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MENTORING GRADUATE STUDENTS: TEACHING THEM HOW TO FISH FOR REAL

SERGIO CHAPARRO AND JOHN CYRUS

LITERATURE REVIEW

Graduate students represent an important part of academic libraries' users and potential users. The National Center of Education Statistics (NCES) reported 833,707 masters and 187,568 doctoral students for 2018-2019 in the USA. There has also been a steady increase in the number of graduate students enrolled in certificates at the graduate level. The research for this paper examined the available literature on graduate students (GS) and information literacy (IL). It seems clear that research is growing but not at the expected rate (Fleming-May & Yuro, 2009). There is some consensus in the literature, however, about several factors that pertain to the information literacy and seeking behavior of graduate students. A few assumptions about graduate students' information literacy must be debunked and they are highly relevant for this paper. There is a tendency to believe that GS know how to search for information and use library resources efficiently, which does not seem to be the case for the majority of them (Chu & Law, 2007; Gibbs et al., 2012; Mahmod, 2016; Monroe-Gulick & Petr, 2012). Mahmod (2016) and Al-Muomen (2012) also identified a great deal of overconfidence regarding searching skills on the part of graduate students. Kayongo and Helm (2010) and Gibbs (2012) suggested that even though graduate students may consider library services as extremely important, they—for the most part—had very limited contact with liaison librarians or were simply unaware of their role and existence. Even more, reluctance by the graduate student to contact the librarian seems to occur because of concerns over appearing inadequate, anxiety, or feeling that it is not the job of the librarian to do their job (Fleming-May & Yuro, 2009; Sadler & Given, 2007). Catalano (2013) and Chu and Law (2007) shared a lot of similar conclusions in their literature reviews: library instruction that addresses graduate students is absolutely necessary because GS may not carry the information literacy and searching skills we assume they do. Disciplinary differences may occur and we may also need to plan specific information literacy instruction and curriculum for masters and doctoral or Ph.D. students separately. In addition, graduate students tend to consult their professors first regarding their information needs, even though Fleming-May and Yuro (2009) suggested that faculty's information literacy guidance and skills may be very limited, thus complicating the information literacy problem. Sloan and McPhee (2013) found that fellow students are also important sources of information literacy advice but warned about those graduate students who may feel isolated at bigger programs and unable to connect with peers (p.8). This leaves the graduate students coping with various strategies for information literacy needs and increasing their levels of stress and anxiety which in turn affect their information searching success (Kuhlthau, 1998; Mellon, 1986). Relevant for this research and the role of the liaison as a mentor is the fact that Sadler and Given (2007) demonstrated that "personal contact with librarians is an effective communication tool, possibly the most effective tool the academic library has at its disposal" (p.135).

It was important for this research to identify some assumptions about graduate students' information literacy skills, their perceptions of self-efficacy, the faculty competence at online searching, and the graduate students' awareness of the role of the liaison or librarian. Perhaps it is time to understand that academic libraries need to build spaces and infrastructures for "graduate students literacies" that provide a more holistic approach to their information needs, where the liaison could be even more effective (McDaniel, 2018). A graduate study room is not enough. Information literacy programs and peer to peer counseling, intervention and dialogue spaces seem to be much needed. In addition, it is time perhaps to bring these issues into effective library education in order to maximize the outreach impact of future academic librarians. Clarifying misconceptions about graduate students' information searching skills and the support of their ecosystems would better target the resource-intensive academic library services.

A major function of graduate school at the masters and doctoral levels is the formation of professional identity. Despite the significance of the phase of academic development, graduate students often struggle to simultaneously build the knowledge and skills required in their future profession and construct this professional identity. Additionally, these identities and the *norms* of the profession may be based on idealized versions of researchers and faculty in the field with little basis in reality (Hall & Burns, 2009). Research on the formation of these professional identities describes a *development network* cultivated by graduate students to advance their work and career. However, the network also shapes their professional identity (Baker & Lattuca, 2010). While the majority of the developmental networks of graduate students are comprised of peers and faculty, other members come from outside of these traditional areas. Extending out to family and friends, these external members of the network influence the development of professional identity in ways similar to those of the core academic relationships (Sweitzer, 2009). While there is little research to demonstrate such as role, studies in the library and information science literature do point to a potential for librarians to act in a mentorship capacity with graduate students (Baruzzi & Calcagno, 2015; Caravello, 2007). While research is needed to describe the extent to which librarians function within the developmental networks of graduate students and serve in a mentoring or coaching capacity, there is little doubt that interactions between librarians and graduate students are complex and multifaceted. Additionally, when it comes to these interactions, it may also be helpful to briefly examine definitions and roles associated with mentoring. Kram (1983) delineated both phases and roles associated with mentorship, such as the idea that mentorship is composed of two functions: those that serve to enhance careers and those that serve a psychosocial function. Roles that served the goal of career enhancement included granting exposure and visibility to mentees, providing coaching, and identifying challenging opportunities. Psychosocial functions addressed by mentoring included role modeling behavior, providing counseling, and in some cases friendship (Kram, 1983). While these specific functions of mentorship are useful in envisioning or contextualizing the benefits of these relationships to graduate students, recent research has sought to distinguish between types of assistance offered by the various members of a particular developmental network. Specifically, Marcdante and Simpson (2018) distinguish between advising, coaching, coaching with wisdom, and mentoring. Most important for our discussion is the difference between coaching (a time-limited relationship whose goal is to assist the learner in accomplishing or acquiring a task or skill) and mentoring (a long-term relationship focused on career development and socialization within a field). The in between form of guidance, coaching with wisdom, is a distinct mixture of coaching and mentoring where the relationship is time-limited and focused on a task or skill that is contextualized by the field of study (Marcdante & Simpson, 2018). In many ways, the concept of a task- or skill-focused relationship placed within the student's field of study mirrors the traditional mode of consultations with a subject-specific librarian.

THE AFFECTIVE CONTEXT OF GRADUATE STUDENT RESEARCH

The role of affective and emotional factors in their information seeking behavior and the existence of library anxiety among graduate students is verified by the literature, as it is the variety of strategies they use to cope with information challenges, such as information overload, time, difficulties building effective searches, and time constraints that limit their ability to perform research (Catalano, 2012). Graduate students live under a continuous state of stress. They have deadlines, advisors, an important group of them work part-time or full time or have TA duties, and in some cases are the first line of library information literacy in the classroom. By this, we mean they build, convey and disseminate information literacy tools and dexterities back to their classrooms and faculty advisors.

We observed a great deal of them approaching us and being vocal about their stresses. These affective and emotional factors remind us to take a more holistic approach towards mentorship—for example, offering spaces for dialogue about their concerns regarding online searching, and their self-perceptions and efficacy. Therefore, graduate students do face important information literacy challenges. This situation becomes more complex as we understand that they are part of an actual research ecosystem composed of different actors, contexts, and constructs (Urquhart & Rowley, 2007). Graduate students do not exist in a vacuum, especially those at the Doctoral level who are embedded at research oriented institutions under complex ecosystems.

TEACHING GRADUATE STUDENTS HOW TO FISH FOR REAL

Teaching GS how "to fish for real" should involve also paying close attention to the affective factors that affect their perceptions of the library information tools. In the course of our experience as liaisons we have identified several instances of "imposter syndrome", low self-efficacy, and reluctance to ask others (e.g., the advisor or the teacher). In addition, teaching them how to fish for real requires to move beyond the traditional consultation, but instead walking with the GS through the research process, speaking interdisciplinarily, which shapes most research nowadays (O'Connor & Newby, 2011), promoting constant communication and lifelong learning.

Mentoring graduate students and teaching them to fish for real are two connected strategies that we believe are conducive to student success and impactful library outreach. To educate graduate students on how to fish for real should involve, among other things, to teach for lifelong learning. As academic librarians and liaisons at VCU Libraries, we faced a very important amount of

graduate student interactions in the behavioral, social, and health sciences. A good portion of those engaging interactions and consultations have prompted our interest in educating for lifelong learning, especially in the context of a research university. Those interactions have also shaped our skills and teaching styles dramatically, making us more aware about teaching for the (graduate students') future. Our information literacy instruction, teaching, and mentorship, may have a lasting and positive effect in their academic and professional futures. We believe that it is also our task to mentor or to advise those graduate students for the future so they can fish for themselves when the situation arises, and educate others about how to fish. If we want to educate for lifelong learning, we need to connect what we do in the classroom context to what future research the student might be interested in. Databases transform and evolve, research tools and paradigms like Systematic Literature Reviews may change, searching options get refined or simply disappear, research themes within disciplines may shift and data may replace text, the field's culture may abruptly get transformed—these are some aspects that need to be carefully explained and instructed for lifelong learning.

Librarians and liaisons interested in teaching graduate students how to fish for real would make effective and efficient use of mentorship as a form of establishing a more consistent contact and connection system between the library and the graduate student. In addition, teaching them to fish for real requires the librarian to mentor by addressing the user in a holistic way. This involves paying attention to their learning styles, emotional maturity regarding the research task, and verifying through consultations and interactions their self-described information literacy skills. It also requires a constant dialogue that enhances the quality of the interaction. This in turn would solve the inherent initial anxiety of contacting the liaison/librarian and facing the interaction which usually triangulates between librarian, student/researcher, and faculty member. Mentorship does not come without challenges: we believe that knowing when to intervene is one of them. The timing is critical for the future course of the interaction since becoming intrusive can also affect the relationship between the graduate student and the advisor. This is where our expertise and intuition educating graduate students would come very handy and useful. It informs and sets up efficient boundaries for our zones of intervention.

SUGGESTED MENTORING TOOLS AND TECHNIQUES

Mentoring should offer graduate students tools for self-learning at their own pace. We suggest paying attention to tutorials for educating on the query. The usefulness of this approach is made more evident by the online learning environments pushed by the COVID-19 pandemic. We found that a great deal of students were asking for materials that could "teach them on their own" and facilitate their exposure to complex query building or examination of database details. We believe our experiences regarding this tendency to self-education in information literacy could be transferable. Current software makes it possible to create more self-paced online learning tools that could facilitate the librarian's graduate student mentorship. Those tools, targeted specifically to user needs should address some of the literature's assumptions about graduate students' searching and researching skills, pay attention to the affective factors of the search for information, and among other things, connect and reconnect the graduate student to the library. Connecting more closely to the faculty, advisors, and researchers close to the graduate students is a must (Cowan & Eva, 2016; Moore & Singley, 2019). Spending time with the librarian is another necessary factor for the mentorship, necessary to teach them how to fish for real, since the librarian's personal touch is the most important communication tool for the library (Harkins et al., 2011; Sadler & Given, 2007).

THE LIAISON'S BOUNDARIES AND LIMITATIONS

Boundaries for our mentorship are connected fundamentally to our own subject expertise, the number of "flight hours" we have interacting with graduate students which in turn inform our intuition and teaching and mentorship styles. Second, our own time and schedules represent a major limiter, as academic librarians do a lot of other things aside from teaching and outreach. Third, we are constantly aware of being unobtrusive, we don't want to risk dialogue and we are fully aware and respectful of the the faculty zones of intervention. Finally, and perhaps one of the biggest lessons of the COVID-19 pandemic has been our recognition of the different educational and mentorship opportunities that the online vs. face-to-face context offer to our outreach. Our comfort zones for mentorship could be affected by these contexts; graduate students may also prefer mentorship only in certain contexts.

THE EXPECTATIONS AND REALITY OF GRADUATE STUDENT – LIBRARIAN INTERACTIONS

Understanding the possibilities of librarians as mentors and coaches for graduate students must begin with a discussion of the container where most of the interactions between librarians and graduate students occur, the research consultation. Graduate students approach the librarian in various stages of learning, experience, and preparation, as well as with varying assessments of their own skills in library research. Additionally, there are a significant number of intrinsic traits and extrinsic factors that students bring with them into the interaction with the librarian. Many of these are represented both in Kuhlthau's (1998) affective aspects and Urquhart and Rowley's (2007) ecosystem but most are not evident to the librarian upon first contact. Additionally, and specifically relating to the student's skills, comfort, and preparation, Heinström (2006) proposes patterns that students exhibit in how they search for information, ranging from exploratory to specific and from surface level nonstrategic exploration to deep and strategic searching.

The initial, and sometimes most difficult, job of the librarian is to understand where the student is in all of these aspects in order to provide the most efficient and effective help possible.

Aside from the student-related factors brought to an interaction, there are points of divergence that shape and alter the nature of the interaction between librarian and graduate student. These points push the consultation and the relationship in one direction or another and force the librarian to react and consider the form that assistance will take. Common points of divergence include the clarity and focus of the initial question presented by the student, whether the impetus for the consultation lies with the student or a faculty member, the amount of work put in prior to the interaction, the personality of the student, and constraints placed on the interaction such as time or student/faculty perception of library value. A point of divergence may be as simple as a student wanting to take ownership or leadership in a project where they have interest but little or no experience. This creates an entirely different dynamic from a situation in which a student is happy to cede control of the interaction to the librarian. It forces a definite coaching mindset onto the librarian, who may be responsible for working with the student as they learn and check their skills. Another point of divergence that drastically alters the relationship within the interaction is when leadership is ceded completely to the librarian. For instance, when a team of novices decides to pursue a complex project based on using and analyzing research literature, such as a systematic review, the librarian may assume the role of both expert and coach. This divergence extends the responsibility of the librarian beyond the role of expert searcher to coach on methodology and process, a role in which many may not be comfortable. Underpinning all of this, in the health sciences especially, is a culture of rapid accumulation of knowledge and acquisition of skills.

LESSONS FROM THE HEALTH SCIENCES

The health sciences as a learning environment has a number of distinct features, including but not limited to persistent exposure to research and the clinical setting. Functioning in a research-intensive environment means that students in the health sciences typically have more regular exposure to research as a process while the clinical setting entails constant adaptation to new knowledge and skills. There are a variety of models that have been used to train students in this setting over the years. The See One, Do One, Teach One paradigm is based on a pattern of demonstration, practice, and confirmation of mastery. The See One stage is characterized by expert walkthrough of a process or procedure wherein skills are broken down into simple component pieces. The Do One stage involves verbal and manual walkthrough by the learner demonstrating basic understanding. Finally, the Teach One stage is used to confirm mastery by having the learner assume the role of expert and pass their knowledge on to other students (Birnbauer, 2011; Speirs, 2018). Another common framework for developing students in this setting are the dual concepts of self-directed and self-regulated learning. Both are learner-controlled approaches to learning new information and skills (Gandomkar, 2018). Self-directed learning, however, is focused on the broader process of sustained learning over the course of a career (Loyens, 2008), whereas self-regulated learning is described as a process of planning, learning, assessment, and adjustment focused on a specific task (White, 2014). A final, more recent framework used to guide student development is that of the master adaptive learner. This conceptual framework is an extension of self-regulated learning that aims to assist learners in functioning in an environment where professionals must balance innovation and efficiency in problem solving, knowledge, and skill acquisition (Cutrer, 2017).

These concepts and models manifest in different ways, but they may go some way to explain why graduate students treat searching as a skill that is either relevant to their future career or not. While not all of the students in the health sciences follow this model, there is a tendency for interactions to take one of three paths: students see a useful skill to acquire and make plans (with the librarian) to learn and practice the skill, an in between path whereon the student observes the expert (librarian) perform the skill and begins to understand the complexity but does not seek mastery, or students (or faculty) recognize expertise that takes more time and energy to acquire than they can commit and turn to a transaction mindset instead of skill acquisition. Moving forward and drawing on the lessons from the models discussed above, librarians would benefit from developing models for working with graduate students on skills acquisition through resources, training, coaching, and assessment. In part, this means developing a better understanding of which support tools facilitate learning but also offering the appropriate level of assistance to help the student succeed and achieve independence / autonomy in use of skills.

TAKEAWAYS

The most common role of the liaison librarian is that of a bridge, facilitating the interaction between student and faculty. However, we must remember that students do not exist in a vacuum. Instead, they bring with them complex aspects that must be accounted for by the librarian in order to both understand the situation and provide adequate support. We must also focus on teaching students to adapt first and foremost as things will change so that they can be successful in their future careers and not just on an individual project. Finally, we must embrace our interdisciplinary natures and look to other fields for best practices, theories, and methods based on our needs as teachers, collaborators, coaches, and mentors.

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