Old Dominion University
ODU Digital Commons

2007

Articulation Trends in Allied Health Programs

Felicia M. Toreno
Old Dominion University

Recommended Citation

ABSTRACT

**ARTICULATION TRENDS IN ALLIED HEALTH
PROGRAMS**

Felicia M. Toreno
Old Dominion University, 2007
Director: John M. Ritz, Ed.D.

Members of the Advisory Committee: Dr. J. David Branch
                                         Dr. Terry L. Jones

The educational environment emphasizes student access to instructional

opportunities. Many health programs are located in community colleges or hospitals, and

in order to advance educational status, students must be able to transfer credits between

multiple educational institutions. Unfortunately, programs are not uniform and many fields

of study are guided by strict accreditation regulations. These conflicting requirements

often make transfer for students cumbersome. Transfer pathways are often considered by

institutions on a program by program basis. This research was designed to analyze the

existing pathways present in urban Virginian allied health programs in order to establish

trends in articulation. These instructional trends highlight methods proven to work as

programs seek to establish pathways for students. This research identifies some of the

problems that need to be addressed in order to make articulation pathways more accessible

for the students seeking to progress to a higher degree. Issues related to articulation

include consistency of or lack of articulation policies, transferability of credits, the time

and difficulty in establishing working articulation agreements, and inconsistencies among

similar programs.

TABLE OF CONTENTS

Page

CHAPTER

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

There is a trend in education to increase academic opportunities for students by improving their ability to move from one institution to another without losing credits. In Virginia, the importance of this educational trend is clearly seen in mandated policy (Warner, 2004). Governor Warner has created pathways for students to move freely among educational institutions without losing credits. This is not a goal limited to Virginia. President George H. W. Bush has made it clear that articulated pathways are important for student success. The federal government has encouraged the development of educational pathways by linking Perkins grant funding to the development of articulated programs (U.S. Department of Education, NAVE, 2004).

Transferring among institutions is not an easy process for those students enrolled in allied health programs. Programs are often specific to an institution and the courses are not necessarily designed to transfer. The content of these technically-based programs is often dictated by accrediting agencies and there is less emphasis on general education courses. This research was designed to identify the articulation pathways available to students in urban Virginia allied health programs and to determine the strengths and challenges of these pathways to institutional administrators and educators.

Statement of the Problem

The problem for this study was to determine the strengths, weaknesses, and common factors that impact articulation pathways among allied health programs in urban Virginia educational settings. The researcher sought to establish benchmarks for programs striving to develop successful articulation agreements and identify common barriers to this

process. This research may help educational institutions establish articulation agreements to better meet student needs.

The need to successfully articulate students into a university setting is not new to Virginia. The State Council of Higher Education for Virginia (SCHEV) named transfer and articulation as a goal in the 2002 <u>Systemwide Strategic Plan for Higher Education in Virginia</u> (SCHEV, 2004). Credit transfer has not been uniformly established and made available to students from all educational settings. The researcher assessed allied health program administrator perceptions of the articulation process and identified factors that impacted the articulation process for institutions, educators, and students both positively and negatively. The researcher developed a questionnaire used to gather information related to programmatic accreditation, government mandates, general education requirements, and standards, as well as institutional type. Data were gathered from community colleges, hospital-based programs, and four-year universities and colleges that receive students for final degree completion.

A recent National Science Foundation grant awarded to Radford University sought to establish articulation benchmarks between Radford and regional rural community colleges in Virginia (Templeton, 2003). This grant led to the development of a model for community colleges and universities to follow when seeking to design successful articulation pathways. This grant established transfer pathways utilizing general education and transfer courses. The goal was to expand the applications of the grant to include other regions of Virginia and other educational programs, such as the health sciences, as they provide more clearly defined articulation pathways for students.

The scope of the Radford University grant was expected to expand regionally to include parts of Eastern Tennessee as well as the remaining portions of Virginia and the Virginia Community College System (VCCS). The recipients of the grant established a well-defined process for the continuation of education for VCCS students seeking to expand or continue their educational opportunities. The Radford grant provided a framework for establishing articulation agreements. Its model relied on combining the efforts of a curriculum development team, a distance learning team, an experiential learning team (this represents clinical education and educational internship environments), and an articulation agreement team. By involving all interested parties, the grant ensured the best outcome for both institutions and students involved in the articulation process. See Figure 1.1.
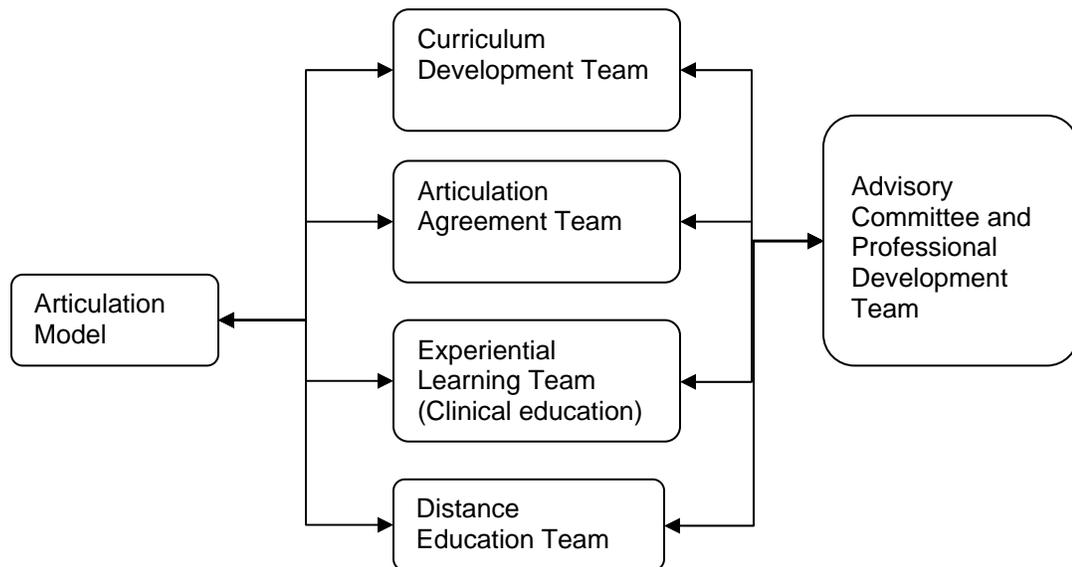
Figure 1.1. Radford University and Southwest Virginia Community College System Colleges Articulation Model.

Research Goals

This research sought to determine the perceptions of allied health administrators and educators related to current articulation pathways used by institutions. The research questions addressed in this study included:

1. What issues related to articulation do faculty and administrators identify as being important to them?

2. What articulation barriers do faculty and administrators identify?

3. What articulation pathways do faculty and administrators identify as being most effective?

The results of this research will be used to provide guidelines for institutional planning to expand programs and offer articulation options to students who may wish to continue their education. Articulation may also be required of allied health programs as they continue to mature and adapt to the changing healthcare environment so guidelines such as these will be useful.

Background and Significance

By necessity, allied health programs are constantly changing to meet the needs of society. In 2001, the Association of Schools of Allied Health Programs (ASAHP) and the National Network of Health Career Programs in Two-Year Colleges (NN2) held their first jointly sponsored meeting in several years. The need to address program change and establish a means of collaborative education was one of the major discussions at the 2001 meeting (ASAHP, 2001). This need stemmed in part from increasing community demands for educational opportunities and colleges' need to find alternatives and non-traditional methods of meeting the demands of students and the community. This trend also stemmed,

in part, from the changes in entry-level practice requirements for new program graduates (ASAHP, 2002; NN2, 2002; Department of Labor, 2003).

Unfortunately, in spite of the recognition for change as a requirement of program growth, there is little research regarding the implications of programmatic cooperation between institutions to build upon (Southerland, 1990). The State Council of Higher Education for Virginia (SCHEV) stated that, "Students should be able to move through Virginia's public education system as if it were a continuum, rather than a system of distinct levels and separate stages" (2004, p. 2). Articulation has been well established in several programs, including nursing, for some time, but inconsistencies remain problematic (Curphy, 1995). Much of the research was based upon the history found within nursing programs. Nursing has not been categorized as an allied health program, but similar issues have existed in nursing programs since they contain significant clinical requirements as well as strict didactic content. Much of the progress made in nursing toward successful articulation pathways for students has been accomplished due to legislative mandates (Muhl, 1991). It has yet to be seen whether articulation in other health care fields can be successful without such mandated interventions.

Allied health professions include a wide variety of medical professionals. Allied health includes all medical professionals except physicians, nurses, and pharmacists. Allied health professionals have been involved with the delivery of health related services including the identification, evaluation, and prevention of diseases, disorders, dietary, and nutrition services, and rehabilitation and health systems management. Allied health professionals have historically included dental hygienists, diagnostic medical sonographers, dietitians, medical technologists, occupational therapists, physical

therapists, radiographers, respiratory therapists, speech language pathologists, athletic trainers, physical therapy assistants, occupational therapy assistants, art therapists, and medical illustrators (ASAHP, 2004).

Allied health workers may or may not be designated professionals in the eyes of the Department of Labor. The distinction of being called a profession has implications tied to reimbursement, scope of practice, salaries, and required educational level for entry level jobs. Many careers labeled as professions require a minimum of a bachelor's degree for entry-level positions.

Professional status has brought increased salaries, increased job responsibilities, and respect from peers in the health care community. Many health professional programs are offered at a community college, hospital, or other technical institution. Changing the minimum degree required for entrance into the labor market could dramatically upset the status of existing programs. Stern (1997) discussed the dichotomy seen in US vocational education as being one of high quality workers with many responsibilities coming from programs that are relatively short in length. Stern stated that more responsibilities required of workers would likely require longer training programs.

It was likely that articulation to four-year colleges and universities would play a larger role in student articulation as the trend for more highly trained workers continued. The need for additional educational opportunities would lead to a further need for seamless vocational educational pathways for students typically receiving education in community college programs. Preparation for changes in minimal educational requirements would help educational institutions meet the demands that will be placed upon them by already having the required articulation pathways in place and clearly defined for student transfer.

This research sought to identify the perceptions within the articulation process for urban higher education centers and community colleges that offered allied health programs in Virginia. Preparing articulation pathways that work helps prepare Virginia for future educational demands. Articulation agreements facilitate the process whereby an appropriate number of health care workers will be trained to meet future societal demands. One such demand is the need to train enough new educators to replace the large number of teachers scheduled to retire in the next decade.

Transfer of credits or articulation was as important for allied health students and educators as it was for other educational offerings. The Merriam-Webster Dictionary (2003, available:http://www.mw.com/ cgi-bin/ dictionary? book=Dictionary& va = articulation) defined articulation as, "among other things, the action or manner of jointing or interrelating". In this research, educational articulation will be defined as the ability to move among differing educational institutions to achieve degree completion. In Virginia, SCHEV stated that, "transfer education should allow students who begin their work toward the baccalaureate degree by enrolling in transfer programs in community colleges to have their work recognized as legitimate and equivalent to that offered at senior institutions" (SCHEV, 2004, p. 3). The articulation process needed to recognize credits from all previous institutions in order to prevent the loss of educational credits for the student and shorten their time for degree completion and credentialing.

Advanced degree recommendations for entry-level positions have been made in a variety of allied health professions. Examples of these movements can be seen in physical therapy, occupational therapy, physician assistant, diagnostic medical sonography, and nursing (Department of Labor, 2003). The Association of Schools of Allied Health

Programs (ASAHP) noted a significant shortage of allied health personnel, even in those

fields projected to have slow growth by the Department of Labor (2002). ASAHP noted

that there were not enough programs offered at higher degree levels to meet the growing

need for faculty necessary to provide for the educational needs of these changing fields.

ASAHP stated that restructuring curricula must be innovative and creative in order to

educate and retain healthcare workers (ASAHP, 1995). Many of the changes required of

allied health programs stemmed from the impact of managed care on the U.S. health care

system. Adams, et al. (2001) commented on the changes in nursing curriculum

implemented in Alabama. Alabama sought to meet the changing needs of the community

and its health care system. One way to help provide an adequate number of health care

workers in light of the quickly changing demands placed on allied health graduates was to

provide articulation agreements between institutions of higher education.

Young (1996) discussed the development of articulation agreements in Connecticut

and Maryland for nursing programs. These programs, and the institutions providing them,

relied on the development of core curricula to ensure students received the education

required to function in the field regardless of their place of training. These nursing

program changes helped to ensure that students were able to move on to receive advanced

degrees should they desire to do so.

Glenn (1996) reported that the number of allied health students graduated each year

was limited by the number of faculty available to teach allied health programs and the

slow pace of change in higher education, including changes in curriculum. Glenn noted

that the changes in requirements for entry-level jobs would impact the curriculum of allied

health programs, but that those changes were difficult to predict. One change required was

increased collaboration between higher education institutions, employers, accrediting bodies, and health care consumers.

As programs have increased requirements within the curricula, one limitation to programs based in the community college setting is the number of credits allowed within the program itself. In Virginia, the Virginia Community College System limits the number of credits in an associate degree from sixty-five to sixty-nine semester credit hours. Acceptable credit ranges for programs in Health Professions is sixty-five to seventy-two semester credit hours and for Nursing programs the credit range is sixty-five to sixty-nine semester credit hours (VCCS, 2007). Southern Association of Colleges and Schools (SACS) requires a minimum of fifteen semester hours of general education in associate degree programs, or twenty-five percent of the credits required in a sixty-credit degree program (SACS, 2006). These credits should include one course each from the humanities or fine arts, social, or behavioral sciences, and natural science or mathematics. For an associate degree program twenty-four to twenty-seven credit hours can be allotted to the program major. In an applied associate of science degree forty-nine to fifty-three credit hours can be allocated to the program major.

If programs are required to add additional coursework or educational requirements necessary for the articulation process they might be forced to eliminate discipline specific courses in order to gain required credit hours. This limitation is seen in the prevalence of associate of applied science degrees in allied health programs. These programs allow more credit hours for discipline specific coursework, but they lead to more difficult transfer pathways since they lack some of the general education courses commonly required for transfer to other institutions for degree awards.

Nationally, many allied health programs are located in urban areas and have faced issues unique to their urban settings. Issues include items such as under funded healthcare, service to indigent patients, severe staffing shortages in many health centers, decreasing numbers of students entering health care programs, and a lack of health care workers with the credentials required to teach. Tied to an aging faculty, this last concern has the potential to become even more significant as institutions struggle to establish efficient articulation agreements.

Matherlee (2003) noted that urban centers would not be able to provide the level of care required by an aging population without significant increases in the number of workers available (2003). This health care crisis was most noted in rural and large urban areas. The American Journal of Nursing noted that hospitals in the Northeast and on the West Coast were more likely to be operating over capacity and were providing the poorest patient care based on patient wait times and the likelihood that patients would be refused admittance to the emergency room due to lack of available beds (Kennedy, 2002). Considering the health care shortages in the U.S., it seemed likely that these trends would continue. Ways to improve patient care included producing more qualified workers as well as providing clearer pathways of career advancement to those workers already in the field.

Walker (2000) emphasized that community colleges were more closely linked to the community's businesses and that community colleges may be better prepared to serve minority and disadvantaged students. Students cited lower community college costs as a reason for completing their college education at this level. Additionally, community colleges were more likely to provide the remedial academic work urban and rural students may need to pursue college coursework.

The issues of healthcare provider shortages and community colleges as a source of healthcare workers meld together. There exists an increased need for workers in both urban and rural settings as well as a need to train urban students to be more contributory to their local communities. These issues are related to teaching critical thinking skills and increasing the scope of practice for healthcare workers on an entry-level basis.

A common workforce issue is that most hospitals are located in urban areas. Poor people tend to live in urban areas. The urban poor often seek jobs in the health sector since they are stable and offer opportunities for future growth. Easier and more direct means of articulation would allow these workers to advance in education without losing all previously accumulated college credits.

Articulation pathways provide a method of advancement for all students and workers without forcing educational institutions to duplicate course offerings. Current students and workers need a means of advancing within their professions as the workforce continues to demand workers with the ability to work independently and think critically on the job. Articulation agreements facilitate student training and the ability to gain the educational requirements necessary to staff the programs most needed as faculty continued to age and leave these positions open and often difficult to fill. Virginia recognizes the need for articulation pathways and is pushing to provide students with these educational opportunities.

Institutional and programmatic issues related to the effectiveness of allied health programs include the structure of the allied health educational system itself. Funding of allied health programs was found to be the number one problem preventing the development of a community workforce (Jones, et al., 1996). The high cost of providing

clinical education to students often limits the number of students that can be accepted and served based on available clinical training opportunities. Other issues included pay scales and the impact of managed care on the healthcare system. Jones, et al. (1996) research was limited in that only programs in South Carolina were studied and programs by college type were not specified. Programmatic and administrative issues related to allied health education were addressed. Edwardson (1996) discussed the impact of managed care on nursing education. Issues related to managed care within the healthcare system included limits on the types of programs that were eligible to receive federal funds.

Allied health programs continue to strive to meet the needs of local communities and to utilize program resources maximally. As programs evolve to meet changing national standards and increasing requests for graduates able to think critically, there are increasing requests to establish articulation agreements with four-year institutions and to develop program standards (ASHAP, 2001). One issue related to program standards is the amount of clinical time included in allied health programs and the cost of this education. Jones, et al. (2000) discussed the clinical education credits used in a variety of allied health programs and several factors related to clinical education in the community college setting. Variations between programs were caused by accreditation requirements, student-to-faculty ratios, and the clinical settings encountered. Also, one of the major reasons that many institutions avoid allied health programs is cost. Allied health programs are expensive to administer due to required low faculty-to-student ratios in many programs. This often causes four-year institutions to hesitate to offer new allied health programs. Allied health faculty demanded competitively high salaries making these programs even more costly to offer (Jones, et al., 2000).

Limitations to Jones' research included the fact that the surveys were restricted by the inclusion of only community college programs that were members of the National Network of Health Career Programs in Two-Year Colleges (NN2). This indicates that the research might have missed many institutions offering allied health programs. The findings of the research did demonstrate the need to assess cost-benefits when establishing and planning allied health programs due to the increasing cost and decreasing funding of educational programs.

State institutions are expected to already have transfer pathways in place, but the realism is that those pathways do not always work. This research is pertinent in documenting the need to provide more clearly defined processes for allied health students. This research also identifies some of the barriers present in allied health programs that lead to problems implementing traditional transfer policies, such as unique curricula and less emphasis on general education coursework within the curricula.

As Virginia colleges strive to improve and increase articulation availability, allied health programs will be required to provide functional pathways for students, especially since many allied health students originate in hospital or other non-traditional based programs. These transfer pathways will help provide further educational opportunities for allied health students as well as providing the next generation of allied health educators. This research documented the issues important to program educators and administrators related to articulation pathways and student outcomes. These trends may be helpful for programs planning change in the future and for colleges planning to add new programs to their existing curriculum.

Research Limitations

Limitations to this research included a lack of random sampling. In order to sample as many health professions programs within urban Virginia as possible, purposeful sampling was used. This research was also limited in its inability to survey all allied health programs in all educational settings. Many allied health programs are offered in proprietary schools. In Virginia there is also a large military training contingent, but those venues were beyond the scope of this research. Another limitation was related to the use of survey methodology.

This research was limited in the timeframe of survey distribution. It was impossible to ensure that all persons best able to answer the questions related to this data would be available at the time of survey distribution. Surveys were distributed in a manner most likely to provide the best data returns possible. Many of these limitations may be addressed by additional research studies conducted as follow-up to this study.

This research was limited by the confounded influence of nursing programs as thought of an allied health program. Nursing is not considered an allied health program, but nursing programs are often run by the same administrators as allied health programs and have provided much of the research regarding the best practices for articulation amongst health career programs.

For this research, programs were identified as those in the research triangle of Virginia, Hampton Roads, Richmond, and Northern Virginia. Programs were identified in community colleges, hospitals, and universities in those regions.

Research Assumptions

Assumptions of this research have included problems related to the best outcome for students involved in an articulation process. Often these processes became mired in institutional processes and philosophy and risked making student articulation more difficult, rather than easier. Students might come from different types of institutions and transfer agreements had to be considered on a case-by-case basis. This was likely to make the process time consuming and possibly lead to credit loss for students.

Another assumption was that the easiest route of articulation for students would be one from a community college to a university setting. There was limited research available to indicate how well pathways from technical and proprietary schools or military credits and experience worked. All participants in this research were linked to some health professions training program in one of the identified locations. All programs and participants were located within the Commonwealth of Virginia.

Procedures

Health training programs were identified in the regions referred to as the Golden Crescent of Virginia. These included Hampton Roads, Richmond, and Northern Virginia. Programs were identified in community colleges, hospitals, and four-year colleges and universities. All participants were identified via a process of purposeful sampling based on their involvement with an allied health program in an urban region of Virginia. Local program directors and institutional administrators were the point of contact for the researcher.

Each identified participant was sent a survey. Surveys were developed via a combined process of expert review and pilot testing and attempted to gather demographic

information, information regarding trends in current articulation procedures, and views on articulation trends in allied health education. Participants received a survey, a cover letter describing the purpose of the research and guaranteeing participant confidentiality, and a pre-paid return envelope. Participants were sent a follow-up reminder card after two weeks and another survey and cover letter after an additional two weeks. The research goal was to maintain a sufficient rate of return for both groups of educators and administrators.

Definition of Terms

Terms and definitions in this research overlapped between educational and allied health settings. Often, multiple terms could be used for the same or similar topics, but the researcher attempted to unify the use of terms with those defined here. Educational institutions use terms specific to their institution to mean the same thing as a term used more universally.

Articulation: The ability to move among differing educational institutions to achieve degree completion without the loss of accumulated educational credits.

Accreditation: Some benchmark or standard related to technical or professional education or training, generally established by national organizations or professional societies.

Allied Health: All health programs except nursing, pharmacy, and physicians that included over sixty-four specific professions.

Community College: An educational institution offering no higher than an associate's degree within the Commonwealth of Virginia.

Pathways: Methods and agreements leading to articulation for students between educational institutions.

Overview of Chapters

Chapter I highlighted the purpose and background of this research project. A pattern of an emerging and growing need for continuing education in allied health fields was shown. Educational pathways have been shown to be difficult and often expensive to establish. Often allied health programs lacked standards making transfer agreements difficult to establish.

Articulation has been shown to be one pathway for advanced education of allied health students. These pathways had often been mandated by the government and were usually established on a program by program basis. The researcher suggested that the barriers between institutional settings could make this process even more cumbersome. Specifically, the researcher documented the perceptions of the strengths and weaknesses of the articulation process within allied health programs in urban Virginia programs.

The existing literature emphasizing gaps and needs related to articulation in health career programs and is presented in Chapter II. The research process and methodology is found in Chapter III. Research findings are presented in Chapter IV and conclusions are presented in Chapter V. Chapter V also outlined recommendations for future research based upon the findings of this research and previously identified research in the area of interest.

CHAPTER II

REVIEW OF LITERATURE

Modern health professionals required both technical and critical thinking skills. They were often expected to further their education in order to improve and enhance work performance. Promotions would be tied to educational achievements, since many health workers originally received certificates or degrees from community college programs. Articulation played a major role in their educational opportunities. This research sought to describe articulation pathways available to health professionals from a variety of educational institutions as well as possible barriers to the articulation process.

There was limited research available regarding articulation in allied health programs, but there was research available regarding articulation in nursing programs. Nursing has never been technically considered an allied health program. It has, however, had many of the same didactic and clinical program components that allied health programs must contend with and has been used as a comparison for articulation standards in allied health education.

Background for this research consisted of studies related directly to articulation, studies related to curricular change, including the use of a core curriculum and studies related to the need for advanced degree requirements in allied health programs. Research related to articulation discussed the reported need for articulation, the barriers to successful articulation, and the reported successes in the articulation process.

Articulation Pathways

Community colleges have historically produced a large percentage of the students who entered universities. Fredrickson (1998) indicated that as many as 30% of the

community college students that articulated into the university system came from community college technical programs. This indicated that many students were interested in pursuing the educational pathways available to them. Students indicated that they advanced their education to pursue opportunities for increased salaries and job promotions. Fredrickson noted that these transfer students were primarily female students with other work commitments as well as family commitments. On the surface, Fredrickson found these students tended to follow the general demographic patterns of other students entering the university system, but the importance of this study to this research was the documented need of technical students to be offered articulation pathways.

In Virginia, it was estimated that a student with an associate's degree would earn $8,000 more in yearly salary when compared to someone with only a high school diploma. A person holding a bachelor's degree was estimated to earn $13,000 more yearly than someone with only a high school diploma (Warner, 2004). Educational opportunities also strengthened a community. Governor Warner (2004) noted that companies often chose to relocate to communities that had strong educational opportunities. This created higher income levels, which, in turn, led to more spending in the local economy. Warner had set in place a Virginia initiative to yield an additional 10,000 degrees ranging from associate's degrees to doctoral degrees by the year 2010. A strong component of that plan involved further offerings of health career programs and articulated pathways between all state educational institutions (Warner, 2004).

The Virginia Community College System (VCCS) specifically stated that its' mission was "to provide programs and courses of instruction, through the associate-degree level, encompassing occupational-technical education, college transfer education, general

education, developmental education, continuing education, and workforce development"
(available on-line: http://www.so.cc.va.us/ aboutvccs/ mission.htm.1999). The
Commonwealth of Virginia had no state mandated articulation for allied health programs.
Many programs had institutional agreements, but these were arranged between institutions
individually. Comments from administrators and faculty indicated that these arrangements,
though intact, were often laden with problems, including inconsistency within the transfer
of accepted credits for students within articulating programs (Jones, 2003).

Issues in Articulation for Allied Health Programs

Many two-year allied health programs offered an A.A.S. degree as their
educational outcome. These degrees had been described as "difficult to articulate", at best
(Curphy, 1995, p. i). In completing her background research for her dissertation project,
Curphy (1995) noted that "information on articulation is difficult to locate" (p. 2). The
purpose of her research was to develop a model to be used for articulation between A.A.S.
degree programs at Maple Woods Community College and Central Missouri State
University. This descriptive research used a survey sent to twenty-three community
college administrators.

Curphy (1995) described articulation as occurring in one of three manners. The
first was state mandated. California was one of the states that provided articulation
agreements due to state mandate. California established a core curriculum and articulation
laws were enacted that all schools were required to follow. The second type of articulation
was voluntary statewide agreements that were negotiated by personnel from the
institutions involved. The third type was state system policies that were driven by a state
agency and had become formal state policy.

Articulation was described as occurring either as course by course or as a capstone degree that accepted the entire earned A.A.S. degree. Even if the entire A.A.S. degree was articulated, Curphy (1995) found that not all courses would be applied to their four-year degree and additional courses might be required for completion of graduation requirements, including general education courses.

Large variations were noted in the methods used to accomplish articulation. Curphy (1995) recommended "a more systematic approach to articulation between post secondary institutions" (p. 32). She recommended the use of a capstone degree as part of the articulation process. The capstone degree would recognize the A.A.S. degree as the first two-years of a four-year degree, but students might have to complete additional general education credits to complete their requirements for articulation and degree purposes.

Muhl (1991) researched articulation specifically related to nursing education in Iowa. She cited the need for nurses with advanced educational preparation to fill the roles formed in current health care settings and noted that several states have mandated such articulation agreements. This research noted three categories of articulation agreements very similar to those noted by Curphy (1995): formal and legally mandated, state system transfer policies, and voluntary agreements between institutions. The transferability of educational credits prior to articulation to a higher institution was also discussed. Transfer might occur via examinations or the completion of a portfolio. Muhl (1991) noted that several states, including Virginia, often utilized a capstone arrangement, voluntarily agreed upon within institutions to accept the A.A.S. degree as the first two years of the student's baccalaureate program.

Muhl (1991) used descriptive research to provide information regarding practices and perceptions regarding articulation in nursing programs throughout the United States. Data were analyzed with chi-square, t-tests, and ANOVA's to detect differences between respondents. Surveys were sent to all 661 associate degree nursing programs in the United States. Muhl's research had an 85.8% response rate. She found that the majority of programs (60%) did not have formal articulation agreements with baccalaureate programs and the majority of those programs with articulation agreements had negotiated those agreements with individual institutions (Muhl, 1991).

It was noted (Muhl, 1991) that 78% of programs surveyed relied on an external validation testing process such as the use of the National League for Nursing (NLN) Mobility Examination or tests rather than program validation for the articulation process. She noted that the use of an external validation process perpetuated the impression that an associate's degree was a second rate degree and often led to the loss of credits for the student during the articulation process, even in nursing specific courses.

Barriers to Successful Articulation

Pranger (1993) indicated the continuing trend of students originating in community college programs to be overlooked by universities in favor of students who begin their coursework in the university setting. This research examined articulation pathway benchmarks. Pranger sought to assess articulation of students into baccalaureate programs from two- and four-year institutions with a focus on the completion of the bachelor's degree. The original focus was articulation and the research included community colleges and four-year colleges and universities. In an effort to look at baccalaureate degree-granting institutions, community colleges were omitted from the data evaluation.

Information was gathered, however, from four-year institutions that awarded two-year

degrees as well as proprietary schools. This research did support the conclusions that

technical students often planned to continue their education beyond the two years that their

program lasted and that, overall, technical programs were thought of with lesser opinions

than were programs within a four-year degree framework, even within the same institution.

Virginia was listed as having "moderately strong" articulation agreements between

two- and four-year institutions (Ignash & Townsend, 2000). Even though Virginia

responded to this national study that they supported traditional vertical articulation, no

formal articulation pathways were identified from private or proprietary schools to

universities. Ignash and Townsend showed that 34 of the 43 states that responded to their

study had articulation pathways in place. This corresponded to an increase in numbers

since 1985, when eight states reported general articulation policies in place and twenty-

five states reported having state-system policies in place. This research showed that most

states were doing well and offered transfer opportunities to students after general

education coursework was completed. The Ignash and Townsend (2000) study also

showed that states were still doing relatively poorly in serving students who come from the

private sector. They noted a need to improve transfer policies for technical students who

often lost a large percentage of their credits when they transferred.

Educational Standards

The attempt to standardize allied health programs was not a new one. Scott, et al.

(1995) completed a national study of six allied health programs to gather information

regarding program information, admission criteria, admission procedures, and

demographics. This study included a combination of public and private colleges at both

four- and two-year institutions. The authors noted a limitation of the research to be the complexity encountered while trying to generalize among programs that offered different degrees. While not the main focus of this study, national program standards might be one means of establishing a common ground for all allied health programs. This study demonstrated the need for investigations into how generalizations could be made among differing program types. Better definitions of program standards would impact faculty and administrators as they encountered transfer students and students choosing between educational programs.

Van Valkenburg, et al. (2001) conducted a more recent study of several types of allied health programs. This study was conducted to investigate the use of standards in radiographic technology programs. The authors found a lack of educational standards. These issues had arisen due to the way programs originally developed. Many of the radiography programs developed after World War II during the proliferation of community colleges. They were developed by technologists rather than educators and resulted in fragmented curriculum. Van Valkenburg (2001) showed that of the 441 programs surveyed, 183 or 41% of the programs were located in community colleges and the average program length was 24 months. Many of the programs surveyed were small, with average number of students admitted per year varying from 10 to 20 students. This study listed variations between programs as one of the study's weaknesses and was further limited, for the purpose of this study, by the types of allied health program information gathered. Information was gathered from only four programs: radiography, sonography, nuclear medicine, and radiation therapy programs.

Limited research was available regarding program standards. In depth research was available from radiography and nursing programs. The study by Van Valkenburg (2001) identified challenges to allied health education as being the movement toward baccalaureate degree programs, since the majority of programs were located in community colleges and suggested the best solution for this would be the establishment of articulation agreements between institutions. In order for articulation agreements to become a feasible and widespread option, program standards must be implemented nationwide.

Issues related to the need for changing curriculum were discussed by Perkins (2001). This analysis discussed changes in education that supported the development of workers with an emphasis on primary heath care. Perkins assessed health care education based upon five principles: community participation, equitable distribution, multi-sectorial cooperation, appropriateness, and health promotion. This educational vision was supported by the charge of the Pew Commission which recommended greater movement toward community-focused education. Perkins also presented a useful model to support clinically based education.

The purpose of the model was to guide successful healthcare education. The model documented a need for community input regarding educational training on such topics as communication, professional roles, therapeutic interventions, and partnerships. The model stated that all training started with community-based clinical practice, advanced to concerns regarding health management, then progressed to issues related to illness intervention, and lastly to topics concerning health promotion.

The model was related to baccalaureate programs and did not reflect community college issues. It did, however, indicate that articulation agreements would help strengthen

student progress into advanced degree programs and supported the development of effective learning that prepared competent healthcare professionals (Perkins, 2001). The Perkins model also suggested that successful articulation would lead to a more effective healthcare delivery system because it would meet the needs of local communities.

Lusk (2001) discussed other curricular issues and presented a model reflecting the need for a dynamic educational system that involved both community colleges and four-year institutions. The purpose of this educational model was to utilize collaboration between Arizona community colleges and the local universities to provide seamless transfer of nursing education in a healthcare and educational system with limited resources. This model was referred to as the Healing Community to signify the cooperative agreements made with multiple institutions.

Lusk (2001) outlined a model reliant upon organization of nursing concepts at many different educational levels. This model was based on the Meleis (1994) work on transition and stated that at its best, nursing depended on input from the environment and the health care professional. Considerations included the mind, body, and spirit, constant transitions, situational transitions, health-illness transitions, organizational transitions, and developmental transitions. This was a "living model" and reflected the need to emphasize integrity, health promotion, and effective care skills.

Lusk (2001) indicated that students should be able to learn increasingly complex concepts and step in or out of the educational system at many levels. Materials were organized into three categories: courses, clinical experiences, and independent studies. Curricula were divided into eight concepts: competency, critical thinking, caring, culture, communication, learning/teaching, accountability, and management/leadership.

Glicken (2002) presented trends in the changing education of physician assistants (PA). Originally based on medical school models, PA programs also had to begin addressing life-long learning skills, communication, and active learning models appealing to the adult and non-traditional learners. A greater emphasis on distance learning, patient communication, interdisciplinary training, and critical thinking may be presented via problem-based learning. This method allowed students to explore most recent knowledge and skills related to patient management.

Evidence-based medicine was similar in process that taught students how to effectively learn and replace and update information. Evidence-based learning allowed students to define critical questions and appraise current information. It emphasized increased cultural awareness and emerging trends in medicine. Students learned through a combination of creative, practical, and critical thinking as well as patient care.

Trends in medicine noted to affect PA program training included health promotion and prevention, complementary and alternative medicines, and bioterrorism. Telemedicine was also noted as an emerging trend that would require students to learn and function more independently in the future.

Asynchronous distance learning methods were presented as one means to stress the need for critical thinking skills. Reusable learning objects such as web based learning in a profession where graduates often provided patient care in rural and underserved communities helped serve learner and societal needs. These teaching and learning methods could provide an environment for open questioning and communication that drove the educational processes and lead to life-long learning skills.

Advanced Degree Requirements

Several authors indicated a benefit of articulation when discussing career ladders and progress. Transfer pathways provided a way local educational institutions could meet community needs. They could also provide a means of career advancement for current practitioners when programmatic standards and entry-level educational requirements changed. Programs such as nursing, physical therapy, and radiography have been very successful at proving continuing educational pathways as a means of addressing changing educational standards. Other programs such as sonography were struggling with this process and could learn from more established programs.

As programs moved toward advancing degree requirements, they would be prudent to analyze programs that had already begun the process. In nursing, the current standard for a degree in registered nursing was an associate's degree. It had been postulated that nursing, as a field, would move to the requirement of a baccalaureate degree for entry-level workers. There was support for this change in many arenas. Aiken (2003) reported a direct link to the educational level of nurses and the patient mortality rates found in hospitals. The move toward a baccalaureate had not been realized, however. The numbers of baccalaureate degree prepared nurses had increased in number from 17% to 30% from 1980-2000. Those nurses prepared by an associate's degree increased from 19% to 40% during that same time period. Diploma awards had shown a decrease from 63% to 30% during that same time period (Halter, 2002).

Halter (2002) discussed the need to make nursing programs part of the liberal arts college training and decrease the separation of educational settings. Methods discussed to reduce the problems encountered by this disconnected educational system included: the

development of cooperative educational opportunities between faculty members at various educational institutions, creation of a core curriculum, offering interdisciplinary courses, and the application of a variety of teaching methods used to enhance student-based learning.

By creating opportunities for interaction amongst faculty, such as mentoring programs and seminars, teachers could become more aware of what skills, theory, and situations were required at each specific discipline. Interaction would likely create stronger teachers. Next interdisciplinary courses, taught by liberal arts and technical faculty, could benefit both faculty and students. Among faculty, the team-teaching approach could lead to a greater appreciation for a profession versus a vocation. It could provide technical faculty with a better means of providing a global perspective to their courses.

The third strategy in creating a combined liberal arts and technical curriculum was to promote a core curriculum. This could be a method used to integrate liberal arts and technical faculty. It was also presented as a way to get nursing faculty to share their knowledge with non-nursing or pre-nursing students. This could become a method used to eliminate negative perceptions of the discipline and improve communication across multiple disciplines.

The fourth strategy presented was eliminating barriers that prevent nursing faculty from participating in school governance. Most administrators were males and trained in arts and sciences. Nursing faculty were often women and often earned less than their male counterparts. This glass-ceiling may have to do with the faculty perceptions of professional degrees, or it may be reflective of the many nurses with a master's degree as their terminal degree. In any case, it represented a loss to institutions.

The Halter (2002) study describes nursing education not as vocational education alone, but as an education that developed the students intellectually, socially, mentally, and emotionally. Another step in nursing education that led to the student being treated as a whole citizen that could participate fully in society was the integration of ethics and philosophy.

This research clearly demonstrated that community colleges continued to play an important role in allied health education, but educators needed to find ways to help students move more easily into university settings. The need for graduates to be well rounded and functional care givers was relevant to all allied health fields. Lastly, this research showed the need for vocational or technical training to provide the skills required for employment within the educational training process.

The literature has demonstrated that there was a need to discuss and study the challenges to community colleges as they attempted to open avenues of higher education to students (Curphy, 1995; Fredrickson, 1998; Ignash & Townsend, 2001; Perkins, 2001). Some researchers have investigated the challenges to programs that have moved to entry-level master's degree programs and similar lessons could be taken from those programs (Gerrish, 2000; Murray, 2001). Many nursing and physical therapy programs were offered at the master's degree level. In the United Kingdom, challenges had included the lack of recognition within the workplace and the parameters related to training in nursing programs at different degree levels. Parameters noted included issues related to allowable scope of practice based on different educational backgrounds. Nurses trained at a master's degree level should be able and expected to work more independently and provide increased leadership and training to other nurses. A master's degree should offer more

opportunity for reflective learning, but it was often hampered by the tendency to focus on utilitarian aspects of the field (Gerrish, et al., 2000).

Murray, et al. (2001) stated that advanced postgraduate programs filled many needs to the healthcare community including providing educators, leadership, and change agents. A study of one master's degree program provided graduate data on demographics, employment, and professional information. This research stated that although the Pew Commission supports interdisciplinary education as a means to increase efficiency amongst allied health workers, the Trialliance of Rehabilitation and Health Professionals (1995) opposed interdisciplinary education at entry-levels of education because of the extensive knowledge base specific to each discipline. The alliance encouraged interdisciplinary education at the post-professional level.

Post-professional skills could have a large impact on employer satisfaction and skills such as grant writing and research could do the same. A majority (57%) of graduates from the program studied indicated that post-professional education led to career advancement. A large majority of graduates (81%) remained active in a professional organization. The program studied by Murray, et al. (2001) allowed students to choose two tracks of education: education and administrative. Graduates of the education track generally reported a higher volume of scholarly publications.

This research (Murray, et al., 2001) was limited to only one program and demonstrated the need for larger studies. It also showed the majority of students were filling administrative positions, and their advanced degree did not necessarily reflect the role they filled professionally. This research identified grant writing as one area not pursued enough by graduates of either track although it provided funding for opportunities

by both educators and administrators. It pointed to a need for core curriculum and dynamic educational opportunities to meet the growing needs of a changing workforce.

Summary

The review of literature has shown research on program specific curriculum changes as well as issues related to the administration of program specific changes. Research has discussed the changes that will help lead to more effective program transition such as developing articulation agreements and a core curriculum, but the literature has failed to identify issues specific to community colleges and community college programs. This need for research designed to specifically identify issues and needs relating to community college allied health programs was the basis for this research project. The focus of this research was to determine if there were relationships specific to allied health programs offered at two-year institutions and hospital based programs that would impact the possibility of articulation to a local university.

Chapter III will describe the research methodologies applied to this study. Research procedures used in this study will document trends in articulation successes and barriers in educational settings in urban Virginia.

CHAPTER III

METHODS AND PROCEDURES

This chapter describes the methods and procedures used in this research. First, the population and sampling used in this research is discussed. The population of this research is health profession programs located in urban regions of Virginia. Secondly, the instrument design is reviewed. The research follows a survey design. Design and testing of the survey instrument will be outlined. Thirdly, there will be a discussion of the methods of data collection. This includes methods of gathering adequate survey returns, as well as follow-up methods that will be considered, based on survey findings such as follow-up interviews. Finally, the methods of statistical analysis will be described and lead to a chapter summary.

Population

The population of this study was all health profession programs within the three urban regions of Virginia. The Golden Crescent of Virginia was noted by the Northern Virginia, Richmond, and Hampton Roads regions. All three urban centers represented a major source of health profession educational opportunities. The population was chosen via purposeful sampling. The population sampled was from universities, community colleges, and hospital-based programs in each of the three regions. This allowed data to be gathered from active and accessible health training centers within Virginia. Data were also collected from the universities most likely to serve as articulating institutions for the programs studied or offering allied health programs themselves. The total number of higher education institutions studied in this research was eighteen. Three were hospital-based programs, seven were universities, and the remaining programs were located in

community colleges. Detailed information regarding specific programs and contact people

for each program and institution surveyed can be located in Appendix A. The institutions

surveyed can be located in Table 3-1.

Table 3.1. Institutions Surveyed

Region	*Institution*
Hampton Roads	Tidewater Community College
	Paul D. Camp Community College
	Thomas Nelson Community College
	Old Dominion University
	Norfolk State University
	Hampton University
	Eastern Virginia Medical School
	Sentara School of Health Professions
	Riverside Regional Medical Center
Richmond	J. Sargeant Reynolds Community
	John Tyler Community College
	Virginia Commonwealth University
	St. Mary's Health System
Northern Virginia	Northern Virginia Community College
	Germanna Community College
	Mary Washington University
	George Mason University
	Mary Washington Hospital

Instrument Design

Information for this descriptive research was gathered via a survey. The survey was

developed based upon the three research goals. Those goals were, "What issues related to

articulation do faculty and administrators identify as being important to them?", "What articulation barriers do faculty and administrators identify?", and "What articulation pathways do faculty and administrators identify as being most effective?" A survey created by Muhl (1991) was used as a reference for items related to legislative mandates for articulation, general articulation satisfaction, articulation trends, and transfer processes. The Muhl survey was designed specifically for nursing and was modified to meet the needs of this research and add more current issues related to Virginia allied health programs.

The survey sought to document articulation pathways provided by educational institutions for students and issues related to articulation according to faculty and administrators, including the most commonly used articulation pathways, articulation barriers, and the most effective articulation pathways. The survey would also document trends in programmatic changes, career outlooks, entry-level job requirements, projected program changes, and student and employer input into program planning.

The survey was evaluated for validity and objectivity by expert peer review and pilot tested for reliability. Pilot testing was conducted with program directors at the host institution, Tidewater Community College (TCC). Both faculty and administrators would participate in the pilot testing process. The survey is located in Appendix B.

Methods of Data Collection

The survey would gather data to be evaluated in both Likert scale format and in general, open-ended questions. Once the instrument had been assessed for validity through the pilot test, it was mailed to all identified participants, along with a cover letter to explain the research goals and ensure participant confidentiality. Three reminder notes were

mailed as well as one re-survey attempt in an effort to obtain a significant return rate. In order to achieve the highest return rates possible, participants were sent two electronic options for survey return if they had a published email address. Participants were sent the survey electronically with the option to return it electronically as well. In order to reach the goal of a significant return rate, non-responding participants were contacted by telephone to request survey return and a third mailing of the survey was made to increase likelihood of participation. The cover letter is located in Appendix C.

The initial surveys were mailed in August, 2005. The first reminder was mailed one week later. A second survey and request for completion was mailed in September 2005. All surveys had a return requested date of October 1, 2005. Telephone contact was made with remaining participants who had not returned a survey by the end of October and a third survey mailed to them by November 1, 2005, with a requested return date of December 1, 2005.

Statistical Analysis

Information was tabulated and assessed for significance. Data were reported through frequency measures such as number and percentages of responses. Likert scale responses were documented for mean scores for each item. T-test for independent samples was run and mean values of program directors and administrators were compared to determine statistical significance.

Qualitative or open-ended responses from the survey returns were organized through a method of chunking and sorting. Chunking data involved placing qualitative responses into larger categories with other similar responses in order to help detect trends in articulation processes.

Summary

The population of this research was defined as all university, community college, and hospital-based allied health programs within the urban regions of Virginia. Those regions included Hampton Roads, Richmond, and Northern Virginia. For all programs a program director and administrator were identified for survey purposes.

A survey was created using the basic framework created by Muhl (1991). Participants were surveyed regarding basic demographics, articulation pathways provided by educational institutions for students, and issues related to articulation according to faculty and administrators, including the most commonly used articulation pathways, articulation barriers, and the most effective articulation pathways. The survey also documented trends in programmatic changes, career outlooks, entry-level job requirements, projected program changes, and student and employer input into program planning.

The survey was evaluated for validity and objectivity by expert peer review and pilot tested for reliability. The survey gathered data in both Likert scale format and in general, open-ended questions. The survey was mailed to all identified participants, along with a cover letter to explain the research goals and ensure participant confidentiality. Reminder notes and two re-survey attempts were mailed to obtain a minimum return rate of 60% from programs identified.

Information was tabulated and assessed for significance. Data were reported through frequency measures such as numbered percentage of responses. Likert scale responses were documented for mean scores for each item. Qualitative or open-ended

responses from the survey returns were organized through a method of chunking and

sorting. All reported data will be analyzed in Chapter IV.

CHAPTER IV

FINDINGS

Program directors and administrators were sent a survey and cover letter explaining

the research and requesting participation in the data collection process. Each individual

identified received a cover letter, survey, and stamped return envelope and/or were

contacted electronically. The surveys received back to the researcher were kept

confidential and reported only in aggregate form. Tracking codes were included on the

surveys, in the footer, and would be used for follow-up purposes. By December 1, 2005, a

sufficient return rate for both groups of participants had been achieved.

Study Retention Rate

Administrators from sixteen institutions were sent surveys. Eleven surveys were

returned for a return rate of 68.7%. Eighty-one surveys were sent to program directors.

Twelve responses were returned indicating the participant should be removed from the

survey pool. One participant indicated the program had been closed, two responses

indicated they did not categorize their profession as an allied health profession, one

respondent indicated they were adjunct faculty, and three respondents indicated they

provided administrative support to the program only. The remaining respondents did not

cite a reason for removal from the survey pool. The program director pool was adjusted to

reflect the possible sixty-nine respondents. Forty-eight surveys were returned from

program directors. This provided a return rate of 69.6%. Of the total ninety-seven surveys

sent out initially, the total pool was adjusted to eighty-five participants. Fifty-nine

responses were returned for an overall response rate of 69.4%.

Study Findings

Each survey was divided into three sections. Section I of the survey gathered demographic information. Section II gathered information pertaining to current articulation agreements. Section III asked for opinion information related to the future of curriculum and articulation in allied health education programs. The survey ended with four open-ended questions allowing participants to share more detail related to articulation/transfer barriers and successes related to the needs and perceptions of faculty/administrators and students. This chapter presents the data from survey results of program directors and administrators identified for allied health programs in the urban regions of Virginia.

Program Background and Demographics

The survey was divided into items related to Program Background and Demographics, Articulation Agreements, Trends in Articulation, and Comments. Section I of the survey was Program Background and Demographics. This section identified specific aspects of participants and the program responding to the survey. Questions regarding program type, size, credit hours, length, and institutional type were asked. Since many programs were housed in departments that also served nursing programs, many program directors and administrators served nursing as well as allied health programs.

Item 1 in Section I was, "What type of allied health program are you affiliated with? If you offer several programs check all offered." This identified allied health programs and program officials responding to this survey. This helped to identify the wide range of programs served within the Commonwealth of Virginia. Although nursing is not considered an allied health profession, nursing was a selection of program type because many institutions combined nursing with their allied health programs. Also of note was the

large number of programs (30.9%, *n = 29*) located in the "other" category. This indicated

the wide range of programs offered as well as the fact that there were many program types

that were only offered at one institution within Virginia (6%, *n = 6*). Programs listed as

"other" included dental hygiene, clinical laboratory services, veterinary technology, art

therapy, funeral services, ophthalmic medical technology, kinesiotherapy, and patient

counseling (see Table 4.1).

Table 4.1.   Program Offered.

Program Type	# Respondents	% Respondents
Nurse Aide	8	8.5
LPN	7	7.4
RN	9	9.6
BSN	3	3.2
MSN	2	2.1
Radiography	7	7.4
Dietetics	3	3.2
Physical Therapy	3	3.2
Physical Therapy Assistant	1	1.1
Occupational Therapy	1	1.1
Occupational Therapy Assistant	1	1.1
Diagnostic Medical Sonography	1	1.1
Respiratory Therapy	2	2.1
CPR	2	2.1
EMT	2	2.1
Paramedic	2	2.1
Dental Assistant	1	1.1
Health Information Technology	5	5.3
Medical Assistant	1	1.1
Surgical Technology	4	4.3
Other	29	30.0
Total	*n = 94*	100%

Item 2 in Section I of the survey was, "Is this program accredited by a national

accrediting agency separate from institutional accreditation? If you are responding for

multiple programs please list accrediting agency information next to program listing." This

identified programmatic accreditation for the allied health programs responding to this

survey. The majority of programs (85%, $n = 94$) are programmatically accredited by an

outside agency (see Table 4.2).

Table 4.2. Programmatic Accreditation.

Response		%
Yes	$n = 94$	85
No	$n = 17$	15
Total $n = 111$ program responses		100%

Item 3 in Section I of the survey was, "How long is your program? If you have

several programs please indicate each program appropriately." This item identified the

wide range of options available within allied health programs in Virginia. The majority of

programs were two years in length or less. This reflected both the large number of

community college programs as well as programs that required applicants to complete

general education or other pre-requisite coursework prior to program entrance. Only

13.9% ($n = 16$) of programs were four years in length, while 32% ($n = 37$) were two years

in length and 60% ($n = 76$) of programs were less than two years in length (see Table 4.3).

Table 4.3.   Program Length.

Length of Program	# Respondents	% Program Respondents
Less than one year in length	17	14.8
One year in length	15	13
Between one and two years in length	7	6.1
Two years in length	37	32.2
Between two and four years in length	21	18.3
Four years in length	16	13.9
Other	1	0.9
Total	$n = 114$ separate program responses	100%

Item 4 in Section I of the survey was, "What do students earn upon completion of

your program? If you have several programs please indicate each program appropriately."

This item demonstrated that even programs with similar lengths offer students different

awards upon program completion, complicating the articulation process. For instance, two radiography programs may both be two years in length, if offered at a community college a degree was awarded, but when offered in a hospital setting, a certificate may be granted upon completion.

Fifty-two percent (*n= 54*) of respondents said their programs awarded either an associate in applied science (A.A.S.) degree or a certificate to graduates. Twenty-three percent (*n = 24*) of respondents said their graduates earned a baccalaureate degree upon program completion. This corresponded with Item 7 in showing that the majority (45.8%, *n = 27*) of allied health programs were offered in the community college setting, but that a significant number of programs were offered in a university setting as well (37.3%, *n = 22*).

Since some of Virginia elected officials encouraged students to begin their education at the community college and then transfer to a university for educational completion, this item supported the need for articulation agreements within allied health programs to better allow student success and completion. This item also reflected the creative design of many allied health programs. Programs may award a baccalaureate degree and be offered at a university, but also required requisite coursework and an additional two years of programmatic classes. Several programs also offered multiple award options to students.

Item 4 also documented that many program directors oversaw more than one program at their institution. This can be viewed as either an opportunity or a barrier to articulation development. If the same person is aware of the process for developing articulation pathways it may be more effective and streamlined. Program directors resists

the implementation of transfer processes would become barriers to the streamlined

articulation process (see Table 4.4).

Table 4.4. Programmatic Award.

Award	# Respondents	% Respondents
Certificate	25	24.3
Diploma	7	6.8
AAS degree	29	28.2
AS degree	5	4.9
BS degree	24	23.3
MS degree	8	7.8
Other	4	3.9
	$n =$ 103 separate program responses	99% (Due to program overlaps total did not equal 100%)

Item 5 in Section I of the survey was, "How many credit hours do students earn in

your program? If you have several programs please indicate each program appropriately."

This item identified discrepancies between similar programs and programs offered at

different institutional types, such as a radiography programs offered at a hospital versus a

community college or university. The difference in credit hours among similar programs

supported the different award types noted in Item 4. The use of clock hours in hospital

based programs was presented as a barrier to student transfer and was noted several times

throughout the survey.

Most of programs (38.6%, $n = 44$) were found to be between sixty and eighty

credit hours in length. This corresponded with Item 7 in showing that the majority (45.8%,

$n = 27$) of allied health programs were offered in the community college setting. Programs

that responded to this item as "Other" indicated either greater than one-hundred credit

hours were needed for program completion or that clock hours were used to track program

progress and not credit hours (see Table 4.5).

Table 4.5.   Credit Hours Earned During Program.

Credit Hours	# Respondents	% Respondents
less than 30	9	7.9
30-45	15	13.2
46-60	12	10.5
60-80	44	38.6
81-100	18	15.8
Other or no credit hours awarded	16	14
Total	$n = 114$ total program responses	100%

Item 6 in Section I of the survey was "Approximately how many students graduate from your program per year? If you have several programs please indicate each program appropriately." This item highlighted the difference between allied health programs. Many programs were small in size and provided limited access to students. This automatically limited some transfer options for students since institutions would be less likely to develop transfer pathways that would be used by only a small number of students.

Of program responses, 72% ($n = 82$) of programs graduated less than fifty students per year and 51.8% ($n = 59$) of programs graduated less than twenty-five students per year. This corresponded to Item 1 (Table 4.1) that showed that five responses (5.3%, n = 94) came from institutions with a single program type. This item also reflected the variety of options offered to students by some programs. Some programs allowed students to step out at different levels and leave with different completion awards (see Table 4.6).

Item 7 in Section I of the survey asked, "Your institution is best described by". This categorized institutions as hospital, community college, or university based. There were 44.8% ($n = 27$) of respondents from community colleges, 16.9% ($n = 10$) were from hospital based programs, and 37.3% ($n = 22$) of respondents were from university based programs. Institutional type findings supported the number of credit hours found within

the majority of programs, the awards most commonly granted upon graduation, and the

relatively small number of graduates from programs (see Table 4.7).

Table 4.6. Graduates Per Year.

Yearly Graduates	# Respondents	% Respondents
10-25	59	51.8
26-50	23	20.2
51-75	12	10.5
76-100	3	2.6
More than 100	15	13.2
Other	2	1.8
Total	$n = 114$ program responses	100%

Table 4.7. Institutional Type.

Institution Type	# Respondents	% Respondents
Community College	27	45.8
Hospital	10	16.9
College or University	22	37.3
	$n = 59$ respondents	100%

Articulation Agreements

Section II of the survey was entitled Articulation Agreements and respondents were

asked questions that reflected their opinions regarding current articulation processes.

Participants were asked to respond to ten Likert scale items, two ranking items, one item

rating general satisfaction with the articulation process, and one open-ended question

regarding successful articulation pathway agreements. Participants were asked to rank

Likert items using a one through five (1 – 5) scale (1 = Strongly Disagree; 2 = Disagree; 3

= No opinion/Neutral; 4 = Agree; and 5 = Strongly Agree).

Item 1 in Section II of the survey was, "Formal, written articulation agreements with

other institutions are currently in place." This item sought to identify if there were

articulation agreements in place at the time of survey response. No difference between

responses of program directors and administrators was noted. There was a wide spread of responses, ranging from strongly agree to strongly disagree, with a mean value of 2.9 which represents an overall neutral response. This demonstrates no statistically significant difference between the two group means, t (13.22) = 0.045, p = .965. The range of responses indicated that articulation processes are in place or working sporadically (see Table 4.8).

Table 4.8. Current Articulation Agreements in Place.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	46	11	57
Mean Response Value	2.9	2.9	2.9

$p < .05$

Item 2 in Section II of the survey was, "Current articulation agreements allow students to enter my program from another institution without repeating similar classes." This item asked about the ability of students to transfer credits into the responding program without repeating coursework. The mean response value for this item was 3.0 which was a neutral response. There was a mean response of 2.8 from program directors which was a neutral response. There was a mean response of 3.8 from administers which was a response of agree. This demonstrates a statistically significant difference between the two group means, t (12.69) = -1.862, p = .086. The difference between administrator and program director response values may indicate the greater awareness of administrators with the transfer process. This warranted further research since program directors were often the first persons to interact with students regarding their transfer options. Education

of program directors regarding the articulation process and requirements would help

reduce this inequity (see Table 4.9).

Table 4.9. Articulation Allows Course Transfer.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	46	9	55
Mean Response Value	2.8	3.8	3.0

$p = .05$

Item 3 in Section II of the survey was, "Accreditation provides the basis of smooth

articulation agreements for students." The mean response value for this item was 3.1

which was a neutral response. The mean response value for program directors was 2.9,

which was a neutral response. The mean response value for administrators was 3.7 which

reflected a response of agree. This represents a statistically significant finding, $t (12.44) = -1.777$, $p = .100$. The difference between program director and administrator responses may

be indicative of the direct contact program directors had with students and the better

awareness many administrators have of the systems involved and required for successful

articulation.

The difference between program director and administrator responses may also

reflect different type of articulation processes in place. Formal articulation processes are

more likely to be known by administrators when compared to program directors. Program

specific transfer agreements are more likely to be known and familiar to program directors

since they affect the individual program. Again, the significance of this finding could stem

from the fact that program directors were often the first persons to interact with the student

regarding their transfer options. Further research is warranted into the difference in

perceptions between program directors and administrators regarding the articulation process. Education of program directors regarding the articulation process and requirements would help reduce the inequity of this response (see Table 4.10).

Table 4.10. Accreditation Leads to Articulation Agreements.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	10	57
Mean Response Value	2.9	3.7	3.1

$p = .05$

Item 4 in Section II of the survey was, "Articulation agreements currently in place have developed due to legislative mandate." This response was overall negative, with a mean response value of 2.4. This does not represent a statistically significant finding, t (10.77) = -0.841, $p = .086$. This indicated that respondents have developed existing articulation agreements voluntarily.

Nursing programs were not included in this survey, since they were not categorized as an allied health program. However, nursing, as a profession, has developed clearly defined transfer processes at many levels and it warrants further research to see if those developments occurred due to legislative mandate. Nursing programs had served as the examples for many allied health programs as they move to advanced degrees and more clearly established articulation pathways (see Table 4.11).

Item 5 in Section II of the survey was, "The current program(s) required modifications in curriculum in order to facilitate the initiation of the articulation agreements." This item was overall negative with a mean response value of 2.3 indicating

Table 4.11. Articulation Agreements Were Mandated Legislatively.

	Program Director Respondents	Administrator Respondents	Total Respondents
# Respondents	45	9	54
Mean Response Value	2.3	2.7	2.3

p = .05

that curricula did not change much in order to allow transfer and articulation agreements. This finding is not statistically significant, *t* (17.53) = .938, *p* = .361. This may be indicative of low numbers of articulation agreements in place currently. This finding may also indicate that curricula remain the same and requirements for articulation are additional courses beyond the established curriculum (see Table 4.12).

Table 4.12. Articulation Agreements Led to Program Modifications.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	46	11	56
Mean Response Value	2.3	2	2.3

p = .05

Item 6 in Section II of the survey was, "Students are required to take additional courses to meet the requirements of articulation if they transfer from this institution to another institution." The mean responses of program directors and administrators were quite similar, near a neutral value of 3. This finding is not statistically significant, *t* (10.91) = .090, *p* = .930. This may indicate that there is a wide range of course requirements for students who wish to transfer from one institution to another ranging from effective transfer to a need for many courses for transfer (see Table 4.13).

Item 7 in Section II of the survey was, "Students can easily move from this accredited program to another accredited program without losing credits." The mean values for program directors and administrators were very close, with mean values

Table 4.13.   Additional Courses Are Required For Transfer.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	45	9	54
Mean Response Value	3.2	3.1	3.2

p = .05

near 3.0. The mean response value was neutral, but the responses from this item ranged from strongly disagree to strongly agree indicating a wide range of opinions regarding the ability of students to leave the current program and move to another institution without losing credits. This finding is not statistically significant, *t* (12.09) = -.109, *p* = .915. (see Table 4.14).

Table 4.14.   Students Move Easily Between Accredited Programs.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	46	10	56
Mean Response Value	3.0	3.1	3.1

p = .05

Item 8 in Section II of the survey was, "Formation of institutional articulation agreements required program staffing changes." The responses were mainly negative from both program directors and administers with a mean response value of 2.1. This finding is

not statistically significant, t (11.28) = -.786, p = .448. This indicated that the

establishment of articulation agreements has not mandated any program faculty changes

thus far (see Table 4.15).

Table 4.15. Articulation Agreements Required Staffing Changes.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	44	10	54
Mean Response Value	2.1	2.4	2.1

p = .05

      Item 9 in Section II of the survey was, "Formation of institutional articulation

agreements led to changes in accreditation status." The responses to this item were

negative from both administrators and program directors with a mean response value of

2.0. This represents a statistically significant finding, t (11.32) = - 1.24, p = .239. This

indicated that the development of articulation or transfer pathways has not impacted

programmatic accreditation (see Table 4.16).

      Item 10 in Section II of the survey was the last Likert scale item in this section. It

was, "Formation of institutional articulation agreements led to an unscheduled

accreditation site visit." The responses from this item were negative from both

administrators and program directors with a mean response value of 1.9. This represents a

statistically significant finding, t (11.13) = -1.262, p = .233. This indicated that few or no

unscheduled site visits were triggered by the formation of new articulation agreements.

This might be an important consideration since the majority of programs are

programmatically accredited (85%, *n* = *94*) and site visits incur a large cost to educational

institutions (see Table 4.17).

Table 4.16. Articulation Agreements Led to Changes in Accreditation Status.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	45	10	55
Mean Response Value	1.9	2.4	2

p = .05

Table 4.17. Articulation Agreements Led to an Unscheduled Site Visit.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	44	10	54
Mean Response Value	1.8	2.3	1.9

p = .05

Item 11 in Section II of the survey was an open-ended question that asked

participants to identify successful articulation pathways. The item was, "If you have the

ability to articulate to multiple institutions based on differing requirements, please indicate

which pathway provides the most effective articulation for your program and students."

Twenty-six comments were returned from that item. Seven responses indicated a lack of

articulation options or very limited articulation options for their programs. The remaining

comments listed specific instances where articulation was working well at their institution.

Five of those positive comments referenced nursing programs. The other positive

comments reflected agreements on a program by program or institution by institutional

process. When asked why those pathways were successful, a variety of responses were offered, from the high demand of workers ($n = 2$) to the established articulation process with another institution ($n = 8$).

The request for comments on articulation successes was then followed by a series of ranked items regarding the importance of articulation and the flexibility of establishing transfer pathways with other institutions. Participants were asked to use a ranked scale with one being the least important and five the most important as they relate to the process of articulation in their program.

Question 12 presented the first section of ranked items. The first ranked item in Question 12 of Section II of the survey addressed the ability of students to complete a degree at a university after completion of their current program and 46% ($n = 17$) ranked this item most important indicating a strong need to see students articulate to other programs after the completion of their current program (see table 4.18).

Table 4.18.   Students Can Transfer and Complete a Degree.

Response Options	# Respondents ($n = 37$)
1 (least important)	3
2	5
3	4
4	8
5 (most important)	17

The second ranked item in Question 12 of Section II of the survey asked participants to comment on the importance of students being able to earn additional, and perhaps higher, degrees at the same institution. Twenty-eight percent (28%) of respondents ($n = 11$) marked this item as least important indicating that most students will pursue other degrees at different institutions rather than in the same institution (see Table 4.19).

Table 4.19. Additional Degrees Can be Earned at This Institution.

Response Options	# Respondents ($n = 37$)
1 (least important)	11
2	5
3	7
4	7
5 (most important)	7

The third ranked item in Question 12 of Section II of the survey asked participants

to rank the process of awarding students credit for all classes completed at their current

program if they transferred to another institution. Thirty-five percent (35%) of respondents

($n = 13$) ranked this item four on the Likert scale, placing it second most in importance.

This reflected other comments regarding the importance that students not lose credits for

coursework already completed (see Table 4.20).

Table 4.20. Credit is Awarded For All Classes Completed Upon Transfer.

Response Options	# Respondents ($N = 37$)
1 (least important)	4
2	4
3	9
4	13
5 (most important)	7

The fourth ranked item in Question 12 of Section II of the survey asked

respondents to rank the need for administrative flexibility when setting transfer and

articulation requirements based on the program curriculum. Thirty-eight percent (38%) of

respondents ($n = 14$) ranked this item as "2" or second least important. This seems to

indicate that respondents do not feel there is much flexibility in setting up transfer

pathways regardless of program curricular requirements (see Table 4.21).

The fifth and last ranked response in Question 12 of Section II of the survey asked

respondents to rank the statement, "Accreditation sets a standard for credits awarded

Table 4.21.   Administration is Flexible When Creating Articulation Requirements.

Response Options	# Respondents (*n* = 37)
1 (least important)	1
2	14
3	12
4	7
5 (most important)	3

during the transfer/articulation process." This statement received the least important

ranking with 49% of respondents (*n* = 18) ranking this item as least important. This

indicated that accrediting agencies were, for the most part, not setting required credit hours

or awards for allied health programs. It may also indicate that accreditation agencies will

recommend curricula, but not program awards. Programs will set curriculum and establish

transfer agreements as they are able. (see Table 4.22).

**Table 4.22.   Accrediting Agencies Determine The Credits Awarded During
               Articulation.**

Response Options	# Respondents (*n* = 37)
1 (least important)	18
2	10
3	5
4	1
5 (most important)	3

Item 13 in Section II of the survey was a ranked item that asked participants to

assess their satisfaction with the accreditation process. The item was, "Please indicate your

satisfaction with the articulation process." Eighteen percent (*n = 8*) of respondents were

very satisfied with the articulation process currently available to them and 62% (*n = 28*) of

respondents were generally satisfied. This indicated that overall educators feel that the

articulation processes available to them are acceptable (see Table 4.23).

Table 4.23. Satisfaction with the Articulation Process.

Responses	# Respondents ($n = 45$)
Very Satisfied	8
Generally Satisfied	28
Somewhat Dissatisfied	8
Very Dissatisfied	1

The last item in Section II of the survey was Question 14 that presented a series of

five responses in which participants were asked to use a ranked scale with one being the

least important and five the most important as they relate to the process of articulation in

their program. The first response in Question 14 of Section II of the survey asked

participants to rank the importance of awarding credit for previous coursework in the

major field from an accredited institution. Forty-seven percent (47%) of respondents ($n =$

36) gave this statement a rank of four or five, reflecting the need for students to receive

credit for previously completed coursework (see Table 4.24).

Table 4.24. Satisfaction in Awarding Credit in Major.

Response Options	# Respondents ($n = 36$)
1 (least important)	3
2	8
3	8
4	11
5 (most important)	6

The second statement in Question 14 of Section II of the survey asked participants

to rank the importance of awarding credit from previous general education coursework

from an accredited institution. Fifty-eight percent (58%) of respondents ($n = 36$) gave this

statement a rank of four or five (most important), reflecting the strong need for students to

receive credit for previously completed general education coursework (see Table 4.25).

The third ranked statement in Question 14 of Section II of the survey asked

participants to rank the importance of providing data to other institutions as part of the

Table 4.25. Satisfaction in Awarding Credit in General Education.

Response Options	# Respondents ($n = 36$)
1 (least important)	3
2	8
3	4
4	7
5 (most important)	14

articulation process for transferring students. Sixty-nine percent (69%) of respondents ($n = 36$) gave this statement a rank of two or three, reflecting a reluctance among programs to feel they have to defend their curricula to other institutions in order to establish transfer pathways successfully. No respondents ranked this item as being most important (see Table 4.26).

Table **4.26. Satisfaction in Providing Data to Other Institutions.**

Response Options	# Respondents ($n = 36$)
1 (least important)	1
2	11
3	14
4	10
5 (most important)	0

The fourth ranked statement in Question 14 of Section II of the survey asked participants to rank the importance of articulation within similar institutions (i.e., community college to community college or university to university). Fifty-six percent (56%) of respondents ($n = 36$) gave this statement a rank of four or five (most important), reflecting the strong need for students to receive credit for previously completed coursework, especially among similar institutions (see Table 4.27).

The last ranked statement in Question 14 of Section II of the survey asked participants to rank the importance of international credit applied to programmatic course requirements. Only fourteen percent (14%) of respondents ranked this item as being

Table. 4.27. Satisfaction with Articulation within Similar Institutions.

Response Options	# Respondents (n = 36)
1 (least important)	3
2	5
3	8
4	8
5 (most important)	12

important or most important to them ($N = 5$). Seventy-two percent (72%) of respondents

($N = 26$) gave this statement a ranking of least important. This may reflect the limited

enrollments noted in many of these programs making them often available to state-

residents prior to other applicants. It may also indicate a reluctance to change curricula

based on external factors such as internationalization of non-standard curricula (see Table

4.28).

Table 4.28. Satisfaction in Applying International Credits.

Response Options	# Respondents (n = 36)
1 (least important)	26
2	3
3	2
4	0
5 (most important)	5

Trends in Articulation

In Section III respondents were asked to respond to items related to the future of

articulation in allied health education. Twelve items were presented in Likert scale format

and then a series of open-ended questions were presented to allow respondents the

opportunity to offer individualized comments. Likert scale items were ranked by

participants using a one through five (1 – 5) scale (1 = Strongly Disagree; 2 = Disagree; 3

= No opinion/Neutral; 4 = Agree; and 5 = Strongly Agree). The open-ended items

addressed the issues important to the respondent, the issues the respondent felt important

to students, articulation successes, and articulation barriers. Responses were grouped for similarity for purposes of reporting.

Item 1 in Section III of the survey was, "More allied health graduates with certificates, diplomas, or associate degrees will be seeking baccalaureate or other advanced degrees in the future." The responses to this item from both program directors and administrators were positive with a mean value of 4.2. This did not represent a statistically significant finding, t (15.27) = -1.623, p = .125. This indicated that both groups felt allied graduates would continue to seek articulation pathways in the future as a means of continuing their educational training. This may indicate an increasing number of allied health programs requiring higher levels of education for entry-level workers (see Table 4.29).

Table 4.29.   Allied Health Graduates Will Seek Advanced Degrees in the Future.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	47	11	58
Mean Response Value	4.2	4.5	4.2

p = .05

Item 2 in Section III of the survey was, "My institution places a high emphasis on articulation agreements with other educational institutions." Mean response values of 3.3 and 3.5 for program directors and administrators, respectfully, indicated a slightly positive response to the arrangement of articulation agreements with other institutions. This did not represent a statistically significant finding, t (12.56) = -.538, p = .600. Later comments indicated that even when articulation agreements were in place, they

frequently were not functional for students transfer and may be reflected in responses to this item (see Table 4.30).

Item 3 in Section III of the survey was, "My field or program requires articulation pathways in order to advance during the worker's career." A mean response value of 2.8

Table 4.30.   There is a High Emphasis on Articulation Agreements.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	11	58
Mean Response Value	3.3	3.5	3.3

$p = .05$

indicated a fairly neutral response to this item. Program directors offered a mean response value of 2.6 indicating less consideration to students' future plans for transfer than did administrators, who responded with a mean value of 3.5. This represents a statistically significant finding, $t (14.80) = -2.005$, $p = .064$. Many respondents indicated that students would want to transfer later on, but not that those transfers would be required for their current field of study (see Table 4.31).

Item 4 in Section III of the survey was, "There is a need for more opportunities of direct transfer of credits from allied health programs at hospitals, proprietary schools, and community colleges into baccalaureate degrees for health professions programs." The mean response to this item was 4.0 representing agreement. The responses were slightly higher for administrators than for program directors, at 4.5 and 3.9, respectively. This represents a statistically significant finding, $t (31.03) = -3.098$, $p = .004$. This discrepancy

may have indicated the function of administrators in developing articulation processes that

program directors are not always aware of and may not utilize regularly (see Table 4.32).

Table 4.31.   Articulation Pathways Are Required For Career Advancement.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	46	11	57
Mean Response Value	2.6	3.5	2.8

p = .05

Table 4.32.   Transfer Should Occur by Direct Transfer of Credits.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	46	11	57
Mean Response Value	3.9	4.5	4.0

p = .05

Item 5 in Section III of the survey was, "Licensure as an allied health worker

should be sufficient validation of competency for direct transfer of credit into a

baccalaureate degree program." The total mean response to this item was 3.2 which was a

neutral response. The mean response from program directors was 3.1, which is neutral, and

the mean response from administers was 3.9, which is a response of agree. This represents

a statistically significant finding, t (13.94) = -1.873, p = .082. This discrepancy again may

indicate the function of administrators in developing articulation processes that program

directors are not always aware of and may not utilize regularly (see Table 4.33).

Table 4.33.   Licensure is Sufficient Validation for Transfer.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	11	58
Mean Response Value	3.1	3.9	3.2

$p = .05$

Item 6 in Section III of the survey was, "There will be encouragement to develop more articulation agreements between allied health programs in hospitals, proprietary schools, community colleges, and universities in the future." The mean response to this item was 3.9 which indicated that respondents agreed with this statement. Responses from program directors and administrators were very similar. This does not represent a statistically significant finding, t (13.74) = -.810, $p = .431$. Responses to this item indicated an awareness that articulation pathways were necessary for allied health programs and their students (see Table 4.34).

Table 4.34.   Articulation Agreements Will be Encouraged.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	11	58
Mean Response Value	3.9	4.2	3.9

$p = .05$

Item 7 in Section III of the survey was, "There will be encouragement to develop a core curriculum in a two-year allied health programs in order to enhance the articulation process with four-year programs." The mean response value to this item was 3.8 which is a response of agree. There was very little difference between administrators and program

directors. This does not represent a statistically significant finding, t (13.87) = .274, p = .788. There was a wide range of response values to this item with a low response value of 1 and a high response value of 5 indicating the disagreement regarding the ability to successfully utilize core curriculum in different allied health programs (see Table 4.35).

Table 4.35. A Core Curriculum Will be Encouraged.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	47	11	58
Mean Response Value	3.8	3.7	3.8

p = .05

Item 8 in Section III of the survey was, "Program accreditation and accreditation agencies should determine basic required competencies for allied health programs." This item had a mean response value of 3.7, which was a response of agree. The mean response value from program directors of 3.8, which represents a response of agree and the mean response value from administrators was 3.0, which is a neutral response. This represents a statistically significant finding, t (13.29) = 1.764, p = .101. The difference between program director and administrator responses should be studied further. This item may reflect the need of administrators to meet general education requirements in program curricula required for transfer agreements, while program directors were more likely to be aware of technical skills outlined as required outcomes by programmatic accreditation agencies (see Table 4.36).

Item 9 in Section III of the survey was, "Program accreditation and accreditation agencies should determine minimum required program length for allied health

Table 4.36. Accrediting Agencies Should Determine Required Competencies.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	11	58
Mean Response Value	3.8	3	3.7

p = .05

programs." Program director and administrator response values were similar, at 3.6 and

3.4, respectively. The overall mean value was 3.5 which represented a response of agree.

This does not represent a statistically significant finding, t (13.55) = .406, p = .691. The

slightly higher value for program directors may indicate a greater willingness to allow an

outside agency to set standard curriculum (see Table 4.37).

Table 4.37. Accrediting Agencies Should Determine Program Length.

	Program Director Respondents	Administrator Respondents	Total Respondents
#Respondents	47	11	58
Mean Response Value	3.6	3.4	3.5

p = .05

Item 10 in Section III of the survey was, "A shortage of health care workers will

lead to a demand for flexible education options in the future." Program director and

administrator response values were similar, at 4.2 and 4.4, respectively. There was an

overall mean value of 4.3 that indicated respondents replied to this item as agree. This

does not represent a statistically significant finding, t (12.03) = -.444, p = .665. The

slightly lower value for program directors may indicate more hesitation in changing

program curriculum versus administrators who are called upon by the community to

remain flexible and lead changes in educational offerings based on local needs (see Table

4.38).

Table 4.38. Flexible Education Will be Required in the Future.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	47	11	58
Mean Response Value	4.2	4.4	4.3

p = .05

Item 11 in Section III of the survey was, "Articulation will not be an important

consideration for my health care program (field)." Program director and administrator

response values were both negative at 2.4 and 1.6, respectively. There was an overall mean

value of 2.3. This represents a statistically significant finding, t (14.29) = 1.927, p = .074.

This indicated that transfer pathways were desired even if they were not easy to establish.

The lower value for administrators reflected the need to provide student pathways in all

educational fields on an institutional level (see Table 4.39).

Table 4.39. Articulation Will Not Be Important.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	47	11	58
Mean Response Value	2.4	1.6	2.3

p = .05

The last ranked item in Section III of the survey was, "Unless mandated,

articulation will not be provided to students in my health care program (field)." Program

director and administrator response values were both negative at 2.6 and 1.5, respectively.

There was an overall mean value of 2.4. This represents a statistically significant finding, t (30.11) = 5.070, p = .000. These negative scores indicate the need to provide transfer pathways to students in all educational programs (see Table 4.40).

Table 4.40.   Articulation Will Not Be Provided Unless Mandated.

	Program Director Respondents	*Administrator Respondents*	*Total Respondents*
#Respondents	47	11	58
Mean Response Value	2.6	1.5	2.4

p = .05

The survey closed with a series of open-ended questions regarding articulation processes, successes, and barriers. Respondents were asked to provide comments to four items. Responses to each item were grouped into recurring themes for the purposes of reporting.

The first item presented for comments was, "Please list the issues most important to you regarding the articulation process." Forty-one responses were returned and those responses were grouped into three major themes. Of respondents to item one, 44% (n = 18) noted a need for more clearly defined requirements related to the articulation process. Twenty-four percent (24%, n = 10) of the respondents stated that they currently have no articulation agreements in place. Twenty-seven percent (27%, n = 11) of respondents stated that the acceptance of previously completed credits was most important. Five percent (n = 2) of respondents noted a need for other options in their profession.

The second item asked was, "Please list the issues you feel most important to your students regarding the articulation process." Thirty-five responses were provided and 69% (n = 24) of respondents to item two indicated that students value transfer of credits

previously completed. Twenty percent (20%, $n = 7$) of respondents stated that the

uncertainty of the articulation process was most important to students. Eleven percent ($n =$

4) reported no student complaints, unknown response, or a need for more technical skills

rather than degree transfers.

The third item asked was, "Please list any articulation successes you wish to

share." Twenty-five responses to item three were returned. These articulation successes

dealt with transfer agreements set up institution to institution and provided a well defined

pathway for students wishing to continue on a vertical pathway in their education.

The last item asked was, "Please list the barriers that you feel most impede the

articulation pathway from your institution to other institutions (or from other institutions to

your institution)." Thirty-seven responses were returned with 48.6% ($n = 18$) noting the

requirement of students to repeat classes or students lacking classes required at another

institution upon completion of their program as the major barrier to successful student

transfer. Another 21.6% ($n = 8$) of respondents indicated that the process, the lack of

familiarity with the articulation process, or inconsistencies within transfer policies to be a

major barrier to students. Of those surveyed 13.5% ($n= 5$) commented that the limit of

programs in allied health professions or the limit in number of credit hours allowed per

program represented a major barrier to student transfer. Respondents that indicated

competition between programs is a barrier to establishing successful transfer pathways was

10.8% (n=4). Additional single comments were made listing familial support, especially

for single minority women, who face requirements and costs related to transportation and

childcare and the difficulty in establishing transfer agreements with hospital based

programs that use a clock hour system instead of credit hours. A single respondent stated

that no barriers existed for establishing transfer pathways. All qualitative comments are located in Appendix E.

Summary

Ninety-seven surveys were mailed. A total of sixty-one surveys were returned for an overall response rate of 62.8%. Thirteen surveys were returned from allied health administrators for a response rate of 60%. Forty-eight surveys were returned from allied health program directors for a return rate of 68.6%. The survey was divided into three sections. Items were presented in Likert scale, rank ordered, and open-ended items.

Section I reported demographic data regarding the program and institution. Section II asked for respondents' opinions regarding current articulation processes at their institution. Section III asked for respondents' opinions regarding the future trends in articulation. Section III was followed by four open-ended items asking for articulation processes, successes, and barriers. Responses were reported for each group, program directors and administrators, and then as a total. Summary, conclusions, and suggestions for future research based on these findings will be presented in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V of this research will outline the research based on defined goals, and then present conclusions and recommendations for future actions related to articulation and transfer among educational institutions. This study included allied health programs in the three urban regions of Virginia, Hampton Roads, Richmond, and Northern Virginia. Allied health programs were identified in those regions in universities, community colleges, and hospital-based programs. Surveys were sent to program directors and administrators at each institution and/or program.

Much of the research on health program education has been conducted in nursing programs, but nursing was excluded from this research since it is not considered an allied health program. Since many program directors oversee multiple programs and administrators often oversee nursing as well as typically allied health programs, many survey returns came with comments reflecting nursing practices and needs. This may represent a confound in research regarding allied health education, but many lessons can be learned from this larger and well organized profession.

This research was designed to analyze the existing pathways present in urban Virginia allied health programs in order to establish trends in articulation. These instructional trends highlight methods proven to work as programs seek to establish pathways for students. This research identified some of the problems that need to be addressed in order to make articulation pathways more accessible for the students seeking to progress to a higher degree. Issues related to articulation include consistency of, or lack

of articulation policies, transferability of credits, the time and difficulty in establishing

working articulation agreements, and inconsistencies among similar programs.

Summary

In higher education a major trend had been to provide smoother articulation

pathways for students. Many states have set standards for programmatic transfer pathways.

Much of the initial work on health related program articulation has been conducted with

nursing programs. In many allied health programs the goal has been to provide workers

with pathways for life-long learning and career advancement without losing credits for any

work previously completed. Findings presented in nursing programs can be easily applied,

in principle, to allied health programs.

Cleary (2003) presented the findings of a North Carolina statewide summit to

outline transfer pathways for nursing. The primary goal of this summit was to provide

registered nurses pursuing a bachelor's (BSN) or master's degree (MSN) educational

mobility within state institutions. The summit was composed of members from

universities, community colleges, the North Carolina Board of Nursing, the North Carolina

Nurses Association, and other nursing related representatives. The summit recognized that

the nationwide shortage of nurses, especially those with advanced training is critical. The

primary response to that shortage is articulation.

Collaboration amongst educational institutions is a means of better utilizing

available funding. Shared costs and resources can improve teaching and increase options

for students. The North Carolina summit stated that associate degree nursing programs

provided a valuable resource to the health system. Articulation is not meant to replace

associate level nursing programs, but to allow those students to move along their educational career seamlessly.

Direct benefits of providing transfer pathways that were clearly defined included providing training to the next generation of nurses, improving employee retention rates in hospital systems, and creating an educated workforce.

Articulation is not a new discussion. The Maryland Articulation Model for Nursing Programs has been in place since 1985 (Hall, 1998). The Maryland Articulation Model provided several transfer and advancement options and were updated again as recently as 2003. Options were made available for RN to BSN or RN to MSN by guaranteeing that licensed registered nurses seeking a bachelor's or master's degree in nursing would be awarded a minimum of 30 upper-division nursing credits when they entered a four-year college or university nursing program. Registered nurses could also transfer from a community college up to one-half of the total credits required for the bachelor's degree. A similar agreement for Licensed Practical Nurses had been established, whereby LPNs may be awarded a maximum of one year of nursing courses in the program they entered.

Other states also have long standing articulation plans in place for their nursing programs such as Colorado which has had a plan in place since 1991 and Tennessee which has had a plan in place since 1994 (AACA, 2006). Even though Virginia consistently states articulation as a state wide goal, it is not listed on the American Association of Colleges of Nursing (AACN) web site as having articulation agreements that are mandated or present at a state-wide level. All Virginia articulation agreements were created on an individual basis between institutions.

This process seems inefficient and in contrast with the statements by former

Virginia Governor Mark Warner (2003), Virginia Governor Tim Kaine (2007), and The

State Council of Higher Education for Virginia (2004), all of which outlined articulation as

a major goal for Virginia. Governor Warner (2003) cited articulation as a major

requirement of the Education for a Lifetime initiative offering examples of increased

income related to degree held. SCHEV (2004) further stated that educational transfer was a

matter of national interest and that Virginia students should be able to move through the

Virginia school system as if it were a continuum and not distinct levels and stages.

Governor Kaine (2006) stated in an executive order that education will be seamless. A P-

16 Educational Council was created recognizing the importance of students moving from

one educational institution to another.

Some curricular standards were set by the professions themselves and were

monitored, at least loosely, by accrediting organizations (Glicken, 2002; APTA, 2006;

ASRT, 2003). The ease at which students were able to move between different institutions

seemed greatly affected by the type of institution in which they began their education.

Some professions, such as radiography, stressed a core curriculum, while others, such as

physical therapy stressed global application of clinical practice skills. There was limited

research available regarding the process of articulation pathways and this research was

meant to identify some of the trends in health career programs regarding curricular

changes and the need for articulation agreements for these students.

This research created a survey instrument based on work by Muhl (1991) and

identified trends in what worked and what was not working for the programs, the students,

and the institutions trying to serve these students. By identifying effective articulation

strategies as well as barriers, the researcher hoped to identify possible topics for future research in this field.

Conclusions

Allied programs were offered in a variety of educational settings. Often programs were small and unique. Often there were only one or two programs of any given profession offered within the state. Additionally, program curricula were often dictated by state curriculum guidelines. It might be difficult for programs to offer required general education coursework as well as the programmatically specific coursework required for student success. All of these considerations led to difficulty when establishing transfer pathways for students, but program directors and administrators both agreed that transfer processes were necessary and that students did not want to repeat or lose credits for classes they have already taken.

In Virginia, the state and state governor had already made it very clear that articulation was an important goal for education (Senate Education and Health Committee, SB 130 (O'Brien) and SB 540 (Stosch). The goal was to see students be able to complete their first two years of education in a community college and then transfer seamlessly for the last two years into a four-year institution. Allied health programs remained problematic. They were considered technical programs and not transfer programs even though many allied students wanted transfer options later on in their educational career.

More research is needed, especially related to articulation from hospital based, proprietary, and military programs. Sixty-two percent of respondents are generally satisfied with the articulation processes in place currently. Approximately equal numbers

of respondents agree and disagree strongly regarding the effectiveness of articulation agreements (27% each). Both groups state that effective articulation is important to them.

The first research question addressed in this study was, "What issues related to articulation do faculty and administrators identify as being important to them?" Participants identified the consistency of articulation pathways as being an issue related to student success. Education of educators and administrators regarding the importance of successful transfer pathways is likely an important step in increasing awareness of all parties regarding the available transfer pathways. Additionally, this may be of particular importance to educators as they counsel students regarding additional requirements for successful transfer to other institutions.

This research was able to determine statistical differences between the responses of program directors and those of administrators which indicated a need for additional research. These statistically significant findings were supported by survey responses in Section II question responses 2 and 3, and Section III question responses 3 and 8.

It appears that administrators feel articulation pathways are more successful than do program directors. This may be because administrators are more aware of the processes involved in articulation than are program directors. This disconnect, in and of itself, may lead to problems in the transfer process for students since program directors and counselors would be more directly in the transfer process than will be administrators.

The second research question to participants in this research was, "What articulation barriers do faculty and administrators identify?" Several comments were made regarding ineffective articulation processes. Some respondents indicated that they did not have any transfer agreements currently in place. This indicates that although on a state-

wide level articulation is important, it may not be working at a programmatic level. There was also a disconnect between the responses from program directors and responses from administrators regarding these processes. This difference may have indicated that at least some of the barriers can be removed with increased education amongst educational institutions.

External motivators may be required to push many programs and/or institutions into developing and honoring consistent articulation pathways. Respondents to this survey did not indicate that any external motivators were involved in the development of articulation pathways, but several professions, such as nursing, have developed very structured pathway mechanisms after being mandated to do so by outside agencies.

The majority of respondents indicated that curricula did not change to meet the needs of transfer agreements. This may have indicated that transfer agreements required students to complete additional classes above programmatic coursework. If this is so, those extra courses may have provided a common or core curricula used in transfer models. It is likely that as articulation pathways increase in number curricula are required to make some changes to accommodate the higher institutions. These changes may have been in general education coursework and may have been related to the process of evaluation and program change. Once articulation pathways are in place, program revision and change may require acceptance by the receiving institution.

Survey responses indicated as a positive response that articulation agreements were in place, but they also indicated that students would be required to take additional courses to complete transfer processes. This indicates that transfer is not the seamless process

recommended at the state level. This also reflects the difficulty in standardizing curricula that vary so greatly.

This research was able to determine statistical differences between the responses of program directors and those of administrators which indicated a need for additional research. These statistically significant findings were supported by survey responses in Section II question responses 9 and 10, and Section III question responses 11 and 12.

The third research question in this study asked participants, "What articulation pathways do faculty and administrators identify as being most effective?" In Virginia articulation and transfer agreements are set up on an institution to institution basis (AACA, 2006), even though Virginia consistently identified transfer as a major educational goal (Warner, 2003; SCHEV, 2004; Kaine, 2006). This research demonstrated that the transfer agreements that were working smoothly had been developed between specific institutions. These agreements were often developed due to the impetus of strongly motivated administrators and educators. Comments consistently reflected that students did not have the same success if they attempted to transfer to an institution not part of the individual agreement.

This research was able to determine statistical differences between the responses of program directors and those of administrators which indicated a need for additional research. These statistically significant findings were supported by survey responses in Section III from question responses 4 and 5.

Examples of articulation agreement successes included the agreement between Old Dominion University and Eastern Virginia Medical School Ophthalmic Technology Program, Tidewater Community College and Old Dominion University, where students

could earn a Bachelor of Science degree in health science, and J. Sargeant Reynolds Community College and Medical College of Virginia and Virginia Commonwealth University, where students could earn a Bachelor of Science degree in radiography.

Recommendations

This research indicated that transfer is not yet seamless in process. A state program outlining the benefits of transfer agreements between differing institutional types would be one way to increase the willingness of educators to begin the lengthy process of establishing working articulation mechanisms (North Carolina Steering Committee, 2003; SCHEV, 2004). Even when in place, this research showed that articulation agreements often do not work smoothly. Dissemination of information at all levels, especially to program directors that have direct contact with students was important to make transfer effective (North Carolina Steering Committee, 2003; Templeton, 2003). Professional development opportunities linking institutions at different levels, with a desired outcome of establishing working articulation agreements, would be one way to approach this. It would be especially important that administrators were involved in this process since they were the policy makers regarding this topic, but that input is gathered from faculty and other content specialists.

Collaboration with local health care organizations was imperative since they provided the clinical portion of the educational process (ASHAP, 2001). Involving the local community could increase graduate success and community participation in critical issues such as educational funding (Templeton, 2003).

External motivators such as state policy often provided the impetus to complete the processes that have already been started and could lead to a higher percentage of

completed goals (Hall, 1998; North Carolina Steering Committee, 2003; SCHEV, 2004).

One external motivator that the researcher recommends is the required development of a

transfer pathway in conjunction with the development of any new programs. This plan

could be implemented within state institutions such as the Virginia Community College

System and might encourage private institutions that wish to articulate to VCCS colleges

to adhere to articulation guidelines and make the process more straightforward for entering

students. For allied health programs this may involve creating new programs and/or

developing a curriculum guide for the program that leads to a related associate of science

degree. Once a curriculum guide with transfer pathways have been completed the program

students could articulate to a Virginia four-year institution.

The researcher recommends the establishment of state policy requiring the

development of clearly defined articulation pathways at all public institutional levels.

Nursing has had well defined articulation pathways for many years and students can more

easily step between completion levels in nursing than most allied health programs (Muhl,

1991; Curfee, 1995; Hall, 1998; North Carolina Steering Committee, 2003). These

pathways should make the educational process for students more seamless and should be

transparent. This means clearly defined pathways that students, faculty, and administrators

can easily follow. Transfer options should become statewide and easily definable

regardless of institution or professional program.

Since programs are limited in the number of credits they can build into their

curricula (VCCS, 2007), effective use of those credit hours is imperative. State educational

requirements should mandate core educational requirements to help eliminate variation

and discrepancy in the articulation process. State policy provides the motivation for

programs and institutions to set up well-defined articulation pathways for all existing programs.

A core curriculum can be difficult to establish, but can start with small groupings of courses such as medical terminology, anatomy, and basic patient care. Curphy (1995) recommended the use of a capstone degree to enhance transferability. Core curriculum may be a means of helping to establish the minimal standard for educational transfer. Ignash (2000) and Spaulding (2000) both used the term "core" related to the general education coursework. Ignash noted that Virginia was "moderate" in development, at the time of survey response. Spaulding recommended a common numbering system throughout states to help aid the transfer process.

State Council of Higher Education for Virginia (SCHEV, 2004) stated that a core competency represented validation of the educational process and includes topics such as writing, technological literacy, quantitative reasoning, critical thinking, and oral communications. SCHEV noted that articulation agreements are in place, but that students cannot be certain transfer will be efficient unless they followed specifically identified institutional transfer agreements. This reflected the development of individual rather than state-wide articulation agreements.

Additional research is needed to identify means of establishing successful and consistent articulation pathways for students in allied health programs. All parties involved in student transfer agreed that it is necessary and desired by students, but there was inconsistency regarding the ability of students to move among institutions without losing credits. Further research should be conducted to compare results of program directors and administrators. Standardization of program curricula will always be difficult. Credit

transfer may be established utilizing a model such as the Radford University/Southwest Virginia Community Colleges articulation model already developed (Templeton, 2003).

In closing, articulation is expected to be available as a student option. Often when available, transfer pathways do not work as expected for students. Program directors and division administrators are often the institutional representatives asked to correct any found discrepancies. In order to create successful articulation, the pathways must be clearly defined and consistently followed. More research is needed to document future trends in allied health education as well as programmatic needs for pathway development. Research is needed particularly in the areas of proprietary schools and military based programs, which were not part of this research.

Participant comments indicated that articulation pathways are present, but do not always work as intended. Professional development of administrators and program directors may help alleviate the problems related to articulation implantation and usage. The researcher recommends that external motivators, such as state policy, be used to help increase the use and success of articulation between institutions.

REFERENCES

Adams, M.H., Sherrod, R.A., Packa, R., Forte, L., Lammon, C.A., Stover, L.M., Morrison, R.S., & Barrett, J.C. (2001). Levels of prevention: Restructuring a curriculum to meet future healthcare needs. *Nurse Educator,* 26(1), 6-8.

Aiken, L.H., Clarke, S.P., Cheung, R.B., Sloane, D.M., & Silber, J.H. (2003). Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association,* 290(12), 1617-23.

American Physical Therapy Association (2007, April). *Education Strategic Plan 2006-2020* . Retrieved May, 2007, from http://www.apta.org/AM/Template.cfm? Section =Education&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=146&Cont entID=16959.

American Society of Radiologic Technologists. (2003). *Bachelor of Science in Radiologic Sciences (B.S.R.S.) Core Curriculum.* Retrieved 2005 from http://www.asrt.org/ media/pdf/BSRS_Core Curriculum.pdf.

Association of Schools of Allied Health Professions (ASAHP) and National Network of Health Career Programs in Two Year Colleges (NN2). (2001, October). *Confronting allied health education challenges in the 21st century.* Compilation of comments gathered at the joint sessions held during the annual ASAHP and NN2 meetings, Norfolk, Virginia.

Bell, D. (2003, December). *Personal correspondence.* Virginia Beach, VA.

Bloomer, J. S., Runyon, C. P., & Evert, M. M. (1995) *A Professional Association's Perspective on Core Curriculum in Allied Health.* In Proceedings from workshop on core curriculum in allied health. Arlington, VA, Pew Health Professions Commission.

Coalition for Allied Health Leadership. (2003, September 11). *Allied Health Resources.* Retrieved 2005 from http://www.alliedhealth.org.

Commission on Accreditation of Allied Health Education Programs. (2003). Retrieved 2006 from Available: http://www.caahep.org/caahep/.

Curphy, K. (1995). *A model for articulation of applied science programs for Maple Woods Community College to Central Missouri State University.* Warrensburg, MO: Central Missouri State University.

Edwardson, S. R. (1996). Financing nursing education in an era of managed care. *Nursing and Health Care: Perspectives on community,* 17(4), 180-184.

Fredrickson, J. (1998). Today's transfer students: Who are they? *Community College Review,* 26(1), 43-50.

Gerrish, K.B., Ashworth, P.D., & McManus, M.B. (2000). Some dilemmas of master's level nurse education. *Journal of Advanced Nursing, 32*(4), 834-841.

Glenn, G. (1996). Examining higher education's role in health care. *Black Issues in Higher Education,* 13(28), 24-7.

Glicken, A. (2002). PA education in an evolving health care system. *Journal of the American Academy of Physician Assistants,* 10, 16-26.

Hall, K. V. & Veise-Berry, S. W. Maryland Nursing Work Force Collaborative. *Journal of Nursing Administration,* 28(1), 5-7, January 1998.

Halter, M.J. & Polet, J. (2002). The place of baccalaureate nursing programs in the liberal arts setting. *Nursing Forum,* 37, 21-29.

Ignash, J.M. & Townsend, B.K. (2000). Evaluating state-level articulation agreement according to good practice. *Community College Review,* 28(3), 1-22.

Jones, B., Murtaugh, M., Durkin, Z.A., Bolden, C., & Majewski, T. (2000). Clinical education in two-year colleges: Cost-benefit issues. *Journal of Allied Health,* 29(2), 109-113.

Jones, T. (December 19, 2003) *Personal communication.*

Jones, W.J., Johnson, J.A., Beasley, L.W., & Johnson, J.P. (1996). Allied health workforce shortages: The systemic barriers to response. *Journal of Allied Health,* 25(3), 219-32.

Kaine, T.M. (2006, October). *Executive Order 40.* Retrieved March, 2007 from 2006 http://www.governor.virginia.gov/Initiatives/Executive Orders/pdf/EO_40.pdf.

Kennedy, M.S., Ferri, R.S., & Sofer, D. (2002). Hospitals in crisis. *American Journal of Nursing,* 102(7), 20.

Lusk, M. & Decker, I. (2001). Moving toward a model for nursing education and practice. *Nursing and Health Care Perspectives,* 22(2), 81-84.

Matherlee, K. (2003, April 11). *The U.S. health workforce: Definitions, dollars and dilemmas.* Retrieved 2005 from http://www.nhpf.org/pdfs_bp/BP_Workforce_4-03.pdf.

Meleis, A. & Trangenstein, P. (1994). Facilitating Transitions: Redefinition of the nursing mission. *Nursing Outlook,* 42, 255-259.

Merriam-Webster, Inc. (2003, March 31). Merriam-*Webster Dictionary.* Retrieved 2005 from http://www.m-w.com/cgi-bin/dictionary.

Muhl, V.L. (1991). *A study of articulation in nursing education.* Iowa City, IA: University of Iowa.

Murray, C., Judd, D., & Snyder, P. (2001). Evaluation on a post-professional master's program in allied health. *Journal of Allied Health,* 30(4), 223-228.

North Carolina Steering Committee for Articulation on Nursing Education (2003, May). *Articulation Summit Proceedings.* Retrieved 2005 from http://www.ga.unc.edu/ NCCN/ workforce /Articulation%20Summit%20Proceedings.pdf.

Perkins, I., Vale, D.J., & Graham, M.S. (2001). Partnerships in primary health care: A process for revisioning nursing education. *Nursing and Health Care Perspectives,* 22(1), 20-25.

Pranger, C. (1993). Transfer and articulation within colleges and universities. *Journal of Higher Education,* 64(5), 539-549.

Spaulding, T. (2000, December). *Components of Effective Partnerships and Articulation Agreements.* The College Board of Higher Education , Washington, D.C.

State Council of Higher Education for Virginia. (2004, October*). State Policy on College Transfer.*Retrieved January 2007 from http://www.schev.edu/Students/StatePolicy On Transfer.pdf., p.2, 3.

State Council of Higher Education for Virginia. (2006*). SCHEV Guidelines for Transfer, Articulation, and Dual and Guaranteed Admission in the Commonwealth.* (2006). Retrieved January 2007 from http://www.townhall.state.va .us/ Utils/ Display_Content.cfm?fileName=E%3A%5Ctownhall%5Cdocroot%5C Guidance Docs%5C245%5 CGDoc_SCHEV_3125_v1.pdf

State Council of Higher Education for Virginia. (2004, March). *A Profile of Accountability in Virginia Higher Education: The Reports of Institutional Effectiveness and Core Competency Assessments Prepared by the staff of the State Council of Higher Education for Virginia.* Retrieved 2005 from http://www.sheeo.org/account/ comm/testim/Virginia%20testimony.pdf

Scott, A.M., Chase, L.M., Lefkowitz, R., Morton-Rias, D., Chambers, C., Joe, J., Holmes, G., & Bloomberg, S. (1995). A national survey of admissions criteria in selected allied health professions. *Journal of Allied Health,* 24(2), 95-107.

Southerland, A.R., Leonard, R., Edwards, G.D., & Hutto, J.R. (1990, April). Statewide articulation cannot be done tongue in cheek. *Leadership Abstracts,* 3(6), Retrieved from http://www.league.org/publication/abstracts/leadership/labs0490.html.

The Commission on Colleges of the Southern Association of Colleges and Schools. (2006). Retrieved from http://www.sacscoc.org/annmtg/2006%20 Annual %20Meeting/staff/CS-1%20Ann%20Chard%20-CORE%20I.pdf

Stern, D. (1997, January). National Center for Research in Vocational Education, Centerfocus. *School-To-Work Policy Insights from Recent International Developments.* Retrieved from http://ncrve.berkeley.edu/Center Focus/CF14.html.

Templeton, D. (2003, April). *Regional Technology Education Consortium: Education Through Partnership.* New Horizons 2003: Enterprising Connections, Roanoke, VA.

Silverberg, M., Warner, E., Fong, M., & Goodwin, D. (2004*).* U.S. Department of Education as prepared by *National Assessment of Vocational Education; Final Report to Congress (NAVE).* Retrieved from http://www.ed.gov/ rschstat/eval/ sectech/nave/navefinal.pdf.

U.S. Department of Labor Bureau of Labor Statistics. (2003). *Occupational Employment, Training, and Earnings: Education Level Report.* Retrieved from http://data_. bls.gov/servlet/oep.noeted.servlet.ActionServlet?Action=emprprt&Occ=2910310434&Occ=2920110478&Occ=2990100499&Occ=2911220460&Occ=2911230464&Occ=2910710449&Number=10&Sort=pchg&Base=2000&Proj=2010&EdLevel=98&Search=Education&Type=Education&Phrase=&StartItem=0.

Van Valkenburg, J., Veale, B., Caldwell, S., Lampignano, J., & Hairfield, K. (2000). Educational programs in radiologic technology. *Radiologic Technology,* 71(6), 525-34.

Virginia Community College System. *Statement of mission*. Retrieved from http://www.so. cc.va.us/aboutvccs/mission.htm

Virginia Community College System. *Minimum requirements for Associate Degrees in the VCCS* (2007). Retrieved from http://www.so.vccs.edu/vccsasr/ SBCC_ Tables_5-1A_5-1B_1106.pdf

Walker, K.P. (2001). Opening the door to the baccalaureate degree. *Community College Review,* 29(2), 18-28.

Warner, M. (2004). *Education for a Lifetime: Preserving and Strengthening Higher Education.* Retrieved from http://www.governor.virginia.gov/ Initiatives /Ed4Life/HigherEd.htm.

Young, C.E. (1996). Statewide articulation plan for nursing education: A study of change. Nursing and health care: *Perspectives on Community,* 17(4), 190-195.