INTRODUCTION

Academic librarians, especially those with liaison responsibilities to business programs, often support student entrepreneurs with research efforts for course projects and personal business ventures. Over the past decade, academic libraries have also increasingly provided support for student financial literacy, as first broadly championed in academic libraries by then-Association of College and Research Libraries (ACRL) president Trevor Dawes in 2013. At Penn State University, we have regularly provided support for both student entrepreneurship and financial literacy for more than 10 years. Until 2019, however, we did not intentionally combine the two topics, though they seem like natural companions. Our interest in financial literacy for student entrepreneurs arose from student suggestions. During our programs, we collect student suggestions for future program topics via our assessment form. At general financial literacy sessions in 2018, which were focused on budgeting, students suggested funding a business as a topic they would like to learn more about from the library.

That year, during Penn State Startup Week, an entrepreneurship-focused event hosted each spring, business librarians at two campuses worked with financial education partners to offer two sessions on financial literacy for entrepreneurs. One session covered the basics of financing for a new small business, and the other offered more advanced content on funding options for startups. Students reviewed the sessions positively, and we wondered if our peer institutions saw demand for, or offered, similar sessions for their students. We were also curious about the role of financial education within curriculum-based entrepreneurship programs, which are common at the 14 universities making up the Big Ten Academic Alliance (BTAA), an academic consortium which includes Penn State. We investigated our peer institutions, the 14 universities of the BTAA, to better understand the landscape for support for financial literacy, entrepreneurship, and financial literacy for entrepreneurs within academic libraries.

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LITERATURE REVIEW

Entrepreneurship Education, Financial Literacy, and Entrepreneurial Success

Entrepreneurship education in the United States began in 1947 at Harvard University. In the following decades it spread to every kind of higher education institution, though the pedagogical methods of entrepreneurship vary widely, and little research into the long-term efficacy of various entrepreneurship educational methods exists. The literature indicates that individuals with higher levels of financial literacy are more likely to be self-employed as entrepreneurs and to be more successful in their business ventures. Conversely, entrepreneurs with lower levels of financial literacy are more likely to have adverse financial outcomes in their business ventures. Despite this evidence, financial literacy education for the general public, let alone entrepreneurs, remains limited as a requirement within most curriculums at the K-12 or post-secondary level.

Entrepreneurship Support, Financial Literacy, and Libraries

As the field of entrepreneurship has grown as an academic discipline, so too has support grown in the academic libraries that serve students in these programs. Though entrepreneurship programs are often interdisciplinary within the university environment, business librarians are the primary facilitators of library support for entrepreneurship students, and thus have been developing the necessary skills to effectively assist this patron group over a number of years. While these competencies on the whole do not deviate from traditional librarian competencies such as reference, instruction, and collection development, librarians supporting student entrepreneurs must develop sophisticated research skills related to databases and data tools not common in other fields of librarianship.

Financial literacy has progressed along a similar but parallel path within libraries, culminating in the development of a set of financial literacy education standards for librarians released by the Reference and User Services Association (RUSA) in 2015. The rationale for the standards highlights the lack of nonprofit, unbiased, and accessible financial education resources in most American communities. In the years since the standards were adopted, academic libraries across the country have developed and promoted programming and resources for student financial literacy; these initiatives often focus on the financial literacy concepts shown in the literature to be indicators of sound personal finance skills that empower good, informed financial decision making.

The evidence overwhelmingly implies a positive relationship between higher financial literacy and increased entrepreneurial success. However, even with general success of separate support programs within academic libraries for entrepreneurship and financial literacy, few libraries appear to consciously combine these competencies. Nor do academic libraries appear advertise their entrepreneurship sessions to the broader student audience, which may leave segments of the student population, especially those not enrolled in entrepreneurship programs, adrift when seeking sources of reliable and free information about the financial aspects of business ownership.

METHODOLOGY

At the outset of this project, we were unaware of the program structure and requirements for entrepreneurship education across the BTAA. Though we regularly correspond and work with business librarians from these institutions as part of the Business Reference and Services Section (BRASS), we had not discussed this aspect of our work. We used a mixed-methods approach to investigate. Our study included two questionnaires, one for academic librarians and one for entrepreneurship educators, and website analysis for each library and entrepreneurship program included in the BTAA. We included the two distinct audiences, academic librarians and entrepreneurship educators for a few reasons. First, while each group provides support for student entrepreneurs, they do so in different ways; second, each university may have a different level of support and connection between librarians and the entrepreneurship program. Focusing only on librarians might exclude important in-
formation about the entrepreneurship curriculum or other methods of support offered by the program. Finally, we wanted to capture more information about curriculum requirements related to financial education of which librarians may be unaware.

Before drafting our survey questions, we developed a list of criteria (Appendix A) with which to examine each library and entrepreneurship program website. On the entrepreneurship sites, we examined the curricular program for the following attributes:

- Level of degree offered (minor/concentration, certificate, or major)
- Required courses in finance or financial management
- Presence of a Small Business Development Center (SBDC), or business incubator/accelerator
- Contacts for the program and relevant business development office.

We reviewed library websites for:

- Relevant LibGuides, programs, and resource collections related to entrepreneurship
- Relevant LibGuides, programs, and resource collections related to financial literacy
- Librarians identified as the liaison to business, entrepreneurship, or financial literacy.

We developed a contact list based on our website evaluations and generated the two questionnaires (Appendices B and C) to focus on facts about the entrepreneurship curriculum and library support. The librarian survey was longer, with specific sections about support for entrepreneurship, financial literacy, and financial literacy for entrepreneurs. For each area of support, we ask the librarian to estimate the number of classes and/or programs offered, reference questions answered, and estimated time spent preparing to support these initiatives. The entrepreneurship survey asked for the key areas of focus for the university's entrepreneurship program, and the degree to which financial management is incorporated into the curriculum through required courses, electives, and extracurricular activities.

Our questionnaires were reviewed by an officer of the Penn State Institutional Review Board (IRB), who declared that our surveys were exempt from IRB approval as we asked questions of fact and not opinion. While we did ask respondents to identify their institutions in each survey, we did not ask for respondents to personally identify themselves and indicated that the survey could be forwarded to the most appropriate person within the institution to complete the survey, if the initial recipient felt they did not have adequate information to complete the survey themselves. We also asked the librarians to identify the most appropriate contact within the entrepreneurship program at their institution for our survey request, as it can be difficult to determine from the website. Depending on the institution, more than one librarian or entrepreneurship professional may have received a survey at each location, based on their liaison areas. In situations where more than one person responded, we combined their answers after checking for any contradictions between the information reported. There were no contradictions in these situations, though some respondents provided more detail than others.

We used the contact list we developed during our website analysis to deploy the survey via email to all BTAA members. Because we asked the librarian respondents to provide an entrepreneurship contact, the librarian survey was deployed first, with the entrepreneurship survey deployed approximately two weeks later. We updated our entrepreneurship contact list with any information gathered from the librarian survey before deploying the entrepreneurship survey. If a responding librarian provided a different contact for entrepreneurship, we amended the contact list; if no additional contact was provided, we sent the survey to the person/people identified from the website analysis. Each group had at least six weeks to complete the survey, with reminders sent to non-responding libraries and programs via email approximately every two weeks until the survey closed.

RESULTS

Responses

We received seven responses to the entrepreneurship survey, six of which were complete, and one school was represented twice, for a total of five unique university responses, which indicates a 35% response rate. The librarian survey received 13 responses, ten of which were complete, with two schools receiving two responses each, for a total of eight unique university responses, which indicates a 57% response rate. There were four paired re-
sponses, in which both the library and the entrepreneurship program responded to each survey, two universities which responded to the entrepreneurship survey did not have a corresponding response to the librarian survey.

**Library Support**

**Entrepreneurship**

Each of the 14 libraries examined provide some level of support for student entrepreneurship. During the website analysis, we found that an entrepreneurship or small business LibGuide is the most common form of library support, usually coupled with either a dedicated librarian whose title includes entrepreneurship or a librarian who serves as a liaison to entrepreneurship. Of the 14 libraries examined, only two, Michigan State University and Penn State University, have a librarian with the title Entrepreneurship Librarian, though most others have a librarian designated to serve entrepreneurship as part of their liaison responsibilities. Thirteen of the fourteen library system websites had such a guide, while the remaining library’s website indicated that they maintain an entrepreneurship-focused collection.

In the librarian survey responses, seven libraries indicated that they provide additional support for entrepreneurship programs beyond LibGuides. The most common form of support was reference or research consultation sessions (seven libraries), followed by course-related instruction (six libraries) and workshops outside of the credit-bearing curriculum (six libraries). One library, Purdue University, indicated that their librarians teach a credit-bearing course that is part of the institution’s certificate in entrepreneurship.

The length of time that the library systems have been supporting entrepreneurship varies, with three libraries—those at Purdue, the University of Wisconsin, and the University of Michigan—reporting that they have been supporting entrepreneurship for over 10 years. Two libraries reported they have supported entrepreneurship directly for five to seven years, two reported two to four years, and one reported one year or less. Other respondents were unsure of the length of time or did not report it.

For the seven libraries reporting support through classroom instruction, the number of sessions ranged from two to 30 per year. Eight libraries reported offering extracurricular workshops, and the number ranged from three to 20 per year. Reference consultations related to entrepreneurship ranged from five to more than 250 per year for the eight libraries reporting.

**Financial Literacy**

While eight of the 14 Big Ten Academic Alliance libraries have at least a LibGuide to support financial literacy education for their students, only three of the libraries who responded to our survey indicated programmatic or long-standing support for financial literacy, and only two—Michigan State and Penn State, reported that the programing is current and ongoing. The third respondent said their library previously provided financial literacy support for students, and they are working to revive it. Michigan State has conducted financial literacy programming for two to four years and Penn State for eight to ten years. Each library reported providing two workshops per year, and Penn State reported ten consultations per year on financial literacy topics. None of the libraries examined have a librarian with a financial literacy title, but many identify a business librarian on their financial literacy LibGuide, or list financial literacy as an area of support in their library.

**Financial Literacy for Entrepreneurs**

The librarian survey asked respondents to share any knowledge they had about the role of financial education in the entrepreneurship programs at their university. Three of the respondents said that there was some coverage of financial literacy education in the credit-bearing entrepreneurship program. One mentioned specific topics covered in their program, including venture capital and angel investing. Four reported that this is not included in the credit-bearing entrepreneurship curriculum, and the rest said they were unsure, or did not respond. One librarian mentioned a 300-level general elective that focuses on life after college and includes financial literacy topics.
Penn State and Michigan State were the only libraries that reported creating specific resources or programs related to financial literacy that they tailor to entrepreneurship students. Both libraries indicated this information is included on entrepreneurship LibGuides, and is covered in entrepreneurship-focused programs or workshops offered by their library.

**Entrepreneurship Programs**

**Financial Literacy in the Curriculum**

The degree to which financial literacy is included in the entrepreneurship education curriculum varies from program to program. Based on our website evaluations and survey responses, we determined that five of the 14 academic programs examined require at least one financial management course. Four programs offer elective courses in topics related to entrepreneurial finance, while four programs did not appear to offer credit-bearing courses in this area. Required and elective course topics at the universities which offer them include seeking and securing funding; conducting valuation of entrepreneurial ventures; and managing scaling and growth.

Three of the six programs responding to the survey indicated that they present information on topics related to entrepreneurial finance through supplemental programs. These include guest speakers and workshops offered through those institutions’ SBDCs, entrepreneurship centers, and co-curricular programs. One program indicated that while they “encourage students to learn the nuances of their books by keeping them on their own at first, [they] actively encourage them to hire a bookkeeper or accountant as soon as they are financially able.”

**Library Partnerships**

No partnerships between the entrepreneurship programs or centers were evident during website analysis. Three of the six respondents to the entrepreneurship survey said they partner with their campus library or librarian. Each reported working with a specific librarian designated as a liaison to their program or to the business school. Financial literacy education collaborations with the library topics were not reported by any respondents. The entrepreneurship respondents said librarians working with the entrepreneurship programs provide market research instruction, database instruction and licensing, and helpful resources for entrepreneurship students.

**DISCUSSION**

The pandemic significantly limited the scope of our project, as well as our ability to offer additional programming on financial literacy for entrepreneurs beginning in March 2020, continuing to the present. Even though we were not able to complete some aspects of the project as originally intended, such as interviews with the librarians and entrepreneurship professionals, we were pleased by the level of responses to the surveys. The answers we received in each survey helped provide additional context to what we discovered in our website analysis and uncovered many new topics for us to consider as we continue in this area of research.

Overall, from both the website analysis and surveys, it seems that libraries and entrepreneurship programs are supporting student entrepreneurs through robust resources, flexible curriculums, and timely extracurricular workshops. It seems, however, that some libraries are still developing more programmatic support. As we noted, only two of the universities within the BTAA have a titled entrepreneurship librarian. One additional respondent to the survey indicated their university is currently creating an entrepreneurship librarian position. A limitation here is that we did not evaluate the sizes of the entrepreneurship programs at each university, especially when compared to the overall business program and the size of the university. In future research, this is a factor it would be important to evaluate, as not all of the universities may have the same emphasis on entrepreneurship due to student enrollment in other programs.

It is also clear that few libraries and entrepreneurship programs are making the important connection found in the literature between high financial literacy and entrepreneurial success. Only two libraries provide programs and resources on financial education for entrepreneurs, and most of the curricular programs include financial literacy education as an elective, an extracurricular, or not at all. It is possible that student entrepreneurs
already have a high level of financial literacy, or they are more motivated and informed enough to seek this information out on their own when compared to other students. However, based on the literature and the service philosophy of libraries, and given the correlation between financial knowledge and business success, we believe it is important for libraries to address this gap through resource selection, outreach and programming, and reference consultations. Further, entrepreneurship students may benefit from a greater emphasis on financial literacy education within their curricular programs.

We intend to conduct additional research as our campuses begin to re-open for in-person instruction in Fall 2021, which will allow us to interview students and other stakeholders about financial education for entrepreneurs and to gather data from our programs and the others we have analyzed here. In our future work, will incorporate in-depth interviews with librarians and entrepreneurship professionals about their experiences and opinions on financial education for entrepreneurs. We hope through this project to get more participation from entrepreneurship professionals so we can better understand their programs and the needs of their students related to financial education. Student voices are currently missing from our findings. Therefore, we intend to survey student entrepreneurs to better understand their experiences, specifically, where and how they acquire financial information about business, and how they view the role of financial education and knowledge within entrepreneurship.

**CONCLUSION**

The literature strongly suggests a correlation between the level of an entrepreneur’s financial literacy and eventual business stability and success. It cannot be ruled out that those with higher achievement in math and financial literacy may be naturally drawn to entrepreneurship, but we may be doing a disservice to students by not incorporating financial literacy education into the curricular entrepreneurship programs and regular library support. Any student entrepreneur visiting a library would likely be able to receive assistance in finding collection materials and electronic resources that would allow them to build financial knowledge within a business context; however, relying on the individual’s initiative may leave some behind, especially those who have been traditionally excluded from or marginalized in the American business environment, such as those who are Black, Indigenous, or people of color and women.

Given that the majority of libraries in the BTAA provide some level of support for student entrepreneurs, one can assume that as a peer group we believe entrepreneurship to be an important topic of study and exploration for our students. We encourage our peers to go further with this topic by incorporating financial literacy directly; while recognizing that we still have strides to make ourselves in this area. What has been most helpful at Penn State is to ask students what they want to know more about at the conclusion of all library programs. If we had not done this, we might not have realized the demand for entrepreneurial financial literacy, and we urge our colleagues to do the same.
APPENDIX A. WEBSITE EVALUATION CRITERIA

**Entrepreneurship Website**

1. University name
2. Does the university have a curriculum-based entrepreneurship program? (Y/N)
3. If Y, what level of degree is offered? (Free text)
4. Are finance or financial management courses required? (Y/N); if Y, describe.
5. Contact person for entrepreneurship program
6. Does the university have a SBDC/Accelerator/Incubator? (Y/N); if Y, describe.
7. If Y, contact person/people for all centers identified
8. Describe any financial literacy-relevant events or resources displayed on the website (Free text)

**Library Website**

1. University Name
2. Librarians identified as liaisons to business, entrepreneurship, or with expertise in financial literacy
3. LibGuide for Entrepreneurship? (Y/N)
4. Other resources for entrepreneurship (Free text)
5. LibGuide for Financial Literacy? (Y/N)
6. Other resources for financial literacy? (Free text)
APPENDIX B. LIBRARIAN SURVEY

Q1 Please select your institution: (Dropdown of BTAA Universities)

Q2 Does your library provide support for student entrepreneurship?
   □ Yes
   □ No
   □ I don’t know
   Skip To: Q8 If Does your library provide support for student entrepreneurship? = No
   Skip To: Q8 If Does your library provide support for student entrepreneurship? = I don’t know

Q3 Please describe the support structure or program for student entrepreneurs in your library:

Q4 How long has support for entrepreneurship been in place?
   □ 1 year or less
   □ 2-4 years
   □ 5-7 years
   □ 8-10 years
   □ More than 10 years
   □ Not sure

Q5 On average, how does your library provide student entrepreneurship support each year, through the following, if known: (Estimate number)
   Number of classes (as part of a credit-bearing course):
   Number of workshops/presentations (delivered apart from credit-bearing instruction):
   Number of Reference/Consultation Sessions:
   Hours spent creating/promoting resources, such as items in the collection or online tools:

Q6 To your knowledge, how is financial literacy education included in the credit-bearing entrepreneurship curriculum at your institution?

Q7 Does your library provide financial literacy programming?
   □ Yes
   □ No
   □ I don’t know
   Skip To: Q11 If Does your library provide financial literacy programming? = No
   Skip To: Q11 If Does your library provide financial literacy programming? = I don’t know

Q8 Please describe the support structure or program for financial literacy in your library:

Q9 How long has support for financial literacy been in place?
   □ 1 year or less
   □ 2-4 years
   □ 5-7 years
   □ 8-10 years
   □ More than 10 years
   □ Not sure

Q10 On average, how much support for financial literacy education does your library provide each year, through the following, if known: (Estimate number)
   Number of classes (as part of a credit-bearing course):
   Number of workshops/presentations (delivered apart from credit-bearing instruction):
   Number of Reference/Consultation Sessions:
   Hours spent creating/promoting resources, such as items in the collection or online tools:
Q11 Are small business/entrepreneurial financial literacy topics supported through programming at your library?
- Yes
- No
- I don't know
Skip To: Q15 If Are small business/entrepreneurial financial literacy topics supported through programming at you... = No
Skip To: Q15 If Are small business/entrepreneurial financial literacy topics supported through programming at you... = I don't know

Q12 Please describe the support structure or program for small business/entrepreneurial financial literacy topics in your library:

Q13 How long has support for small business/entrepreneurial financial literacy been in place?
- 1 year or less
- 2-4 years
- 5-7 years
- 8-10 years
- More than 10 years
- Not sure

Q14 On average, how much support for small business/entrepreneurial financial literacy does your library provide each year, through the following, if known: (Estimate number)
Number of classes (as part of a credit-bearing course):
Number of workshops/presentations (delivered apart from credit-bearing instruction):
Number of Reference/Consultation Sessions:
Hours spent creating/promoting resources, such as items in the collection or online tools:

Q15 Who is the best person to contact within the entrepreneurship curriculum program, entrepreneurial center, or small business development center at your university, as applicable?
- Name and Email:
- I don't know
APPENDIX C. ENTREPRENEURSHIP SURVEY

Q1 Please select your institution: (Dropdown of BTAA Universities)

Q2 How long has the entrepreneurship program been in place at your institution?
   - 1 year or less
   - 2-4 years
   - 5-7 years
   - 8-10 years
   - More than 10 years
   - Not sure

Q3 Please describe the high-level topics the entrepreneurship program emphasizes:

Q4 How are financial management aspects of entrepreneurship included in the curriculum? Select all that apply.
   - Financial management is a core theme of the overall program
   - Financial management is a required part of the curriculum
   - Financial management is an elective part of the curriculum
   - Financial management is included in supplemental programs (guest speakers, community partnerships, etc.)
   - I don’t know

Skip To: Q7 If How are financial management aspects of entrepreneurship included in the curriculum? Select all that apply... = I don’t know

Q5 Please provide additional detail regarding how financial management is taught, promoted, or supported in the credit-bearing curriculum:

Q6 Please provide additional detail regarding how financial management is taught, promoted, or supported using supplemental resources (books/supplemental materials, community partnerships, online materials, etc.):

Q7 Please describe any partnerships/collaborations between the entrepreneurship program and the university library:

NOTES

2. Penn State Startup Week, https://startupweek.psu.edu/.


