

Undergraduate Student Thriving: An Assessment and Comparison of Nutrition Science and Dietetics Students

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Abstract

This study utilizes the Thriving Quotient to determine the factors of student thriving for students in a nutrition and dietetics program at a large university in Southern California. Additionally, the study compared these students to the national averages for the factors of thriving. The Thriving Quotient assesses student levels of engagement, academic determination, positive perspective, social connectedness, and diverse citizenship. The largest influence on thriving for the sample population were engagement and academic determination. Comparisons to the national average and implications on practice are discussed.

Keywords: student thriving, dietetics and nutrition training, student success

1. Introduction

Every faculty member wants their students to thrive in college. Thriving is more than just surviving. College is a time for students to learn within their chosen field as well as learn how to be on their own within a new community. The goal for university administrations and faculty should be to shepherd students through their college experience while gaining the most of their time. This study identifies the factors and pathways for thriving for the students in the Nutrition Science and Dietetics options at a large Polytechnic University in Southern California.

Thriving is a construct that goes beyond many of the traditional student success factors such

as retention, GPA, and academic performance (Schreiner, 2010). Thriving, as a concept, combines persistence research (Bean & Eaton, 2000; Berger & Milem, 1999) with adult flourishing and positive psychology research (Keyes, 2003; Keyes & Haidt, 2003) to quantitatively assess students level of thriving in college. In a sense, thriving is a new and possibly disruptive way, to view student success (Schreiner, Edens, & McIntosh, 2011; Schreiner, Edens, & McIntosh, 2010).

This study was guided by two research questions:

- What factors of Thriving are significant for Nutrition and Dietetics Students?
- How do Nutrition and Dietetics Students compare to the national Thriving Model?

2. Background

There have been many studies on how college affects students (George D. Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). Much of the research is focused on outcomes such as persistence (Bean & Eaton, 2000; John M. Braxton, 2009; Tinto, 1993) or cognitive development (Pascarella & Terenzini, 2005), or even a wider scope of outcomes (Astin, 1993). Some research has looked at social integration (Weidman, 1989) or student engagement (Carini, Kuh, & Klein, 2006). Student success is a complex matrix of all of these factors. In fact, sometimes students describe their experiences as merely surviving college. However, students should not only succeed based on these measures, they should thrive while attending college.

Multiple theoretical frameworks and constructs form the Thriving Quotient. The scales used in the Thriving Quotient measure academic, interpersonal, and psychological well-being. The five factors of thriving are: 1) Engaged Learning (Schreiner & Louis, 2008) which assesses students' psychological engagement and deep learning; 2) Academic Determination measures self-regulated learning (Pintrich, 2004), environmental mastery (Ryff & Keyes, 1995), hope (Snyder, 1995), investment of effort (Pintrich, Smith, Garcia, & Mckeachle, 1993; Robbins et al., 2004), and the application of one's strengths to their academic work; 3) Positive Perspective is conceptualized as realistic optimism (Carver, Scheier, Miller, & Fulford, 2009), which is predictive of students' satisfaction with the college experience, as well as their institutional fit and possibility of persisting; 4) Social Connectedness is adapted from the Positive Relations scale of the Psychological Well-Being instrument (Ryff, 1989) and measures the quality of students' relationships; 5) Finally, the Diverse Citizenship scale includes openness to diversity and to multiple perspectives (Miville et al., 1999), as well as citizenship (Tyree, 1998), which are aspects that predict satisfaction, institutional fit, and persistence. As a second order factor, the Thriving Quotient has a significant effect on students' intent to graduate and their perception that the tuition was a worthwhile investment on their future (Schreiner, 2016).

This study focuses on the subset of students in the Nutrition and Food Science Department at a larger, public university in Southern California. Typically, the profession is largely female with limited diversity (Wynn et al., 2017). Additionally, the sample institution serves a largely Hispanic and Asian student population. Women and students from diverse backgrounds often

face unique challenges while attending college (Pascarella, 2006).

3. Method

This study was approved by the study university's Institutional Review Board and all participants provided written informed consent. Working with the Thriving in College Project (www.thrivingincollege.org), the survey was finalized to include all of the Thriving Quotient items as well as additional items to capture school identifiers for future persistence tracking and a question on whether dietetics students intended to apply for the dietetics internship after their graduation. The survey was distributed to all undergraduate students by email with a link to complete the instrument online using Qualtrics. The survey was open for collection during weeks four, five, and six of the Winter Quarter, which is the exact middle of the academic year. During that time, 134 students responded, which represents 25% of the total population of nutrition science and dietetics students. The demographic characteristics of the final sample are presented in Table 1. The final sample ($n = 123$) was primarily identified as female (66.7%), Latino/Hispanic (29.4%), between 21 and 26 years old (46.8%), senior-standing (49.2%), and attending full-time (72.2%). Additionally, the sample population were primarily first-generation (41.3%), transferred into the university (51.6%), and work off-campus (37.3%).

Prior to data analysis, data were cleaned and screened based on recommendations from Tabachnick and Fidell (2007). Statistical analyses were conducted using SPSS version 23.0 (International Business Machines Corporation, 2017b). To test differences between the sample population and the national averages, independent samples t -tests were utilized. To analyze the factors that influence thriving, structural equation modeling was conducted using AMOS 24.0 (International Business Machines Corporation, 2017a).

4. Results

This study was guided by two questions: 1) What are the factors of thriving for nutrition and dietetics students, and 2) how do nutrition and dietetics students differ from the national averages collected on all students? To answer the first question, a structural equation modeling was used. The structural model followed the model developed by previous research conducted by Schreiner, Edens, and McIntosh (2011). A confirmatory factor analysis (CFA) using thriving as a second order was conducted using AMOS 23.0 (International Business Machines Corporation, 2017a). The model confirming the factors of student thriving for nutrition and dietetics students is presented in Figure 1.

To test whether to accept or reject a hypothesized model, researchers assess the fit of the model. Chi-square (χ^2), the Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) were all evaluated. The χ^2 statistic is the most basic assessment of fit (Tabachnick & Fidell, 2007). However, the χ^2 statistic is sensitive to large sample sizes and/or complex models. Because this model is complex, the additional fit measurements were also analyzed.

The Comparative Fit Index indicates the relative fit of the model as compared to an independence model where all variables in the model are assumed as uncorrelated (L.-T. Hu

& Bentler, 1999). CFI values range from 0 to 1. Values above .90 are generally accepted for adequately fitting models and values above .95 represent well-fitted models (L.-T. Hu & Bentler). The Root Mean Square Error of Approximation utilizes the chi-square statistic, sample size, and degrees of freedom. RMSEA compares the hypothesized model to a saturated model and shows the lack of fit where a lower value indicates a better fitted model (Byrne, 2010). When using RMSEA, values under .06 are generally accepted for well-fitted models (L.-T. Hu & Bentler, 1999).

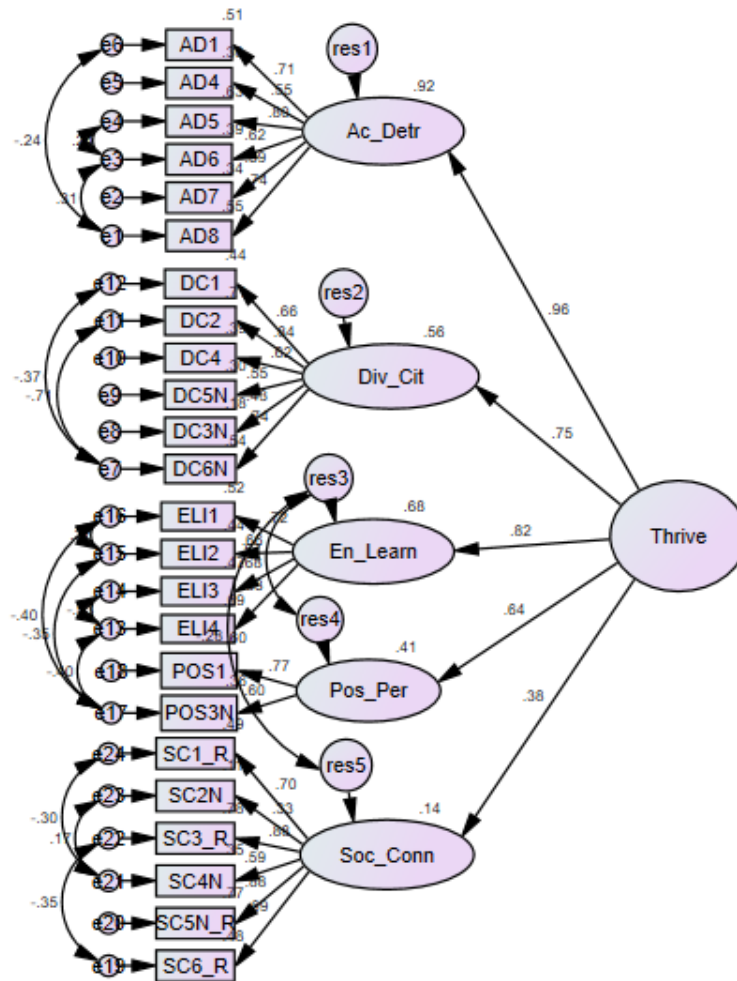


Figure 1. Structural equation model factor analysis for thriving in nutrition and dietetics students

The CFA showed that the hypothesized model was an adequate fit, with $\chi^2(232) = 428.08$ ($p < .001$), CFI = .86, and RMSEA = .08. All of the observed variables loaded on their respective latent variables (β range = .62 to .86). The sample size in this analysis is a consideration. In general, SEM requires a sample size of at least 200 (Byrne, 2010). This study was less than the generally accepted sample size and even though the model was

statistically significant, the fit statistics do show an adequate fit as compared to a well-fitting model.

Table 1. Characteristics of the sample population

		<i>N</i>	%
Gender	Male	12	9.5
	Female	84	66.7
	Other	2	1.6
Age	18-20	13	10.3
	21-23	34	27
	24-26	25	19.8
	27-30	13	10.3
	31-34	4	3.2
	35-38	3	2.4
	39-42	3	2.4
	43-46	2	1.6
	Over 50	1	0.8
	Race	Black	1
Asian		24	19
White		28	22.2
Latino/Hispanic		37	29.4
International Student		6	4.8
Other		3	2.4
Level	First-year	4	3.2
	Sophomore	4	3.2
	Junior	26	20.6
	Senior	62	49.2
	Other	3	2.4
Status	Part-time	8	6.3
	Full-time	91	72.2
Transfer	No	34	27
	Yes	65	51.6
First Generation	Yes	52	41.3
	No	46	36.5
Work for pay	No	25	19.8
	On campus	20	15.9
	Off campus	47	37.3
	Both on and off campus	7	5.6

Table 2. Results of independent samples t-testing

Variable	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>
Thriving Quotient					
National	4.64	0.65	-0.92	6,197	0.36
Sample	4.69	0.61			
Academic Determination					
National	4.83	0.79	-0.28	6,197	0.78
Sample	4.85	0.70			
Engaged Learning index					
National	4.77	0.93	-1.34	6,196	0.18
Sample	4.88	0.8			
Diverse Citizenship					
National	4.86	0.70	-1.94	5,989	0.05
Sample	4.98	0.58			
Positive Perspective					
National	4.63	1.02	-0.66	5,768	0.51
Sample	4.69	0.79			
Social Connectedness					
National	4.10	1.02	-0.35	5,990	0.73
Sample	4.13	1.02			

In investigating the factors of the Thriving Quotient and their impact on student thriving for nutrition science and dietetic students, Academic Determination (standardized coefficient = .96, $p < .001$) had the largest influence on thriving followed by the Engaged Learning Index (standardized coefficient = .82, $p < .001$), Diverse Citizenship (standard coefficient = .75, $p < .001$) and Positive Perspective (standardized coefficient = .64, $p < .001$). Although statistically significant, Social Connectedness (standardized coefficient = .34, $p < .001$) had the least effect on overall student thriving for this population.

Following the development of the SEM model, the sample population's mean scores for thriving and each of the components of thriving were compared to the mean score for the national dataset. Table 2 presents the results. There were no significant differences between the national averages and the sample for the Thriving Quotient and all of the factors of thriving except for Diverse Citizenship. The institution sampled in this study is a very diverse university. The school is both a Hispanic Serving Institution and enrolls a large number of Asian students. The university is diverse and promotes diversity, which may explain the significantly higher scores for Diverse Citizenship.

5. Discussion and Implications

Several implications arise from the results of this research. Primarily, the results identify that Academic Determination and the Engaged Learning Index have the largest influence on overall student thriving in the sample population of nutrition and dietetics students.

Therefore, academics and what happens in the classroom are important.

First, the major component of the classroom experience is teaching. Faculty must work to provide an environment that fosters learning and engagement. New modalities such as flipping the classroom, service learning, and experiential learning should be utilized to support academic engagement. Projects in the classroom can support learning and reinforce, in a practical way, the concepts delivered through lectures and reading assignments. Teachers must challenge students, with support, to create classroom experiences in which students want to participate, learn, succeed, and thrive. There has been much research on the conditions for learning and best practices in teaching that should be referenced when developing the classroom environment (Astin, 1993; Carini et al., 2006; George D. Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Pascarella & Terenzini, 2005).

A challenge ahead is the increasing delivery of online courses. To increase student volume, many universities are adding additional online offerings (Hart, Friedmann, & Hill, 2018). Some research shows that there are many factors that affect student success taking online courses (Martin, Wang, & Sadaf, 2018). Additionally, there is little to no research on thriving within an online course environment. Many of the factors that support thriving may be removed or non-existent in the online environment. As faculty move their courses to online platforms, creative ways to keep the students engaged should be investigated. As with face-to-face teaching, administrations should support faculty development for teaching online courses.

Beyond teaching, university administrations must support faculty development to improve engagement, teaching and the classroom experience. As already discussed, student thriving is a function of the student's academic determination and their engagement. The more the university invests in developing teachers, the better the level of student thriving, which in turn leads to other benefits in student success. Unique to this sample is the large number of commuter students. The main place that commuter students participate in the university environment is the classroom (J. M. Braxton, 2000; George D Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Therefore, making the classroom environment as enriching and engaging as possible can not only benefit those students living on campus, but it will benefit all students. There may even be a larger impact on thriving for commuter students.

Outside of the classroom, there is an opportunity to support learning and engagement. Co-curricular activities that are educationally purposeful are positively correlated with outcomes such as grades and persistence (George D Kuh et al., 2008). In fact, the effect of these educationally purposeful activities is increased for students of color and lower ability students (George D Kuh et al., 2008). Knowing that student thriving is increased through thoughtful engagement informs universities to allocate funding and staffing to co-curricular activities such as service-learning, first-year seminars, peer tutoring and mentoring, and learning communities. In the case of the study institution, all new nutrition and dietetics students take a first-year seminar course. Additionally, there are several courses in the didactic program in dietetics that have been modified to include service learning, such as community nutrition and nutrition education.

Diversity is another discussion. In this study, Diverse Citizenship was the only factor of thriving that was significantly different from the national sample. Students at the sample university scored higher in the Diverse Citizenship scale. First, the sample university is a very diverse institution and is designated as a Hispanic Serving Institution (HSI). In addition, the university has a large number of Asian students.

Beyond the structural diversity that exists at the University, some of the explanation may be related to the nature of the questions that make up the DC scale. The questions that make up the DC scale are: 1) I spend time making a difference in other people's lives, 2) I know I can make a difference in my community, 3) I value interacting with people whose viewpoints are different from my own, 4) It's important for me to make a contribution to my community, 5) It is important to become aware of the perspectives of individuals from different backgrounds, and 6) My knowledge or opinions have been influenced or changed by becoming more aware of the perspectives of individuals from different backgrounds. Several of these questions may actually relate to the service nature of the degree. Many of the students in the nutrition and dietetics programs are preparing for work in the healthcare and wellness fields, where serving others is the prime goal of the career. Therefore, students may have answered the questions related to service with a higher score than their counterparts in the national sample.

Noting the importance of diversity, faculty and staff in higher education should work to develop a diverse and inclusive environment. Programs that support diversity, both structural as well as cultural, are educationally beneficial (Bowman, 2010; S. Hu & Kuh, 2003; Hurtado, Milem, Clayton-Pedersn, & Allen, 2002; Kim, Edens, de la Parra, & Jones-Lopez, 2016; Milem & Hakuta, 2002). Creating diversity in the classroom and on campus can create links to the educationally purposeful activities that support student determination, learning, and engagement. Additional research should compare the effects of the factors of thriving for various majors or fields of study to identify differences in their impact.

6. Future Research

Research advises future research by its findings. In the case of this study, the primary application for future research is to increase the sample size by collecting additional responses. Responses can be collected each academic year to increase data collection and the overall sample. With data being collected annually, additional research can be conducted on the impact of student thriving on measures such as persistence and graduation.

As part of the Thriving Quotient survey instrument, additional data are collected which expands the overall model of thriving in college. Future research should expand the model to include students' perceptions of Psychological Sense of Community, Institutional Integrity, and Satisfaction with Student-Faculty Interaction. Each of these factors has been identified in other research as having an impact on thriving and student success (Schreiner, 2016; Schreiner & Nelson, 2013).

Finally, there is an opportunity to develop interventions that support Academic Determination and Learning Engagement. Experimental design can be used to assess the impact of the interventions on thriving directly or other student success factors as mediated by the factors

of thriving.

7. Limitations

As with all research, limitations in this study must be noted. The primary limitation of this research is the sample size. As SEM usually requires a sample size of 200, this study had a final sample of 132. However, the 132 responses represent approximately 25% of the total population of nutrition and dietetics students at the university.

Second in this study is the nature of the sample. The sample characteristics represent a sample that is non-traditional. The students were primarily female, older, and working while enrolled in undergraduate studies. As compared to the national sample, which is collected at a large number of colleges and universities across the country, this sample represents different characteristics. It should be noted though, the sample population, being primarily female is similar to the national population of students in Dietetics programs in the United States (Wynn et al., 2017).

8. Conclusion

Thriving is a new way to assess student success. Thriving takes into consideration factors that go beyond the traditional measures like grade point average and persistence, and adds new dimensions such as social health, diversity, and engagement. This measure allows the university to assess whether their students are thriving during their college experience rather than just surviving their time in college.

This study assessed thriving within the set of nutrition and dietetics students attending a large, public university in Southern California. One hundred thirty two respondents completed the Thriving Quotient Survey online. Of the five factors of thriving, the two with the largest effect were Engaged Learning and Academic Determination. Because of the impact of these factors, the classroom experience and faculty teaching are very important to supporting both student learning and student thriving.

Differences between the factors of thriving for the national sample and the sample population were also evaluated in this study. The only factor where a significant difference existed was Diverse Citizenship. There are a few potential explanations for this difference. Primarily, the nature of the survey items in Diverse Citizenship focus on service to others. Often, students in the nutrition and dietetics programs are attending to prepare for a career in the healthcare or foodservice industries. Second, the survey site is a structurally diverse school that is designated as a Hispanic Serving Institution. As the school is very diverse, the focus on diversity issues may be more important to the student attending that school.

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