studies that have predicted student success on national licensing exams in other professions as a measure of student learning.

### *Review of Mortuary Science/Funeral Service Education*

The minimum educational experience required of every accredited program in mortuary science education is outlined in three sources: the ABFSE (2009b) *Manual on Accreditation*, the 19 ABFSE-approved curricula (ABFSE, 2010a), and the ICFSEB (2005) task outline.

The ABFSE (2009b) *Manual on Accreditation* is a compilation of 15 standards as well as other general accreditation procedures. The standards cover: the administration of both the program and the institution, including finance, sponsorship, etc.; the curriculum; faculty credentials; student services, including the library and facilities; and planning and evaluation. As part of the curriculum standard, the ABFSE dictates the number of courses in individual subjects, the number of embalming cases, and the embalming activities each student must complete. The standard makes no additional learning activity a requirement of

the program. Even the requirement that restorative art lab be taught on campus does not list any activities that must be completed during that lab. The standards also dictate: the minimum degree for mortuary science graduates, which is an associates degree; the minimum educational requirement of faculty members; and the process for accreditation and withdrawal of accreditation.

The second source of information for mortuary science education is the ABFSE (2010a) *Curriculum Manual*. This manual contains the outline and prescribed vocabulary of 19 individual subjects. The subjects included in the curriculum range from the sciences of embalming, restorative art, anatomy, chemistry, microbiology and pathology, to the arts, including small business management, funeral directing, funeral merchandising, psychology and counseling, business and funeral law, ethics, accounting, sociology, and the history of funeral directing and embalming. The curricula are in outline format and are evaluated and updated every 5 years on a rotating basis.

The final source of information for funeral service education is the *Funeral Service Practitioner National/State Board Examination Content Outline* (ICFSEB, 2005). This is a list, compiled by the ICFSEB, of tasks that employers have stated are essential skills for new interns to possess upon graduation. The ICFSEB ties each question on the NBE to both the curriculum from which it came and to the practitioner content outline. The questions can be submitted from any practitioner but must be approved by a committee prior to inclusion in the examination.

### *Experiential Learning*

It is well understood in higher education that “traditional learning, with the teacher or trainer spouting facts and figures and with pupils or participants regurgitating the information

without deeper involvement, is a very ineffective form of learning” (Beard & Wilson, 2006, p. 1). Throughout the ages, many educators have attempted to produce learning by presenting a series of facts and asking the students to memorize and regurgitate those facts. When students were asked what lecturers might do to improve learning, in Beard’s (2005) study, they responded that the relevance and reality of the material needed to be improved. This certainly could be accomplished by providing more experiences in learning. Experiential learning has been discussed since the early 1900s, with John Dewey being an early proponent. Experiential learning begins with the belief that rote memory is not learning and, if learning is to occur, knowledge is “formed and re-formed by experience” (Kolb, 1984, p. 26), which is an interaction between the person and the world around them. This leads one to the “growing consensus too that experience forms the basis of all learning” (Rogers, 1996, p. 107).

Experiential “learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p. 38). As defined by Beard and Wilson (2006), “experiential learning is the sense-making process of active engagement between the inner world of the person and the outer world of the environment” (p. 2). Experience and experiential learning is found in all forms and levels of learning, however “its value is frequently not recognized or is even disregarded” (Beard & Wilson, p. 2).

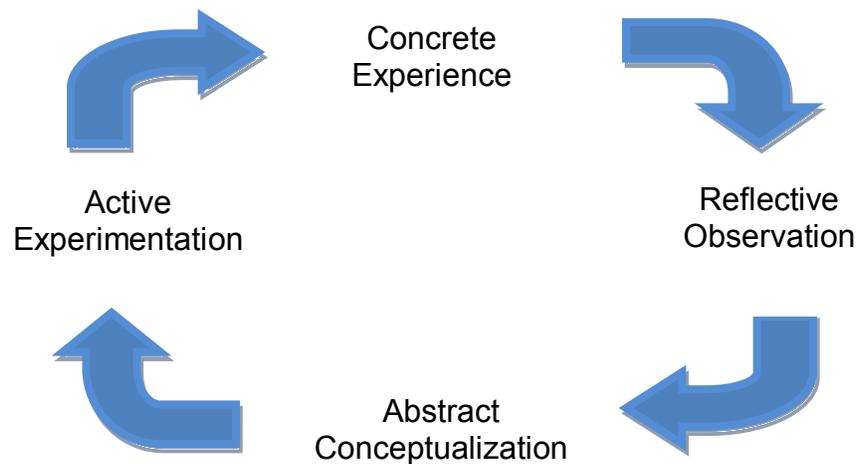
Dewey’s (1938) experiential learning theory suggests that students must have a level of discomfort with the new material in order to learn. He suggested that it was not enough for students to simply memorize facts from before, but they must have experiences, which may include lectures, in order to truly learn. He stated that “experience itself primarily consists of the *active* [Dewey’s emphasis] relationship subsisting between a human being and his natural

work and social surroundings” (Dewey, 1916, p. 274). Dewey believed one could learn only through active learning and experiences. He further stated, “Experience is primarily practical, not cognitive—a matter of doing and undergoing the consequences of doing” (Dewey, 1916, p. 276).

Dewey (1916) also stated that activity alone will not produce learning. Learning comes when a student tries an activity and then reflects upon it to connect it to both prior knowledge or experience and the possible future implications. Dewey (1916) further expounded that the connections are not possible without the experience or activity.

Kolb (1984) described Dewey’s theoretical model as a spiral that has numerous iterations that lead to ever-increasing knowledge. He extended Dewey’s work by describing the vast number of experiential learning opportunities in higher education, including “internships, field placements, work/study assignments, structured exercises and role plays, gaming simulations” (p. 3). Kolb described the balance today as “a spirit of cooperative innovation that integrates the best of the traditional and the experiential” (p. 5). He further described the role reflection has on learning. If the experience is to produce the learning it is intended to produce, the learner must critically reflect on the experience to draw conclusions. Rogers (1996) supported Kolb’s position when he stated that “critical reflection will lead in some cases to drawing of conclusions, to developing generalisations” (p. 108) and “critical reflection on experience would seem to be the key strategy in the process of creating meaning out of experience” (p. 109). Chickering (1977) pointed out the role of experiential learning in the following way: “It turns us away from credit hours and calendar time toward competence, working knowledge, and information pertinent to jobs, family relationships, community responsibilities, and broad social concerns.” (p. 86).

Kolb (1984) developed a cyclical approach to the learning process and then applied that process to different learning styles (Figure 2.1). The cycle begins with experience, requires the learner to reflect on that experience followed by conceptualization to generalize the lessons learned from the experience, then applying those lessons to other experiences, and thus repeating the cycle.



*Figure 2.1.* Kolb's (1984) experiential learning model.

Beard and Wilson (2006) described experiential learning as a combination lock that divides factors of learning into six “tumblers” of the lock: the learning environment, learning activities, sensors (eyes, ears, etc.), emotions, intelligence, and learning style. In their model learning took place only when the tumblers were placed in the correct combination for each learner.

When looking at experiential learning theories, the framework suggests that all higher education programs need iterative experiences for students to learn, though not all experiences are created equal. The experience must be meaningful and intentional in order to

produce learning. The quality of the experience must be considered. This study illuminates the experiences used in mortuary science/funeral service education that lead to the greatest possible student learning. Those experiences that consistently lead to higher results on the NBE may be considered of higher quality than those that do not produce higher results.

Dale (1969) described the levels of experiential learning as “the cone of experience” (pp. 107–135). The cone of experience is divided into three categories of experience: “the enactive (direct experience), the iconic (pictorial experience) and the symbolic (highly abstract experience)” (p. 108). The enactive area is located at the base of the cone and includes: direct experience, in which students learn by doing; contrived experiences, in which students learn through simulated exercises; and dramatized experiences, in which students role play the activities. The next group of experience is the iconic, which includes: demonstrations, field trips, exhibits, videos and pictures. Dale classified the pinnacle of the cone as the most abstract group (symbolic experience), which includes: audio recordings; visual symbols, such as drawings on the chalkboard (white-board); and verbal lecture. Dale listed as a misconception the belief “that all teaching and learning must move systematically from base to pinnacle” (p. 128). He stated that we must move through the cone of experience to learn: “We cannot successfully cope with problems on the indirect—more or less symbolic—level unless we have already had experiences on the direct level” (p. 201). He cautioned the teacher not to add experiences for experience sake but to make sure the “experiences are tied to some purpose” (p. 187). If the only purpose is the experience, Dale described the exercise as one who wanders through the woods. Although it may be an experience, it is not necessarily on purpose.

### *Challenges to Experiential Learning*

Wildemeersch (1989) cautioned that experiential learning “might turn adult education into an apolitical, acurricular, reactive and consumer-oriented enterprise [and] may simultaneously lead to isolation, individualism and poor learning” (p. 62). Although poor learning may occur, there is no doubt that poor learning occurs in all methods of delivery, in keeping with Dewey’s (1938) belief that only quality experiences lead to learning.

A second criticism identified by Beard and Wilson (2006) is the subjectivity of experience. This criticism is based upon the belief that if the activity utilized for learning is too specific, the learner cannot generalize the knowledge to another specific task that is not identical. Although activities may be specific to the environment, all learning is specific to the environment in which it is learned, each student brings a unique perspective to the educational process, and therefore, all learning is subjective, based upon the learner’s past experience.

### *Vocational Education*

Dewey (1916) addressed the broad category of vocational education by defining a vocation as “a direction of life activities as renders them perceptibly significant to a person, because of the consequences they accomplish” (p. 307). He later weighed in on the value of vocational education: “Education through occupations consequently combines within itself more of the factors conducive to learning than any other method” (p. 309). This is because the learner “unconsciously, from the motivation of his occupation, reaches out for all relevant information, and holds to it” (p. 310), and “the subject matter of industrial occupation presents . . . greater opportunity for familiarity with the method by which knowledge is made” (p. 314).

### *Online Learning*

In addition to the experiences within the courses of the program of study, the college experience itself was considered in this study. The first area of the college experience considered was online education.

Although some in higher education, generally, and funeral service education, specifically, resist the influence of online education, the online trend continues to grow. Howell, Williams, and Lindsay (2003) reported the current higher education system could not accommodate the enrollment demands, “making more distance education programs necessary” (p. 2). Kim and Bonk (2006) reported 2.35 million students enrolled in online courses during fall of 2004 (p. 23). Kim and Bonk also reported in their survey findings that 60% of the respondents expected the quality of online education to be equal to or greater than that of traditional education by 2013 (p. 26). This question of online quality has been studied by many people over the years, and yet there is not agreement on the quality of online education.

Clark (2003) noted that “compelling evidence of greater amounts of newer media when compared with more traditional media has not surfaced” (p. 2). Further, there is “no evidence of learning benefits from any medium that cannot be explained by another factor besides the medium” (p. 3). Conversely, Hannay (2006) reported over half (59%) of the students in her study self-reported higher grades in distance learning courses than in traditional courses. She further reported 57% of the students perceived to have learned more under the distance learning approach. Some studies have documented significantly higher learning outcomes in traditional courses (Brown & Liedholm, 2002; Ferguson & Tryjankowski, 2009), whereas others have discovered significantly more learning in online

courses (Sahin, 2006; Sitzmann, Kraiger, Stewart, & Wisner, 2006), but many authors have found “no significant differences” among the instructional delivery methods (Cook et al., 2008; Silver & Nickel, 2005; Smith & Palm, 2007; Willoughby & Cresap, 2002). Though many have reported no significant difference when comparing online and traditional courses, perceptions of learning did show some significant differences in that online students reported lower satisfaction than did traditional students, though the satisfaction level climbed from the precourse expectation to their postcourse satisfaction (Yablon & Katz, 2001). Additionally, employer perceptions of online degrees traditionally rank lower than do their perceptions of traditional (on-campus) degrees. According to Adams and DeFleur (2006), 96% of employers reported they would choose to hire a candidate with a traditional degree over one with an online degree. Although this seems to be a general rule, there are exceptions. Some employers hold online and traditional degrees of equal value (Columbaro & Managhan, 2009), though claims of high employer acceptance seems to “apply to situations in which the employee was already working for the organization and completing an online degree to gain internal advancement rather than being hired from the outside” (Columbaro & Managhan, ¶24).

One advantage enumerated by Clark (2003) is “if students cannot [or will not] give themselves an adequate example, an instructional [method] must provide it to them” (p. 3). Online education may also provide students with problem-based discovery instruction, much like that which can occur in traditional courses, but with a high degree of learner control over navigation. Clark stated that, although this high degree of control may benefit students with very high abilities, it constitutes a very small percentage of online learning. Clark added, “research has shown the high-level of learner control during learning has found only very

limited benefits” (p. 13). Clark further stated that “complex learning is facilitated when (1) learners are engaged in solving real-world problems, (2) existing knowledge is activated as a foundation for new knowledge, (3) new knowledge is demonstrated to the learner, and (4) new knowledge is integrated into the learner’s world” (pp. 15–16).

The suggested problems with online education is the perceived lack of quality (rigor), lack of face-to-face interactions, increased potential for academic dishonesty, and concerns about student commitment if students do not regularly go to campus (Columbaro & Managhan, 2009). According to Herrington, Oliver, and Reeves (2003), “in scenario-based learning environments . . . there appears to be some misapprehension about the approach, because it is so different from the more academic approaches with which they are familiar” (¶7). This lack of quality is not supported by the literature, though the perception remains. Meyer (2002) looked at more than 50 studies that compared online to traditional instruction. Through those studies, Meyer concluded there was no significant difference between online and traditional education when comparing student achievement.

One way to combat the question of quality and rigor is by providing authentic experiences that can be measured in either online or on-campus courses. Herrington et al. (2003) described authentic activities and the characteristics of those authentic activities. The first definition they used to describe authentic activities was those activities in which real-life problems are replicated and are active and engaging. Herrington et al.’s characteristics included real-life relevance, activities that require learners to define the tasks to be accomplished over a sustained period of time, and those activities that allow for collaboration and reflection. This study tests whether authentic activities are being utilized for online

mortuary science/funeral service students and the degree to which those activities are effective in producing learning.

### *Experiential E-Learning*

Carver, King, Hannum, and Fowler (2007) developed a model for experiential e-learning. The model was designed in response to a belief that most online courses are modeled after traditional classroom instruction and how instructors view the Internet, namely that the Internet is a publisher for the delivery of materials to students. They proposed a six-stage taxonomy of online course design. The phases they identified range from content sharing to direct experience/action learning. The phases are as follows:

In Type 1–Content Sharing, the online course is used to simply provide a way to distribute material from the instructor to the students, with the students having little or no interaction back to the instructor (other than possibly graded assessments) and with no interaction between students.

In Type 2–Online Conversation, the online course provides an opportunity for students and instructors to interact with each other and have conversations, either synchronous or asynchronous.

In Type 3–Meaningful Online Conversation, the conversation is student directed based upon the student’s needs rather than predefined by the instructor. The interactions are based upon the experiences of the students and what they are learning.

In Type 4–Drawing on Student Experiences, the course is designed by asking the students to assist in development of the course objectives, course content, and instructional methodology.

In Type 5–Problem-Based/Service Learning, the course is constructed around real world problems, however the experiences are planned and initiated by the instructor.

In Type 6–Direct Experience/Action Learning, the course focuses on the actual situations in which the students find themselves. In this model, the students bring in real situations in which they find themselves in their workplace and not simulated activities created by the instructor.

Carver et al. (2007) believed “when e-learning is designed to incorporate maximum levels of experiential learning, by intentionally orienting it towards the higher end of the above taxonomy, it can become more effective” (p. 250). Through this study, the questions, when taken together, help develop a “picture” of the typical online course being delivered to students in the area of mortuary science/funeral service education.

#### *Factors Influencing Student Success*

There are a number of factors that may lead to student success in general in higher education. Certainly student engagement, as described in the literature of the National Survey of Student Engagement and the Community College Survey of Student Engagement plays a significant role in student success. Other factors that may contribute to student success include the type of program (cohort model or selective scheduling) and full-time or part-time status.

#### *Cohort Model*

Studies have concluded that students in cohort programs experience greater interaction in the program (Reynolds, 1997) and online programs are best suited if they included a cohort design in the courses and program (Garland, 2004). Dewey (1916) stated that one of the conditions of the extent to which students learn is the social environment in

which the experience is conducted. Although Dewey did not require his premise of “social intercourse” to occur solely in cohorts, it may be that the social environment of cohorts differs from that of noncohort social environments. As described by Ubell (2010), Dewey’s social interaction is also not limited to only traditional students, but is available, albeit more challenging to accomplish, in online courses.

#### *Full-Time Versus Part-Time Status*

Much has been written in literature about success rates of full-time students, while minimizing the success rates of part-time students. Some have stated that part-time students “are at a disadvantage relative to their full-time peers” (Wasley, 2007, p. 25). Although there may be a definite disadvantage to attending part time, it may be due to valid, if not uncontrollable reasons, such as the need to work part time or full time while going to school (Wasley).

#### *Professional Licensure Education*

Although the only previous study in the field of funeral service education, which predicted student success on the NBE, was in 1987 (Poston, 1987) and its sample was taken entirely from graduates of the Southern Illinois University Mortuary Science program, other fields have studied the predictors of student success on licensing examinations. The educational field with the most research is nursing, followed by other health-related professions that require passage of a licensing exam, such as athletic trainers.

In a meta-analysis of studies that predicted student success on the National Council Licensure Examination (NCLEX) for nursing graduates, Campbell and Dickson (1996) discovered the variable that most often predicted student success on the NCLEX was grade point average (GPA). In contrast to Poston’s (1987) study relative to funeral service

education, Campbell and Dickson's meta-analysis revealed the least predictive variable was college cumulative GPA and examination scores in individual nursing courses. The most significant finding of the Campbell and Dickson meta-analysis was that the research had yet to identify variables that consistently predict successful retention, graduation, or NCLEX student success, which is identified as pass or fail. Following Campbell and Dickson's meta-analysis, Haas, Nugent, and Rule (2003) learned the only statistically significant difference between those passing and failing the NCLEX was GPA and further recommended that early identification of those students who are at risk could produce a positive benefit by beginning intervention techniques earlier rather than later.

As consideration is given to Dewey's (1938) study of experiential learning, the study by Jolly, et al. (1996) gives insight into the role of clinical education in student success on licensing examinations. Jolly et al. studied students in two universities that offer medical education. The study considered if the clinical experiences of the students had any impact on either the written portion of the exam or the objective structured clinical examination (OSCE), which tested students' practical abilities. The study concluded the strongest predictors of student success on the OSCE was whether the students examined patients on their own, whether the objectives were made clear, the number of clinics attended, and the number of days on call. The study also discovered merely observing a task being completed did not confer much, if any, advantage in the clinical examination performance.

In the field of athletic trainers, studies have attempted to identify predictors for the licensure exam. Among those, Harrelson Gallaspy, Knight, and Leaver-Dunn (1997) concluded through a multiple regression analysis that no single independent variable could predict student success on the licensing exam, though the best predictor was a composite

variable that included GPA, major GPA, ACT composite score, and the number of semesters enrolled at the university. Another study in the field of athletic training education (Turocy, Comfort, Perrin, & Gleck, 2000) focused on clinical experiences in education to determine if they predicted student success on a licensure examination. They concluded that those students who had prior experience in a related field had a higher score on the licensure exam, though the total number of clinical experience hours had no effect on the outcome. They suggested this was due to the quality of the experiences more than the quantity of experiences. One final study in the field of athletic trainer education found similar results. In a study by Middlemas, Manning, Gazzillo, and Young (2001), the results were very similar to the earlier results. The GPA of the student was a good predictor of student success on the licensing exam, whereas the quantity of clinical experience hours did not reveal a statistically significant difference in the scores. They concluded the reason the clinical experiences may not have an impact on the score of the licensing exam is “most credentialing examinations are written, and they may tend to focus on material and testing methods that emphasize knowledge and understanding of the concepts normally developed in the classroom setting” (p. 139).

### *Summary*

This study seeks to explore the experiential learning which occurs in funeral service education. Following Astin’s (1991) I–E–O model, the survey considers the input characteristics of graduates, such as prior funeral home experience, previous education, and demographic information; the environmental conditions of the program, such as scheduling status, full-time or part-time status, and experiential learning activities; and intermediate factors, such as the length of time to complete the program and GPA. These independent

variables were measured to determine their impact on the outcome measured by the NBE. The literature guided the study by borrowing from other health education research as well as from higher education research in determining the factors to consider for predictive purposes of student success on the NBE. Although prior research at a single funeral service program and most research in other health-related fields demonstrated GPA as the most predictive factor of student success on licensing examinations, this study seeks to expand the research to include students from mortuary science programs throughout the country.

The underlying hypothesis is that experiential learning activities to which a student is exposed will impact the score on the NBE in a positive way and that experience in a funeral home setting either prior to or during the program of study will also elevate the NBE scores. Although this is supported by Dewey (1916), and believed by many in the profession, this study seeks to determine if it is generally true of mortuary science students today with respect to a single measure of student success, the NBE.

The literature outlined in this chapter was utilized to develop the methods described in Chapter 3. In particular, the sequential regression model is operationalized from Astin's (1991) I-E-O model, and the experiential learning activities included in the survey were developed from the ABFSE curriculum and the *Practitioner Content Outline* developed by the ICFSEB. Other factors considered, such as cohort or non-cohort and instructional delivery method, were developed using the literature from higher education to determine if funeral service education was congruent with general education with regard to these areas.

## CHAPTER 3. METHODOLOGY

Chapter 3 describes the methodology used in the study. The first portion describes the epistemological position of the study. The conceptual framework and the rationale for that framework are articulated in the next section, giving attention to the proposed causal model that guided the study. The third portion of this chapter presents the data sources, participants, variables, and data analysis procedures. The concluding portions discuss the research design limitations and ethical considerations of this study.

### *Methodological Approach*

This study followed a quantitative approach with a postpositivist epistemology, which Creswell (2009) described as a “philosophy in which causes probably determine effects or outcomes” (p. 7). This epistemology was used because, for this study, the data pointed to causes, the variables described later, that predict certain outcomes, namely student success on the NBE. Creswell further described postpositivism as a philosophy in which “knowledge is conjecture . . . absolute truth can never be found” (p. 7). This is in keeping with Crotty (1998) who defined postpositivism as an epistemology that “talks of probability rather than certainty, claims a certain level of objectivity rather than absolute objectivity, and seeks to approximate the truth rather than aspiring to grasp it in its totality or essence” (p. 29). Although the study identified variables that predict student success, this may or may not be absolutely true for all participants in the study, let alone all graduates in the population.

This study was positioned as a “natural experiment,” which Astin (1991) described as one that studies “the real world rather than the artificial ones that are created by experimentation” (p. 28). In this case, the real world consists of over 50 accredited mortuary science/funeral service programs, an accrediting body, and the testing agency. This natural

experiment, which Astin described, does not have a control group nor does it seek to impose an artificial “treatment” onto any student(s).

### *Conceptual Framework*

The study utilized the I–E–O model (Astin, 1991) as the conceptual framework to operationalize the theoretical perspective described in Chapter 1. In keeping with Astin, this study was designed with Astin’s purpose of assessment in mind, as he stated “a fundamental purpose of assessment and evaluation . . . is to learn as much as possible about how to structure educational environments so as to maximize talent development” (p. 18). This study sought to determine the educational environments that lead to the maximum talent development for students in mortuary science/funeral service programs. Astin stated that “any educational assessment project is incomplete unless it includes data on student inputs, student outcomes, and the educational environment to which the student is exposed” (p. 18). The purpose of the I–E–O model for this study was to be able to control for the inputs students bring with them into funeral service/mortuary science programs so as to discover whether input characteristics or educational experiences have a greater impact on learning.

Figure 3.1 demonstrates how input variables can lead to environment variables or intermediate outcomes or directly to the outcomes of the study; how environment variables can lead directly to outcomes or to intermediate outcomes; and how intermediate variables, which are influenced by input variables and environmental variables, influence the outcomes of the study. Astin (1991) described the components of the I–E–O model in this way:

*Outcomes*, of course, refers to the “talents” we are trying to develop in our educational program; *inputs* refers to those personal qualities the student brings initially to the educational program (including the student’s initial

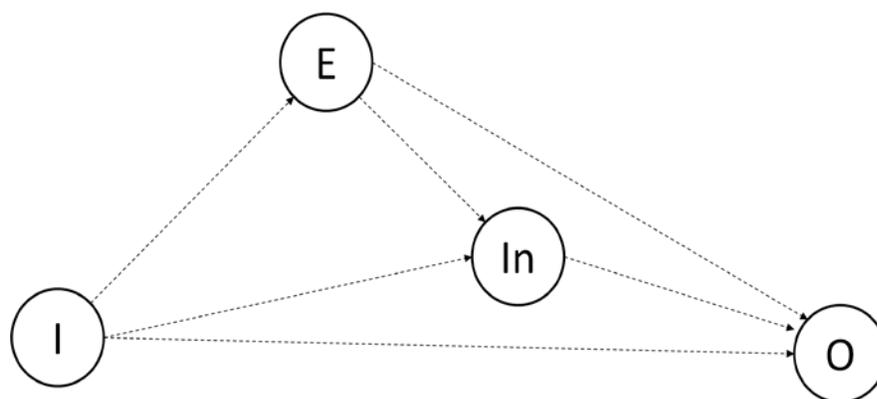


Figure 3.1. How variables operationalize in Astin's (1991) I–E–O conceptual model.

level of developed talent at the time of entry); and the *environment* refers to the student's actual experiences during the educational program. (p. 18)

He further defined intermediate outcomes as “another class of environmental variables . . . that cannot be known at the time of initial exposure to the educational program (that is, when the input data are initially collected) but which can, nevertheless, have important effects on the student's development” (p. 304).

For this study, the conceptual outcome was student success on the NBE. Student success is passage of the NBE; whereas program success is a high rate of passage on the NBE. The outcome measured was the individual scores on the NBE arts section and science section. The input factors for this study included the fixed student attributes of gender, ethnicity, and age—noting that age “changes regularly, but each student's age in relation to every other student's age remains invariant” (Astin, 1991, p. 70). The environmental factors for this study included the educational experiences during school, professional experiences offered in the program, whether the student completed the program in a cohort or not, and the instructional method (online or traditional). Although the list of input and environmental

factors is extensive, it is certainly not exhaustive. There may well be hundreds of other factors that may contribute to the success of students in general and in the specific study of funeral service/mortuary science.

For this study, I examined two intermediate outcomes: the student's GPA while in a mortuary science/funeral service program and the length of time in the program (which could be either an environmental factor or an intermediate outcome). GPA was included in the study because Poston (1987) found the best predictor of student success on the NBE is the student's GPA in the program.

### *Methods*

#### *Research Design*

This study utilized a survey design. The survey was constructed with the approval of the Iowa State University Institutional Review Board (IRB; Appendix A), utilizing material taken primarily from the ICFSEB *Funeral Service Practitioner Content Outline* (ICFSEB, 2005). The *Practitioner Content Outline* is a list of tasks that was compiled through surveys of funeral service employers throughout the country asking what essential skills a graduate of an accredited program should possess at the time of graduation. The tasks were compared with the national curriculum that is utilized by every accredited program to develop questions that ascertain if educational experiences associated with those tasks were being incorporated into the program of study.

The survey was self-administered in two forms: the first option was an online survey administered through the Qualtrics survey software, and the second option was a paper survey, which was mailed to graduates. The two surveys were identical other than the format in which they were administered. The format by which the survey was administered to each

participant was based upon the contact information obtained by me via the ABFSE from each of the participating accredited programs (i.e., if the program submitted an e-mail address, an electronic survey was administered; if the program submitted a mailing address, a paper survey was administered). The rationale for using a survey design is primarily because these data did not currently exist, and Astin (1991) pointed out that the best source of environmental factors is from the participants themselves. In addition, because the study was seeking to collect data from a representation of graduates nationally, a survey was the most efficient method of collecting the data.

### *Participants*

This study utilized those individuals who graduated during the year 2009 from a program/institution accredited by the ABFSE. Participation in the study was based upon the willingness of both the program and the graduate. Program participation was essential because the names and contact information of the graduates was not known by me or the ABFSE office. That information is kept at each of the programs/institutions throughout the country. For this study, program chairs (primary contact for each program or institution) were contacted and asked to provide the name and e-mail address for each 2009 graduate of their program as part of their annual report to the ABFSE. Many of the programs (21) submitted the names and e-mail addresses (resulting in 599 potential participants), and 12 programs provided the names and mailing addresses of their graduates (resulting in 243 potential participants).

Once the names and e-mail addresses were collected, they were compiled and placed into an online survey software package, which was then programmed to send out the request for participation in the survey. Two weeks after the initial electronic mailing, a reminder e-

mail was sent to each participant who had not yet responded to encourage more participation. The mailing addresses were compiled and a copy of the survey was mailed to each participant. Three weeks after the initial mailing, a postcard was mailed to participants who had not responded reminding them to respond and providing a website address (in Qualtrics) where they could log in and complete the survey. Once the graduate received the e-mail or letter with the information about the survey, the graduate had the opportunity to choose to participate or not participate in the survey and, thus, the study. For those graduates who responded via the paper survey, to facilitate the compilation of the results, I entered the data into Qualtrics with care given to make sure the information was identical to the information in the paper survey.

### *Sample*

The population for this study was the 1,278 graduates of the programs accredited by the ABFSE who graduated in 2009. The participant pool consisted of 842 graduates whose names and e-mail/ mailing addresses were provided by their programs. Of those 842 potential participants, 599 were in the electronic pool because the programs they attended provided e-mail addresses, and 243 were in the paper survey pool because the program they attended provided mailing addresses. The sample consisted of 213 graduates who responded to and completed the survey including the final question, which asked them to print their name in the survey to give permission for me to merge the survey data with the NBE scores, which were obtained from the ABFSE office. Of those 213 participants in the sample, 166 were from the electronic pool and 47 returned a paper survey, a response rate of 27.7% for the electronic version and 19.3% for the paper survey and an overall response rate of 25.3% of the potential pool (Table 3.1).

Table 3.1.

*Response Rate*

Contact mode	Potential participants	Sample	Response rate
E-mail	599	166	27.7
Surface mail	243	47	19.1
Total	842	213	25.3

*Survey Instrument*

The survey instrument (see Appendix B) includes sections for demographic information; information on work experience completed prior to or during the mortuary science/funeral service program; the educational environment of delivery method, cohort options and full- or part-time status; and the educational experiences in which participants had engaged during the program of study.

The first page of both the online and the paper copy of the survey instrument contained the required informed consent statements (Appendix C). The participants were aware that by returning the survey, they voluntarily agreed to participate in the study. In addition to the informed consent statement at the beginning of the survey instrument, question #24 explicitly asked participants to type their name and the name of their program to grant permission for the study to merge the survey data and the NBE score to create the dataset. In addition to the 213 participants in the study, 14 participants returned the survey instrument but chose not to include their name, thus not granting permission to merge their data. Most of those 14 respondents also had numerous other items on the survey that were not completed, and therefore, their information was not included in the study.

### *Data*

The data for this study were collected from three sources: surveys administered through an online survey software package to mortuary science/funeral service graduates who had completed their program during 2009 or whose information was typed into the Qualtrics system if the graduate submitted a paper survey; the NBE scores, which are collected and maintained by the ABFSE, also using the 2009 data; a review of the curriculum of each accredited program that had at least one participant in the study; and a review of the ABFSE annual reports from accredited programs/institutions.

The final questions on the survey instrument are: (a) If you grant permission to include your National Board Examination (NBE) score in the study, please fill in the box with your name; and (b) at what program/institution did you complete your program of study? These two items taken together enabled the survey data and the NBE scores to be merged for analysis.

Each January the NBE scores are submitted from the testing agency ICFSEB to the ABFSE office for all accredited schools and therefore for all graduates who would have taken the NBE during the previous year. The ABFSE provided the data for those respondents who granted permission. The dataset was formed by merging the survey information (inputs, environmental factors, and intermediate outcomes) with the NBE scores (outcomes) utilizing the name which was submitted on the survey instrument and which also appeared on the NBE summary sheets.

### *Variables*

This study utilized a variety of independent variables, which are classified as inputs, environmental factors, or intermediate outcomes.

*Input variables.* Input variables measure those characteristics possessed by students prior to being exposed to the environment being studied (Astin, 1991). The input characteristics may be demographic characteristics or any other characteristics the student possessed prior to the program of study. The following variables were considered in the input portion of the I–E–O model: gender, ethnicity, age, previous educational level, if a family member is involved in the profession, and the amount of previous work experience in the field of funeral service/mortuary science (Table 3.2). The demographic variables were measured as categorical variables. The input variable “previous education” measured the amount of previous higher education on a scale of 1 to 6: 1 = no prior higher education, 2 = up to 1 year of education prior to the mortuary science, up to 6 = masters degree as the highest degree earned prior to entering the mortuary science program of study. The final input variable considered was “prior work,” which measured the amount of funeral-related

Table 3.2.

*Input Variables Operationalized from the I–E–O Conceptual Model*

Variables	Description
Gender	Gender of the graduate
Ethnicity	Ethnicity of the graduate
Age	Age of the graduate
Prev ed	Amount of previous higher education; scale: 1 to 6
Family	Classification of six types of relatives in the profession, as well as none
Relatives	Calculated dichotomous variable (0 = no relatives in the profession; 1 = at least 1 relative in the profession)
Prior work	Funeral home experience prior to the program of study

experience prior to entering the funeral service/mortuary science program. on a scale of 1 to 5, with 1 = no experience, 2 = unpaid job shadowing only, 3 = less than 10 hours of paid work per week, 4 = work for pay between 10 and 25 hours per week, and 5 = more than 25 paid work hours per week.

*Environmental variables.* Astin (1991) defined the environmental variables as those that measure characteristics of the environment to which a student is exposed during a program of study. The following variables were considered as environmental factors of the study (Table 3.3): full-time or part-time status, instructional delivery method (online, web-blended, or on campus), individual scheduling (cohort or noncohort schedule), the amount of funeral home work a student participated in concurrently with the program of study, completion of a practicum or internship as part of the program, and a series of experiential learning variables. The experiential learning variables were divided into five categories: engagement, technical, embalming, presentations, and mock activities.

The engagement variables are similar to those utilized by the Community College Survey of Student Engagement including writing a paper of more than five pages, giving an oral presentation, participating in a study group, and participating in an activity that requires group work. The other variables in the engagement category were participation in a community service project, which is identified in the accreditation standards, and participation in a fraternal organization. The next environmental variables, which are included due to the requirements of the accreditation standards, relate the number of embalming cases completed by the graduate. To study the effect of the number of embalming cases on the NBE results, two embalming variables were included: the number of embalming

Table 3.3.

*Environmental Variables as Defined by the I-E-O Conceptual Model*

Variables	Description
FT vs PT	Full-time or part-time status
Delivery	On-campus, online, or web-blended
Scheduling	Cohort or selective scheduling
School Work	Funeral home experience concurrent with the program of study
Practicum/Internship	Dichotomous variable of whether a practicum was included or not
Educational activities (6)	Scale of 6 engagement variables: paper, oral, chat or study session, fraternal organizations, community service, and group activities
Technical activities (5)	Scale of 5 technical variables: cremation, casketing, cosmetics, solo embalming, and group embalming
Embalming Cases (2)	Scale of 2 embalming variables: number observed and number participated
Presentation activities (7)	Scale of 7 presentations/observations: merchandise, chemical, related presentation, crematory, autopsy, selection room, and places of worship
Mock activities (5)	Scale of 5 mock experiences: observation or performance of mock of funerals, visitations & arrangements

cases that were observed and the number of embalming cases in which the student participated.

The remaining experiential learning variables included a number of activities identified by the practitioner content outline developed by the ICFSEB (2005) as the minimum tasks employers expect graduates to possess prior to the internship. In the area of technical activities, presentations, and mock activities, the variables identified the number of times the graduate identified having completed those activities. The specific variables included in environmental factors were: observing a cremation; observing an autopsy;

casketing of a human remains; cosmetizing a human remains; embalming a deceased with no other student present; embalming a deceased human remains with other students present; participating in a presentation by an embalming chemical company, funeral merchandise company, or related profession; observing a funeral; observing an arrangement conference between a funeral director and a family member(s); role-playing the role of a funeral director in conducting a mock funeral, mock visitation, or mock arrangement conference; visiting a crematory; visiting a funeral home casket room; and visiting places of worship to discuss religious funerals.

*Intermediate variables.* Two intermediate variables were considered in this study: the time to completion of the program and student's approximate GPA. These were classified as intermediate variables because they are dependent to some degree upon other variables, including input, environmental, and other unmeasured characteristics. The time to completion was measured from the first mortuary science/funeral service education course (general education courses were not included) until graduation. The GPA variable assumed a standard scale.

*Dependent variables.* For this study the dependent variables were student success on the NBE as measured by the score for the arts section and the score for the science section. The score on each section (arts and science) is a number between 0 and 100. The arts section of the NBE is divided into seven curricular subjects: sociology, psychology, funeral directing, business law, funeral law, merchandising, and accounting. The science section of the NBE is divided into six curricular subjects: embalming, restorative art, pathology, chemistry, microbiology, and anatomy. Given that the individual curricular subject scores were known for each participant, these subject scores were treated as additional dependent

variables for the study. Because these section scores (arts and sciences) were computed using the individual curricular subject area scores, these dependent variables were not utilized in the regression analyses of the arts and science scores, but were used during the comparative analyses.

### *Data Analysis Procedures*

At the conclusion of the survey administration window, all data were in one of two datasets (one for e-mail responses and one for mail responses). Prior to any analysis all the surveys were merged into one dataset. The single dataset was then sorted by accredited program and graduate name. The survey data from the data set were merged with the NBE scores from the ABFSE.

### *Research Question 1*

The first research questions was: What are the demographic characteristics among the 2009 graduates of programs accredited by the American Board of Funeral Service Education? Once the data were collected, the data set was first analyzed by considering the descriptive statistics for each of the demographic questions in the survey. The survey results were compared to the demographic data from the population as listed in the 2009 annual report published by the ABFSE (2010a). The purpose of this analysis was to determine if the sample was representative of the entire population, which would provide information about any limitations in the sample of the study.

### *Research Question 2*

The second research question was: What are the educational experiences among the 2009 graduates of programs accredited by the American Board of Funeral Service Education? The descriptive statistics of each survey question were compiled to provide

information about the educational experiences and work experience relating to the funeral service profession. In addition, two questions on the survey were open-ended questions that asked: *What educational activity has been the most beneficial to your knowledge of funeral service/ mortuary science?* and *What educational activity would you like to have participated in, which could have improved your knowledge of Funeral Service/Mortuary Science?*

Although responses to these questions were not part of a formal qualitative study, they were analyzed using qualitative techniques of coding to determine common themes among the responses from the participants.

Following the descriptive statistic analysis and prior to any other analysis of the data (*t* tests, correlations, or regression analyses), the data were analyzed for missing data points and outliers. The study first considered missing data. Analysis of all independent and dependent variables demonstrated that only three variables had more than 5% missing data: the number of observed embalming cases (21.1%), whether the graduate participated in a practicum or not (12.4%), and the extent of funeral home work experience of the participants concurrent with the program of study (9.9%). Each variable was considered individually.

First the observed number of embalming cases was considered and the variable was considered for comparative analysis but eliminated from consideration in all other analyses (Tabachnick & Fidell, 2007). Part of the basis for this elimination from further analyses was that another variable, the number of embalming cases in which the graduate participated, was also measured in the study, and the correlation analysis revealed a moderate to high correlation between the variables ( $r = .554, p < .01$ ).

The variable with the second highest number of missing data was whether the graduate had participated in a practicum or internship as part of the program of study. In

addition to a high number of missing data points, I also detected inconsistencies of responses between the survey results as well as known information about accredited programs; specifically, I was aware of participants from particular programs that do not offer a practicum or internship course as part of the program had marked “yes” to the survey question. In this instance, I utilized another data source, the individual curriculum from each participating institution. The curriculum for each institution was readily available, and I reviewed each program to determine if the program included a practicum or not. This secondary data source provided the data for all participants and was consistent with 75% of the participants in the study, with 12% missing and the remaining 13% inconsistent with survey responses. All of the participants who were inconsistent came from seven institutions, though all 33 programs were reviewed, and the data were input from those secondary sources.

The final area of concern was the extent to which each graduate had worked in funeral service while attending the program of study. A review of the correlation between this variable and the variables “prior funeral service experience” demonstrated a correlation of .392. With this correlation, the variable “concurrent funeral service experience” was not used in further multivariate regression analyses, but was considered in research question #3 when completing comparative analyses.

The next area considered was the outliers in the dataset. Descriptive statistics were analyzed for all variables. The variables were considered individually for outliers and collectively for mean, minimum, maximum, standard deviation, skewness and kurtosis (Appendix D). Three independent variables were found to have outliers, the first being the number of observed embalming cases. Because that variable had previously been disregarded

due to missing data, a mean comparison analysis ( $t$  test) was not conducted for this variable. The other variables were: the length of the program of study, with all but two participants completing the program within 36 months and two participants responding they completed the program of study in 60 months; and the number of embalming cases in which respondents had participated. For the length of time variable, a high kurtosis was detected. To remove the outliers and to lower the kurtosis, a new variable was created by converting the variable from a continuous variable into a categorical variable with categories of 9 to 12 months, 13 to 15 months, 16 to 18 months, 19 to 24 months, and over 24 months. Through this conversion, the outliers were removed and the kurtosis was lowered from 8.7 to 1.2. For the number of embalming cases in which the respondent participated, two variable transformations were considered. First considered was categorizing the participants into categories of 0 to 10 cases, 11 to 20 cases, etc., to above 100 cases. This eliminated the outliers, but on further investigation of the new categorical data, the distribution possessed a positive skew and so the variable was instead transformed using a natural log of the number of cases in which the graduates had participated. This distribution was determined to be nearly normal and eliminated the outliers.

The dependent variables were also considered. Two outliers were identified, one for each of the two sections (arts and science) of the NBE. The participants whose scores were identified as outliers were excluded from the comparative and multivariate analyses by identifying the participants for whom the outliers corresponded and excluding all the data for those participants from the comparative and regression analyses.

In addition to evaluation of missing data and outliers, the correlation coefficients were run for all variables after removal of the outliers; the correlations demonstrated

correlations with absolute values of less than .8. Appendix E contains the correlation matrices of all variables included in the regression analyses.

### *Research Question 3*

Are there any statistically significant differences between the National Board Exam scores (science section, arts section, and individual subjects) for students who completed the program of study in different educational environments (online versus traditional and cohort versus non-cohort)? Several dichotomous variables were considered as independent variables for to test this, including: gender, delivery method (online versus traditional), prior and concurrent work experience, the type of program or institution (whether a public institution or a private institution), whether or not the participant was in a cohort, and whether or not the participant was in a practicum. The delivery method, which allowed participants to respond on the survey with on-campus, online, or web-blended, was considered dichotomous due to the low number of responses for the web-blended category (23 participants and nearly all were from one institution). Additional variables were created to dichotomize three variables that had multiple categories each. The variable “family” asked participants to identify if they had spouse, parent, sibling, in-laws, other relatives or no relatives in funeral service. For participants who responded with no relatives, the new variable “relatives” was given a numerical value of “0”; for those who identified at least one relative as being in the funeral profession, the relatives variable was given the value of “1.” This would allow a dichotomous study of those with relatives compared to those without relatives in the funeral profession. Two other variables were transformed into new variables in similar ways. The variables “prior funeral experience” and “concurrent funeral experience” each had five categorical areas that could be checked: no funeral home experience, unpaid job shadowing experience,

less than 10 hours per week, 10 to 25 hours per week, and over 25 hours per week. Because the descriptive statistics demonstrated a relatively low frequency in two or more of the categories, the new variables “previous work” and “school work” were created, assigning participants with a numerical value of “0” if they had either no experience or only unpaid job shadowing experience; the participants were assigned a numerical value of “1” if they had any paid experience (10 hours or less, 10 to 25 hours, or 25 or more hours of work per week). Descriptive statistics of the original and new variables were analyzed in the study. For the type of institution, the study reviewed the 2009 annual reports from accredited programs/institutions (ABFSE, 2010a) to determine whether each program was a private or public institution.

The mean comparisons were tested for these variables using Levene’s test for equal variances followed by *t* tests relative to the dependent variables arts score, science score, and each of the 13 individual curricular subject areas; second comparative analyses were conducted relative to the experiential learning activities.

#### *Research Questions 4 and 5*

The final two research questions were: To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs of study predict student success on the arts section of the National Board Examination?; To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs of study predict student success on the science section of the National Board Examination? The analysis relative to these research questions began with an evaluation of the assumptions underlying multiple regression analysis. The first step was to identify

variables to be considered for each of the two regression analyses (arts and science scores as dependent variables). Variables to be considered were identified, in part, based upon which variables had not previously been addressed through the mean comparisons of research question 3 with the experiential learning variables given preferential inclusion in the analysis.

Because evaluation of outliers had already been completed for both independent and dependent variables, the next consideration was whether the distributions of each independent and dependent variable was normal. This evaluation demonstrated the dependent variables to be normally distributed, as was the distribution for previous education. Two of the variables, age and the number of embalming cases in which the graduate had participated, had a moderate to significant positive skew. These variables were transformed into the natural log of those variables, producing a near normal distribution (Tabachnick & Fidell, 2007). The prior funeral service experience variable had a bimodal distribution but had previously been converted into a dichotomous variable for *t* tests, so the new dichotomous variable was used for the regression analyses. The length of the program variable had previously been converted into a categorical variable to remove outliers and lower the measure of kurtosis. This new variable “length categories” was included in all further analyses.

Of the experiential learning variables identified as environmental, 6 were bimodal, 3 had slightly negative skews, and the remaining 10 variables had positive skews. All variables that possessed significant positive or negative skews or were bimodal were transformed into dichotomous variables with values of “0” or “1.” The value of “0” was given to the responses of “never” or “none” and the responses of “1,” “2,” “3 or more,” and “less than monthly,” “monthly,” and “weekly” were given the value of “1.”

Following the transformation of the variables into dichotomous variables, the assumptions of the regression analysis were evaluated to insure compliance. The assumptions that were evaluated were: proper ratio of cases to independent variables; absence of outliers on independent and dependent variables; absence of multicollinearity and singularity; and normality, linearity, and homoscedasticity of residuals (Tabachnick & Fidell, 2007). During the data analysis described earlier, the independent variables were evaluated for outliers and any known outliers were removed or transformed in such a way as to no longer have an outlier. The dependent variables had previously been evaluated for outliers. The case that had the outlier for each section was excluded from the valid cases prior to the regression analysis. To evaluate the distribution of variables for normality and linearity, the descriptive statistics, accompanying histograms, and scatterplots measuring observed and projected values were studied. All variables were either dichotomous or appeared to be near normal, and all scatterplots demonstrated insignificant deviation from linearity. The correlation coefficients for all variables were calculated and showed only one case with a correlation above .85. In the case of high correlation, the two variables observation of an autopsy and observation of arrangement conferences had a correlation of 1.00. Both variables were kept, but care was taken to insure they were not used in the same regression analysis. The observation of an autopsy was used in the regression relating to the science score, and the observation of the arrangement conference was used in the regression relating to the arts score, thus insuring the absence of multicollinearity.

Though there were 213 participants in the study, the regression analyses for the arts section and the science section of the NBE had 182 and 177 valid cases, respectively. The multiple regression analysis was limited to comply with Tabachnick and Fidell's (2007)

requirement that the number of cases must be greater or equal to 50 plus eight times the number of independent variables ( $N \geq 50 + 8m$ ; with  $N$  equal to the sample size, and  $m$  equal to the number of independent variables) and the number of valid cases greater than or equal to 104 plus the number of individual predictors ( $N \geq 104 + m$ ; p. 123). This sample size allowed for up to 16 variables to be included in the regression model for the arts section and up to 15 variables to be included in the regression model for the science section. Utilizing the 14 arts variables and 14 science variables listed in the subsequent paragraph met the requirements of the appropriate sample size.

The variables used for both regression analyses included: input variables (natural log of age, previous education, and the dichotomous measure of prior funeral service experience); environmental variables (inclusion of a practicum course); and intermediate variables (GPA and length of time in the program; see Table 3.4). Specific to the science regression model only, the following environmental variables were included: natural log of the number of embalming cases in which the graduate participated and the dichotomous variables of participation in cremation, tour of a crematory, participation in embalming with or without other students present, participation in cosmetizing and casketing of the deceased human remains, and observation of an autopsy.

Specific to the arts regression model only, the following environmental variables were included: a funeral merchandise presentation; visits to a casket selection room and places of worship; observation of funerals and arrangement conferences; and conducting of mock activities of funerals, visitation setups, and arrangement conferences.

The final assumption, homoscedasticity of residuals, was evaluated as part of the regression analysis and is described below.

Table 3.4.

*Variables Used in the Regression Analyses*

Science regression analysis	Arts regression analysis
Input variables	
Log of age at graduation	Log of age at graduation
Prior education	Prior education
Prior funeral service work experience	Prior funeral service work experience
Environmental variables	
Practicum included in the program	Practicum included in the program
Log of number of embalming cases	Funeral merchandise Presentation
Observation of cremation	Visit to a casket selection room
Visit to crematory	Visit to places of worship
Casketing of human remains	Observation of a funeral
Cosmetizing of human remains	Observation of arrangement conference
Embalming with or without other students present	Conduct mock funeral
Participation in embalming without other students	Set up mock visitation
Observation of an autopsy	Conduct mock arrangements
Intermediate variables	
Length of time to completion of program	Length of time to completion of program
GPA	GPA

The regression analyses employed listwise deletion, omitting cases that exhibited missing data for one of the variables in the sequential regression model. The sequential regression model was employed to allow the independent variables to enter the model in accordance with Astin's (1991) I-E-O model to determine the effect of each block of variables on the regression model. This allows variables that are "causally prior" to enter into the model in advance of other variables in the model (Tabachnick & Fidell, 2007). Following the regression analysis the scatterplots displayed homoscedasticity of residuals in both regression analyses. These plots confirmed no outliers were included in either analysis.

#### *Limitations*

The known limitations of the study include omission of some information due to the difficulty in obtaining it, such as ACT and SAT scores. A second limitation is that data were self-reported; although this presents no problem with some variables, the self-reported variable GPA may pose another limitation to the study.

Due to the nature of the distributions of the variables being studied, some variables had to be transformed using a natural log or by converting the data to a dichotomous variable. Although this made the regression more robust, the model is limited to a scale of the variables rather than actual measures of the variables. In particular, the number of embalming cases a graduate had completed is more relative to other cases than the impact of each embalming case on the overall score on the NBE.

#### *Ethical Considerations*

The data were collected through a survey software program and then downloaded onto a laptop, with backups on flash drives, all of which I controlled and did not make available to anyone else. In order to insure anonymity of the participants, the categories of

demographic variables with fewer than 10 respondents were considered for inclusion or exclusion. Due to the synergistic relationship with the ABFSE, I inquired about the preference of the executive director to suppress or retain those categories. Because the analyses were conducted in aggregate, the executive director's position was that leaving them in the tables would not compromise anonymity. In addition, no analysis was conducted with respect to a particular college or program from which the participant graduated to maintain confidentiality at the program level as well.

The next chapter addresses each of the research questions, including the results of the analyses that were completed.

## CHAPTER 4. FINDINGS

This study focused on the educational experiences of funeral service education graduates. This chapter is devoted to the results of the research questions included in the study. The study's first research question was to determine the demographics of the sample. The data from the sample were then compared to the population demographics, which are readily available from the ABFSE. The second research question was to determine the educational experiences of the 2009 graduates of accredited programs. To answer the third research question analyses were conducted comparing the results of the NBE arts and science scores and educational experiential learning activities based upon categorical variables such as coursework delivery method, whether the graduate had worked in a funeral home prior to and concurrent with the program of study, and whether the graduate had any other relatives in the profession. To answer the final two research questions multiple regression models were utilized to predict which educational experiences could impact the scores on the NBE.

### *Demographic and Background (Input) Characteristics*

The first research question was: What are the demographic characteristics among the 2009 graduates of programs accredited by the American Board of Funeral Service Education? This research question was answered through the use of descriptive statistics of the independent variables. The sample consisted of 213 out of the 1,278 graduates of accredited programs in 2009 (16.5% of the population) and out of the 842 potential participants (25.3% response rate). For the study, the demographic variables of the participants were compared to the demographic variables of all 2009 graduates as reported by the ABFSE (2010b). As with all demographic variables, the sample variables in the study were categorized in the same manner as reported in the ABFSE (2010b) 2009 annual report.

The percentage of graduates in each category of the sample was compared to the percentage of graduates in the same category of the population to determine if the sample was representative of the population. In nearly all cases, the percentage was very similar, demonstrating the sample to be a good representation of the entire population.

The ages of the graduates, ranging from 19 to 63, were collected as a continuous variable by asking the age of each graduate. The responses were grouped into the ABFSE-reported categories (Table 4.1).

Table 4.1.

*Age of the Population and Sample*

Age category	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
20 or under	56	4.38	10	4.69
21–25	549	42.96	83	38.97
26–30	262	20.50	46	21.60
31–35	147	11.50	26	12.21
36–40	85	6.65	9	4.23
41–45	67	5.24	13	6.10
46–50	59	4.62	8	3.76
51–55	33	2.58	8	3.76
56–60	9	0.70	4	1.88
61–65	5	0.39	1	0.47
66–70	0	0.00	0	0.00
71 and over	0	0.00	0	0.00
Unknown	6	0.47	5	2.35
Total	1,278	100.00	213	100.00

The distribution of ethnicity in the sample deviated slightly from the distribution of the population (Table 4.2). African Americans made up 14.95% of the population, yet accounted for only 8.45% of the sample. The percentage of African American graduates from the population who completed the survey was 9.4%, a response rate similar to the response rate of African American students in other studies (Dey, 1997).

The gender of the participants in the study mirrors very closely the gender percentages of the population (Table 4.3).

The previous education variable deviated somewhat from the population (Table 4.4). As with other studies, students seeking or possessing bachelor's degrees were more likely to respond (Dey, 1997), thus the response rate was higher for those with higher degrees.

The frequency distribution for those graduates who had family members in the profession gives insight into the new demographic of students entering the profession. Historically, many students who enrolled in mortuary science/funeral service programs were

Table 4.2.

*Ethnicity of Population and Sample*

Ethnicity	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
Caucasian	990	77.46	177	83.10
African American	191	14.95	18	8.45
Native American	6	0.47	3	1.41
Asian American	8	0.63	1	0.47
Hispanic American	67	5.24	9	4.23
Other	16	1.25	5	2.35
Total	1,278	100.00	213	100.00

Table 4.3.

*Gender of Population and Sample*

Gender	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
Female	680	53.21	115	53.99
Male	598	46.79	98	46.01
Total	1,278	100.00	213	100.00

Table 4.4.

*Previous Education of Population and Sample*

Education level	Population		Sample	
	<i>n</i>	%	<i>n</i>	%
No previous education	273	21.36	30	14.08
Up to 1 year	211	16.51	33	15.49
Up to 2 years	370	28.95	51	23.94
Up to 3 years	128	10.02	29	13.62
Bachelor's degree	228	17.84	56	26.29
Master's degree	26	2.03	12	5.63
Other	42	3.29	1	0.47
Missing	0	0.00	1	0.47
Total	1,278	100.00	213	100.00

the son, daughter, or other relative of a funeral director. Over time, that has changed. This study demonstrates that only 21.7 % of the graduates of mortuary science programs have relatives who are licensed in the profession (Table 4.5); thus 78.3% of the graduates have no relatives in the profession. This demonstrates a dramatic shift in the demographic of the current mortuary science student.

Table 4.5.

*Family Members Who Were in the Funeral Service Profession*

Relative	<i>n</i>	%
Parent	19	8.96
Spouse	2	0.94
Sibling	5	2.36
In-law	1	0.47
Other	19	8.96
No relatives in the profession	166	78.30
Total	212	100.00

The survey demonstrated that approximately 50% of the graduates had had experience in the funeral profession prior to enrolling into a funeral service program of study (Table 4.6). While enrolled in the program of study, approximately 77% of the participants worked at a funeral home.

Table 4.6.

*Amount of Funeral Home Experience*

	Prior to education		Concurrent with education	
	<i>n</i>	%	<i>n</i>	%
No paid funeral home experience	102	49.5	45	23.4
Paid funeral home experience	104	50.5	147	76.6
Total	206	100.0	192	100.0

### *Educational (Environmental) Factors*

Almost three-quarters (72.4%) of the participants identified themselves as having taken the program as part of a cohort, and 89.4% of the participants identified themselves as full-time students (Table 4.7).

The number of students who identified themselves as part-time students corresponds to the number of student who took longer than 24 months to complete the program (Table 4.8). In nearly all accredited programs, the program of study is generally 1 year of general education courses and 1 year of mortuary science courses. The vast majority of graduates completed the program in 2 years or less.

The study surveyed the instructional delivery method of the participants in three categories: traditional (on campus) instruction; online delivery; and web-blended, which was defined to be 50% online and 50% on campus. Of the participants, 73.7% ( $n = 157$ ) identified their instructional delivery method as traditional, on campus; 15.5% ( $n = 33$ ) identified their delivery method as online; and the remaining 10.8% ( $n = 23$ ) identified their instructional method as web-blended. Due to the low number of participants who self-identified the instructional delivery method as web-blended, the web-blended participants were not included in analyses differentiating the delivery method. The ABFSE identifies only nine accredited programs with their entire program available online. Personal correspondence with representatives from all nine programs where the entire program can be taken online determined a total of 96 graduates who had completed the program entirely online during 2009 (Table 4.9).

The sample of 33 participants who completed the program entirely online represents 34.3% of the population of entirely online graduates (Table 4.10).

Table 4.7.

*Cross Tabulation of Enrollment and Scheduling Statuses*

Variables	Full time		Part time		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Cohort	144	94.7	8	5.3	152	73.1
Selective scheduling	42	75.0	14	25.0	56	26.9
Total	186	89.4	22	10.6	208	100.00

Table 4.8.

*Length of Time for Program Completion*

Time in months	<i>n</i>
9 to 11	10
12	69
13 or 14	8
15	35
16 or 17	3
18	18
19 to 23	3
24	47
26 or greater	16
Total	209

Table 4.9.

*Number of Graduates from Institutions with Online Programs*

Program/Institution	# of graduates
American Academy/McAllister	29
Arapahoe CC	15
Arkansas State Univ	0
Des Moines Area CC	5
Fayetteville Area Tech College	0
Jefferson State CC	7
Ogeechee Tech College	0
Pittsburg Institute of Mortuary Science	21
St. Petersburg College	19
Total	96

Table 4.10.

*Cross Tabulation of Enrollment Status and Instructional Delivery Method*

	Full time	Part time	Total
Traditional	146	8	154
Online	20	13	33
Blended	21	2	23
Total	187	23	210

The second research question was: What are the educational experiences among the 2009 graduates of programs accredited by the American Board of Funeral Service Education? This research question was answered through the use of descriptive statistics of the independent variables which included areas of engagement, technical experiences, and other professional activities. The responses revealed that slightly more than half of the participants had not participated in a practicum or internship as part of the program of study (Table 4.11).

The next experiential area of descriptive statistics is in technical experience. Technical experience is the area of study that includes processes that are completed with a deceased human remains, including embalming, cosmetizing, casketing, and cremation. The study measured the frequency of technical activities during the program of study and revealed specific areas in which students receive little experience, namely cremation or the processing of cremated remains and embalming without other students present. The composite variable embalming measured the frequency of any embalming whether in a group of students or without other students present; this variable was computed by utilizing the maximum response of the two embalming variables (embalming alone or embalming in a group). Although nearly every deceased human remains that are embalmed are also

Table 4.11.

*Frequency of Graduates Who Had Completed Practicum or Internship*

	<i>n</i>	%
No practicum	112	54.6
Practicum or internship	93	45.4

cosmetized and placed into a casket, the study revealed a wide discrepancy between the frequencies of those experiences during the program of study. Only 3.8% of the participants had responded that they had never embalmed a deceased human remains, 37.5% had never placed a human remains in a casket, and 32.2% had never cosmetized a deceased human remains (Table 4.12). The study also revealed that nearly half of all graduates (48.6%) had never performed the activity of embalming a deceased human remains without other students present. Although the national cremation rate has been increasing for many years, and is up from 28.2% in 2002 to 33.5% in 2006 (Cremation Association of North America, 2010), nearly 60% of students had never participated in a cremation or in the processing of cremated remains.

Table 4.12.

*Technical Experience in Funeral Service Programs (N = 208)*

Experience	Never		Less than monthly		Monthly		Weekly	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Cremation	124	59.6	46	22.1	12	5.8	26	12.5
Cosmetizing	67	32.2	54	26.0	17	8.2	69	33.2
Casketing	78	37.5	42	20.2	17	8.2	72	34.6
Embalming with no other students present	101	48.6	26	12.5	26	12.5	55	26.4
Embalming in groups of students	26	12.5	41	19.7	27	13.0	116	55.8
Embalming in or outside of a group	8	3.8	35	16.8	27	13.0	140	67.3

The location of the technical experiences was overwhelming at funeral homes (cremation establishments for cremation) rather than on campus, in hospitals, or in a medical examiner's offices (Table 4.13). Some students gave multiple answers on the survey question of where they performed the embalming cases, and this accounts for more responses in the location than in the technical activity question.

Table 4.13.

*Location of Technical Activities*

Activity	Funeral home	Campus	Medical Examiner's	Hospital
Cremation	59	3	1	21
Cosmetizing	92	43	2	0
Casketing	112	19	0	0
Embalming with no other students present	99	14	3	1
Embalming in groups of students	61	88	19	8

The reported number of embalming cases in which the graduates/students had participated ranged from 0 to 300. Although accreditation standards require each graduate to complete a minimum of at least 10 embalming cases during the program of study, 12 participants (5.8%) surveyed revealed they had participated in fewer than 10 embalming cases; the median number of embalming cases was 25.

The responses to the survey revealed the number of funeral service-related observations and presentations in which graduates had participated during their program of study (Table 4.14). For each activity, the mean number of times students had completed that activity was computed. Of the presentations and observations measured, the most frequently

identified activities were for merchandise presentations, with a mean number of presentations for each participant at 1.91. Visits to a casket selection room had a mean of 1.73 visits. The observations and presentations that were identified as the least frequent were observation of an autopsy ( $M = 0.78$ ), and a presentation by the representative from an embalming chemical company ( $M = 0.80$ ). Of these activities, more than half (61.9%) of the graduates surveyed reported they had not observed an autopsy and 57.4% reported they had not visited a place of worship relating to their studies. In keeping with the technical aspect of the survey, 34.6% of the participants had never visited a crematory.

Table 4.14.

*Frequency of Funeral Related Visits, Observations, and Presentations*

Activity	None	1 time	2 times	3+ times	$M$
Merchandise presentation	28	52	42	89	1.91
Chemical company presentation	99	66	32	13	0.80
Other funeral-related presentation	81	59	29	42	1.15
Crematory visit	73	87	17	34	1.06
Observed an autopsy	130	31	14	35	0.78
Casket selection room visit	51	41	30	87	1.73
Places of worship visit	120	24	5	60	1.02

The study measured the frequency of funeral-related activities, including observing a funeral and arrangement conference and conducting a mock funeral, visitation, and arrangement conference. Of those activities, the activity with the greatest mean frequency was observation of a funeral, which had a mean frequency of 1.75; 37.9% of the participants

reported having never observed a funeral during their program of study (Table 4.15). The smallest mean frequencies of these activities were 0.51 for those participants who had set up a mock visitation and 0.64 for those who had performed a mock funeral. For the simulated activities, 68.2% had never set up a mock visitation, 56.4% reported never having performed a mock funeral, and 41.7% had never performed mock funeral arrangements.

Table 4.15.

*Frequency of Observation of Funerals and Performance of Mock Services*

	None	1 time	2 times	3+ times	<i>M</i>
Observed a funeral	80	7	9	115	1.75
Observed an arrangement conference	96	10	9	96	1.50
Performed mock funeral	119	66	8	18	0.64
Performed mock visitation	144	44	6	17	0.51
Performed mock arrangements	88	68	16	39	1.03

Because a student could have participated in some of these activities in either a role-playing (mock) setting or in a funeral home setting, two composite variables (funerals and arrangements) were computed. The composite variable funeral was computed by adding the number of funerals observed and the number of mock funerals that each participant completed. The composite variable arrangements was computed by adding the number of mock arrangements completed to the number of arrangement conferences that each participant observed. These two composite variables revealed that nearly a quarter of all participants had no experience in any actual or mock funerals (23.7%) or in any actual or mock arrangement conferences (24.2%; Table 4.16). The responses demonstrated that 16.6%

of all participants had not completed any funeral related activities, as determined by the sum of the number of times the graduates had participated in any of the following activities: observing funerals or arrangements, conducting a mock funeral, setting up a mock visitation, or conducting mock funeral arrangements.

Table 4.16.

*Frequency of Observation and/or Performance of Mock Services*

	0	1	2	3	4	5	6+
Funerals	50	27	12	64	40	5	13
Arrangements	51	30	14	48	32	13	23

In the area of instructional engagement activities, such as writing papers, giving oral presentations, participating in group projects, meeting for chat sessions online or for study groups outside of class, participants identified higher tendencies than in some of the other educational experiences (Table 4.17). One such area was the frequency with which graduates identified having either study groups or chat sessions; 38.8% of the graduates reported having participated in this activity on a weekly basis. Another area was working on a group project with other students; 30.8% of the graduates reported having performed this activity on a weekly basis. Additionally, the area of most frequent engagement was in-class student discussions as part of their learning experience, which 82.1% of the graduates in an on-campus program reported to have had.

Table 4.17.

*Frequency of Participation in Activities Identified as Engaging*

Activity	Never	Less than monthly	Monthly	Weekly
Wrote a paper with 5 or more pages	46	124	35	3
Made oral presentation	53	106	40	11
Study group/chat	50	51	27	81
Social club/fraternity	136	24	28	22
Community service	145	42	20	4
Student groups	36	55	55	65
In-class student discussions (on campus only)	8	11	10	133
Required to come to campus (online only)	3	23	1	6
Required to come to campus (blended only)	0	1	1	20

The survey afforded the participants a chance to respond to two open-ended questions that asked them to identify which educational activities were the most beneficial and which educational activities would have been beneficial in improving their instruction had they been included. Although these questions were evaluated using standard qualitative coding practices, a formal qualitative analysis was not completed. The responses are presented here as a summary of the responses to those questions.

The most frequent responses to the question of the most beneficial activity in the program were: 49 participants who reported the embalming clinical was the most beneficial, and 47 participants who identified the practicum as the most beneficial. Other areas that were identified by relatively high numbers of participants were hands-on activities in general (21 responses) and the classroom setting (18 responses). In answering this question, 13 students

(6%) responded that nothing in the program was beneficial in preparing them for the work they experienced in the funeral home setting, as evidenced by one participant's response: "Nothing I learned in that program helped me when I actually began in my career. We never did any educational activities."

When the responses to the question of what additional activities would have been helpful, the most common response was to conduct either mock arrangements or to be able to observe arrangements (42 responses), followed by conducting mock funerals (17 responses), more embalming (14 responses), adding a practicum or internship to the program (14 responses), and more hands-on activities in general (10 responses). The items listed by participants as activities they believed would have enhanced their learning were summed up by the following statements from two of the participants. "I would have liked to have attended at least one funeral service before graduating" and "mock arrangements and funerals should be included—my apprenticeship (following graduation) taught me from scratch. I had nothing in terms of background knowledge in those areas walking into the funeral home."

### *Comparative Analyses*

The third research question was: Are there any statistically significant differences between the National Board Exam scores (science section, arts section, and individual subjects) for students who completed the program of study in different educational environments (online versus traditional and cohort versus noncohort)? This question was answered through the use of mean comparison evaluations (*t* tests).

A series of *t* tests was run for seven independent variables to determine if there were any statistically significant differences when evaluating the two sections of the NBE and the 13 individual subject areas. When comparing online to on-campus instructional delivery

methods, the findings revealed that the arts section and three individual subjects within the arts section all had statistically significant higher averages for online students compared to that of the on-campus participants. The individual subjects, which were all approximately one percentage point (5% to 6%) higher for online students than for on-campus students were funeral directing,  $t(183) = 2.450, p < .05$ ; funeral law,  $t(183) = 3.985, p < .05$ ; and business law,  $t(183) = 2.342, p < .05$ . The arts section was three percentage points higher for online than for on-campus students,  $t(183) = 2.380, p < .05$ .

Evaluation of the comparisons demonstrated no statistically significant differences on either of the sections of the NBE or on any of the individual curricular subject areas relative to whether the participant was in a cohort compared with selective scheduling and when comparing whether the participant had any funeral home work experience while attending the funeral service program of study. The  $t$  test demonstrated no statistically significant differences on the scores for the two sections of the NBE relative to whether or not a student had participated in a practicum but did show a statistically significant effect on four individual subjects. Those participating in a practicum had a 5% higher funeral directing score than did those without,  $t(201) = 2.327, p < .05$ . The other three individual subjects, which were 4% to 5% higher for those without a practicum experience, were business law,  $t(201) = 3.288, p < .05$ ; pathology,  $t(201) = 2.382, p < .05$ ; and anatomy,  $t(201) = 2.625, p < .05$ .

Gender differences were also evaluated. In this study, gender differences were found for both the arts and sciences sections of the NBE as well as seven individual curricular subject areas. In all cases, males scored statistically significantly higher than did females. The arts score was on average 3% higher for males,  $t(208) = 3.003, p < .05$ ; and the science

score was 2.4% higher for males,  $t(208) = 2.168, p < .05$ . The individual curricular subject areas, including the subjects of funeral directing, business law, funeral law, merchandising, accounting, embalming, and chemistry, were higher for males by approximately 1 percentage point (4% to 5%).

Two variables, “relative,” which was a dichotomous variable created based upon whether the participant had any family members in the funeral service profession, and “previous work,” a dichotomous variable created from the number of hours per week worked at a funeral home prior to admission into the program, had nearly identical results on the  $t$  tests. For both of these variables, those participants who had relatives in the profession and those who had worked in the profession prior to enrolling in the mortuary science program had a 2.4% and 2.6% statistically significant higher score, respectively, on the arts section than did those who had no relatives in the profession,  $t(201) = 2.528, p < .05$ , and those who had not worked in a funeral home prior to being admitted into the program,  $t(207) = 2.323, p < .05$ . Similarly on the curricular subjects of funeral directing and merchandising, those with relatives in the industry scored 8% and 7% higher, respectively, than did those without relatives in the profession,  $t(207) = 2.393, 2.474, p < .05$ ; those with prior funeral home experience scored 6% and 7% higher, respectively, than did those without prior funeral home experience,  $t(201) = 2.608, 3.095, p < .05$ . Because of the similar results, the correlation of these two variables was evaluated and found to be  $r = .243$  at  $p < .01$  significance.

When the mean comparison for type of institution was evaluated, there was no statistically significant difference between public or private programs in terms of the score on either the arts or science section of the NBE. There were no individual subject areas in which graduates of public schools scored higher than did graduates of private schools. There were

two individual subject areas in which graduates of private schools scored significantly higher than did those from public schools: business law,  $t(208) = -2.368, p < .05$ , and anatomy,  $t(208) = -2.085, p < .05$ ).

A second series of mean comparison analyses were conducted related to the experiential learning activities identified in the survey instrument, and the same seven variables, which were evaluated to determine if differences existed on the NBE scores, were again used to determine if differences existed. The variables for which the comparisons were made included, though were not limited to, the frequency of participation in the cremation process, the number of embalming cases in which the graduate had participated, the number of presentations or field trips relating to funeral merchandise (caskets, vaults, urns, etc.), the number of visits made to places of worship to discuss funeral services, the number of funerals the participant had observed in the program, the number of mock funeral arrangements conducted by the graduates, the frequency of papers written, the frequency of oral presentations made, the frequency of community service projects in which the graduate participated, the frequency of study sessions/chat sessions in which the graduate participated, and the frequency of group activities in class.

For the comparison of gender, the only statistically significant differences were in the number of embalming cases in which the graduate had participated and the frequency of chat sessions or study groups outside of normal class time. In this study, male graduates averaged 40.14 embalming cases and females averaged 26.24 cases; thus males averaged 14 more embalming cases during the year,  $t(206) = 2.173, p < .05$ . This may contribute to higher scores for males on the science section and the embalming curriculum subsection of the

NBE. Female graduates participated more frequently in study groups and chat sessions than did their male counterparts,  $t(207) = 2.599, p < .05$ .

The comparison of mean differences between those participants with relatives in the funeral profession and those with no relatives in the profession found no statistically significant differences in the experiential learning activities identified in the survey.

With a strong correlation between those participants who had worked at a funeral home prior to admission and those who had worked at a funeral home during the program of study ( $r = .392, p < .01$ ), both variables “previous work” and “school work” demonstrated that those who had prior or concurrent experience working in a funeral home had a statistically significant higher frequency of participation in the cremation process,  $t(199) = -2.221, p < .05$ ; casketing of human remains,  $t(200) = -2.320, p < .05$ ; and cosmetic application,  $t(199) = -2.736, p < .05$ ; and a higher average number of embalming cases in which they had participated,  $t(197) = -2.008, p < .05$ . All other areas appeared to have no statistically significant difference between those with and those without prior or concurrent funeral home experience.

The  $t$  test comparisons of mean differences among those graduates who had completed the program of study in a cohort and those who had completed the program in a student-selected schedule yielded the following differences. Those in a cohort more frequently participated in embalming cases in a group of students,  $t(204) = 4.305, p < .05$ ; community service activities,  $t(205) = 2.542, p < .05$ ; and group activities in class,  $t(205) = 2.394, p < .05$ . Additionally, the graduates who identified themselves as members of a cohort had higher averages of frequencies of the following activities: participation in a mock visitation,  $t(205) = 4.687, p < .05$ ; participation in a mock funeral,  $t(205) = 3.113, p < .05$ ;

participation in embalming cases,  $t(201) = 3.638, p < .05$ ; funeral merchandise presentations,  $t(205) = 5.144, p < .05$ ; and observation of an autopsy case,  $t(204) = 2.146, p < .05$ .

When comparisons of funeral experiences were calculated between graduates who had participated in a practicum and those who had not, the graduates with a practicum experience participated in learning experiences in greater numbers or more frequently than did those who had not had a practicum. The areas of note are: frequency of participation in cremation process,  $t(199) = 4.354, p < .05$ ; frequency of casketing a human remains,  $t(200) = 5.370, p < .05$ ; the frequency of application of cosmetics to deceased human remains,  $t(198) = 4.921, p < .05$ ; the frequency of embalming with a funeral director present, though without any other students present,  $t(199) = 5.012, p < .05$ ; the number of visits to a crematory,  $t(202) = 2.371, p < .05$ ; the number of visits to a selection room,  $t(201) = 5.168, p < .05$ ; the number of funerals observed,  $t(202) = 7.662, p < .05$ ; the number of arrangement conferences observed,  $t(202) = 6.106, p < .05$ ; the number of mock visitations the student had set up,  $t(202) = 2.437, p < .05$ ; and the number of mock funeral arrangements in which the graduate had participated,  $t(202) = 2.781, p < .05$ .

This study revealed several experiential learning areas in which the type of institution (public or private) produced a statistically significant difference. Graduates of private institutions reported two areas in which they experienced a higher frequency of activities, than did the public institution graduates: chemical representations,  $t(208) = -2.709, p < .05$ , and merchandising presentations,  $t(209) = -2.502, p < .05$ . The graduates of public institutions reported higher frequencies of eight other experiential learning activities: participation in cremation,  $t(206) = 2.217, p < .05$ ; casketing of deceased human remains,  $t(207) = 2.875, p < .05$ ; application of cosmetics,  $t(205) = 2.301, p < .05$ ; embalming a deceased human remains

without other students present in the room,  $t(206) = 3.300, p < .05$ ; participation in a practicum,  $t(203) = 14.733, p < .05$ ; visit to a casket selection room,  $t(207) = 2.684, p < .05$ ; observation of a funeral,  $t(209) = 4.381, p < .05$ ; and observation of an arrangement conference,  $t(209) = 4.190, p < .05$ .

In the comparison of means of online versus on-campus graduates, there were statistically significant differences with respect to eight experiential learning activities. Four of those activities had higher average frequencies for on-campus students and four had higher frequencies for online students. Those that were higher for on-campus students included: number of embalming cases in which the graduate participated as a group of students,  $t(184) = 6.048, p < .05$ ; the number of funeral merchandise presentations;  $t(184) = 6.694, p < .05$ ; the number of times the graduate participated in mock funeral arrangements,  $t(184) = 2.476, p < .05$ ; and the number of group activities,  $t(185) = 6.088, p < .05$ . The areas in which online students participated in greater number or frequency included: the number of times the graduate participated in a visit to a place of worship to view funeral service customs,  $t(182) = 3.386, p < .05$ ; the number of funerals that had been observed as part of the program of study,  $t(184) = 2.044, p < .05$ ; the number of arrangement conferences the graduate had observed during the program of study,  $t(184) = 3.508, p < .05$ ; and the frequency of study sessions,  $t(184) = 7.042, p < .05$ . For the final analysis (the frequency of study sessions), online students were asked the frequency with which they participated in chat sessions and on-campus students were asked the frequency with which they participated in study sessions outside of normal class times. All other areas of experiential learning had no statistically significant differences in the instructional delivery method.

### *Regression Analyses*

The fourth research question was: To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs of study predict student success on the arts section of the National Board Examination? This question was answered through a correlation and regression analyses, as described next.

The correlation matrix for the arts score revealed that the largest correlations observed for the arts portion of the NBE were GPA (.373), the natural log of age (.278), and the amount of previous education (.273), all at a significance level of  $p < .01$  (Appendix E). The only other statistically significant correlations were prior funeral service experience, with a correlation of .158; a merchandising presentation, with a negative correlation of -.173; and mock visitations, with a negative correlation of -.160, all at a significance level of  $p < .05$ .

Following the verification of the assumptions of multiple regression, the analysis produced three models; the first with only input variables in the model; the second with input and environmental variables in the model, and the final model with input, environmental, and intermediate variables. The final regression model produced an  $R^2$  of .348 at  $p < .01$ . The other two models produced an  $R^2$  of .143 and .201. Thus the predictive power of the full model with input, environmental, and intermediate variables is moderate for the arts score on the NBE and is significantly better than the models without the intermediate variables included.

The input variables of age (natural logarithm of age) and previous education were both statistically significant (at  $p < .05$ ) in the regression model and had standardized beta coefficients of .159 and .199, respectively (Table 4.18). The only other statistically

Table 4.18.

*Standardized Betas of the Arts Regression Models*

	Model 1	Model 2	Model 3
Input variables			
Log of age	0.225*	0.173**	0.159**
Previous education	0.237*	0.280*	0.199*
Prior funeral service experience	0.082	0.065	0.081
Environmental variables			
Practicum course		-0.056	-0.076
Visit to places of worship		-0.062	-0.113
Observation of funerals		-0.028	-0.088
Observation of arrangements		-0.004	0.077
Conduct mock arrangements		-0.044	-0.047
Conduct mock funerals		0.094	0.014
Conduct mock visitations		-0.154	-0.059
Merchandise presentation		-0.123	-0.142
Selection room visit		-0.020	-0.020
Intermediate variables			
GPA			0.404*
Length of time in program			0.000
$R^2$	0.143	0.201	0.348
$\Delta R^2$		0.057	0.148
$F$	8.663	3.152	5.859
$\Delta F$		1.359	19.052

\* $p < .01$ . \*\* $p < .05$ .

significant variable was the intermediate variable of GPA with a standardized beta coefficient of .404 at  $p < .01$ . The regression models that included environmental variables demonstrated that no environmental variables contributed significantly to the regression models.

The final research question was: To what extent do demographic and background characteristics, instructional characteristics and experiential learning activities, and outcomes of the programs of study predict student success on the science section of the National Board Examination? This question was answered through a correlation and regression analyses, as presented below.

The correlation matrix for the science score revealed the only statistically significant correlation observed for the science portion of the NBE was GPA at .439 at a significance level of  $p < .01$  (Appendix E).

Following the verification of the assumptions of multiple regression, the analysis produced three models: the first with only input variables in the model; the second with input and environmental variable in the model; and the final model with input, environmental, and intermediate variables. The final regression model produced an  $R^2$  of .243 at  $p < .01$  level. The other two models produced an  $R^2$  of .018 and .078. Thus the predictive power of the full model with input, environmental, and intermediate variables is fairly moderate for the science score on the NBE and was significantly better than the predictive power of the models without the intermediate variable.

The only statistically significant variables in the full regression model was the GPA with a standardized beta of .416 ( $p < .01$ ). No other variables were statistically significant in the full regression model (Table 4.19).

Table 4.19.

*Standardized Betas of the Science Regression Models*

	Model 1	Model 2	Model 3
Input variables			
Log of age	0.030	-0.005	-0.039
Previous education	0.119	0.179**	0.117
Prior funeral service experience	-0.068	-0.065	-0.043
Environmental variables			
Practicum course		-0.102	-0.130**
Log of embalming cases		-0.144	-0.143
Observation of autopsy		-0.056	0.006
Crematory visit		-0.054	-0.112
Participation in cosmetics		0.034	-0.036
Participation in embalming without other students		0.051	0.091
Participation in embalming with other students		-0.059	-0.021
Participation in casketing of remains		-0.160	-0.197
Participation in cremation		0.089	0.083
Intermediate variables			
GPA			.416 *
Length of time in program			-0.027
$R^2$	0.018	0.078	0.243
$\Delta R^2$		0.060	0.184
$F$	1.080	1.164	3.712
$\Delta F$		1.188	17.587

\* $p < .01$ . \*\* $p < .05$ .

The next chapter includes a summary and a discussion the findings of this study, including the implications for practice, policy, and further research.

## CHAPTER 5. CONCLUSIONS AND IMPLICATIONS

This chapter provides a summary of the findings of this study; a comparison of the findings to research on experiential learning, online education, factors of student success, and predictive abilities; and a discussion of the practical, policy, and research implications of these findings.

### *Experiential Learning*

The study found many instances in which graduates had been exposed to experiential learning opportunities but found more instances in which the graduates had not been exposed to those activities. Many of the findings demonstrate that educational experiences are lacking as they relate to funeral service. This is evidenced by only 53% of all graduates actually participating in a practicum or internship where the student had worked in a funeral home as part of the educational experience. This would not be an issue if the graduates had been exposed to funeral-related experiences in other ways. When other experiential opportunities, similar to those described by Kolb (1984), are considered, again there is a lack of experiential learning found among the graduates of the accredited programs. For example, 37% of graduates had never placed human remains in a casket, 32% had never cosmetized a deceased human remains, 34% had never assisted with a cremation, 56% had not visited places of worship as part of the religious funeral curriculum, 38% had never observed a funeral, and 45% of the graduates had never observed an arrangement conference between a funeral director and the family he/she was serving. When these activities, or lack thereof, are considered together, it demonstrates a lack of consistent funeral experiences for students in accredited programs.

These examples of the low frequencies of experiential learning in the programs of study seem to support the critics of funeral service education who have stated that, although book knowledge is not lacking, practical skills required in the profession are lacking. From the data, it appears that not all accredited programs are following Dewey's model of experiential learning. If a significant number of programs do not offer students funeral-related experiences, Dewey's (1916) theory that all learning comes from experience and activities would suggest that what students are doing in many mortuary science/funeral service programs are memorizing facts to regurgitate on the NBE and they are not learning. This would keep with Kolb's (1984) opinion that rote memory is not learning and experience forms the basis of all learning (Kolb, 1996, p. 107). If Kolb is correct, then the experience needed to truly learn to be a funeral director is not being included in many accredited programs.

In those cases in which a number of activities were included in the program but in low numbers, such as once or twice in the entire program, it would suggest that the iterative experience process described by Kolb (1984) is not being accomplished. It is likely that the experiences are seen as the learning process, and the programs are failing to utilize the remainder of the model—that the student must reflect upon and then conceptualize the experience to which he/she was exposed. The lack of experiences that are pertinent to the graduate's career and included in the active arena of Kolb's (1984) model may also suggest that funeral service education has not moved beyond credit and clock hours and into the realm of competency and relevant knowledge.

While successful passage of the NBE may or may not require funeral-related experiences, it is likely these findings cause concern for both the general public and the

profession by questioning what skills the graduate possesses at the time of graduation that are beneficial to an employer and/or for a family in their time of need. Further, as long as funeral-related experiences are not part of the requisite knowledge needed to pass the NBE, nor required by the accreditation standards, without outcry from the funeral profession it is unlikely the amount of experiential learning offered to students in funeral service education will change. Finally, these findings support the current regulatory requirements in nearly all states. Nearly every state regulatory authority throughout the country understands this lack of experiences in the educational program and has therefore adopted rules and laws that require graduates of funeral service programs to complete at least 1 year, and in some states as many as 3 years, of internship following graduation from the accredited program as a requirement for licensure.

### *Vocational Education*

Dewey (1916) was correct when he stated that vocational education combines many of the factors of education that are conducive to learning because the student will unconsciously reach out for all relevant information and hold on to it. This lack of identified experiences begs the questions: Are these experiences the ones needed to be successful in the funeral service profession?; if not, what experiences are necessary?; and if they are necessary, why are they not taught in all accredited programs? It is likely this lack of vocational preparation is a factor in the national trend of many graduates to leave the profession within 5 years of graduation due to lack of obtaining employment, burnout due to unrealistic expectations, or due to the struggle during the first years of employment to meet the vocational expectations of the employer.

### *Voices of the Graduates*

The vast majority of the graduates surveyed shared a common position relative to what they perceived was lacking in funeral service education. With few exceptions, most graduates inferred the amount of embalming cases required was sufficient and met their expectations. Simultaneously, many graduates articulated that something was missing from the program; specifically, many of them shared sentiments such as “I didn’t learn anything in school that I really use in the business.”

Voiced in several ways, 62% of all participants identified some form of experiential learning that they perceived was lacking in the program. This would suggest the students either did not find all the material relevant or did not find the material sufficient, as suggested by Dewey (1916), in order to motivate them to learn. This is likely to be due to the students’ expectations at the time of matriculation into the program, such as learning how to conduct a funeral or arrangement conference, being unmet at the time of graduation.

### *Online Learning*

Although the critics have suggested online education is not a viable option for students in a mortuary science or funeral service program, the results of this study confirmed that graduates who had completed the program completely online (with the exception of required clinical components) were on equal footing when the science section of the exam was considered and were at an advantage when the arts section was evaluated. Although the number of funerals observed did not make a statistically significant impact on the NBE scores, the online students reported a statistically higher frequency of funeral observations than did on-campus graduates. There does not appear to be a characteristic or demographic that is highly correlated with online students that would account for these differences. Some

of the strongest correlations were moderate negative correlations between online education and previous education and prior work experience. This seems to imply some other underlying factor, such as desire or work ethic, may be responsible for the higher scores on the NBE arts section.

The differences in educational experiences demonstrated online graduates participated more frequently in some activities and less frequently in other activities. Specifically, visits to places of worship, the number of funerals and arrangement conferences observed, and the frequency of study sessions all were reported in higher frequencies among online students than among on-campus students. This would seemingly refute the critics who have suggested online education fails to provide adequate educational experiences or those who suggest online education is less rigorous or of lower quality than on-campus education.

#### *Factors Influencing Student Success*

Other factors were evaluated to determine whether or not they impacted student success, including: cohort or selective scheduling, gender, and relatives in the profession. The study's results demonstrated no significant differences between cohort members and those who selected their own schedule with respect to the NBE scores. Further investigation of the correlations between instructional delivery method and schedule method (cohort or selective scheduling) demonstrated that the online students were less likely to have identified themselves as a member of a cohort ( $r = -.321, p < .01$ ). This would suggest that most online students are not in a cohort, which Garland (2004) suggested would produce the greatest learning. The study demonstrated that graduates who identified themselves as members of a cohort were more likely to have participated in educational activities, including community service and group activities as well as mock funerals and visitations.

Investigation of the demographics and prior experience of the students demonstrated that those who had relatives in the profession and those who had previously worked in a funeral home were more likely to score higher on the NBE arts section, though not on the science section, than those who did not identify as having those characteristics. This finding seems reasonable given that most students who had prior work experience reported experience assisting with funerals rather than working in the embalming room.

Although no sense of causality can be determined from the study, another unexplained result was the gender difference in the NBE scores. With males scoring higher than females on both sections of the NBE and seven individual curricular subjects, the study considered the correlations of gender with all other variables. The correlations suggest other factors, such as prior experience and previous education, played a more significant role in males having higher scores than females than did the gender difference.

Although there appeared to be no statistically significant difference on NBE scores between students who had funeral home experience prior to entering the mortuary science program and those who did not, there was a statistically significant difference between these groups of students with respect to the number of experiential learning activities. The activities that had statistically higher frequencies for those with prior funeral home experience were: participation in cremation, casketing of human remains, cosmetic application, and the number of embalming cases. These findings would support those in the profession advocating for an internship prior to enrollment in a mortuary science program.

For graduates who had participated in a practicum, there was no statistically significant difference in the arts score of the NBE. A significant difference was discovered between graduates who had completed a practicum and those who had not with respect to the

science score on the NBE as well as with the frequency with which those who had completed a practicum had participated in funeral-related educational experiences.

### *Professional Licensure*

The results of this study were consistent with prior studies including: Poston's (1987) study in which he found the best predictor of student success on the funeral service NBE was the GPA of the student while in the mortuary science program; the meta-analysis of Campbell and Dickson (1996) in which GPA was the most often predictive indicator of student success on the licensure exam; and the study by Middlemas et al. (2001), in which the GPA of the student was a good predictor of student success on the licensing exam. Unlike the Turocy et al. (2000) study, previous experience in the field did not have a statistically significant impact on student success on the licensure examination.

The results of this study cannot be compared to the Jolly et al. (1996) study due to the difference in the student success measure of that study and the present study. Jolly et al. studied the student success of graduates on a clinical component of the licensing examination, whereas the NBE has no such component.

### *Implications*

The findings of the study lead to a discussion of potential implications for funeral service education today and into the future. Those implications are enumerated in the categories of future research, policy, and practice.

### *Implications for Future Research*

Although this study was representative of the graduates of funeral service educational programs, the study had some limitations. If future research could control for those limitations, a more robust study could be conducted and stronger conclusions could be made.

Areas to consider for future research include: to increase the sample size, to obtain more accurate information, to obtain additional information, to obtain a business perspective, to study in more detail the experiences of the practicum course, and to study the process of reflection on the experiences. An additional study could also include path model analysis rather than, or in addition to, a regression model.

*Increase the sample size.* The first control would be to increase the sample size. This could be accomplished in a number of ways. Three specific options would be to: require all accredited programs to provide the names and addresses of their enrollees or graduates (because this study was voluntary, 23 programs chose not to participate), require each applicant taking the NBE to complete a survey at the time of application, or conduct a longitudinal study, although there would be limitations to that as well.

*Obtain more accurate information.* The second item for future research is to obtain more accurate information regarding the program activities. This could be accomplished by: obtaining information regarding the learning activities from the program representatives rather than from students or by administering the survey in closer proximity to the graduation date. Although no information is known regarding the length of time between graduation and the time of the survey, it could have been over a year.

*Obtain additional information.* Future researchers could review transcripts as part of the study so as to include additional and more accurate data. The transcript review may give a more accurate GPA and time to completion than did the self-reported graduate responses, which may have been delayed. A more in-depth review may also provide data regarding whether grades in specific courses correlated or predicted student success on individual

curricular subjects or the overall scores; the number of repeated courses; and ACT or SAT scores, which were predictive in some health-related studies.

*Obtain a business perspective.* The NBE tests a student's knowledge of the curriculum and background knowledge needed in the profession. Although this study included student perspectives of beneficial areas and areas that needed improvement, it did not include any feedback from employers. A future study could include employer feedback that corresponds to specific graduates and thus could be tied to a specific set of educational experiences. This would provide information that is currently not measured on a national scale but is required by each program as part of the assessment and evaluation process.

*More details of the practicum.* Although a number of graduates identified learning experiences related to funeral service, only practicums had any impact on increasing the NBE scores. A future qualitative study could ask graduates who participated in practicums to identify what they did during their practicum in order to ascertain which activities had the most impact on student learning. This could be accomplished by a review of a practicum log or other documentation but generally would require a qualitative approach.

*Reflection on experiences.* Because the study identified educational experiences that did not have an impact on increasing NBE scores, further research could determine if Kolb's (1984) experiential learning model was followed; if so, did it produce a different result and, if not, which step of the cycle was missing. This would inform educators on practical steps that could be taken to improve learning.

*Path model analysis.* A future study could consider the path model for analysis in addition to or in place of the regression analysis. Although the regression analysis identifies correlations, the path model analysis would allow researchers to test the directional

relationships of the variables studied. This would enable the researcher to test the data within Astin's conceptual and Kolb's theoretical frameworks where the regression model does not provide the directional evaluation.

### *Implications for Policy*

The policy implications discussion is divided into the state level of each licensing authority and the national level of the ABFSE.

*State policy.* By the 1940s most states had adopted rules and laws regulating the funeral service profession; by the 1970s those laws generally included an internship. It is likely the internship grew out of a need to have graduates able to perform practical tasks in addition to just memorization of materials for an exam. It is also likely that states will continue to require an internship. These licensing authorities will continue to identify those experiences they deem important for graduates and interns to complete in preparation for licensure.

*National policy.* The ABFSE should be vigilant in maintaining its relevance within the profession. This comes by educating the next generation of students in the field of funeral service, which is changing at a faster pace than ever before. The funeral service profession increasingly provides families with cremation services and nonreligious funerals. The ABFSE is encouraged to study the effect of practical experiences on the graduates' professional performance once employed at a funeral home to determine if the experiences provided are the correct experiences to prepare graduates for the profession. The process of determining which, if any, professional activities or experiences need to be consistently included in the accredited programs could be patterned after the state licensing boards, which have previously determined the practical experiences they require in internships. Because of

those internships, it is possible that the accredited programs may not need to include practical experiences in the program of study.

### *Implications for Practice*

Historically, funeral directors were taught by their father and grandfather as the funeral and furniture business was passed from one generation to the next. On the other hand, prior to 1900 embalmers were taught by itinerant “undertakers” who sold fluids and supplies and taught undertakers how to use their particular chemicals. These courses were generally 6 to 8 weeks in length. In the 1920s and 1930s schools became 6- to 9-month programs and began to expand beyond the use of the embalming supplies. Currently most programs are associate or bachelor degree programs and cover, as required by accreditation standards, at least 3 semesters of instruction.

Funeral service educators must be cognizant of the growing number of students (49.5%) who have no funeral-related experience prior to entering the mortuary science program. For those students, the program of study is the only source for them to obtain the practical skills needed to be successful in the profession. Educators must also be aware of the expectation of students to be exposed to the various practical skills they will need in the profession. The implications for practice are divided among various characteristics of programs and also for the general public. They are enumerated for various stakeholders involved in funeral service.

*Faculty members.* Faculty members must continue to successfully prepare graduates for the NBE. In addition, they should also evaluate their entering students to determine the practical experiences needed of each student or of each class of students in order to prepare them for licensure.

*Employers.* Although employers may or may not be directly impacted by the study, they are stakeholders in the educational process. The employers may be the first to call attention to deficits among graduates, though not all are willing to be partners in the process of improvement. Although the consensus of most employers who are members of national and state associations is a desire for graduates to possess more funeral-related experiences upon graduation, there is not a general consensus on which experiences/skills are lacking among the graduates. If employers believe there is something lacking in the educational process, they are encouraged to collectively voice their concerns and give direction on the changes that must occur.

*General public.* Although the general public is a stakeholder in funeral service education, they are oftentimes overlooked by the educational institutions. As the needs of the general public change, particularly in the area of an increase in cremation services, nonreligious ceremonies, and pet grief services, funeral services will need to change to meet these needs.

### *Conclusions*

The societal need for healing in times of grief is best accomplished by those who are properly trained to meet those needs. For many years funeral service educators have been, and into the foreseeable future will continue to be, instrumental in providing the proper training. This study demonstrated that funeral service education properly prepares the graduate with the background knowledge needed to pass the NBE. The study also revealed inconsistency in the accredited programs in offering practical experiences related to the funeral service profession.

Adequate background knowledge is demonstrated by the high percentage of graduates passing the NBE (which is created by practitioners and licensing authorities) on the first attempt. The grading systems utilized among the programs adequately represent the knowledge acquired by the student, as evidenced by GPA being the best predictor of success on the NBE. Although the graduates are prepared for the examination, many of those same graduates stated in one form or another that they were underprepared for their work within the funeral service profession. This was primarily evidenced by the graduates' own words about what could be improved and was a reflection of the graduates' perceived or real lack of funeral-related experience prior to entering the workforce. Graduates identified embalming as an area of strength, whereas other professional activities needed for funeral directing were perceived by graduates to be lacking or inconsistent across the programs

The study demonstrated areas of equity and disparity between different educational characteristics. First, although those who had prior experience in funeral service statistically did better than did those without prior experience, experience did not produce a predictor for success on either section of the NBE. Second, the study verified there is no significant difference between online and on-campus instruction and the scores for the science section of the NBE, though it did show the arts scores to be significantly better for online students than for on-campus students. The study also dispelled false assumptions that online students receive fewer funeral-related experiences than do on-campus students, as online students received more experience in observing funerals, arrangement conferences, and places of worship than did their on-campus colleagues.

The study discovered that various educational experiences within this vocational program were not consistently offered to students among the accredited programs. The study

also found significant differences between NBE scores of online and on-campus graduates. Finally, in keeping with other studies related to indicators of success on national licensing examinations, the study concluded the best predictor of success on the NBE was the graduate's GPA during the program of study.

## APPENDIX A: INSTITUTION REVIEW BOARD (IRB) APPROVAL

*IRB Approval for Electronic/Online Survey*
**IOWA STATE UNIVERSITY**  
 OF SCIENCE AND TECHNOLOGY

 Institutional Review Board  
 Office for Responsible Research  
 Vice President for Research  
 1138 Pearson Hall  
 Ames, Iowa 50011-2207  
 515 294-4566  
 FAX 515 294-4267

**DATE:** December 22, 2009

**TO:** Kevin E. Patterson  
3302 SW Applewood St.  
Ankeny, IA 50023

**CC:** Larry Ebbers  
N221A Lagomarcino

**FROM:** Office for Responsible Research

**TITLE:** **Capstone Project: Mortuary Science/Funeral Service Survey**

**IRB ID:** 09-559

**Submission Type:** New

**Exemption Date:** 22 December 2009

The project referenced above has undergone review by the Institutional Review Board (IRB) at Iowa State University and has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the IRB application**, including obtaining and documenting informed consent if you have stated in your application that you will do so or if required by the IRB.
- **Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes**, to determine if the project still meets the federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to **use only the approved study materials** in your research, including the **recruitment materials and informed consent documents that have the IRB approval stamp.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.



## APPENDIX B: SURVEY INSTRUMENT

*Electronic version:* Please complete each of the following 24 questions on 9 screens for this survey, by answering each question with the answer which most describes your experience.

*Paper version:* Please complete each of the following 24 questions on 7 pages for this survey, by answering each question with the answer which most describes your Funeral Service/Mortuary Science Educational experience.

**Demographic Data:**

## 1. Gender

- Male  
 Female

## 2. Ethnicity

- African American  
 Asian/Pacific Islander  
 Hispanic/Latino  
 Native American  
 White (Non-Hispanic)  
 Other

## 3. What was your age (in years) at Graduation? \_\_\_\_\_

## 4. How much previous education have you completed (prior to and NOT including any Mortuary Science/Funeral Service courses)?

- I have no previous college.  
 I have completed up to (and including) 1 year of college.  
 I have completed up to (and including) 2 years of college.  
 I have completed up to (and including) 3 years of college.  
 I have completed a Bachelor's degree.  
 I have completed a Master's degree.  
 Other

## 5. Family member in Funeral Service

- Parent is funeral director/embalmer/mortician  
 Spouse is funeral director/embalmer/mortician  
 Sibling is funeral director/embalmer/mortician  
 In-law is funeral director/embalmer/mortician  
 Other family member - specify relationship: \_\_\_\_\_  
 No family member is a funeral director/embalmer/mortician

**Program Description:**

6. How would you characterize your enrollment in mortuary science/funeral service courses?

- Full-time student (12 or more credits per term)  
 Less than full time (fewer than 12 credits per term)

7. How would you characterize your instructional delivery method for mortuary science/funeral service courses?

- On campus program  
 Online program  
 Web Blended (50% on campus and 50% on-line)

8. How would you characterize your course schedule?

- Cohort program – you took all courses with the same group of students  
 Selective schedule program – you chose your schedule of classes each term, which may differ from other students  
 Other

9. How long (in months) did it take to complete the Mortuary Science/Funeral Service courses?

**Include only Mortuary Science/Funeral Service courses.**

**Please do NOT include General Education courses.**

Examples: 12 months, 15 months, 24 months, etc.

\_\_\_\_\_

**Grade Point Average (GPA):**

10. To your best knowledge, what was your Grade Point Average (GPA) or overall average for Funeral Service/Mortuary Science courses? (Please answer only one.)

GPA = \_\_\_\_\_

Overall percentage = \_\_\_\_\_

**Funeral Home Experience:**

11. Describe your experience in a funeral home prior to and during your program of study.  
**Select one option in each column.**

	Prior to entering the Funeral service/Mortuary science Program	During the Funeral service/ Mortuary science Program
No experience in a funeral service related area		
Unpaid job shadowing or observation only		
Worked less than 10 hours per week on average in a funeral home setting		
Worked between 10 and 25 hours per week in a funeral home setting		
Worked over 25 hours per week in a funeral home setting		

12. If you worked in a funeral home prior to or while attending the mortuary science/funeral service program, what tasks did you generally perform as part of your duties? (Check all that apply.)

- Office work
- Funerals, Removals, etc
- Pre-need sales
- Cemetery
- Crematory
- Embalming
- Restorative Art
- Other: \_\_\_\_\_

**Instructional Activities:****13 a. Online and Web-Blended Graduates ONLY:**

As part of the normal classroom, practicum, or clinical activities, assignments, or requirements, please check the appropriate response to the frequency of those activities:

	Never	Less Than Monthly	Monthly	Weekly
Wrote a research paper with 5 or more pages				
Made an oral presentation in class				
Participated in a chat room or on-line discussion which related to your studies				
Participated in a social club or fraternity relating to funeral service				
Participated in a community service project as part of the program or social club/fraternity				
Worked in student groups instead of individually during class				
How often were you required to come to campus				

**On-campus Graduates only:**

13 b. As part of the normal classroom, practicum, or clinical activities, assignments, or requirements, please check the appropriate response to the frequency of those activities:

	Never	Less Than Monthly	Monthly	Weekly
Wrote a research paper with 5 or more pages				
Made an oral presentation in class				
Participated in a study group outside of class time				
Participated in a social club or fraternity relating to funeral service				
Participated in a community service project as part of the program or social club/fraternity				
Worked in student groups instead of individually during class				
Participated in student discussions in class				

**Professional Activities:**

14. As part of the normal classroom, practicum, or clinical activities, assignments, or requirements, please check the appropriate response to the frequency of those activities:

	Never	Less than Monthly	Monthly	Weekly
Participated in cremation or processing of cremated remains				
Dressed and casketed human remains				
Cosmetized human remains				
Completed embalming cases with no other student present in the room during the process				
Completed embalming cases with other students present in the room during the process				

15. If you participated in the experiences above, in what location did those activities occur? Examples of locations: Campus, FH (Funeral Home), Cremation establishment, Medical Examiner's office, another college or university, etc.

Participated in cremation or processing of cremated remains:

\_\_\_\_\_

Dressed and casketed human remains:

\_\_\_\_\_

Cosmetized human remains:

\_\_\_\_\_

Completed embalming cases with NO other student present in the room during the process:

\_\_\_\_\_

Completed embalming cases with other student present in the room during the process:

16. How many embalming cases did you observe or participate in during the Mortuary Science/Funeral Service program?

Observed only: \_\_\_\_\_

Participated: \_\_\_\_\_

**Practicum or Internship:**

17. Did you participate in a practicum course or internship in a funeral home **as a requirement for the program?**

Yes

No

18. As part of your program courses, check the appropriate number of times you participated in each of the following professional activities.

	None	1 time	2 times	3 or more times
Visited or had a presentation from a funeral related manufacturing company, such as a casket, vault or monument company				
Visited or had a presentation from a chemical company				
Visited or had a presentation from a funeral related service business, such as a cemetery or a hospice house				
Visited a crematory				
Observed an autopsy				
Observed a selection room at a funeral home				
Visited a place of worship (churches, synagogues, mosques, etc.) to learn about religious funerals				

19. As part of your program courses, check the appropriate number of times you participated in each of the following professional activities.

	None	1 time	2 times	3 or more times
Observed a funeral, memorial service, or visitation at a funeral home				
Observed an arrangement conference at a funeral home				
Performed mock funerals				
Set up mock visitations				
Conducted mock arrangement conference				

20. Of the Professional Activities listed above in which you participated, where did you complete the majority of those activities?

- In the classroom/off site during course activities  
 In a Funeral Home during a Practicum/Internship

**Educational Activities:**

21. What educational activity has been the most beneficial to your knowledge of funeral service/mortuary science?

22. What educational activity would you like to have participated in, which could have improved your knowledge of Funeral Service/Mortuary Science?

23. Please type your name and the program you graduated from in the boxed below to grant permission to the American Board of Funeral Service Education to merge your National Board Examination scores with the data from this survey. Once they are merged, your name will be deleted from the data set and will NEVER be released by the American Board of Funeral Service Education. The exam scores will not be released to any other entity.

Name: \_\_\_\_\_

24. Institution (college or university) where you completed your mortuary science/funeral service program of study:

\_\_\_\_\_

## APPENDIX C. INFORMED CONSENT DOCUMENT

### **Informed Consent Statement**

In conjunction with the American Board of Funeral Service Education, which accredits all Mortuary Science / Funeral Service programs in the country, and the college from which you graduated, I am conducting a study to discover the different educational experiences (group discussions, role-playing professional activities, lecture, previous experience, etc) which tend to predict success on the Funeral Service National Board Examination.

This research study will provide national data on the instructional / educational experiences which are most helpful in providing the education needed to pass the National Board Examination. We are seeking your assistance as well as that of all 2009 graduates of accredited programs throughout the country. If you decide to participate in the study, it is hoped the information you provide will help all mortuary science / funeral service programs in the country to improve the education experience they provide to future students. This will include highlighting areas you and the data identify as being the best experiences provided in your educational program. Since this is conducted after graduation, there is no known risk for you to participate in this study.

If you agree to participate in the study, you will be asked to complete a 10 minute survey and give permission to have your survey information merged with your National Board score by the researcher and the accrediting body, the American Board of Funeral Service Education. The merger of your survey data and the National Board score will be conducted in the ABFSE office to maintain the strictest confidentiality and once merged, any identifying data will be deleted. Because your identity will not be known by anyone, your individual data will not be released, and only the aggregate (total) numbers will be used in the study.

Your participation in this study is completely voluntary, you may choose to skip any question you wish, and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty to you.

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies including the American Board of Funeral Service Education, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information. To ensure confidentiality to the extent permitted by law, once you complete the survey, the data will be merged with your National Board Examination score in the office of the American Board of Funeral Service Education, all personal identifiers will be removed. If the results are published, your identity will remain confidential.

You are encouraged to ask questions at any time during this study. For further information about the study contact Kevin Patterson at 515-964-6244 or you may contact Dr. Larry Ebbers of Iowa State University at 515-294-8067.

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, [IRB@iastate.edu](mailto:IRB@iastate.edu), or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

By returning the survey, you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You may receive a copy of this informed consent agreement by printing a copy prior to continuing on with the survey.

Survey Question #24:

**Please type your name and the program you graduated from in the boxes below** to grant permission to the American Board of Funeral Service Education to merge your National Board Examination scores with the data from this survey. Once they are merged, your name will be deleted from the data set and will NEVER be released by the American Board of Funeral Service Education. The exam scores will not be released to any other entity.

Name: \_\_\_\_\_

Program: \_\_\_\_\_

## APPENDIX D. SUMMARY VARIABLE STATISTICS

Variable	Valid	<i>M</i>	Minimum	Maximum	<i>SD</i>	Skewness	Kurtosis
Age	208	29.91	19	63	9.849	1.366	1.106
Previous Education	212	3.42	1	7	1.529	-0.050	-1.071
Length of Program	209	17.64	9	60	7.455	2.236	8.733
GPA	209	3.3745	2.00	4.00	0.45794	-0.616	-0.159
Prior Experience	206	2.78	1	5	1.698	0.178	-1.690
Concurrent Experience	192	3.71	1	5	1.414	-0.752	-0.810
Cremation	208	1.71	1	4	1.037	1.284	0.300
Casketing	209	2.40	1	4	1.297	0.189	-1.688
Cosmetics	207	2.43	1	4	1.251	0.187	-1.608
Embalming - Solo	208	2.17	1	4	1.284	0.442	-1.543
Embalming - Group	210	3.11	1	4	1.112	-0.766	-0.951
Observed Embalmings	168	23.99	0	400	50.417	5.019	29.201
Participated Embalmings	206	32.65	1	300	38.605	3.801	17.405
Merchandise Present	211	2.91	1	4	1.094	-0.437	-1.216
Chemical Present	210	1.80	1	4	0.915	0.889	-0.172
Related Present	211	2.15	1	4	1.140	0.515	-1.167
Crematory Visit	211	2.06	1	4	1.036	0.768	-0.535
Autopsy	210	1.78	1	4	1.145	1.115	-0.383
Selection Room	209	2.73	1	4	1.235	-0.266	-1.561
Places of Worship	209	2.02	1	4	1.324	0.708	-1.353
Observed Funeral	211	2.75	1	4	1.430	-0.348	-1.828
Observed Arrangements	211	2.50	1	4	1.442	0.005	-1.941
Mock Funeral	211	1.64	1	4	0.906	1.463	1.341
Mock Visitation	211	1.51	1	4	0.891	1.833	2.385
Mock Arrangements	211	2.03	1	4	1.112	0.761	-0.797
Paper	208	1.98	1	4	0.670	0.320	0.181
Oral	210	2.04	1	4	0.808	0.525	-0.074
Chat or Groups	209	2.67	1	4	1.218	-0.140	-1.578
Fraternal Organization	210	1.70	1	4	1.055	1.180	-0.123
Community Service	211	1.45	1	4	0.744	1.592	1.713
Group Activities	211	2.71	1	4	1.082	-0.213	-1.250

## APPENDIX E. CORRELATION MATRICES

*Arts Regression Correlation Matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Log of age	—														
2 Previous education	.188**	—													
3 Prior experience	.012	.182*	—												
4 Practicum	-.055	.056	-.070	—											
5 Worship <sup>a</sup>	.120	.137*	-.054	.067	—										
6 Observed funerals <sup>a</sup>	.070	.078	-.027	.387**	.419**	—									
7 Arrangements <sup>a</sup>	.064	.143*	.107	.360**	.366**	.834**	—								
8 Mock arrangements <sup>a</sup>	-.260**	.099	.072	.129**	.117	.196**	.219**	—							
9 Mock funerals <sup>a</sup>	-.227**	.071	-.038	-.042	.082	.099	.098	.524**	—						
10 Mock visitations <sup>a</sup>	-.155*	.050	-.032	-.037	.164*	.221**	.178*	.510**	.712**	—					
11 Merchandise present <sup>a</sup>	-.272**	.029	-.023	-.038	.033	-.008	-.038	.377**	.286**	.266**	—				
12 Selection room visit <sup>a</sup>	.070	.153*	-.043	.217**	.406**	.457**	.406**	.165*	.171*	.249**	.144*	—			
13 Length of program <sup>b</sup>	.197**	-.025	-.140*	.166*	.086	.089	.051	-.149*	-.312**	-.204**	-.197**	-.007	—		
14 GPA	.045	.172*	-.046	.047	.113	.047	-.009	.038	.046	-.026	.085	.082	-.183*	—	
15 Arts score	.278**	.273**	.158*	-.040	-.069	-.065	-.028	-.136	-.114	-.160*	-.173*	-.056	-.035	.373**	—

<sup>a</sup>Scored as a dichotomous variable. <sup>b</sup>Scored as a categorical variable.

\*Significant at the 0.05 level (2-tailed). \*\*Significant at the 0.01 level (2-tailed).

*Science Regression Correlation Matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Log of age	—														
2 Previous education	.192**	—													
3 Prior experience	.015	.178*	—												
4 Practicum	-.061	.053	-.071	—											
5 Log of embalming cases	-.004	.173*	.106	-.103	—										
6 Observed autopsy <sup>a</sup>	.073	.133*	.091	.364**	.113	—									
7 Visited crematory <sup>a</sup>	-.184**	.185**	-.027	-.016	.259**	.349**	—								
8 Cosmetic app <sup>a</sup>	-.013	.223**	.087	.180*	.410**	.366**	.361**	—							
9 Embalming w/o others <sup>a</sup>	.012	.117	.107	.294**	.264**	.406**	.100	.395**	—						
10 Embalming w/ others <sup>a</sup>	-.192**	.018	.033	-.117	.025	.000	.126*	.142*	-.143*	—					
11 Observed cremation <sup>a</sup>	-.004	.237**	.076	.255**	.246**	.379**	.229**	.483**	.400**	.120	—				
12 Casket remains <sup>a</sup>	.034	.229**	.064	.229**	.292**	.446**	.267**	.784**	.490**	.101	.513**	—			
13 Length of program <sup>b</sup>	.201**	-.026	-.134*	.157*	-.154*	.054	-.194**	-.162	.035	-.148*	-.076	-.141*	—		
14 GPA	.045	.172*	-.073	.051	.015	-.035	.101	.073	-.034	-.045	.052	.071	-.174*	—	
15 Science score	.029	.104	-.008	-.047	-.093	-.123	-.100	-.058	-.056	-.060	-.011	-.099	-.077	.439**	—

<sup>a</sup>Scored as a dichotomous variable. <sup>b</sup>Scored as a categorical variable.

\*Significant at the 0.05 level (2-tailed). \*\*Significant at the 0.01 level (2-tailed).

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