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Interdisciplinary Ethics Learning in Higher Education: Students' Perceptions

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Abstract

The purpose of this study is to evaluate speech-language pathology (SLP) students' understandings of professional issues and ethics related to their own profession and to public health administration and to evaluate SLP students' perceptions of interdisciplinary learning opportunities. Participants were second-year graduate students pursuing a Master of Arts degree in SLP (N = 24) enrolled in an interdisciplinary professional issues and ethics course. Students completed a pre- and post-test questionnaire regarding their perception of interdisciplinary learning opportunities, and their understanding of public health professions and codes of ethics, SLP code of ethics, and SLP professionals' impact on other professionals within the workforce. The results suggest that SLP students have a positive attitude towards interdisciplinary learning opportunities before and after a short-term exposure. The results also reveal that students learned more about different professions and their respective codes of ethics. This research reflects the fact that students enrolled in master's level courses value and learn complex concepts in an interdisciplinary professional issues and ethics course.

Keywords

Rehabilitation healthcare professionals, health administrators, and university students in clinical externships face complex ethical dilemmas, sometimes on a daily basis. Teaching professional ethics in higher education can help develop skills so that students can meet challenges that might arise, regardless of their chosen working environment (Illingworth, 2004 & 2009). Students who learn how to recognize, define, and justify ethical or value judgments will be effective decision-makers, especially in the work environment (Cannaerts, Gastmans, & Dierckx de Casterle, 2014). This is accomplished by providing a way of addressing professional issues and ethical or value judgments so that as future professionals, students are able to decide what is ethically sound in different situations.

Many professional organizations have five moral principles that underlie the guidelines of their codes of ethics: freedom of action and choice, justice and fairness, doing good for others, preventing or avoiding harm, and loyalty (Bupp, 2012). However, when conflicts arise, professionals may differ in the relative importance they ascribe to these principles. For example, if a patient in the hospital has a very complicated medical history, a nurse may prioritize a patient with the principles of freedom of action and choice, and a doctor may prioritize the same patient with preventing or avoiding harm (Oberle & Hughes, 2001; Robertson, 1996). The World Health Organization (2010) reports that if professionals who work together in teams understand each other's roles and scopes of practice, this will improve the efficacy and effectiveness of patient and family care.

Interdisciplinary Learning

There is an increased acknowledgment that interdisciplinary education at the post-secondary level may hold promise for preparing health care professionals as collaborative practitioners (Ruebling, et al., 2013). Interdisciplinary learning is defined as "learning together to promote collaborative practice" (Hammick, 1998, p. 323) and that the disciplines interact to affect one another's perspective. Research has shown that students who learn in interdisciplinary courses tend to facilitate the development of an understanding of higher-order relationships and organizing principles, process-based information, and problem-solving or step-by-step task completion (Ivanitskay, Clark, Montgomery & Primeau, 2002). However, there is a need for research on what topics are suitable for interdisciplinary teaching and learning. Topics need to be appropriate and have detail to field-specific content (Aveyard, Edwards, & West, 2005), such as a course on speech sound disorders in children geared for speech-language

pathology (SLP) students. This field-specific topic would not necessarily be suitable for other professions, such as nurse-anesthetists or neurosurgeons.

One area that has been identified as being suitable for interdisciplinary learning and teaching is ethics education (McMichael, Irvine, & Gilloran, 1984; Peach, 1999). Ethics education in interdisciplinary classes has the potential to develop mutual support on ethical issues and to help establish the notion of good between disciplines (Edward & Preece, 1999). Through an interdisciplinary ethics course, conflicts can potentially be thwarted early in a career from different perceptions of care, points of view on patient care, variations in professional value systems, and variations in moral reasoning process. In addition, exposing students to different professional viewpoints, codes of ethics, conflict resolution processes, hidden assumptions, embedded ideals, and implied value judgments can become overt and explicit (Illingworth, 2009).

There is continuing debate among educators in higher education on the best way to teach ethics in health care professions (Aveyard, et al., 2005; Cannaerts, et al., 2014). Educators must decide whether to teach ethics in a specific stand-alone ethics course or through ethics lectures that are systematically infused throughout the entire curriculum. They may debate whether "something is lost" or gained (e.g., cognitive presence, the shared learning experience) if ethics training is delivered online as opposed to face-to-face (Mantie-Kozlowski, 2013). They must further decide whether to teach ethics by focusing on clinical experience and reflection, teaching abstract theories, or using skills-based approaches through lectures (Leino-Kilpi, 2001; Grady, Danis, Soeken, O'Donnell, Taylor, Farrar & Ulrich, 2008). There are many levels of decisions to make, one of which may lead educators to decide to teach ethical practice through the form of case-study methods (Horner, 2012). Case-study methods include scenarios that tell a story and are designed to encourage discussion in the classroom. The scenarios should, according to Azer, Peterson, Guerrero, and Edgren (2012)

- simulate real life situations that students may face in their future careers;
- allow students to generate hypotheses for the case-study problem and processes to link their hypotheses to the problem;
- integrate knowledge and link basic sciences with clinical practice;
- stimulate discussions to discuss moral and ethical issues;
- allow students to give evidence and reasoning for their points of views and/or actions;
- promote retention of information into long-term memory.

Additionally, case-study approaches to teaching ethical practice allow students to develop their critical thinking skills, listen to and consider diverse perspectives of other students representing other healthcare professions, learn more about other health professions and their ethical codes, and begin to understand the similarities and differences in ethical standards among health professions.

Students' Perceptions

Research into student's perception of interdisciplinary learning is varied. Curran, Sharpe, Flynn, and Button (2010) found that general health science students have positive attitudes about interdisciplinary learning. Curran et al. used a time series study design conducted over three years to assess the attitudes of undergraduate students from all health and human service professions towards interdisciplinary learning and teamwork. The results revealed that relatively positive attitudes were evident in health science students. Similarly, Anderson, Thorpe, and Hammick (2011) report that students engaging in formal interdisciplinary learning experiences are more likely to have constructive attitudes towards colleagues from other professions.

In contrast, other long-term studies have found that health professions students start their educational programs with positive attitudes towards interdisciplinary learning and that their attitudes become more negative over time (e.g., Pollard, Miers, & Gilchrist, 2004; Pollard, Gilchrist, Miers, & Sayers, 2006; McFadyen, Webster, Maclaren, & O'Neill, 2010). For example, Pollard, and colleagues (2006) surveyed university students who were enrolled in an interdisciplinary curriculum in a faculty of health and social care. The results revealed that a negative shift in attitudes towards interdisciplinary learning and interaction occurred during the second year of the three-year study. In another study, McFadyen et al. (2010) also used a longitudinal design to review interprofessional attitudes and perceptions of undergraduate students enrolled in health care programs, such as nursing, occupational therapy and physical therapy. The interprofessional education program was implemented over a four-year period. The results indicated a general trend of lowering mean scores from the beginning to the end of the four-year period to more of a negative attitude towards interprofessional educational opportunities. The authors concluded that the initial levels of positive views supporting the principles behind interprofessional education may be idealistic. The authors also noted that differing clinical placements might have affected the attitudes and perceptions of students, as students in each discipline had differing lengths of time, content and style.

Studies of students' short-term exposure to interprofessional education tended to reveal students' perceptions as being more favorable (O'Neill, & Wyness, 2005; Cusak & O'Donoghue, 2012; Tran, Newton, Smith, Stumbo, Mortensen, & Plundo, 2013). For example, Cusak and O'Donoghue (2012) examined 92 science students' perceptions of an interdisciplinary module that was taught over a 12-week semester. Students from medicine, physical therapy, nursing and diagnostic imaging elected to take the course. The results suggested that 49 of the 70 students (i.e. >70%) positively endorsed the module. The students appeared to value the opportunity to work with individuals from other health science disciplines. In an interdisciplinary educational opportunity that took place over one day, Tran et al. (2013) revealed that student participants improved in their understanding of interdisciplinary education, scopes of practice of other health professions, and attitude towards interdisciplinary education. This interdisciplinary educational opportunity included presentations, video viewing, and small group discussions on a multi-problem clinical case aimed at promoting interdisciplinary collaboration in a patient-cared process.

It is likely that opportunities for interdisciplinary educational experiences (both clinical and classroom) for SLP students most often occur at the graduate level. Moreover, given that the American Speech-Language-Hearing Association's Knowledge and Skills Acquisition (KASA) requires graduate training programs to teach professional issues, which may or may not include information on ethical matters (McCarthy, Poole, & Solomon, 2010) professional ethics information for SLP students is also likely presented in graduate school. However, few published articles have included SLP students in studies of interdisciplinary education with the professions of medicine, nursing, audiology, dentistry, pharmacy, and physical and occupational therapy (e.g., DiVall, Kolbig, Carney, Kirwin, Letzeiser, & Mohammad, 2014; Lumague, et al., 2006; Baxter, 2004) .

The purpose of this study was to:
1. Evaluate speech-language pathology students' understandings of professional issues and ethics related to public health administration.
2. Evaluate speech-language pathology students' perceptions of interdisciplinary learning opportunities.

Method

Participants. Participants in this study were second-year graduate students pursuing a Master of Arts degree in SLP ($N = 24$) at a public university located in the southeast region of the United States. A degree in SLP prepares students to

prevent, assess, diagnose, and treat speech, language, social communication, cognitive-communication, and swallowing disorders in children and adults (ASHA, n.d.). Students are trained to work in many different research, education, and health care settings, including colleges and universities, state and federal government agencies, research laboratories and institutes, and/or private industry. Students receive instruction in eight domains of service delivery options (ASHA, 2016a) (i.e., prevention and wellness; counseling; screening; assessment; treatment; modalities, technology, and instrumentation; population and systems; collaboration). The participants were enrolled in a class on professional issues and ethics in speech-language pathology, which was a required course. Participant information is displayed in Table 1. Informed consent was obtained from all students prior to participating in the study.

Table 1. SLP Student Participants.

Participants	SLP
Sample Total	24
Gender	22 females
	2 males
Age Range Distribution	20-25 years old= 14
	26-35 years old= 9
	36-45 years old= 1
	46-55 years old= 0
Major	SLP= 23
	Not specified= 1
Degree Sought	Master's= 23
	Not specified= 1

Procedures. A pre–post intervention design was used to examine SLP students' perceptions of interdisciplinary learning opportunities and change in knowledge of ethics and other professionals' scopes of practice and issues. In the study, a student who was enrolled in the Master of Public Health Education at the same university attended the Professional Issues and Ethics course in the department of Communication Sciences and Disorders. A degree in public health prepares students to work on a range of public health initiatives including health education, institutional administration, disease prevention, and policy advocacy (American Public Health Association, n.d.). This degree allows students to become clinicians, health educators, epidemiologists, and administrators in health care

settings at local, state, regional, or national levels. Students in the public health program have preparation in the core areas of public health that include biostatistics, epidemiology, environmental health sciences, health administration, and social and behavioral sciences. In addition, they are trained for seven areas of responsibility for health education specialists that include assessment, program planning, implementation, evaluation, administration and management, resource, and communication and advocacy. This student in public health education needed to complete three of nine mandatory elective hours in her course requirements and was not a participant in the study.

The course content was taught through a blend of lecture style formats from the instructor of record, teaching assistant and guest lecturers, in class group-based learning opportunities, and student-led presentations. The course was taught over a 15-week academic semester and met once a week for a three-hour period. Content focused on topics such as issues related to employment settings, job exploration and preparation, credentialing, trends in service delivery models, ethics, legal considerations, and professional advocacy in the profession of speech-language pathology. The content was prepared and taught in accordance with the ASHA Scope of Practice (ASHA, 2016a), ASHA Code of Ethics (ASHA, 2016b), and guidelines for credentialing. The instructor of record (the second author) modified the course content to include professional issues and ethics topics in public health education. Some examples of modifications included reading the code of ethics of American College of Healthcare Executives (ACHE, 2011), reading and discussing peer reviewed articles on ethics in public health education (e.g., Journal of Healthcare Management), class discussions on pertinent topics (e.g., the role of the administrator in ethical decision-making policies), and roleplaying ethical scenarios in small groups (e.g., see example below).

All SLP students participants were required to answer a four-section 28-question pretest survey (see Appendix) during class time at the beginning of the semester. On the last day of class, the following scenario was presented:

> "It is a little known fact that a star player for the Carolina Panthers receives speech therapy. While at a cocktail party, his SLP from the Department of Hearing and Speech in a local Health Center confided to another SLP that she probably should have discharged him months ago but is physically attracted to him. The conversation involved a discussion of his physical and personality traits as well as the language problems for which he sought help. The health administrator was notified of the conversation."

Following the role-played presentation, all students in the class engaged in discussion about the presentation. The discussion focused on what aspects of the American Speech-Language Hearing Association (ASHA) and the American College of Healthcare Executives (ACHE) codes of ethics were violated, the judicial process for filing an ethical violation, possible sanctions, and how one profession can influence another in the work setting.

After the scenario presentation and class discussion, a posttest survey was given that consisted of the same 28 questions and an additional four, open-ended questions regarding interdisciplinary learning and the potential to develop other interdisciplinary courses (see Appendix).

The open-ended questions were analyzed through a typical procedure of qualitative research (Marshall & Rossman, 1999) by the three researchers. First, the data were organized. Each student's answer was entered into tables by question. For example, all 24 answers to question number one were entered into a separate table from question number two and so on for the remaining seven open-ended questions. Second, themes were observed to generate categories that each answer could be assigned to. Two of the three researchers worked together to determine the themes. The third author checked the themes for accuracy. Lastly, the data were coded according to the categories created by the same two authors who determined the themes. By using this approach, "the authors derived, modified, refined and agreed upon a coding scheme that captured major themes in the data" (Rosenfield, Oandasan, & Reeves, 2011, p. 473). Following this approach, both of the authors coded all the data separately then compared answers to determine accuracy of the themes. After the themes were captured and the data were coded, a fourth person was trained on the themes and coding procedures to determine inter-rater reliability on 25% of the answers. Intra-rater reliability was also established on 25% of the answers. The nine open-ended questions were also entered into the SPSS database after they were analyzed and coded. (see Table 3 for descriptive statistics.)

Analyses and Results

Each pretest and posttest survey answer was entered into a Statistical Package for the Social Sciences (SPSS) database. Section I of the survey focused on participant background information and the information is presented in Table 1. Sections II and III consisted of a series of questions that participants answered using a five-level Likert scale. Section II focused primarily on questions related *to understanding interdisciplinary professional issues and ethics in the profession*

of s the healthcare executive. Section III focused on *benefits of interdisciplinary learning*. See Table 2 for results of the paired samples t-test analysis.

Table 2. Paired Samples t-test Analysis SLP Students Section II &III.

Sub-scale	Pre-training score	Post-training score	Significance
Section ll: *Understanding professional issues and ethics in the profession of the healthcare executive*	Mean: 34.50 SD: 4.49 Range: 27-45	Mean: 39.29 SD: 2.55 Range: 36-44	$t = -4.88$ $* p < 0.001$
Section lll: *Benefits of interdisciplinary learning*	Mean: 23.25 SD: 1.59 Range: 20-27	Mean: 23.42 SD: 1.38 Range: 21-27	$t = -0.50$ $p = 0.62$

* p < .05

When using Likert-type scales it is essential to calculate and report Cronbach's alpha coefficient for internal reliability of the scale (Gliem & Gliem, 2003) because the Cronbach's alpha indicates the "interrelatedness between the items of a scale" (Panayides, 2013, p. 694). For this study, the Likert-type scales were divided into two sections with each section measuring a different underlying attitude. Section II addressed the concept of professional issues and ethics and Section III addressed the concept of interdisciplinary learning. By using multi-item measures instead of a single-item measure to assess each concept, measurement error can be minimized as it "averages out when individual scores are summed to obtain a total score" (Nunnally & Bernstein, 1994, p. 67). A score of 0.70 or above is considered acceptable for Cronbach's alpha as a measure of internal reliability (George & Mallery, 2009). For Section II of the subscales, the internal reliability for *understanding professional issues and ethics in the two professions* was 0.76 and for Section III, *benefits of interdisciplinary learning*, the coefficient was 0.75. For the two subscales, this represents acceptable reliability.

As stated previously, Section II of the questionnaire focused on understanding interdisciplinary professional issues and ethics in the profession of the healthcare executive. Paired t-test results show a significant change in the pretest to posttest condition (pre = 34.50, post = 39.29, t = -4.88, p < 0.001). SLP students' understanding of professional issues and ethics of the healthcare executive increased.

Section III focused on future benefits of interdisciplinary learning (see Table 2 for the pre- and posttest analysis). Interestingly, there were no significant changes in the opinion of interdisciplinary learning between the pre- test and posttest exposure (pre = 23.25, post = 23.42, $t = -.50$, $p < 0.62$). Students had a favorable opinion of interdisciplinary learning prior to the class and again at the end of the semester.

Section IV questions allowed participants to answer items by sharing in their own words what experiences and opinions they have in interdisciplinary learning (Fowler, 2009). Section V asked questions pertaining to the specific role-played presentation so that the researchers could explore further unanticipated answers in future research (Fowler, 2009) and to assess the effectiveness of using scenario based teaching in ethics (Azer, et al., 2012).

When coding open-ended questions for answers, inter-rater and intra-rater reliability need to be established (Richards & Morse, 2013). Inter-rater reliability provides a way of quantifying the degree of agreement between two or more people who code identified themes within a set of answers (Hallgren, 2012). Intra-rater reliability determines the agreement among repeated administrations of applying the theme codes to each answer of the open-ended question by the same coder. Inter-rater reliability was 0.97 and intra-rater reliability was established at 0.99. Disagreements were resolved through discussion.

As expected, the answers varied in Section IV. For the first question of *understanding the role of the healthcare executive in professional work*, four themes emerged within the answers; manage employees, oversee patient care, manage financial business, and did not know (see Table 3). In general, the SLP students appeared to better understand the role of the healthcare executive (i.e., public health major) as no participant replied with "did not know" and more students identified key elements of the role (i.e., manage employees, oversee patient care and manage the financial business of a work place) in the post-test condition. Nine participants in the pretest exposure and 12 in the posttest answered that the role of the health care executive is to manage employees. Some participants provided more than one answer: two participants in the pretest and three in the posttest answered that the role of healthcare executives includes overseeing patient care and managing employees; one in the pretest and none in the posttest answered manage financial business and manage employees; nine in the pretest and 11 in the posttest included a reference to managing employees, managing financial business, and overseeing patient care; nine students in the pretest condition identified all four themes in their answer; and 11 had all the themes.

Table 3. Frequency Analysis of SLP Students Section IV

Section lV Question	Answer	Pretest Frequency	Posttest Frequency
In your opinion, what's the role of the healthcare executive in professional work? Please explain.	Manage employees	9	12
	Oversee patient care & Manage employees	2	3
	Manage financial business & Manage employees	1	0
	All of the above	9	11
	Did not know	2	0
Do you believe that experts such as Speech-Language Pathologists are limited in professional autonomy? Please explain.	Yes	10	10
	No	10	9
	Unsure	2	3
	Did not understand the question	1	1
	Did not answer	1	1
In your opinion, how important is interdisciplinary learning during your internship/ externship? Please explain.	Very important	17	19
	Important	4	2
	Somewhat important	2	1
	Not important	1	1
In your opinion, how important is interdisciplinary learning during your academic class work? Please explain.	Very important	10	11
	Important	9	11
	Somewhat important	3	1
	Not important	2	1
During your current graduate studies, did you take courses outside the department? If so what and why? Or why not?	Yes	1	1
	No	23	23
	Why? Or Why not?	It was not encouraged or part of the curriculum	It was not encouraged or part of the curriculum

Surprisingly, the second question, *Do you believe that experts such as speech-language pathologists are limited in professional autonomy?*, was evenly divided (*n* = 10) with a *yes* or *no* answer in the pretest exposure and this changed very little in the posttest with 10 reporting *yes* and nine reporting *no* (see Table 3). The course focused on the concept of professional autonomy, including definition and concept on how autonomous the profession of SLP is in clinical practice. The explanations provided by the students suggested that the students did not fully understand the concept or have not had enough exposure in clinical practice to appreciate the elements of the SLP profession. Although not all students provided an explanation, examples of answers varied from stating that they better understand the concept of autonomy, but were not sure how it truly applies in day-to-day practice. Other students replied that they have not had enough clinical practice to determine how autonomous the profession really is in the real world. The third and fourth questions asked students about *the importance of interdisciplinary learning during their internship/externship and during their academic class work*. The results revealed that the majority of the participants (i.e., more than 20) viewed this as either important or very important in both the pretest and posttest survey. Interestingly, more participants (*n* = 17 pretest and 19 posttest) described interdisciplinary learning in their internship/externship (i.e., clinical education) as very important compared to interdisciplinary learning during the academic class work (*n* = 10 pretest and 11 post).

The last question asked *if participants took courses outside the department*. Twenty-three stated they did not because they did not have the time to add to their current class load, as it was not built into their class sequence, nor was it encouraged by the department.

Section V was only answered in the posttest exposure as a feedback to the presentation of the scenario. The first question asked *if students were interested in interdisciplinary educational opportunities,* and 13 out of the 24 student participants reflected a very interested response. The second question *probed the understanding and knowledge obtained from the scenario type of teaching ethics*. Participants were asked to list three points that they learned from the scenario. The answers produced eight common themes (see Table 4). For example, students stated that they have a better understand what types of consequences and/or sanctions that can occur following a disciplinary hearing of an ethical violation. They also noted how an impact of an ethical violation affects other professions that work together. The third question *probed for further questions that participants may have regarding interdisciplinary learning*. Fifteen of the participants stated either that they had no questions or they did not answer the question. Some examples of the questions include the following: "I would like to

know more about the process of interdisciplinary learning."; "How can the disciplines best do team therapy?"; "What continuing education is available that incorporates this?"; "How many codes of ethics are there?"; and "Is there one that incorporates all?". The final question asked participants to suggest types of interdisciplinary learning opportunities to include in the SLP curriculum. Participants provided more than one answer (see Table 4) with five suggested professionals emerging in both the education and health professions.

Table 4. Posttest SLP Frequency Analysis of Section V.

Section V Question	Answer	Posttest Frequency
Based upon the demonstration, how interested are you in participating in interdisciplinary educational opportunities?	Very interested	13
	Interested	4
	Somewhat interested	6
	Did not answer	1
List three specific points that you learned from the interdisciplinary scenario presented*	Consequences of ethical violations	11
	Codes of ethics are similar	21
	Codes of ethics differ	14
	Impact of violation affecting others	8
	Importance of confidentiality	4
	Role of Health Care Executive	17
	Process for filing an ethical violation	6
	Ethical complaints are not anonymous	4
	Other	2
What questions do you have regarding interdisciplinary learning?*	No question	15
	1 question	7
	2 questions	2
What types of interdisciplinary learning should Communication Sciences and Disorders (CSD) include in their curriculum? *	Doctor	1
	Allied health professionals (e.g. physical therapy)	21
	Education (e.g. teachers, principals)	5
	Other ethics courses	3
	Administrators	4
	Unsure	1

*Participants provided more than one suggestion

Discussion

The first purpose of this study was to evaluate SLP students' understanding of professional issues and ethics related to the profession of public health in an interdisciplinary education classroom. Overall, the results show that students increased their understanding of professional issues and ethics in a discipline of public health. For example, students understand that SLPs have an impact on a healthcare organization and a healthcare executive's code of ethics. Through an interdisciplinary course, SLP students developed an appreciation for other professionals.

The second purpose of this study was to evaluate SLP students' perceptions of interdisciplinary learning opportunities. The results suggest that students had a positive view of interdisciplinary learning opportunities prior to exposure and remained positive after one class that was a semester in length. In this regard, our findings are similar to past investigations (e.g., O'Neil & Wyness, 2005; Cusak & O'Donoghue, 2012; Tran, et al., 2013). Students' value interdisciplinary opportunities and a short-term exposure appears to maintain the positive attitude.

A semester long course in an interdisciplinary classroom can provide students with a positive learning environment that in turn should establish a positive attitude towards interdisciplinary training. It is essential for students to have a positive attitude as it influences students' engagement and training of behaviors related to communication (Brock, et al., 2013) and clinical practice in the interprofessional working environment (Rueblin, et al., 2014). In this specific example of an interdisciplinary classroom on the topics of professional issues and ethics, students' attitudes were positive from the beginning to the end of the semester. According to Ajzen and Fishbein (1977), positive results should lead to an increased motivation for learning. Applying this theory to the current study, there should be an increased motivation to participate in other interprofessional educational opportunities, especially those that are also short-term in length. Each educational opportunity has the potential to further develop and build upon specific skills that students need to enter into clinical practice.

This study offers some insight into how the topic of ethics might be taught in an interdisciplinary classroom while maintaining a positive appeal with these learners. Based on these results and those of others (e.g., Hoffman & Harnish, 2007), short-term projects may work well with interdisciplinary learning opportunities. As Illingworth (2009) suggested, exposing students to different professional viewpoints can greatly improve the effectiveness of discussion-oriented learning. Through this short-term learning opportunity, students have

begun to grasp what interdisciplinary learning has to offer in terms of preparing them for when they enter their future professions. As future practitioners, students need to understand how ethical decision-making affects them and other professionals in their work place and interdisciplinary learning is one way the concept of ethics can be introduced into the curriculum.

Limitations

Limitations of this study include the fact that there were only two disciplines involved in the learning opportunity (SLP and public health). More disciplines may have influenced the discussion after the presentation thereby changing the students' perceptions and understanding of codes of ethics. In addition, students were exposed to only one presentation of interdisciplinary learning without follow-up. Long-term influence of the exposure has not been established. However, despite the one-time learning and the fact that there were only two disciplines involved, student understanding of similarities and differences of codes of ethics changed and students continued to have a desire to learn in interdisciplinary classes.

Future Studies

Future studies may wish to look at the effects of interdisciplinary learning and teaching methodologies (e.g., group based learning, lecture, use of scenarios) have on student retention and application of information post-graduation and in the work force. There is also a need to research the influence of the timing (e.g., undergraduate or masters level; sophomore or senior year) and duration (e.g., one day, one semester, two years) of interdisciplinary learning in the classroom and in clinical placements. Additionally, research should focus on whether the delivery mechanisms of interdisciplinary learning, such as traditional in-class versus online delivery (Mantie-Kozlowski, 2013), matter. Finally, there also needs to be consideration and research into determining which disciplines would be a good blend for the different professions and interdisciplinary learning opportunities in higher education. For example, speech-language pathologists are employed in a variety of locations outside of the healthcare setting (e.g., private practice, schools) that was described in this study. If they work in an education setting, they may face different ethical dilemmas (e.g., providing appropriate supervision to clinical fellows or support personnel), professions (e.g., teachers, psychologists, teaching assistants), and scopes of practice (e.g., special educator, reading specialist) that impact the delivery of services and interdisciplinary relationships.

Conclusion

As students transition from school to the workforce, they will encounter ethical issues that influence interdisciplinary teams. They will need to have a solid grasp of how interdisciplinary teams work together to provide ethically sound decisions regarding clinical practice. This study shows that SLP students learn about other professions, while maintaining a favorable attitude in interdisciplinary learning in ethics education. They have a desire to work with one another and learn about other professions. Through continued research, better learning opportunities may be developed for students.

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APPENDIX   Pretest and Posttest survey for SLP students.

Section I (Please circle your best response)

1. Please identify your gender: Male   Female
2. Please identify which age range best describes you:
        20 to 25   26 to 35   36 to 45   46 to 55   < 55
3. Please identify the number of university degrees that you have already earned:
        1   2   3   4   >5
4. Did you work before working on your current master's degree? If so, where?
        Part time or Full time
        Where?
5. Are you currently enrolled in a clinical externship/internship experience?
        Yes   No
6. Are you currently enrolled in an administrative externship/internship
    experience
        Yes   No
7. What degree are you currently pursuing?

Section II (Please circle your best response)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
It is important for an SLP who works in a healthcare organization to be familiar with healthcare executive's code of ethics	1	2	3	4	5
I have an understanding of the healthcare executives' code of ethics	1	2	3	4	5
I understand the impact that I, as an SLP, have on a healthcare executive's code of ethics	1	2	3	4	5
The ASHA and American College of Healthcare Executives Codes of Ethics are different	1	2	3	4	5

It is necessary to learn about the two Codes of Ethics (ASHA & American College of Healthcare Executives)	1	2	3	4	5
I had adequate training during my internship/externship regarding health administrative policies, procedures, standards and ethics	1	2	3	4	5
As an SLP I will have impact on a healthcare organization	1	2	3	4	5
The American College of Healthcare Executives Code of Ethics has impact on SLPs	1	2	3	4	5
I have accountability to healthcare executives	1	2	3	4	5

Section III (Please circle your best response)

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Learning with other healthcare disciplines will make me a more effective member of a healthcare team	1	2	3	4	5
Patients would ultimately benefit if healthcare disciplines learned together	1	2	3	4	5
Shared learning with other healthcare disciplines will	1	2	3	4	5

increase my ability to understand clinical problems					
Learning between healthcare disciplines before qualification would improve working relationships after qualification	1	2	3	4	5
I don't want to waste time learning with other healthcare disciplines	1	2	3	4	5
It is not necessary for healthcare disciplines to learn together	1	2	3	4	5
Clinical problem solving can only be learned effectively with students from my own discipline	1	2	3	4	5

Section IV
1. In your opinion, what is the role of the healthcare executive in professional work? Please explain.
2. Do you believe that experts such as SLPs are limited in professional autonomy? Please explain.
3. In your opinion, how important is interdisciplinary learning during your internship/externship? Please explain.
4. In your opinion, how important is interdisciplinary learning during your academic class work? Please explain.
5. During your current graduate studies, did you take courses outside the department? If so what and why? Or why not?

Section V (post-test only)

Feedback to presentation

1. Based upon the demonstration, how interested are you in participating in interdisciplinary educational opportunities?
2. List three specific points that you learned from the interdisciplinary scenario presented.
3. What questions do you have regarding interdisciplinary learning?
4. What types of interdisciplinary learning should CSD include in their curriculum?