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Daniel G. Kipnis Rowan University, kipnisd@rowan.edu

Lisa A. Adriani *Quinnipiac University*, lisa.adriani@quinnipiac.edu

Ronda Kolbin Quinnipiac University, ronda.kolbin@quinnipiac.edu

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## Academic Libraries and Athletic Training: Research Preferences of Athletic Training Students

Daniel G. Kipnis <u>https://orcid.org/0000-0002-4589-5106</u><sup>a</sup>, Lisa A. Adriani <u>https://orcid.org/0000-0003-2751-6210</u><sup>b</sup>, and Ronda I. Kolbin <u>https://orcid.org/0000-0002-7568-</u> 3286<sup>c</sup>

<sup>a</sup> Campbell Library, Rowan University, Glassboro, New Jersey, USA

<sup>b</sup> Edward & Barbara Netter Library, Quinnipiac University, Hamden, Connecticut, USA

<sup>c</sup> Arnold Bernhard Library, Quinnipiac University, Hamden, Connecticut, USA

## ABSTRACT

To ensure academic standards are met for athletic training curriculums, it is essential that librarians and faculty understand student research habits and information literacy instruction preferences. This article provides results from a survey of undergraduate athletic training students conducted at two universities. Athletic training students prefer information literacy instruction at the beginning of the semester. When seeking research assistance, students ask their classmates first, followed by friends and Google. Most students spend up to 60 minutes researching online before seeking assistance and prefer in-person communication for assistance from the library followed by email.

## **KEYWORDS**

Academic libraries, athletic training, information literacy, research assistance, research habits

Introduction

In order to ensure academic learning outcomes and standards are met for athletic training curriculums, it is essential that librarians and faculty understand student research habits and information literacy instruction preferences. Many universities have specific learning objectives. For example, Quinnipiac University's Essential Learning Outcomes approved by their Faculty Senate on February 12, 2016, outlines how students must gain knowledge such as the ability to "find critically, evaluate and analyze information from diverse sources efficiently."<sup>1</sup> There is little in the published peer-reviewed athletic training literature on how students conduct research and their exposure to information literacy instruction. Therefore, the goal of this article is to provide results from a survey conducted at two universities to gain an understanding of the research habits and information literacy instruction preferences of athletic training students.

#### Background

As of fall 2019, the Commission on Accreditation of Athletic Training Education (CAATE) had accredited approximately 393 universities offering degrees for athletic training.<sup>2</sup> With thousands of athletic training students being educated every year across the United States, learning about students research preferences benefits librarians, libraries and athletic training professors.

Additionally, athletic training is a health care profession with origins in kinesiology that has evolved into a critical component of contemporary sports medicine. In the mid-1970s National Athletic Trainers' Association (NATA) Professional Education Committee formalized 11 required courses for athletic training students including: anatomy, physiology, applied anatomy and kinesiology, psychology, first aid and safety, and nutrition. Also, the completion of 600 to 800 clinical-experience hours is expected in an approved or accredited program. In comparison to a traditional medical school curriculum, athletic training programs were "steeped in clinical experiences and less in didactic instruction."<sup>3</sup>

In June 1990, the American Medical Association (AMA) formally recognized athletic training as an allied health profession. Moreover, athletic training educational competency domains have been approved including: pathology of injury and illness, acute care of injury and illness, therapeutic modalities, and nutritional aspects of injury and illness. Lastly, it is especially important that athletic trainers seek evidence to support their practice decisions, which requires them to understand how to conduct research, interpret findings, and put into action their decisions. It is why teaching research skills in athletic training programs is so important.

The two universities involved in the study both have classes with assignments that include literature searching. At Rowan University, students are required to run a literature review. This assignment involves writing an 8–10 page paper on a therapeutic modality. Students are required to find 10 sources and synthesize them into a literature review. All references should be peer-reviewed, and the following databases are suggested for searching: PEDro, PubMed, CINAHL, SPORTDiscus and Cochrane Database of Systematic Reviews. At Quinnipiac University, students conduct research on a clinical question using PICO (Patient, Intervention, Comparison,

and Outcome). They must search PubMed for relevant peer-reviewed articles of different types such as systematic reviews, randomized controlled trials, and case reports. They also must gain an understanding of MeSH (Medical Subject Headings).

#### Literature review

The published peer-review literature on use of libraries by athletic training students concentrates on which databases to use for literature searches and how to access the literature. Athletic training students' research preferences are not discussed in the literature.

Whitehall, Norton and Wright's 1996 article "Navigating the Library Maze: Introductory Research and the Athletic Trainer,"<sup>4</sup> describes "new technology" including CD-ROMs and various databases including MEDLINE, CINAHL, SPORTDiscus and ERIC. The authors outline a plan for a search including key terms for searching articles of postsurgical rehabilitation modalities used for athletes and how to obtain articles after a search is conducted. This article emphasizes how undergraduate athletic training students should conduct research but does not discuss their research preferences or methodologies. Additionally, in 1996, Susie Rohrbough from Ohio University Libraries published a letter to the editor in the *Journal of Athletic Training*, in which she discusses library instruction similar to that offered by Whitehall, saying she introduced her students to databases including ERIC, MEDLINE, CINAHL, Physical Education Index and SPORTDiscus. She also discusses how information retrieval is different across institutions.<sup>5</sup> Similarly, in 2004, a librarian from Temple University echoed the importance in planning a search strategy and understanding where best to search for relevant literature, with the author listing databases including PSYCInfo, Mental Health Abstracts, MEDLINE and CINAHL.<sup>6</sup>

In 2007, Kronenfeld et al. offered an overview of Evidence-Based Practice (EBP) in selected allied health professions including athletic training. The article concluded with ways librarians can be involved in the "preservice arena" in providing outreach to faculty, collaborating with instructors with integrating EBP in the curriculum, and becoming members of teams or committees that address EBP.<sup>7</sup>

Peer-reviewed literature discusses how undergraduate or graduate students in other disciplines approach research needs and use library services. For example, Zhang et al, asked students questions about preferences and expectations when seeking help from the library. The results indicated that half of those surveyed preferred step-by-step help while the other half preferred "conceptual help."<sup>8</sup> Additionally, in a survey conducted by Pelligrino, the data indicated that when faculty encouraged students to seek library help, students were more likely to ask for assistance.<sup>9</sup> In another survey, graduate social work students indicated that they are willing to seek help first from classmates, followed by instructors, and lastly by librarians. Distance learners indicated that they would prefer in-person if help was available. Students in their 20s were more likely to use texting when seeking help than students in their 40s.<sup>10</sup>

In a more recent study, Beisler and Medaille found that students opted to use their family and fellow classmates for help.<sup>11</sup> A study conducted by Thomas et al. in 2017 indicated that students will use their peers as their primary source for help.<sup>12</sup> An athletic training student explained that they felt their peers understood better what they were talking about because they were in their program. The student also explained that it was easier to ask students in the program, as they would already be familiar with the material and have specific or "insider knowledge" that librarians would lack. The implication is that it is easier to consult with a peer who understands the assignment than to consult with a librarian who needs to have the assignment details explained in order to help the student. Finally, Hvizdak et al. found that 1st-year undergraduate students rarely sought help with researching their papers but were more likely to seek assistance with basic research needs, such as locating a book.<sup>13</sup>

#### **Methods**

Academic librarians from Rowan and Quinnipiac Universities conducted a survey to better understand the research preferences of athletic training students enrolled at their respective institutions. The purpose of the quantitative survey was twofold:

1. To contribute to the literature on use of academic libraries by athletic training students.

2. To provide a profile of athletic training students and their research preferences when conducting research in order to assist librarians and athletic training professors to plan lessons and better understand their students.

The librarians received institutional review board approval from their respective universities (Quinnipiac protocol #04318, Rowan Pro2018002233). A Qualtrics survey was designed consisting of 13 questions (see <u>Appendix A</u>). This survey was adapted from a similar survey that was used to learn about occupational therapy students' research habits.<sup>14,15</sup> The quantitative survey was distributed via email during October 2018 and March-April 2019. At Rowan University the survey was distributed by faculty via email to students in introductory research classes on athletic training. The fall class had 20 students enrolled and the spring class had 8 enrolled students. In addition, the survey was distributed to the class titled, "Introduction to Athletic Training" with 18 enrolled students. In total from the three classes, 46 students responded to the survey. All enrolled students at Rowan University completed the survey for a 100% response rate. At Quinnipiac University the survey was sent by a faculty member via email to all 72 undergraduates students enrolled in the athletic training program. Of the 72 students who received the survey 26 students responded, representing a 36% response rate. Between the

two universities 118 students received the survey and 72 completed the survey for a 61% response rate. This article will share the results from 10 of the 13 questions that are directly relevant to research preferences of athletic training students. This article will not share the social media results as part of this article. Anonymized survey responses are available in the institutional repository of primary authors' institution.

#### Survey results

All 72 survey respondents were between the ages of 18–24; 26 identified as female, 19 as male and 27 did not respond to the gender question. Table 1 shows the breakdown by year of study.

Year of study	# Responses
1 <sup>st</sup> year	26
2 <sup>nd</sup> year	30
3 <sup>rd</sup> year	12
4 <sup>th</sup> year	2
5 <sup>th</sup> year Masters	1
Did not respond	1
Total	72

Table 1. Year of study of athletic training students who responded to survey.

The survey asked athletic training college students if they received library instruction (information literacy) in high school. The rationale for this question was to see if students have had any library and research training in high school during a time when many high school libraries are being eliminated. In a 2018 article in *Education Week*, Sparks and Harwin wrote, "The nation's public school districts have lost 20 percent of their librarians and media specialists since 2000, from more than 54,000 to less than 44,000 in 2015, according to an Education Week Research Center analysis of federal data. Many districts lost librarians even as student populations grew by 7 percent nationwide."<sup>16</sup> Another possible reason for not receiving information literacy instruction is the lack of time in the test-driven curriculum for high school students. Teachers find that they do not have the time to dedicate towards library instruction, hence the response rate of a quarter of high school students who did not receive any library information literacy instruction.

Twenty-five respondents (35.2%) received at least one tour of their high school library and 1 to 3 hands-on database computer sessions while 18 (25.4%) did not receive any tour of their library or hands-on computer sessions. 16 respondents (22.5%) answered that they had received only a tour of the library with no information literacy training. Only 12 out of 71 respondents (16.9%) had received multiple (at least 4 or more hands-on computer classes) library workshops/taught by library faculty/librarian or high school teacher.

Once in college athletic training students tend to get their library instruction mostly in their 1st and 2nd years; however, 28 respondents out of 70 who responded to this question (40%) answered they had not received information literacy instruction in their first three years of college (Table 2).

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5th year Masters
Tour of library with 1 to 3 hands-on database computer sessions, Only tour of the library	3	11	6	0	1
None	14	10	4	0	0
Only tour of library	3	4	0	1	0
Multiple (at least 4 or more hands-on computer classes) library workshops taught by library faculty/librarian or Professor	5	4	3	1	0

**Table 2**. Information literacy instruction received by athletic training students in undergraduate course work, broken down by year of study (Question 6 from survey). (<u>Table view</u>)

Total: 70 responses; 2 did not answer	25	29	13	2	1

Fifty-two, or 72% of athletic training students preferred to have their information literacy classes scheduled at the beginning of the semester compared to later in the semester (12, or 16.7%), while 8, or 11%, respondents indicated that they would learn the content on their own.

The majority of athletic training students surveyed (41, or 56.9%) tend to spend 1 hour researching a website or searching a database for their research before seeking help. A smaller group of students (16, or 22.2%) indicated they are willing to search for 1–2 hours and only 6 (8%) respondents indicated they are willing to spend two or more hours on research. In addition, 9 respondents (12.5%) indicated that they would never ask for help. Follow-up studies could inquire as to the reasons why students would not seek out research assistance.

Athletic training students tend to first ask those they know when seeking research assistance. Classmates and friends ranked as the first two options by 34 respondents (47%), followed by Google and Instructor/Professor, each selected by 14 students (18%), and librarians were the last option, indicated by 10, or 13.9% of the students. The answers here support the literature in other disciplines where colleagues/friends tend to be the first place to seek answers. An example of this is when clinicians tend to seek advice from those within the same organization or when graduate students at MIT turn to their peers.<sup>17.18</sup>

When asked which method of communication they preferred when seeking assistance from the library, 49 athletic training students (68.1%) preferred in-person interactions, 17 students (23.6%) preferred email, 4 (5%) preferred text messaging, and 2 (2.7%) preferred live chat.

#### Discussion

Findings show that library instruction in two athletic training programs occurs mostly in the first two years of the curriculum. There is an opportunity for librarians to continue teaching information literacy and research skills in the later years of the curriculum.

Seeking research assistance in-person is the preferred method for athletic training students. With the global Coronavirus pandemic and explosion of web-based tools such as Zoom, WebEx and Google Meet, future studies could examine if these online real-time interactions are equivalent replacements for in-person interactions.

The goal of the question that asks students if they have had any information literacy training in high school was to find a benchmark for determining information literacy skills as students enter college. Knowing that a quarter of incoming students had never received a tour of their high school library or a hands-on computer session and that a little over 20 percent had only received a tour with no information literacy training is also an opportunity for teaching novices information literacy skills. This benchmark is useful because it provides a starting point for librarians to build an instruction program that efficiently scaffolds upon the students' existing knowledge base from high school.

Results also support the library trend of diminished use of text and chat communication for athletic training students for seeking help.<sup>19</sup> This presents an opportunity for libraries to examine their reference offerings. Some libraries have removed their traditional reference desk also due to diminished numbers.<sup>20</sup> Using data to reassess which services are used by students is a helpful analysis to make sure that needs are being met. Scheduling staff for chat shifts could be unnecessary if athletic training students do not use chat or text for assistance. Librarians could assign their time to provide assistance in other ways. Libraries could adopt a consultation request model for students seeking help in-person. Email continues to be a method for seeking help.

The students' response that they do not seek any assistance with research at all (12.5%) was unexpected, even though it was an answer option. It is recommended that faculty require students to meet with librarians to obtain the instruction and guidance that will save time and generate a better final work product. The benefits could include introducing students to embedded librarians to learn more about the research process and the importance of libraries and librarians in the academy.<sup>21</sup>

Librarians came in last in the responses to where athletic training students seek help. Understanding that students feel comfortable seeking help from classmates and friends, faculty can design group assignments in which the students can seek help from each other while working towards a common goal.

Lastly, athletic training students overwhelmingly prefer to have their information literacy training at the beginning of the semester. Sharing this with faculty and scheduling sessions early can benefit students and cater to their needs as students learn to conduct research with enough time to practice, consult with classmates, and seek the guidance they need in conducting research.

#### Limitations and directions for future research

The results focused on athletic training students and were influenced by answers limited to those who voluntarily responded to the survey. Future surveys could be required for all athletic training students to respond to, and, in addition, more academic institutions can be added to increase the sample size of respondents. Moreover, ethnographic studies or interviews can be conducted to gather more information from the athletic training students. Ethnographic studies could try to answer why 12.5% of students would choose never to seek help when conducting research. Future research could include increased librarian involvement in the athletic training curriculum to see if student research preferences change.

The survey was distributed in October 2018 and March 2019, before the Coronavirus global pandemic. The reason why so many freshmen and sophomore students had not received any library instruction could be because of how early in the semester the survey was given (October 2018). The results indicate that the majority of undergraduate athletic training students prefer inperson assistance with their research. Future studies could examine if the move to remote teaching and learning changed how athletic training students pursue help with their research and what are their communication preferences.

#### Conclusions

Athletic training faculty and librarians need to work collaboratively and effectively to meet information literacy learning objectives. The survey results have provided a snapshot of athletic training students research habits and information literacy instruction preferences from two universities. The authors recommend that faculty require students to meet with librarians before starting their research assignments. Both institutions are working with faculty to incorporate information literacy sessions by including class assignments that require librarian instruction.

Additional creative approaches could include partnering with writing centers and continuing to integrate library information literacy in the curriculum. The authors of this article have collaborated on an article on recommended databases and search tips, published in the Online Updates section of this issue.<sup>22</sup> The database recommendations will help students, staff, clinicians, and faculty in the field of athletic training find the literature they need to help make evidence-based decisions and to stay current with the published literature.

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#### **Disclosure statement**

No potential conflict of interest was reported by the authors.

#### Notes on contributors

*Daniel G. Kipnis*, MSI, (<u>kipnisd@rowan.edu</u>) is a Life Sciences Librarian at Campbell Library, Rowan University, Glassboro, New Jersey, USA.

*Lisa A. Adriani*, MLS, AHIP, (<u>lisa.adriani@quinnipiac.edu</u>) is a Research and Instruction Librarian at Edward & Barbara Netter Library, Quinnipiac University, Hamden, Connecticut, USA.

*Ronda I. Kolbin*, MLS, (<u>ronda.kolbin@quinnipiac.edu</u>) is a Public Services Librarian at Arnold Bernhard Library, Quinnipiac University, Hamden, Connecticut, USA.

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### Appendix: Survey

1. What is your gender?

- 2. What is your current age?
- a. 18–24
- b. 25–30
- c. 31–35
- d. 36–40
- e. 40+
- 3. Indicate your current year of study:
- a. 1st Year
- b. 2nd Year
- c. 3rd Year
- d. 4th Year
- e. 5th year Masters

4. Select your university:

- a. Quinnipiac University
- b. Rowan University

5. In your high school did you have any formal library information literacy classes (formal library instruction, how to use databases properly, etc.)?

a. Multiple (at least 4 or more hands-on computer classes) library workshops taught by library faculty/librarian or high school teacher

b. Tour of library with 1 to 3 hands-on database computer sessions

- c. Only tour of the library
- d. None

6. In your undergraduate coursework (prior to the library class you just took), did you have any formal library information literacy classes? (formal library instruction, how to use databases properly, etc.)?

a. Multiple (at least 4 or more hands-on computer classes) library workshops taught by library faculty/librarian or high school teacher

- b. Tour of library with 1 to 3 hands-on database computer sessions
- c. Only tour of the library
- d. None

7. What instructional method is your preference?

- a. Lecture by professor (no slides, PowerPoint etc.)
- b. PowerPoint slides in professor's lectures
- c. Videos
- d. Case Studies
- e. Internet exercises
- f. Guest speakers
- g. In-class group discussion
- h. Group semester projects
- i. Individual semester projects

8. If a class was offered on how to successfully search literature/research databases, when is your preferred time during the semester?

- a. Beginning of semester
- b. Later in semester as deadline nears
- c. Never. I would learn it myself by reading all the help menus and relevant documentation

9. How long will you surf a website or search a database before asking for help?

- a. 0–30 minutes
- b. 30 minutes to an hour

- c. 1–2 hours
- d. 2+ hours
- e. I never ask for help
- 10. When seeking research assistance, where do you turn FIRST?
- a. Friend
- b. Classmate
- c. Instructor/Professor
- d. Librarian
- e. Google
- 11. Which method of communication do you prefer when seeking assistance from the library?
- a. Email
- b. Telephone
- c. Live chat/Instant Messaging
- d. In-person
- e. Text Messaging

12. What social media platforms do you use on a weekly or greater basis for information related to your field of study (check all that apply)

- a. Facebook
- b. Instagram
- c. Twitter
- d. Professional community (such as Linkedin)
- e. Snapchat
- f. None of the above: Other please specify:

13. Of the following platforms, which of the following would you like to connect with the library on? (check all that apply)

- a. Facebook
- b. Instagram
- c. Twitter
- d. Snapchat
- e. Periscope
- f. Blog
- g. Email
- h. A library specific website
- i. None of the above: Other please specify:\_\_\_\_\_