FACTORS THAT ENCOURAGE/DISCOURAGE AND BEST PRACTICES FOR STUDENT-OPERATED RESTAURANTS

Nathan Stokes, PhD[*]; Emily Vaterlaus Patten, PhD, RDN, CD; Kaylee Hickman, MS;
Amanda Mathews, MS, RDN

Department of Nutrition, Dietetics and Food Science, Brigham Young University, Provo, UT, USA

ABSTRACT

Dietetics education programs sometimes utilize student-operated restaurants (SORs) to teach foodservice and management principles. Forty-seven DPD directors were surveyed and 19 managers of SORs were interviewed in order to better understand the prevalence of SOR use in dietetics programs, factors that encourage/discourage SOR use, and SOR "best practices." Fifteen (31.9%) surveyed programs utilized a SOR, and those that did not indicated the lack of faculty able to manage the SOR and the overall cost of operating a SOR discouraged SOR adoption. Interviews revealed a variety of SOR "best practices" related to coursework management, student experience, SOR organization/management, and student interactions.

Keywords: Dietetics; foodservice management; student-operated restaurant; dietetics education

INTRODUCTION

Dietetics is a multi-faceted profession with practitioners working in multiple practice areas including clinical nutrition, community, food and nutrition management, consultation and business, and education and research (Academy of Nutrition and Dietetics, 2020; Griswold & Rogers, 2020). Due to the expansive nature of the profession, it is important for Didactic Programs in Dietetics (DPDs) to educate students in all aspects of the dietetics field. The Accreditation Council for Education in Nutrition and Dietetics (ACEND) is the accrediting body for education programs that prepare students to become entry-level registered dietitian nutritionists (RDN) and to practice in these varied areas of the dietetics field (ACEND, 2021). ACEND develops and revises core Knowledge Requirements for Dietitian Nutritionists (KRDNs) and requires that each program demonstrate how the curriculum prepares students to know those topics (ACEND 2018). KRDNs cover a variety of curriculum topics encompassing all aspects of dietetics, including topics related to foodservice and management concepts.

Foodservice and management practice in dietetics provides unique opportunities for students. According to the Academy's Compensation and Benefits Survey 2019 (Academy of Nutrition and Dietetics 2020; Griswold et al. 2020), RDNs who work within the food and nutrition management practice area have a higher range of pay than those RDNs who work in clinical or community settings (e.g., 50th percentile pay rate for an inpatient clinical RDN is $31.03/hour, 50th percentile pay rate for a community RDN is $28.85/hour, and the 50th percentile pay rate for a RDN in food and nutrition management is $39.02/hour). Furthermore, RDNs with a foundation in nutrition are uniquely qualified to manage and operate large scale foodservice operations in non-commercial settings like hospital systems, K-12 school districts, colleges/universities, and prison systems. These operations require managers with skills in foodservice, management,

and nutrition; all of which are unique to RDNs. Existing research has indicated that more dietetics students are aware of and interested in a clinical career in dietetics compared to other areas such as food and nutrition management (Hughes & Desbrow, 2005). Therefore, further research is needed to determine opportunities that encourage students to plan and prepare for a career in foodservice and/or management in dietetics.

Previous research has explored how dietetics programs are addressing specific curriculum topics such as food safety (Scheule, 2000), food science, (Deskins & Spicher, 1989), research (Hynak-Hankinson, Martin, & Wirth, 1997), multiskilling (Gates & Sandoval, 1998), and nutrition education (Short & Chittooran, 2004). Gregoire, Lafferty, and Dowling (2006) discussed the importance of foodservice management education for dietetics students and concluded that incorporation of active learning strategies and real-life experiences is essential. Management principles are often taught within dietetics programs as part of foodservice management courses. However, management in general is a skill that applies to all aspects of the dietetics industry and is essential for all dietetics professionals (Gould & Canter, 2008). Cluskey, Gerald, and Gregoire (2012) highlighted both the importance of teaching and valuing management skills in dietetics programs, and the idea that management skills can help dietetics professionals achieve advanced positions in the dietetics industry. Although the importance of management in dietetics is evident, there is a lack of research exploring how Didactic Programs in Dietetics (DPDs) are addressing foodservice and management curriculum.

One method that some programs are using to address foodservice and management curriculum, and prepare students to become food and nutrition management practitioners, is through the use of student-operated restaurants (SOR) (although the extent of use is not well known). Student-operated restaurants have been described as on-campus restaurants where students learn quantity food production and service principles as well as prepare and serve meals to paying customers (Josiam, Foster, Malave, & Baldwin, 2014; Nies, 1993). Although programs utilize other methods to address these educational concepts like culinary courses or externships in other foodservice facilities/operations, this study chose to focus solely on SORs due to the heavy resource investment required by SORs and the need to better understand their use in education. Furthermore, SORs allow instructors to tailor the learning experience to both meet the goals of the education program and also provide practical and real experiences with quantity food production and customer service which is not always the case in other teaching methods.

Previous research regarding use of SORs is limited but does indicate that SORs can be an effective tool in dietetics education. Nies, (1993) explored the use of SORs in Hospitality programs and found that programs with a SOR were more likely to have a higher percentage of graduates employed in foodservice and management positions. More

*Corresponding Author: Phone: (801) 422-6676; E-mail: Nathan_stokes@byu.edu

recently Stokes, Patten, and Weight (2018) assessed the customer experience of a dietetic SOR and found that 77.6% (n = 294) of customers were aware the restaurant was a laboratory experience for students. Holik, Heinerichs, and Wood (2021) found that students in a foodservice management course in a dietetics program felt that experiential learning activities were beneficial and helped improve learning and application. It is clear that experiential learning opportunities (such as a SOR) increase learning and are beneficial to students. Therefore, more research is needed to better understand prevalence of SOR use in dietetics education, what would encourage/discourage education programs from utilizing a SOR, and best practices (from those who do use SORs) for those who might be wanting to refine theirs or initiate one.

The purpose of this study was to identify the prevalence of SOR use in DPDs and to explore "best practices" of SORs currently operating. The specific research objectives were to:
1. Identify the prevalence of SOR use among DPDs.
2. Identify factors that encourage or discourage DPD directors to use SORs as part of foodservice and management education.
3. Identify "best practices" of currently operating SORs.

METHODS
To meet the research objectives, two separate study phases were designed and completed. The methods for each phase are described below.

Phase One
For the first phase, a survey was developed using previous studies related to dietetics programs and SOR use (Deskins & Spicher,1989; Gates & Sandoval, 1998; Hynak-Hankinson, Martin, & Wirth, 1997; Scheule, 2000; Short & Chittooran, 2004). Qualtrics (Provo, UT) survey software was then used to create an electronic version of the survey. To prepare the questionnaire for use, an expert review was conducted to test for content validity and then cognitive interviews were conducted to test for face validity (Dillman, Smyth, & Christian, 2009; Mackison, Wreiden, & Anderson, 2010). Five experts with multiple years of experience in SOR management, foodservice and management education, dietetics education program management, and/or proven records of accomplishment of publication using survey methodology were invited to participate in the review. They evaluated each survey item based on their importance, relevancy, and phrasing using a 10-point likert scale (10 = high importance, relevancy, and proper phrasing) (Mackison et al., 2010). Following the expert review, cognitive interviews were conducted with three DPD directors through Zoom videoconferencing. Cognitive interviews involve potential survey respondents completing the survey instrument while discussing their thought process to an interviewer. This allows the researchers to gain understanding of how questions are being interpreted and make adjustments to questions accordingly (Dillman et al., 2009). Feedback from the cognitive interviews resulted in minor changes in grammar and phrasing to improve the clarity of questions and overall flow of the survey. The final survey instrument consisted of 34 multiple choice and free response items which included questions exploring the use of SORs in DPDs, factors that encourage/discourage SOR use, and general characteristics of DPD directors and their programs.

The survey link and an invitation to participate was emailed to 201 DPD directors of ACEND accredited DPDs in the United States and Puerto Rico using publicly available contact information from the Academy of Nutrition and Dietetics website. The informed consent was included at the beginning of the survey and completion of the survey indicated their consent to participate. In order to encourage completion of the survey, directors were offered a $15 Amazon gift card. The study was approved by the Institutional Review Board at Brigham Young University prior to recruitment and data collection.

Data Analysis
Data from the survey were first downloaded to an excel spreadsheet from the survey software (Qualtrics, Provo, UT). Data were then cleaned by deleting four incomplete responses. The clean data file was then uploaded to SPSS version 24 for further analysis. Descriptive statistics including frequencies, percentages, mean scores (for Likert scale items), and standard deviations were calculated and then interpreted to identify significant findings.

Phase Two
Phase two involved conducting semi-structured interviews with managers of SORs to explore manager's self-identified "best practices" of SOR management and operation. Emails were sent to 378 directors of dietetics and hospitality programs using contact information from the Foodservice Systems Management Education Council (FSMEC) listserv, the Accreditation Council for Education in Nutrition and Dietetics (ACEND) website, and the International Council on Hotel, Restaurant, and Institutional Education (ICHRIE) website. Researchers opted to extend beyond dietetics education in this phase to gather more information about SOR use in the university setting. Directors were asked to forward the study information to the manager of their SOR or the person best suited to answer interview questions regarding the SOR. After completing a short demographic survey, participants indicated their availability for an interview and a member of the research team reached out and scheduled an interview time.

An interview guide was developed using the foodservice systems model (Gregoire, 2017) and included questions related to the operational and management characteristics of the SOR. Table 1 provides interview guide question examples. Interviews were conducted and recorded via Zoom by two members of the research team who utilized a topical interview method where the interviewers use a list of topics to guide the interview (Marshall & Rossman, 2016). Interviews were transcribed verbatim by a professional transcription service for use in data analysis. Participants provided verbal consent prior to the interview and were sent a $25 Amazon gift card as a thank you for participating. Participant comments indicating what they considered to be their SOR "best practice(s)" were used for this paper. Other participant comments related to nutrition and menu planning were published elsewhere (Mathews, Patten, & Stokes, 2021).

Table 1. Interview Guide Question Examples	
Parts of the Foodservice Systems Model	**Example of Related Interview Guide Questions**
Input	How is the SOR at your facility funded?
Transformation	I see that you use _____ method of procurement. Please describe how this method is used.
Output	What do you feel the students overall satisfaction is regarding their experience in the SOR?
Control	What are your future plans for the SOR?
Feedback	Do you feel like the SOR has a best practice that other SORs could implement?

Data Analysis

Three researchers read and reread the sections of participant transcripts relevant to this study and discussed commonalities of the self-identified best practices for operating a SOR. Based on participant responses from the interviewing process, researchers summarized responses for each participant. One researcher summarized each "best practice," and two additional researchers compared the summaries to the transcripts to verify the participants' responses were accurately represented. Open coding of the summarized responses was then conducted, and the summarized responses were categorized in to four overarching themes (Marshall & Rossman, 2016) by the research team. Themes included (a) *Coursework management,* (b) *Providing a broad experience for students,* (c) *SOR organization/management,* and (d) *Interactions with students*.

RESULTS AND DISCUSSION

The phase one survey instrument was sent via email to a total of 201 DPD Directors from across the U.S. A total of 57 participants responded, but 10 responses were incomplete, for a total of 47 useable responses and a response rate of 23.4%. The majority of DPD directors had a professional focus in education (n=21) or clinical nutrition (n=20) and represented a broad range of years in their role as DPD director. The majority also indicated that management and foodservice in dietetics is "extremely important" or "very important" for student's long-term career. All 47 programs were housed on a physical campus and the majority (n=34) were at public universities. Participating DPDs had as few as 5 to as many as 90 students graduating from their programs each year. Table 2 provides additional director and program characteristics.

Phase two consisted of interviews with 19 managers of SORs across several academic disciplines – seven programs were dietetics only, six were hospitality only, and six had majors from more than one academic program involved in the SOR. The majority of participants were at universities with more than 15,000 students (n=12). During the phase two interviews, managers of SORs were asked to share "best practices" that they felt they utilized in their SOR.

Objective 1: Prevalence of SOR Use in DPDs

Of phase one respondents, 15 DPDs operated a SOR and 32 DPDs did not at the time of data collection. Of those that did not, four indicated they had plans to open an SOR in the future, 23 had no plans for an SOR, and five previously had an SOR but no longer did. To date, there is no data about prevalence of SOR use in dietetics education. Interestingly, when evaluating hospitality programs, Nies indicated that 38 of the 77 programs surveyed had a SOR; though this research is now dated and was only conducted with hospitality programs. To our knowledge, the current study is the only study that has attempted to establish the prevalence of SOR use in DPDs. Unfortunately, the sample size is small, and further research should be conducted to verify the prevalence of SORs in dietetics education programs.

Objective 2: Factors that Encourage/Discourage SOR Use in DPDs

Programs without a SOR (n=32) were asked to indicate on a five-point Likert scale (1 = strongly discourage; 5 = strongly encourage), to what extent certain factors encouraged or discouraged the implementation of a SOR in their DPD (Table 3). Directors revealed the most discouraging factors (those with the lowest mean scores) to be "number of faculty to teach/manage lab experience" (M=2.12 ± 0.89), "upfront costs" (M=2.15 ± 0.94), and "university funding" (M=2.30 ± 1.26). The factors with the highest mean scores were "alignment with DPD goals" (M=3.24 ± 0.94), "credit hours available for students" (M=2.97 ± 0.85), and "number of students in the program" (M=2.94 ± 0.97). However, all of the listed factors fell in the

Table 2. Phase 1, Didactic Program in Dietetics (DPD) and Director Characteristics		
DPD Format	**n**	**%**
On Campus	47	100.0
Distance/Online	1	2.1
Hybrid	0	0.0
Other	1	2.1
Average DPD Enrollment		
Less than 10	8	17.4
11-20	12	26.1
21-30	11	23.9
31-40	6	13.0
41-50	2	4.3
More than 50	7	15.2
University Type		
Private	9	19.1
Public	34	72.3
University Location		
Rural	14	29.8
Suburban	19	40.4
Urban	9	19.1
Number of Students Graduating from DPD Each Year		
Less than 10	8	7.4
11-20	12	26.1
21-30	11	23.9
31-40	6	13.0
41-50	1	2.2
51-60	4	8.7
More than 60	4	8.7
Number of years as DPD Program Director		
Less than 3 years	10	21.3
3-5 years	11	23.4
5-10 years	9	19.1
11-15 years	9	19.1
16-20 years	3	6.4
Greater than 20 years	1	2.1
Highest Degree Achieved		
Masters	20	42.6
Doctorate	20	42.6
Other	2	4.3
DPD Director Areas of Professional/Academic Focus		
Education	21	44.7
Clinical nutrition (acute, ambulatory, or long-term care)	20	42.6
Community	13	27.7
Food and nutrition management	9	19.1
Research	9	19.1
Other	6	12.8
Consultation and business	4	8.5
Directors' perception of importance of management and foodservice for students' long-term career success		
Not at all important	0	0.0
Slightly important	3	7.1
Moderately important	11	26.2
Very important	17	40.5
Extremely important	11	26.2

Table 3. Phase 1, Factors that Encourage or Discourage Use of Student-Operated Restaurants in Didactic Programs in Dietetics (DPDs)

	Mean[a]	SD	Discourage n (%)	Neutral[b] n (%)	Encourage n (%)
Alignment with DPD goals	3.25	0.94	5 (10.7)	15 (31.9)	13 (27.7)
Credit hours available for students	2.97	0.85	7 (14.9)	19 (40.4)	7 (14.9)
Number of students in the program	2.94	0.97	8 (17.0)	18 (38.4)	7 (14.9)
Expertise of faculty/staff	2.79	0.99	12 (25.5)	12 (25.5)	9 (19.1)
Administrative support	2.73	1.28	14 (29.8)	11 (23.4)	8 (17.0)
Other	2.67	0.82	1 (2.1)	5 (10.6)	0 (0.0)
Profitability	2.58	0.94	13 (27.6)	17 (36.2)	3 (6.4)
University funding	2.30	1.26	20 (42.6)	9 (19.1)	4 (8.5)
Available space	2.30	1.21	19 (40.4)	8 (17.0)	6 (10.8)
Upfront cost	2.15	0.94	21 (44.6)	11 (23.4)	1 (2.1)
Number of faculty to manage/teach lab experience	2.12	0.89	22 (46.8)	9 (19.1)	2 (4.3)

[a] Scale of 1 to 5 was used as follows: 1= Strongly Discourages, 3= Neutral, 5= Strongly Encourages
[b] Neither Encourage nor Discourage

discouraging range (1-2) except for one. None of the listed factors' mean scores fell in the range of encouraging (4-5).

Our study found that four programs have plans to implement a SOR in the future indicating the potential for use of SORs in DPDs to increase. In contrast, 23 programs had no plans for an SOR. Nies (1993) similarly found that of the 39 hospitality programs who did not have a SOR, only a small portion of these programs (n=8) indicated that they had plans to develop one at the time of the study. These results indicate that there are clearly challenges to implementing a SOR, but there are some DPDs considering it. From the current study, the factors that most discouraged DPDs from utilizing a SOR were the number of faculty needed to teach/manage lab experience, upfront costs, and university funding which all indicate a primary concern about resources. Nies (1993) also found that lack of resources was a difficulty that many programs both with or without SORs faced. Programs could consider partnerships with foodservice and management industry leaders to help ease the cost of starting an SOR. Programs could also consider utilizing graduate students to help manage SORs rather than relying solely on faculty members. Employing graduate students to help manage the SOR may reduce the cost of running the SOR, and would also benefit the graduate students as they gained additional managerial experience. Partnering with on campus dining services may also help reduce costs of operating a SOR, as it may give smaller SORs some purchasing benefits that they would not typically get based on size. Other foodservice and management industry partnerships, as well as partnerships at the University level, should also be considered by programs seeking to reap the benefits of utilizing a SOR. This would allow programs to better meet required education standards and prepare students for food and nutrition management positions post-graduation.

Objective 3: Self-Identified Best Practices within SORs
All phase 2 participants (n=19) responded to the "best practices" questions during their interviews. Phase 2 expanded to include information from SORs across several academic disciplines. Participant responses were categorized into 4 themes including (a) *Coursework management,* (b) *Providing a broad experience for students,* (c) *SOR organization/management,* and (d) *Interactions with students*. Each of these themes are described in greater detail below.

Table 4 presents the self-identified best practices of the SOR manager interviewed along with the number of students at the university, the students' majors, and the menu style for context. University size, student academic focus, and the menu all play a role in determining the type of SOR experience provided.

Coursework Management
Two participants described "best practices" related to methods used when managing the coursework related to the SOR experience. One participant discussed the importance of "grading all along," which included providing feedback to students throughout their experience rather than just at the end. Another participant felt that the "online format" was unique and effective. Rather than having a separate lecture course along with the SOR experience (as most programs do) they developed an online component that students completed as part of the SOR experience. They felt that this helped the students connect the course material with the lab experience more effectively. Managers of SORs have the unique responsibility of not only providing an academic experience for students but also running a business. This task demands efficiency to avoid instructor burnout and to make the business viable. Managers could utilize these course management "best practices" in order to increase efficiencies in how they manage the academic experience for students.

Providing a Broad Experience for Students
There were a total of five participants that discussed "best practices" related to providing a broad and comprehensive experience for the students. Three programs highlighted the importance/effectiveness of having students rotate through as many different positions as possible to gain a breadth of experience and knowledge, and to make sure that students were trained in all aspects of the SOR. One participant specifically mentioned the benefit of an overlapping rotation schedule, so that students could teach each other about the rotation responsibilities. It was also discussed that the more students produce, the more that they learn, so SORs should seek to provide opportunities for students to prepare large quantities of food. Dietetic students have previously indicated that experiential learning opportunities help with learning and applying material being taught (Holik et al. 2021). These "best practices related to providing a broad experience for students highlight the effectiveness of SORs as an

Table 4. Phase 2, Self-Identified Best Practices of Student-Operated Restaurants by Managers/Faculty Members

# of students at University	Majors of Participating Students	Menu Style	Self-Identified Best Practice
Theme 1: Coursework Management			
15,001-30,000	Nutritional Science, Dietetics, Food Science	Static menu, Single use/ Catering	"Grading all along." Break up large menu projects so you can provide feedback to students along the way rather than just at the end.
>30,000	Hospitality Management	Cycle menu	Use an "Online format" for the coursework related to the lab rather than a separate in-person lecture in order to help students connect the course material with the lab experience. This helps keep material more succinct.
Theme 2: Provide Broad Experience for Students			
No answer	Dietetics	Single use/ Catering	Make sure "students rotate through the positions" to cultivate ownership and be more invested in management roles.
5,000-15,000	Dietetics	Changed weekly	Have students "rotate through every possible position." When students know how to do the job they are better prepared to manage others in those positions.
>30,000	Hospitality Management	Cycle menu	Develop a gradual overlapping rotation schedule that allows students to work in each different position and learn their duties from the student who worked that position previously. "Students helping each other because they're more comfortable asking each other questions."
>30,000	Hospitality Management	Static menu, Single use/ Catering	"Take the time to train" students in all aspects of the SOR (alcohol safety, food safety, proper dress, professionalism, how to talk to guests, kitchen safety etc). Even if it takes three weeks, go over everything to make sure students are set up for success.
5,000-15,000	Dietetics	Static menu	"The more students produced, the more they learned." Provide opportunities for students to repeatedly make items in large quantities.
Theme 3: Student-operated Restaurant Organization and Management			
>30,000	Dietetics	Students plan the menus	Go "over and above" baseline regulations and expectations. Our program is a model or template that other programs can use to get started.
15,001-30,000	Dietetics	Table d'hote	Modeled the SOR after a "benchmarked" or "verified" SOR program.
5,000-15,000	Dietetics	Single use/ Catering	Have students take the "ServSafe certification exam." Have "a real Health Inspection twice a year" to provide real world experience. Utilize the restaurant as a recruiting tool to "share about the department."
>30,000	Dietetics	Cycle menu	Have a "two-tier system" where dietetic interns are upper level management overseeing undergraduate students in basic management roles. Interns can teach/ proctor ServSafe, develop marketing tools, make production sheets, and hire/train employees.
15,001-30,000	Nutritional Science, Dietetics, Food Science	Static menu	In building a SOR it is "important to over-build" – plan for a little more space than you think you will need.
<5,000	Nutritional Science, Dietetics, Food Science	Custom menu each week	Make sure the "front of the house and the back of the house managers" [faculty] are "in sync."
15.001-30,000	Dietetics	Single use/ Catering	"Allow the department to collect the money and be responsible for the budget"
>30,000	Hospitality Management	Menu changes weekly	"Try to limit the amount of food waste" because students notice. Take reservations and forecast as precisely as possible in order to not have left overs. Consider donating left over food.
Theme 4: Interactions with Students			
15,001-30,000	Hospitality Management, Culinary Arts	Static menu	"Building community in the classroom" by encouraging teamwork in class and interaction outside of class. Help them realize the network they have with each other.
5,000-15,000	Dietetics	Single use/ Catering	"Independence with guidance." Allow the students to really take ownership to run and manage the restaurant with little supervision.
>30,000	Hospitality Management	Static menu	"Keep expectations very high" to ensure students are prepared for the high standards in the industry.
15,001-30,000	Dietetics	Single use/ Catering	Try "not to intervene too much" especially towards the end of the semester. Allow students take ownership of their mistakes.
5,000-15,000	Hospitality Management	Pre-fix and Single use – changes weekly	Have a "360 degree full circle" reflection for students. Have students be evaluated frequently by the management team, each other, professors, and guests. This feedback will allow students to reflect all semester long on how to improve.

Note: the number of "best practices" exceeds the number of participants because several participants shared more than one.

experiential learning tool. Having a broad and realistic "job preview" of several SOR positions prepares them for management of multiple employees with different tasks in the future.

SOR Organization and Management

When discussing "best practices," eight participants mentioned principles related to the general organization and/or management of the SOR. A couple of participants mentioned requirements such as having students complete ServSafe training, having students experience a health inspection, and going "over and above" baseline regulations and expectations. Having students with extra certifications and experience with regulations could open doors for future employment and also assures a comprehensive understanding of important foodservice and management concepts. One participant felt their best practice was in having a "two-tier system" of management where dietetic interns/graduate students act as upper-level management who oversee the undergraduate students in their more basic management roles. This type of system could increase the return on investment for the organization by introducing students to the SOR environment as an undergraduate student and then allowing them to use the skills they gained to manage other students at a higher level as a graduate student. Other organization and management best practices included overbuilding when starting an SOR, having effective communication between front-of-house and back-of-house faculty members, having the department responsible for the SOR budget, and forecasting effectively to minimize food waste. Having the business side of the SOR effectively and efficiently managed could allow for the manager to focus on mentoring students while still operating a viable business.

Interactions with Students

The fourth "best practice" theme was shared by five different participants and included comments related to interactions with students. A couple of the participants discussed the importance of allowing students to practice independence within the SOR by not intervening too much, but also providing sufficient guidance. This supports previous research which has indicated that dietetic students appreciate experiential learning opportunities and feel that they help to better learn and apply concepts (Holik et al. 2021). Another participant felt that it was important to "build community in the classroom" by encouraging teamwork and interaction in and out of the classroom. Having high expectations of students was also mentioned in order to make sure that they are prepared for the real world. Finally, one participant felt that their best practice was to have a full-circle reflection for students where they are evaluated by the management team, each other, professors, and the guests.

As programs adopt or consider adopting the use of SORs, knowing "best practices" and being aware of other programs' approaches may ease and enhance the transition. Cross-university collaboration and discussion may create opportunities to benchmark and continue to refine the SOR experience for students and faculty/managers.

Limitations

Factors that encourage/discourage programs from implementing a SOR were only gathered from DPDs. Future research would be improved by exploring these factors amongst SORs in other educational program types such as hospitality management. Due to the relatively small sample size, results of this study are not generalizable to all foodservice and management education programs. Future research should focus on including a larger sample of education programs (e.g. hospitality management and culinary) that utilize SORs or could possibly benefit from the inclusion of a SOR. It may also be beneficial for researchers to try different incentives for

participation or to develop a database of foodservice and/or management educators that could be used in future studies so that researchers don't have to rely on having the survey link forwarded from directors to potential participants. A larger and more diverse sample would allow for a better understanding of factors that encourage and discourage use of SORs in foodservice management education programs. Further, more data is needed to understand the student experience in SORs and how the learning in that setting influences their understanding of foodservice and management. It would also be helpful to know how and to what extent the experience influences students' career aspirations.

CONCLUSIONS AND APPLICATIONS

Student-operated restaurants are utilized by some DPDs across the country in order to meet KRDNs specific to foodservice and management, and to provide real life foodservice and management experiences for students. However, most DPD programs are discouraged from utilizing SORs due to the large number of resources necessary. Nies (1993) surveyed programs with SORs and found that 86.8% utilized university support and 42.1% utilized support from industry partners. Education programs should seek collaborations with both foodservice management industry and University partners in order to alleviate the heavy resource investment required by SORs. For example, a partnership with equipment companies could be beneficial for both the SOR and the foodservice and management industry; as the foodservice and management industry donates equipment and SORs train students to be competent with that equipment. Then, as they enter the workforce, future practitioners may prefer use of that equipment brand. These collaborations could foster an environment where SORs are more feasible, resulting in students who are better prepared to more readily enter positions in food and nutrition management. Having the SOR aligned with the program goals was identified as the most encouraging factor. Programs considering use of a SOR should begin by discussing overall program goals and making sure that they align with the potential benefits of utilizing a SOR. Having well defined goals that are supported by SOR use could provide justification to encourage University and other stakeholder support. Haynes (2011) provided a justification for the creation of commercial kitchen in an academic program and emphasized the importance of creating support amongst key stakeholders and soliciting funds to support the project.

"Best practices" from 19 programs (dietetics and hospitality management) currently operating a SOR were identified as part of this study. These "best practices" can serve as a guide for both those programs who are seeking to start a SOR as well as those currently operating. In order to foster "best practices" across programs, programs should seek to increase their connection with other programs and share ideas and information. Increased use of SORs and increased effectiveness of SORs will benefit education programs as well as create better prepared students to enter the field of food and nutrition management.

REFERENCES

Academy of Nutrition and Dietetics. (2020). Compensation & benefits survey of the dietetics profession 2019. file:///C:/Users/newman/Downloads/508989%20(1).pdf

Academy of Nutrition and Dietetics. (2021). Accreditation Council for Education in Nutrition and Dietetics Mission and Vision (2021). http://www.eatrightpro.org/acend/about-acend/acend-mission-and-vision

Accreditation Council for Education in Nutrition and Dietetics. (2018). ACEND accreditation standards for nutrition and dietetics didactic programs (DPD). http://www.eatrightpro.org/resources/acend/accreditation-standards- fees-and- policies/2017-standards

Cluskey, M., Gerald, B., & Gregoire, M. (2012). Management in dietetics: Are we prepared for the future? *Journal of the Academy of Nutrition and Dietetics, 107*(3), 386-389.

Deskins, B., B. & Spicher, C. B. (1989). Food science instruction in undergraduate dietetic education. *Journal of the American Dietetic Association*, *89*(9), 1250-1253.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, Mail, and Mixed-mode Surveys: The Tailored Design Method (3rd ed.).* Hoboken, NJ: John Wiley & Sons Inc.

Gregoire, M. B. (2017). *Foodservice Organizations: A Managerial and Systems Approach (9th ed.).* Boston, MA: Pearson.

Gregoire, M. B., Lafferty, L. J., & Dowling, R. A. (2006). Teaching foodservice management a critical component in dietetics education. *Topics in Clinical Nutrition*, *21*(3), 182-189.

Griswold, K., & Rogers, D. (2020). Compensation and benefits survey 2019. *Journal of the Academy of Nutrition and Dietetics, 120*(3), 448-464.

Haynes, J. R. (2011). An academic justification for creating a commercial foodservice laboratory kitchen in the department of family and consumer sciences. *Journal of Foodservice Management & Education*. *5*(1), 22-27.

Holik, M.T., Heinerichs, S., Wood, J. (2021). Using experiential learning to enhance outcomes in a didactic program in dietetic foodservice management course. *Internet Journal of Allied Health Sciences and Practice. 19*(1), Article 15.

Hughes, R. & Desbrow, B. (2005). Aspiring dietitians study: A pre-enrollment study of student's motivations, awareness and expectations relating to careers in nutrition and dietetics. *Nutrition & Dietetics, 62*(2-3), 106-109.

Hynak-Hankinson, M. T., Martin, S., Wirth, J. (1997). Research competencies in the dietetics curricula. *Journal of the American Dietetic Association*, *97*(2), s102-s106.

Josiam, B. M., Malave, R., Foster, C., & Baldwin, W. (2014). Assessing quality of food, service, and customer experience at a restaurant: The case of a student-run- restaurant in the USA. *Journal of Service Research*, *14*(1), 49-73.

Mackison, D., Wrieden, W. L., & Anderson, A. S. (2010). Validity and reliability testing of a short questionnaire developed to assess consumers' use, understanding and perception of food labels. *European Journal of Clinical Nutrition*, *64*(2), 210-217.

Marshall. C. & Rossman, G. B. (2016). *Designing Qualitative Research (6th ed.).* Thousand Oaks, CA: SAGE Publications, Inc.

Mathews, A., Patten, E. V., & Stokes, N. (2021). Foodservice management educators' perspectives on nutrition and menu planning in student-operated restaurants. *Journal of Nutrition Education and Behavior*, *53*(3), 223-231.

Nies, J. I. (1993). The role of student-operated restaurants in the hospitality curriculum. *Hospitality and Tourism Educator*, 5(3), 21-24.

Scheule, B. (2000). Food-safety educational goals for dietetics and hospitality students. *Journal of the American Dietetic Association*, 100(8), 919-927.

Short, J. E., & Chittooran, M. M. (2004). Nutrition education: A survey of practices and perceptions in undergraduate dietetics education. *Journal of the American Dietetic Association*, *104*(10), 1601-1604. https://doi:10.1016.j.jada.2004.07.029

Stokes, N., Patten, E. V., Weight R. E. (2018). Dietetics student-operated restaurant: The customer experience and perspective. *Journal of Foodservice Management and Education*, *12*(1), 1-6.