

Communication of Professional Readiness by Dietetics and Human Nutrition Undergraduates: A Pilot Study

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Abstract

Learning experiences within the dietetics and human nutrition undergraduate curricula develop knowledge and skills pertinent to student career goals. Core competency requirements are extensively assessed in these programs, yet the communication of transferable skills gained and student professional readiness are rarely examined. The purpose of this study was to evaluate undergraduate students' perceived professional readiness following six professional development workshops on transferable skills and career preparedness communicated through resumes and personal statements. In this pilot study, twelve upper-level dietetics and human nutrition students self-assessed their resumes and personal statements with rubrics and completed surveys before and after the intervention. Following the workshops, four professionals in the students' respective career field of interest assessed the resumes and personal statements using the same rubrics. Trends toward improvements were seen in three of 15 transferable skills and in six out of 10 skills assessing confidence in career preparedness. Four out of seven resume components saw trends toward improvements, and all items on the personal statements improved after the intervention. No differences were observed between the student and professional assessments. Providing structured time for student reflection to effectively articulate professional

readiness may better prepare students for success in future professional endeavors.

Introduction

Transferable skills, sometimes referred to as “soft” or “employability” skills, are non-technical, fundamental, professional skills necessary in any occupation and profession-specific definitions do not exist (Robles, 2012; Sawin, 2004). These skills include critical thinking, problem-solving, teamwork, and oral and written communications, among others, and are essential competencies expected among new graduates seeking employment (Ahmad and Pesch, 2017; National Association of Colleges and Employers, 2017; Finch et al., 2013; Robles, 2012). Volunteer activities, internships, and employment foster the application of transferable skills, as do courses designed with practical application components and experiential learning opportunities (Cox and King, 2002).

Generally, health-profession-oriented undergraduate students have a variety of tailored learning opportunities for future educational endeavors and entry-level preparedness through competency-based curricula. In both dietetics and human nutrition curricula, students receive tailored learning opportunities to prepare them for post-undergraduate

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endeavors (Newton et al., 2015; Rose et al., 2005). Dietetics students complete an accredited science-based curriculum, with emphasis on food, nutrition, and health sciences, where core competency knowledge requirements are systematically assessed (Accreditation and Education Programs Team, n.d.). These programs prepare students for careers that apply principles of food and nutrition to human health (Andersen et al., 2018). Similarly, human nutrition students complete a diverse curriculum focused on understanding how biomedical sciences intersect with nutrition to influence human physiology and disease. These graduates apply for entry into professional programs such as pharmacy school, medical school, physician assistant programs, dental school, etc. (Auburn University, n.d.; University of Kentucky, n.d.; University of Tennessee, n.d.).

Several experiential learning methods complement curricula to equip students with relevant experiences, including research projects, service-learning projects, standardized patient simulations, patient case studies, and role-play scenarios. These activities allow students to gain valuable hands-on experience and develop transferable skills (Roofe, 2012; Stephenson et al., 2012). Most students graduating with human nutrition and dietetics degrees are not going directly into the workforce. Instead, they seek admittance to graduate school, professional programs, or internships. Learning experiences embedded within the dietetics and human nutrition curricula are designed to develop professional readiness necessary for reaching those specific post-undergraduate goals. However, there is limited evidence on what aspects of the curricula develops transferable skills and professional readiness for graduates in these majors. Further, students' ability to communicate their professional readiness through their resumes and narrative-style personal statements – standard requirements for post-graduate applications – is less emphasized.

To that end, the current study has two objectives. The first is to observe changes in self-assessed transferable skills, confidence in completing career preparation activities, and professional readiness. The second is to assess how students communicate transferable skills and relevant experiences through written communications (resumes and personal statements) before and after completion of a professional development workshop intervention. Additionally, student resumes and personal statements are assessed by professionals in their respective career fields to determine whether transferable skills are effectively communicated for future education and career endeavors. The findings of this study will address whether integration of additional professional development content is needed to augment the current curricula in dietetics and human nutrition undergraduate programs.

Materials and Methods

Study Design and Setting

This study was a non-experimental pre- and post-test design to examine changes in transferable skills from a pilot program at a research university. The University of Kentucky Institutional Review Board approved all measures

and procedures.

Participant Recruitment

A trained undergraduate research assistant recruited a convenience sample of undergraduate students classified as juniors or seniors majoring in dietetics or human nutrition enrolled in one large research institution. Multi-faceted recruitment for the professional development workshop series included an email announcement circulated in the weekly department-wide student newsletter for two weeks, posted flyers in two buildings that hold upper-level courses, and in-class announcements in four courses where junior and senior students were in attendance. Course enrollments of in-class announcements totaled 226 students, though enrollment overlapped. Participants enrolled in the study by completing an online consent form, that informed the students on the purpose of the professional development workshop series, a description of each of the six sessions, and logistic information, including workshop dates and times and contact information for study personnel. Demographic data, G.P.A., major, and classification (e.g. junior, senior) data from the university's Registrar were collected.

Pilot Intervention

A pilot intervention related to transferable skills and professional readiness in undergraduate dietetics and human nutrition students was developed and implemented during the Spring of 2018. This professional development intervention included a series of six workshops with pre-post assessments. These sessions highlighted student transferable skills and self-reflections on educational and extracurricular experiences (Table 1). There was an emphasis on the preparation of written communications, including resumes and personal statements, for use in graduate, employment, and internship applications.

The students completed pre-evaluations and baseline self-assessment of resume and personal statements using established rubrics during session 1. Workshop sessions 1 and 3 were "learning" sessions where information on a specific topic was introduced (Table 1). Sessions 2 and 4 were "working" sessions where the implementation of content from "learning" sessions occurred. These sessions provide students time to refine and craft their resumes and personal statements. Session 5 was a panel with professionals from the students' respective careers of interest. This session focused on practical advice to build professional readiness and experiences. The final session provided the opportunity for student goal sharing, self-assessment of resumes and personal statements, and post-evaluations. We also collected final drafts of resumes and personal statements. Upon completion of data collection and attendance of all workshops, each student received a \$15 gift card incentive.

Following the final session, participant resumes and personal statements were assessed by a healthcare professional external to the study. Four healthcare professionals with experience in the students' planned areas of study scored the materials using the same self-assessment rubrics, after guidance on using the rubrics was provided by study personnel.

Table 1. Content of Workshop Sessions

Session	Session Topic	Learning Objectives	Session Activities
1	Reflecting on Experiences	Identify key experiences and skills obtained through self-reflection	Informed consent; Pre-assessment; Review resume and identify transferable skills from experiences
2	Articulating Experiences	Connect experiences with career goals through transferable skills	Develop statements that articulate transferable skills
3	Bloom's Taxonomy	Articulate transferable skills obtained through experiences	Integrate new vocabulary into resumes and personal statements
4	Personal Strengths and Weaknesses	Identify self-perceived skills of strength and growth	Update resumes and personal statements to effectively communicating strengths and weaknesses
5	Interview Preparedness	Identify strategies for marketing and verbally communicating transferable skills	Professional panel with open discussion focused on professional experiences
6	Career Goals and Readiness	Appraise transferable skills with regard to professional readiness and career goals	Post-assessment; Establish personal next steps and goals for future

Assessments

An adapted version of transferable skills and career preparation activities assessment was administered (Sinche, 2016; Sinche et al., 2017) before and after the pilot intervention. We collected pre-assessments at the beginning of the first session and post-assessments at the end of the sixth session. This assessment included 15 transferable skills students may develop during their undergraduate years. Each skill was rated by asking participants to indicate their level of agreement with the statement: "I have developed this skill during my education and related experiences thus far." Examples of transferable skills assessed include oral and written communication, time management, and teamwork. Items on confidence and intention to implement ten career preparation activities were collected by asking participants to rate their level of agreement with the following statements: "I feel confident that I can..." and "In the future, I intend to...". Participants rated items on a 5-point Likert scale (1= "strongly disagree" and 5= "strongly agree"). Examples of career preparation activities assessed include identifying relevant job openings, creating competitive applications, and successfully interviewing.

Students self-assessed their resumes and personal statements using rubrics. We generated a numerical score using a rubric including the seven most common subsections found in resumes: header, objective, education section, experience section, other sections, format, communication skills (Tillotson and Osborn, 2012). Participants rated items on a four-point scale (1=needs significant improvement and not likely considered, and 4=above average is competitive for landing an interview). The maximum summed score for this rubric is 28. Similarly, participants rated items on a four-point Likert scale for their personal statements using the "Statement of Purpose/Personal Statement Document Rubric" developed by the University of West Georgia Career Services. The rubric includes five subsections: thesis, theme, and focus, organization and flow, style and mechanics, creativity, and reflective examples (University of West Georgia, n.d.). The four-point scale ranged

Table 2. Demographic and academic characteristics of study participants, n=12.

	Study participants	
	n	%
Major		
Dietetics	3	25.0
Human nutrition	9	75.0
Classification		
Junior	2	16.7
Senior	10	83.3
Gender		
Female	10	83.3
Male	2	16.7
Student Career Paths of Interest		
Registered dietitian	3	25.0
Dentist	4	33.3
Pharmacist	2	16.6
Physician	1	8.3
Physician assistant	1	8.3
Graduate school	1	8.3
GPA		
Dietetics	3	3.7
Human Nutrition	9	3.3

from 1=poor, 2=needs development, 3=competent, and 4=excellence, and a maximum summed score of 20. This rubric was selected due to the detailed explanation of each point on the scale to help students accurately self-score their personal statements.

Analysis

To determine changes in self-perceived transferrable skills, confidence, and intent for career preparation

activities, and self-assessment of student resumes and personal statements pre- and post-intervention, we used paired t-tests. Paired t-tests also compared the differences between professional-assessment and student-assessment of resumes and personal statements post-intervention (SPSS 23.0, Chicago, Illinois, SPSS Inc.). Significance was set at a 95% confidence interval. Due to the small sample size, significant changes are noted as the direction of the trends.

Results and Discussion

Sixteen students began the workshop series, and 12 students completed all six workshops and assessments. Data for participants who did not complete the workshops were excluded from analyses. Participants were demographically representative of the overall department (data not shown). Most study participants were female and classified as seniors, with three-fourths interested in pursuing professional programs for healthcare professions, and one-fourth interested in pursuing a career in dietetics (Table 2).

Transferable Skills and Career Preparation Scores

Participants scored themselves high at baseline for all transferable skills assessed. Only three of 15 transferable skills showed a trend toward improvement: written communication skills, ability to manage a project, and the ability to manage others (Table 3). Students' scores of remaining skills showed small positive changes, apart from the ability to set a vision and goals and career planning and

awareness, both of which slightly decreased from pre- to post-assessment. Thus, the current study demonstrated that providing designated time for self-reflection on undergraduate experiences, in the form of workshops allowed students to recognize the transferable skills they had already acquired.

Six of the 10 skills assessed under the confidence items related to career preparation activities and future intentions trended towards improvement. The activities were to develop and execute a career development action plan, identify relevant job openings, create competitive application materials, choose a career path, effectively pursue a career path, and successfully attain admission/career (Table 4). There were no changes for items related to the intention to execute career preparation activities.

Resumes and Personal Statement Scores

Students also self-assessed their resumes and personal statements before and after the professional development workshop intervention (Table 5). Three of seven components on resumes showed a trend toward improvement from pre- to post-assessment, with the total scores of resumes showing the largest trend in improvement post-assessment. All items in the personal statement trended towards improvement in students' post-assessments. There were no differences between the assessments completed by the students and healthcare professionals after the study for either the resume or personal statements.

With the large course load required for all undergraduates, including dietetics and human nutrition students, it is unclear if, and to what extent, students acquire and develop transferable skills throughout their undergraduate education. These reflections enabled students to improve

Table 3. Pre- and post-assessment scores of 15 transferable skills, n=12.

Transferable Skills ^a	Pre-assessment		Post-assessment		t-test
	M	SD	M	SD	
Discipline-specific knowledge	4.08	0.79	4.42	0.51	-1.301
Ability to gather and interpret information	4.33	0.65	4.58	0.51	-1.393
Ability to analyze data	4.17	0.58	4.42	0.67	-1.149
Oral communication skills	4.17	0.94	4.58	0.90	-2.159
Written communication skills	3.83	1.03	4.50	0.52	-2.602*
Ability to make decisions and solve problems	4.42	0.51	4.58	0.51	-0.804
Ability to learn quickly	4.08	0.79	4.42	0.51	-1.773
Ability to manage a project	4.00	0.74	4.33	0.89	-2.345*
Creativity/innovative thinking	3.67	1.15	4.17	0.83	-1.732
Ability to set a vision and goals	4.83	0.39	4.67	0.49	1.483
Time management	4.42	0.67	4.58	0.51	-1.483
Ability to work on a team	4.42	0.90	4.92	0.29	-1.915
Ability to work with people outside the organization	4.25	1.06	4.83	0.39	-1.865
Ability to manage others	3.42	1.00	4.42	0.67	-3.071*
Career planning and awareness skills	4.08	0.67	4.42	1.00	-1.173

^a Likert scale 1 to 5; *p < 0.0

Table 4. Pre- and post-assessments on confidence and intention for career-preparation activities, n=12

Career-Preparation Activity ^a	Pre-Confidence	Post-Confidence	Change in Confidence	t-test	Pre-Intention	Post-Intention	Change in Intention	t-test
Identify work readiness	3.92	4.25	0.333	-1.773	4.67	4.67	0.000	0.000
Develop and execute a career development action plan	3.67	4.83	1.167	-4.311**	4.92	4.92	0.000	0.000
Identify relevant job openings (e.g. posting, ads)	3.42	4.33	0.917	-3.188**	4.75	4.83	0.083	-1.000
Create competitive application materials (e.g. resume, personal statement)	3.42	4.67	1.250	-4.486**	4.83	5.00	0.167	-1.000
Submit applications (e.g. online forms, submission websites)	4.42	4.67	0.250	-1.149	5.00	5.00	0.000	
Successfully interview	3.75	4.08	0.333	-1.773	5.00	4.83	-0.167	1.483
Identify a career field of interest	4.58	4.75	0.167	-1.000	5.00	4.92	-0.083	1.000
Choose a career path	4.58	5.00	0.417	-2.803*	4.92	5.00	0.083	-1.000
Effectively pursue a career path	4.50	5.00	0.500	-3.317**	5.00	4.92	-0.083	1.000
Successfully attain admission/ career	3.83	4.75	0.917	-4.750**	5.00	4.92	-0.083	1.000

a Likert scale 1=strongly disagree...5 strongly agree; *p<0.05, **p<0.01

Table 5. Pre- and post-assessments and professional's assessment compared to post self-assessment of resume and personal statement rubrics, n=12

	Pre self-assessment		Post self-assessment		t-test	Professional assessment		t-test
	M	SD	M	SD		M	SD	
Resume Items^a								
Header	2.92	1.08	3.42	0.67	-2.171*	3.58	0.67	-2.000
Objective	1.67	0.98	2.42	1.16	-2.283	2.67	1.37	-1.970
Education Section	2.50	0.90	3.50	0.67	-3.633	3.25	0.87	-1.827
Experience Section	2.42	1.00	3.25	0.75	-2.278	3.00	1.41	-1.541
Other Sections	2.33	0.89	2.92	0.67	-3.023*	3.08	1.00	-1.827
Format	2.50	1.09	3.25	0.87	-2.283	3.00	0.85	-1.149
Communication Skills	2.50	1.17	2.92	1.38	-0.959	3.33	0.78	-2.590
<i>Total Score</i>	16.83	5.49	21.67	3.67	-3.420**	21.92	4.72	-0.119
Personal Statement Items^a								
Thesis, Theme, Focus	2.08	0.90	3.17	0.58	-4.733	3.17	0.58	-3.767
Organization and Flow	2.00	0.85	3.00	0.74	-4.062	3.00	0.74	-4.690*
Style, Mechanics	2.17	1.11	2.83	0.72	-2.152	2.92	0.67	-2.462
Creativity	2.08	1.00	3.17	0.58	-3.676	3.17	0.58	-4.168
Reflective Examples	1.83	0.72	3.33	0.78	-5.745	3.33	0.78	-9.950**
<i>Total Score</i>	10.17	4.15	15.50	2.47	-5.488***	15.58	2.61	-0.119

^aLikert scale 1=strongly disagree...5 strongly agree; *p < 0.05, ** p<0.01, ***p<0.001

their articulation of skills in a professional context, and in turn, enhance their confidence in achieving their career goals.

Students' ability to articulate the value of experiences and transferable skills gained within their resumes and their personal statements were the areas of most considerable improvement. However, the professional development workshop intervention emphasized communication skills, especially written communication abilities, in the form of resumes and personal statements. Therefore, we expected to see an improvement in written communications.

Additionally, no differences were observed between students' self-assessments and the professional assessments of resumes and personal statements, suggesting that undergraduate students can assess their transferable skills in their resumes and personal statements when provided the correct tools. Finding no differences between student self-assessments and professional assessments is a favorable outcome, as written communication abilities are specifically of high value for dietetics and nutrition professionals at all career levels, including professional school and entry-level positions (Cox and King, 2006; DuPre and Williams, 2011; Gaba et al., 2016). Not only do professionals overwhelmingly indicate that communication skills are one of the top skills needed by employees in the workplace (Robles, 2012), students also perceive communication skills as valuable early in their careers (DuPre and Williams, 2011). Among employers, these skills are esteemed in new graduates, making them competitive in the marketplace (Finch et al., 2013). Recruiters, who work with new graduates, report that poorly composed application letters or written materials (e.g. resumes and personal statements) frequently impact hiring and/or admissions decisions because they are used to assess an applicant's written communication abilities (Leggette et al., 2011).

Diverse experiential learning opportunities embedded throughout the undergraduate curriculum provide opportunities to develop professional readiness. The current study found there were few improvements in most transferable skills, as self-assessments revealed students' perceptions of their skills were already high. This suggests that the experiential learning opportunities incorporated into undergraduate curricula for our sample of dietetics and human nutrition students, and their choices of extracurricular activities, may be adequate (Hunter et al., 2007).

For students in health-profession-oriented undergraduate programs, like dietetics and human nutrition, additional experiential learning activities may include patient simulations and peer role-playing scenarios (Hausberg et al., 2012; Hmelo-Silver, 2004; Rickles et al., 2009). Additionally, communication-intensive peer- and standardized patient experiences reinforce the importance of communication skills in health education (Brown et al., 2017; Gibson and Davidson, 2016; Stephenson et al., 2015). These types of experiential learning activities provide opportunities to improve communication skills and enhance critical thinking, problem-solving, and teamwork abilities, while also reinforcing fundamental disciplinary knowledge (Brooks and Simpson, 2014; DuPre and Williams, 2011; Luo and

Jamieson-Drake, 2015; Suvedi et al., 2016). Collectively, these experiences lend to the development or enhancement of transferable skills for undergraduate students, reflected in the high baseline scores for participants in this study. Further, longer-term, more in-depth interventions are needed to explore the mechanism of transferable skill development.

Another explanation for high baseline scores for transferable skills may be experiences outside the standard undergraduate curricula. Participants reported engagement in a diverse range of extracurricular activities, including undergraduate research, pre-professional clubs, paid work experiences, university-related volunteer experiences, study abroad, and leadership positions, among others (data not shown). These experiences take dedication, time, and energy and may cultivate transferable skills, increased confidence in abilities, and increased professional readiness outside of the undergraduate curriculum (Hunter et al., 2007). The ceiling effect of improvement on self-assessed transferable skills scores may also be due to these types of extracurricular opportunities.

Intentions to execute career preparation activities were high and remained unchanged throughout the study. However, confidence for success in their employment, internship, and graduate/professional program pursuits improved. Although the focus of the intervention was not specifically on these career preparation activities, the intervention provided students space to reflect on experiences and transferable skill development related to career preparation. This workshop may have allowed students to realize that they were better situated to execute career preparation actions than anticipated and may explain their increased confidence to carry out those activities.

Limitations

Although the study begins to answer important questions regarding undergraduate dietetics and human nutrition students' transferable skills and communication skills, there are limitations with implications for results. First, the brevity of the intervention, both in duration each week and in number of sessions planned, may have impacted the findings. Due to time restrictions, not all transferable skills and career planning activities evaluated were covered in the sessions and therefore, no changes in these outcomes were expected. It is unclear how the use of campus resources related to resumes, personal statements, and professional readiness scores, such as other workshops or the campus career center, impacted the results. We did not assess for gains in knowledge and sources that were not associated with our workshop before and during the study period. Whether obtained prior to or during the workshop, any additional knowledge could have impacted assessment scores. Self-selection bias into the intervention shows a high level of motivation and engagement with career planning which may have influenced results. Finally, a small convenience sample from one institution with no control group was utilized for this study, thus limiting the ability to generalize findings to the broader undergraduate population.

Summary

Creating opportunities for dietetics and human nutrition undergraduate students to reflect on professional experiences may increase their confidence in accomplishing career preparation activities, allow them to identify transferable skills gained, and better articulate and market those skills. In combination with other resources available to them throughout their undergraduate career, these culminating opportunities may result in improved professional communications. The findings of this study suggest future professional development opportunities integrated within current curricula focused on the translation of transferable skills into resumes and personal statements may promote professional success for undergraduate students.

Future interventions should consider the timing of professional development workshops, and inclusion criteria of participants. Some post-graduate applications are due as early as junior year and intervening with students earlier in their undergraduate careers may further their development as they progress through undergraduate curriculum. Future studies can assess the sources of transferable skills developed during undergraduate education to determine whether students recognize these experiences as skill-building opportunities. By providing dietetics and human nutrition undergraduate students with opportunities to complete guided self-reflection, they may create more competitive professional applications. This pilot professional development workshop intervention showed improvements in the primary area of focus - communication of transferable skills – indicating other studies of this nature may be insightful.

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