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Librarian Class Attendance: Methods, Outcomes and Opportunities

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Abstract

What, if any, are the benefits of having librarians attend lectures and seminars? In the midst of a start-up program, the librarians at the Weill Cornell Medical College in Qatar were challenged to test new models of active participation while demonstrating positive outcomes. This paper describes the setting, methods, and outcomes associated with having librarians attend courses as active members in an evolving learning environment. Interactions with faculty and students will be analyzed to assess whether course attendance benefits professional relationships in a way that positively impacts student learning. In parallel, an examination of assessment measures for determining value of service will also be undertaken.

Keywords: Embedded librarians, Collaboration, Assessment measures

Introduction

The State of Qatar is a small, wealthy country situated on the northern coast of Saudi Arabia and the southern shore of the Persian Gulf. In a very short time span, Qatar has gone from a subsistence aquaculture-based economy to a rapidly modernizing, oil and gas-based economy. The Weill Cornell Medical College in Qatar (WCMC-Q) is a joint venture between Cornell University and the Qatar Foundation for Education, Science and Community Development. The Foundation's premiere project is Education City, a multi-institutional campus for education, research and technology, with a goal of preparing graduates to take on leadership roles in key professions. Cornell University is currently one of five leading American universities who have established programs on the campus. The 'deliberately digital' Distributed eLibrary of WCMC-Q is intended to serve users beyond the confines of any particular space. As such, our service mandate is one that is based on outreach and working with users in their own workspaces. This case study describes a collaborative pilot project that was undertaken between the faculty members involved in a first year medical course and the liaison librarian assigned to support this course.

Educational Setting

The WCMC-Q program is comprised of a two-year premedical program and a four-year medical program, the

latter being a replica of the program offered in New York. The medical program emphasizes the integration of basic and clinical sciences, includes a strong problem-based learning stream, and incorporates clinical training from the first year onward.

The WCMC-Q Distributed eLibrary has a mandate to provide both resources and services beyond the confines of a traditional library space. One of our service objectives has been to infiltrate the curriculum in such a way that librarians become part of student and faculty workflow. We have been experimenting with attending lectures and seminars, roaming through student work areas offering assistance, and creating course specific webpages that offer point-of-need recommended resources, search tips, and other links.

There has been a mixed response from administration and faculty as to whether or not attending lectures and seminars is a valuable use of time. Some are very supportive of the idea, while others (including some librarians) are not convinced that the outcomes of such activity are substantive enough to warrant the time and effort involved. In order to demonstrate the value of various service activities, we have been investigating ways to define value and success, and experimenting with developing appropriate indicators.

Objectives

The pilot project was instituted with a dual set of objectives, the first related to student learning and the second related to measuring the library's contribution to student learning.

A) Student Learning Objectives

The student learning objectives, articulated by the faculty member in charge of the course, centered on the information skills and habits of students in relation to Journal Club presentations and discussions. The faculty member was concerned about the 'googlization' of medical information seeking, and also wanted to broaden the discussions of the journal articles to ensure that students understood the relevance and context of the articles they were reading. Put formally, the learning objectives were:

- 1) To expand student awareness and use of specific information resources, beyond the few resources that they already regularly consulted

- 2) To introduce students to concepts relating to scientific/medical publishing and scholarly communication

B) Library Measurement Objectives

Having been challenged to test new models of active participation while demonstrating positive outcomes, the Information Services staff had begun tracking outcomes in relation to our activities in order to demonstrate their value. With this pilot, our measurement objectives were:

- 1) To develop and test a methodologically triangulated approach to measuring outcomes
- 2) To assess the effectiveness of a participatory model in terms of student learning and outcomes measurement

Literature Review

A review of the literature was undertaken on two tracks: information seeking behaviours of clinicians and faculty/librarian collaboration, specifically collaborative efforts in which librarians are embedded in courses.

A recent literature review by Coumou and Meijman on how physicians search for clinical information revealed that the time and skills required for this activity continue to be the major deterrents [1]. Improved skills, improved information systems, or collaborating with a clinical librarian provide possible remedies, without which physicians will continue to seek answers to only a limited number of their questions. Clearly, improved ways of assisting physicians in finding quality information quickly are needed.

Curriculum-integrated information literacy instruction is well established in many academic institutions. Still, there is a sense that in many instances this kind of instruction is only a piece of a possible larger whole. Chiste et al [2] and Owusu-Ansah [3] describe scenarios, both real and imagined, in which faculty-librarian collaboration goes beyond point-of-need, curriculum-integrated instruction sessions to include librarian involvement in all aspects of course development and delivery, including curriculum development and co-teaching.

Embedding a librarian in class is not common in the library literature. Dewey defines embedding as the “integration of one group with another to the extent that the group seeking to integrate is experiencing ... the daily life of the primary group” [4]. In the context of medical education, there have been some instances where librarians have been embedded in the PBL portion of the curriculum. For example, Satterthwaite et al [5] and Watkins [6] describe roles that librarians can play in this type of curriculum, including those of traditional reference and instruction providers to students, resource persons to faculty, and facilitators in problem-based learning groups.

Moving beyond the descriptive, Koufogiannakis et al determined that involvement of librarians in small-group PBL sessions was not warranted in relation to pre- and post-test scores when testing students’ level of health information knowledge [7]. This study resulted in a decision to discontinue small-group involvement of librarians, though larger group instruction and involvement in PBL faculty meetings was retained in the program.

Recently, a number of academic libraries have started to offer “embedded librarian” services in courseware environments. Librarians become active members in online courses, following the content and discussions of the course, posting content and, in some instances, giving/grading assignments relating to library research [8]. That faculty are welcoming this kind of librarian involvement in online courses is interesting, and could lead to more active involvement in face-to-face courses as well.

Method

The methods used to provide the service and assess student learning will be described, as well as the methods used to measure outcomes and value of service.

A) Method - Student Learning Objectives

WMCQ-Q, like most American medical schools, follows a problem-based learning curriculum. Each week students engage in a PBL case wherein they meet three times, gathering information and discussing the case as they progress through the week. The final meeting also incorporates a 60-90 minute Journal Club component wherein selected students present one or more assigned journal articles. The articles are closely related to the PBL case topic for that week. All students are expected to read the articles and be active participants in the discussion. Several faculty members are involved over the course of the semester.

The liaison librarian assigned to the course was invited to attend Journal Club. Several weeks into the semester, the course director stated his concerns to the librarian about the information sources that the students were consulting. He asked the librarian if she could meet with the presenters each week to guide them in their use of resources. Ensuing discussions about the role of the librarian and the support she would need in order to ensure student “buy-in” resulted in the following approach:

- 1) The faculty member announced to the students that he expected Journal Club presenters to meet with the librarian prior to their presentations.
- 2) The librarian contacted presenters each week to initiate a meeting. A follow-up was initiated by the librarian if necessary.
- 3) The librarian introduced presenters to one or two standard resources related to the topic of the week, and introduced one or two concepts related to scientific/medical publishing and/or scholarly

communication e.g. types of articles, citation searching, journal impact factors, etc.

- 4) Immediately following the Journal Club presentation, the librarian posted the information that had been shared with the presenting students to the course support webpage on the eLibrary's website. (<http://delib.qatar-med.cornell.edu/index.php?page=HSF&pagetype=CourseSupport>)
- 5) On occasion, all students were reminded by the librarian and/or the faculty members involved that they should be regularly checking the course support page in order to be aware of all of the information that was being shared each week with the presenters.

Course support material was quickly and easily posted to the website via Feeder, a pseudo-blogging tool that creates an XML feed that is published to our website. Once posted, an email was sent to the course director or other faculty member for approval of the material. If any changes were required, these could be made quickly and easily via Feeder. [See Figure 1]

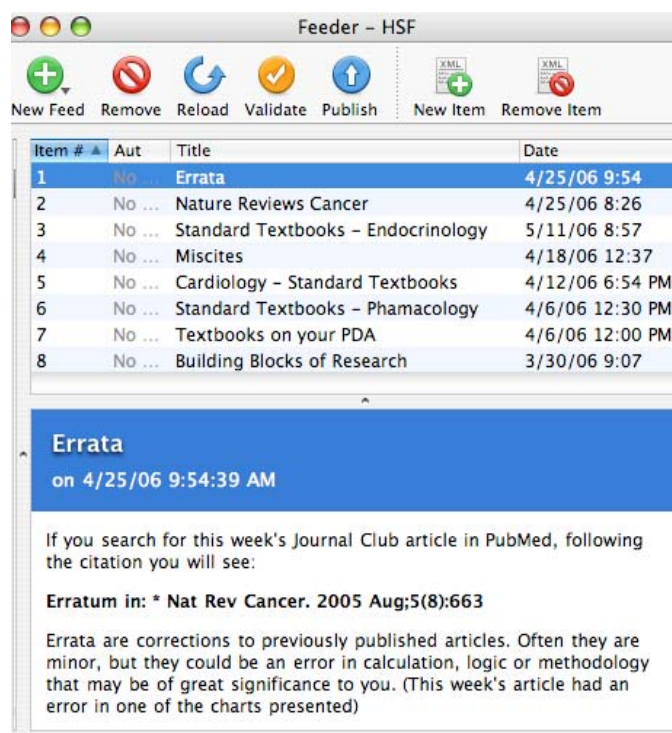


Figure 1: Feeder screen for inputting/editing content to be posted to course support webpage.

B) Method - Library Measurement Objectives

Having already begun experimenting with various measurement methods, we decided to employ multiple approaches to data collection in order to counteract subjectivity and bias in our results. We would collect, analyze and compare data from the following sources:

- 1) Participant Observation: The content of interactions with students and faculty, in and out of Journal Club seminars, and related observed outcomes would be journalized. This qualitative data would be analyzed using Ethnograph and SPSS.
- 2) Quantitative: RefTracker reports would provide quantitative data such as number/type of interactions, time spent, and counts of associated outcomes, where applicable.
- 3) Survey: Student and faculty perceptions of the value of the service would be collected via brief faculty interviews and student questionnaires.

RefTracker is a reference statistics software package, produced by Altarama, used by all Information Services staff to record service activity. In an effort to identify and track outcomes of our service interactions, we modified our input form to accommodate the types of data we wanted to capture and track. Along with standard categories such as reference, research, circulation, and document delivery, we created new categories to track time spent on liaison activities, class attendance, and adding content to course support pages. We also modified another area of the RefTracker Form to allow us to trace outcomes or follow-ups resulting from particular activities e.g. class attendance might lead to a literature search, material for the course support page, or some form of collaboration with a faculty member. For this pilot, RefTracker was used each week to document time spent and associated outcomes in relation to meetings with students, Journal Club attendance, and the creation of course support content.

A previous, exploratory diary activity, undertaken by all Information Services Librarians, and analyzed using a textual analysis methodology, helped to determine the outcomes that were made available as choices in the RefTracker software. The usefulness and "fit" of the chosen outcomes in RefTracker would be tested throughout this pilot.

Results

A) Results - Student Learning Objectives

The pilot was run for nine weeks. For seven of the nine weeks, at least one student from the presenting group met with a librarian. In each of the meetings, students were explicitly told of the twofold purpose of the meeting: 1) to expand their knowledge of standard textbooks for the purpose of filling out any background information needs that they might have, and 2) to expand their ability to provide some context to the article(s) in relation to publishing trends and scholarly communication. Students were clearly told that most of their presentation should remain focused on discussing the content of the article(s); and that they should include contextual information only as a small part of the overall discussion.

Each week, content of student-librarian meetings and associated, observed outcomes in Journal Club were documented in diary format by the librarian. The standard

content included the introduction of respected textbooks related to the topic of the week, and an introduction to the scholarly communication process of citing and being cited by other researchers (including an introduction to how perform a Web of Science cited reference search). Specific content included types of journals, types of journal articles, journal impact factors, errata/retractions, misciting, finding author information, self-citation, and types of questions to ask when scanning titles of cited/citing articles e.g. anything intriguing such as strong support from important bodies, supportive or contradictory findings, progression from animal to human studies, etc.

As a participant observer, the librarian looked for and documented outcomes in Journal Club presentations that demonstrated students had incorporated meeting. She also noted the lack of this type of content in presentations where no meeting had taken place.

A textual analysis of the diary data was undertaken by a librarian that was not present at the meetings or Journal Club. Both meeting content and observable classroom outcomes were included in the analysis. Categories were derived from the data itself, that elucidate the various types of interactions and outcomes that were observed:

- Familiarization with the library’s collection
- Familiarization with the library’s services
- Differentiation between resources types e.g. review articles, letters, etc.
- Knowledge of scholarly communication concepts e.g. citation searching, impact factors
- Knowledge of scholarly communication tools e.g. Web of Science, Journal Citation Reports
- Knowledge of scholarly communication analysis e.g. using bibliography and/or citing articles to ascertain research threads
- Familiarization with technical environment
- Socialization with librarians, information use, etc. e.g. appreciation of role
- Knowledge of publishing e.g. editions, first author concept
- Gaps in users knowledge
- Gaps in librarian’s knowledge re: user knowledge/behaviour
- Peer learning
- Course Support page content

Figure 2 summarizes the frequency of the categorized types of meeting content and class outcomes in Journal Club, separately and in combination. [See Figure 2] The most frequently observed outcomes were in the areas of scholarly communication, socialization, and the generation of Course Support page content. Also observed were instances of

familiarity with new library resources and services, differentiation between resource types, and peer learning.

The compiled data was shown to the course director who validated the accuracy of the results.

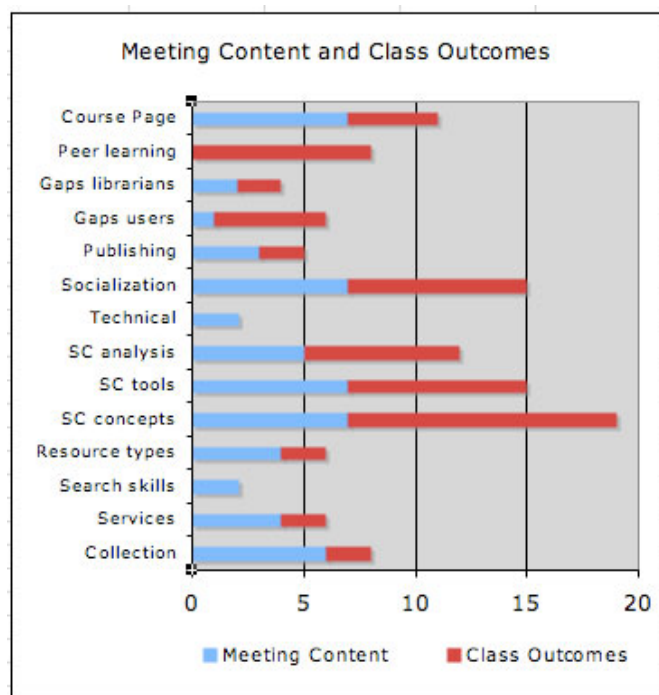


Figure 2: Meeting content and classroom outcomes in Journal Club

The role of a librarian in Journal Club, once formally recognized, led to new faculty/student/librarian interactions that had not occurred in other courses. Three such events were related to answering a quick reference question from faculty during class, two were related to correcting a student’s misunderstanding of a scholarly communication concept, one was related to encouraging a faculty member to speak about the nature of collaborative research articles, one was related to providing guidance on proper citing, and one was related to difficulty in undertaking a citation search. These interactions modelled the styles and benefits of collaboration possible between librarians and students, and librarians and faculty, in their everyday work lives.

The results of faculty interviews and student questionnaires indicated that both groups found the pilot valuable. Students were given a brief questionnaire following the last week of Journal Club. Responses were received from fourteen of the eighteen students. Each question and a summary of responses is provided below:

- 1) Did you consult with a librarian prior to your Journal Club presentation? If not, why not?
 - Eleven students met with a librarian
 - One did not because another member of the presenting group took on that responsibility

- Two did not due to lack of time, one of which also stated he/she did not think it was necessary
- 2) If so, do you feel that your meeting had any effect, positive or negative, on the quality of your presentation? If so, in what way(s)?
- Eight students reported a positive effect; of these, four referred to learning about resources, six referred to learning about putting the article in context
 - Three students reported no effect
- 3) What, if anything, did you learn from your meeting(s) that you did not know before?
- All eleven students who met with a librarian reported that they had learned something. Nine reported learning how to determine how many times an article had been cited; three reported learning how to assess an article's quality; two reported learning about new resources; two reported learning about impact factors; and one reported learning about errata

Two of the three regular Journal Club faculty members were interviewed about their perceptions of having a librarian involved in Journal Club. Both reported that they felt the quality of the presentations had been improved by the additional information students were including: reporting how many times articles were cited, noting important previous studies, referring to "importance" of journals in general and of specific articles in particular. Both faculty stated they would involve a librarian in this way in the future; they felt the students were learning skills crucial to continuing education in their future careers. One faculty stated that he thought it was important for students to learn about the "business" of publishing. The third faculty member involved was not interviewed, but emails and personal conversations with the librarian in the course of Journal Club, indicate agreement with his colleagues.

B) Results - Library Measurement Objectives

Data sources included librarian diary entries, RefTracker counts, and student/faculty feedback.

Diary entries, as described above in relation to student learning objectives, provided rich evidence of learning outcomes in Journal Club.

RefTracker data was used to compile librarian time spent on various activities. Inevitably, data was incomplete in some areas and, in some cases, time spent had to be estimated based on diary accounts. [See Table 1] Librarian time spent on this pilot was a total of approximately 37 hours: 3 hours spent on student meetings, 10 hours spent on preparation for student meetings, 13 hours spent in the classroom, 7 hours spent communicating with faculty, and 4 hours spent on publishing material to the course support page.

| Frequency and Duration of Librarian Activities (not including preparation time) | | | |
|----------------------------------------------------------------------------------------|---------------------|-------------------|---------------------|
| | < 10 min. | 10-30 min. | > 30 min. |
| Student Meetings | 1 | 5 | 3 |
| Classs Attendance | 0 | 0 | 9 |
| Faculty Liaison | 7 | 5 | 4 |
| Course Webpage | 4 | 8 | 1 |

Table 1: Frequency and duration of librarian activities

RefTracker was not able to provide meaningful data re: outcomes or follow-ups resulting from particular activities. Not only were the outcome categories too broad for the purpose of this pilot, but the reports provided by RefTracker did not include these data elements.

Student questionnaires and faculty interviews, as more fully described above in relation to student learning objectives, were successfully employed with a good response rate and useful data.

Discussion

A) Discussion - Student Learning Objectives

There was limited success in achieving the objective of expanding student awareness of information resources, at least in relation to observed outcomes in Journal Club. Students did not appear to consult background sources often, so perhaps Journal Club is not the appropriate venue for teaching about specific resources.

Considerable success was achieved in introducing students to concepts in scientific/medical publishing and scholarly communication. Students incorporated their learning into their presentations, and this learning was deemed valuable by all involved faculty and a majority of students.

The collaborative model adopted by the course director and the librarian, and especially the faculty member's expressed wish that students meet with the librarian as part of their Journal Club coursework, were, in the opinion of both the librarian and the course director, instrumental in achieving some level of success. Further, such a role provided the librarian with opportunities to learn more about course content and the knowledge gaps in student information literacy. The ability to identify and respond to such gaps, in small, relevant chunks, allows for more meaningful learning for students.

There were librarian perceived benefits, beyond the immediate scope of this pilot, that relate to overall library goals with respect to student learning. Students were socialized to the importance of information, and to the role that a librarian could play in assisting them with their information needs. Faculty-librarian interactions during Journal Club model this relationship, and students included the librarian in their discussions more than previously noted.

Also, as the medical profession heavily depends on the model of colleagues as information sources, the process of individual students meeting with a librarian and then incorporating what they had learned in presentations to peers, reflected this collegial process.

A) Discussion - Library Measurement Objectives

The triangulated approach to methodology provides some reinforcement for the validity of the results. Observed outcomes from the diary paired with faculty/student perceptions lends credibility to the claim that librarian involvement in the class resulted in positive student learning outcomes.

Using RefTracker to compile statistics and outcome threads, though promising, presented some challenges. Consistency of data entry was problematic, even for a short-term, highly committed effort. The choices of "outcome" offered in the RefTracker form were developed from an earlier exploratory study and designed for use with all types of reference questions. They were too robust to be meaningful in a study that required more subtle observation.

Still, RefTracker is not entirely without promise as a brief form for recording both qualitative and quantitative data. With some modifications, allowing for ease of use, richness of data entry, and flexibility of report generation, RefTracker data has the potential to reveal clear connections between activity and outcome as well as maintaining counts of resource inputs and service outputs.

The three methods of data collection each had their strengths and weaknesses. Diary data is rich in content, but suffers from librarian bias. Faculty validation helps to overcome this problem, but does not eradicate it, possibly due to interviewer effects. RefTracker data can provide reliable data on librarian time spent on activities, but only if the inputting librarian is consistent. RefTracker was inadequate in recording outcomes, though it could be refined to provide more useful outcome categories as a result of this pilot. Category development is iterative, and so it is not surprising that the categories were inadequate in the first attempt. Faculty interviews and student questionnaires provided valuable feedback, though the questions were somewhat vague and need to reflect a more refined set of goals for the program, once established.

Conclusion/Future Possibilities

Unlike Koufogiannakis et al, this study indicates that librarian class attendance can produce positive outcomes that are worth the time spent. The contents of student-librarian meetings were fuelled by librarian class attendance and such attendance socialized students to the use of information and information mediators. Koufogiannakis et al focused on pre and posttest comparisons as an indicator of the value and success of their efforts. A change in student knowledge, tested in this way, is a valuable measure but not the only one.

Consultation with the faculty involved in this pilot indicates that we should refine, continue and possibly expand our

efforts in librarian classroom involvement. In future, we will more fully articulate faculty-driven goals and expected outcomes, and we will refine our assessment criteria for program success. This may include adopting a pre/post test methodology of assessment in addition to the measures that were used in this pilot. Further, the degree to which faculty value the outcomes of this kind of interaction and student learning will be explored. This measurement will aid us in determining if outcomes are substantive enough to justify time and effort spent.

More clearly defined goals will allow us to more clearly define expected outcomes. Measurement methods can be changed and/or refined as needed. Means to streamline data recording in RefTracker will be explored in the hope of facilitating consistent tracking. We will continue to collect feedback from interviews and questionnaires since multiple methods of data collection lend greater credibility to our results. The impact of embedding often seems elusive and/or intangible, but defining what we measure, refining our measurement methods, and asking faculty to assess the value of outcomes is the one certain way to gain support.

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