Christine Drew, Worcester Polytechnic Institute

Christine Drew, M.L.S., is Manager, Instruction & Outreach at Gordon Library, WPI, Worcester, Massachusetts. Christine serves as liaison to Chemistry, Chemical Engineering, Biomedical Engineering departments as well as the Interdisciplinary & Global Studies Division. She has worked with business professionals, engineering & management students for 8+ years educating users and performing research on various industries and markets. Prior to starting at WPI October 2005, Christine assisted Babson students, faculty and entrepreneurs with comprehensive research for business plans where she was the Manager of Instructional Services at Babson's Horn Library. In her work at Babson, she led all aspects of research and instructional support. In addition to other initiatives she has also served as liaison to the math and science divisions and to the humanities faculty At Babson she sought and gained integration with their First Year Experience, second semester Rhetoric, and upper level management courses. She is known for her experience with and vision for information literacy, her strong technology background, and her commitment to the students and faculty.
Encouraging Use of Entrepreneurship Information Resources: Faculty/Library Collaboration

Abstract

Librarians, faculty, and the WPI Collaborative for Entrepreneurship and Innovation partner to encourage awareness of information resources available to engineering students developing business ideas. We co-promote information resource seminars, and librarians provide online research guides, workshops and one-on-one research consultations. Learn about the approach we take to educate students on information resources for business planning and suggested sources for entrepreneurial engineers.

Background

In early 2005 the Gordon Library began a renewed effort to promote information literacy at Worcester Polytechnic Institute (WPI). Worcester Polytechnic Institute, located in central Massachusetts, offers more than 50 undergraduate and graduate degree programs in science, engineering, technology, management, the social sciences, and the humanities and arts, leading to the B.A., B.S., M.S., M.E., MBA and Ph.D. The Gordon Library serves all members of the campus community as the main library on campus. Our information literacy program ideas and goals include aligning the library’s educational programs with the university mission to remain “true to the founders' directive to create, to discover, and to convey knowledge at the frontiers of academic inquiry for the betterment of society.” We collaborate with faculty and campus administrators to ensure that students develop the information literacy skills, attitudes, and knowledge needed in order to become efficient, effective users and producers of information. As the library’s plan for information literacy was shared and discussed with faculty and administrators, a clear partnership arose between the Library and the Collaborative for Entrepreneurship and Innovation.

The Gordon Library & the Center for Entrepreneurship and Innovation Partnership

According to our mission, “the Gordon Library designs, produces, acquires, stores, preserves, and provides access to resources and innovative services to meet the collaborative learning, information, teaching, and research needs of the University.” This partnership, as you will learn, helped us realize our potential by pushing the boundaries of our “highly technological environment … staffed by skilled experts who assist and instruct users wherever they may be.” We support more than 3800 undergraduate, graduate, and doctoral students, and 325 full and part time faculty. Two-thirds of our students complete one or more significant projects off campus and overseas.

As part of the library’s information literacy planning process we began outreach to various institutes and centers on campus. This opened dialogue about the research needs of certain focus areas. One in particular resulted in collaboration between the library and the Collaborative for Entrepreneurship & Innovation (CEI). CEI is a university-wide entrepreneurship program, founded in 1999. Their mission is “to inspire and nurture people to discover, create, and
commercialize new technological products and services, and to create new organizations based on those products and services, thereby advancing economic development and improving society. After meeting with the faculty and staff of the CEI to learn about their programs, librarians determined research areas in need of development. We attempted to fill these knowledge gaps by offering open research workshops for the entire campus community. This quickly turned into a promotional partnership as the CEI administrators realized the potential of library resources and research assistance that could aid potential entrepreneurs. Education was needed in the following areas, which supplement the local business professionals, legal advisors, and other programs offered by the CEI: business plan research, company, industry, and market research, and patent searching.

The CEI provides support for entrepreneurship to WPI students by leveraging their alliances with the local business community and alumni. Programs are offered on a regular basis, including dinners with entrepreneurs, workshops, elevator pitch programs, and business plan competitions. The WPI Venture Forum hosts monthly programs which are useful networking opportunities for students interested in starting their own businesses.

Types of Information Needed by Entrepreneurs

While developing research workshops for future entrepreneurs it became useful to understand their information behaviors and needs. Not surprisingly, various studies indicate that entrepreneurs tend to recognize opportunities and succeed within areas in which they have prior knowledge. Studies on entrepreneurs utilizing business planning, market orientation & environmental scanning processes show better firm performance and as a result those firms with a better understanding of its customers, competitors, and environment are less likely to fail. Cooper, Folta, and Woo explored the area of “intensity” of information seeking by experienced vs. inexperienced entrepreneurs. One of their findings suggests that entrepreneurs “might gain greater emphasis upon gathering and utilizing external information as they enter unfamiliar fields.” According to Brush’s research which surveyed entrepreneurs in manufacturing industries, nearly 100 percent use trade magazines and also many utilized competitors’ sales brochures and advertising, and general magazines and newspapers. In addition to secondary research, engineers as well as entrepreneurs rely heavily on informal networks to gather information. Hood & Young asked 100 leading entrepreneurs and Chief Executive Officers what one needs to know in order to be a success and concluded that for content areas, marketing and market related content knowledge should be a primary focus of university entrepreneurship education curricula.

After scanning the literature and through personal experience working with researchers, the following types of information are gathered or routinely used by entrepreneurs:

- Business planning – general sources
- Competitors products, strategy & market share
- Customer needs
- Demographics of marketplace
- Market research, including information on competitors, suppliers, size of market, market share
 Libraries can and do play roles in integrating applicable information sources and education into university curricula. Our contributions go beyond making resources available and accessible. Our impact can be felt by aligning with faculty and promoting information competency. A set of Information Literacy Competency Standards for Higher Education,\textsuperscript{13} and disciplinary subsets, including Science/Technology standards created by a Task Force on Information Literacy for Science and Technology\textsuperscript{14} and Information Competency Skills for Business Students\textsuperscript{15} help guide our practices as academic librarians.

In Rodriguez’ paper on the “Industry Expectations of the New Engineer,” he states:

Engineers with solid library research skills will generally produce more thorough reports than those without. The ideal time for the engineer to develop his or her information gathering and management skills is not when entering the corporate world, rather, it is during the engineering education where engineering library resources in staff and collections are virtually always superior to that of the corporate world where library service may be limited or non-existent.\textsuperscript{16}

The importance of social networks is illustrated through strong results which indicate that it is not what you know, but who you know. Although informal research workshops are useful for those who self select them, librarians have an opportunity to make a broader positive impact on the education of our students.

**Library & Collaborative for Entrepreneurship & Innovation Promotional Activities**

After the librarians worked with students, administrators, and faculty to determine information needs, the CEI and Library offered a one hour *Business Plan Resources* workshop and co-promoted the session. Promotional activities:

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| • announcements by monthly email to campus community  
  • table tents in library and campus center  
  • library web site, main campus events calendar | • campus newspaper ads (library workshops related to entrepreneurship & innovation are listed)  
  • Focused email distribution list week of event  
  • Referrals to library workshops, reference and research consultation service |

The initial session was well attended and well received, so we have continued to offer the workshop. WPI has seven week terms for undergraduates and traditional 16 week semesters for graduate students, we have found that one workshop per term (4 per year) is sufficient.

**Business Plan Workshop Format**
The Gordon Library offers a one hour interactive session in a computer instruction lab for a maximum of 16 attendees at a time. Featured information resources fell into the following areas:

Business plan components & samples
Resources to help you get to know:
  — Industry & Product (Fig. 1)
  — Customers
  — Pricing, Benchmarking, Ratios
  — Financing options
  — Trademarks & Patents (Fig. 2)

Your Piece of the Industry Pie

Search for articles:
wpi.edu/+library > All Databases > Industry

Industry Analysis: Free Size & Data Sources

• Bureau of Labor Statistics | International Labour Organization
• Census Economic Indicators | Global Economic Indicators
• County Business Patterns - businesses by industry to zip code
• Statistical Agencies (International)
• Economic Census 2002 - industry sales, size, establishments
• Federal Reserve of Boston - New England Indicators Database

Figure 1
Attendees over the past two years included: undergraduates, graduate students, staff and faculty. During the workshop attendees are encouraged to share their business idea so that examples can be explored during the demonstration of specific resources. This approach gives attendees immediate applicable information, allows researchers to understand that some areas are more complex to research than others, and gives an opportunity for the librarian to describe potential as well as the limitations of secondary research for business planning.

An additional program was developed for a regional conference. The Collaborative for Entrepreneurship and Innovation sponsors the CEO East Conference, a one-day collegiate entrepreneurship conference which attracts college students from the Northeast to the Worcester area. The library’s business plan workshop was modified to be included as a program for participants outside the WPI community who may not have access to subscribed resources. This program has been offered during the conference for the past two years.

Two more focused one hour workshops were developed and offered on patent searching and company research. Resources recommended during the sessions can be found on the library’s web site. Distance learning students who noticed announcements for on campus offerings requested online versions of the sessions. Librarians experimented with online asynchronous delivery of the patent workshop via Interwise iMeeting videoconferencing. Due to low registration for a few trial offerings in spring 2006 we opted not to continue with this method of instructional delivery. In January 2007, a 15-minute online video tutorial on patent searching was created and posted in a streaming media format. Further assessment will be needed to determine whether or not the brief video tutorials will be valuable for researchers. In the meanwhile, we will continue to offer the in-person workshops.
Moving Towards Curricular Integration

Since the library and CEI partnership developed in early 2005, librarians have been invited to offer in-class instruction to students in an Entrepreneurship course as well as to visit the Graduate Qualifying Project course. The request came through the Management Department Chair, who stated it was made at the request of graduate students who attended the Business Plan Research workshop. Course integrated exposure to information tools and strategies is ideal for the library as more students are made aware of tools and can gain information competence prior to their venture start-up, and as Rodriguez recommends, while they have access to superior information staff and resources. This approach also allows all students enrolled in the course offerings to gain the advantage of having knowledge of all competitive information sources accessible to them while members of the university community.

Benefits of Collaborating with Faculty

Overall, students, as well as management faculty now have an increased awareness of resources and are more aware of librarians’ research expertise. The library has gained a better understanding of researchers needs. Since the collaboration began the librarians have identified information gaps and acquired additional databases to fill these needs.

A University of Arizona study mentions that entrepreneurship programs can be costly, and that faculty working with students creating business plans can take considerable time. In addition “viable plans demand more market research and competitive analysis than is necessary for projects in traditional courses.” Another result of the alumni survey of entrepreneurs at the University of Arizona which contributes to the difficulty of market research and competitive analysis is the finding that entrepreneurship graduates spend more time in R&D and work with projects with short life cycles, such as high technology sectors.” Research for the planning of innovative science and technological business ventures pose a challenging audience for the Gordon Library staff to support. Information on sectors that are newly developed or new innovations which may be ambiguous or sparse can require much time and patience, or a lot of money, to research.

To begin to assess the impact of the collaboration, the Director of User Services of the Gordon Library contacted faculty members and the CEI administrator involved in the partnership to request feedback. Through feedback from faculty members the library determined that, although most agreed that Management faculty now have an increased awareness of resources available from the library, we still have work to do in this area. Currently, we are working closely only with a specific group of faculty. Beginning August 2006, librarians and academic technology staff implemented a department liaison program which we hope will increase direct communication about IT and library resources to faculty on campus. The liaison program could help expand communication channels to other members of the management department that are not directly involved with the CEI partnership.

In addition to improved communication about information resources available at the library, the faculty consulted strongly agreed with the following statements:

- the library's communication with management faculty has improved;
entrepreneurship information, resources and services are more accessible for WPI students;
their students' are able to find more academic or scholarly information after instruction by the library staff;
the ability to refer students to librarians for research assistance helps save faculty and CEI staff time.

As a result of faculty/library collaborations, more faculty have invited librarians to work with their classes. This move towards course integration is evident as we are now working with professors who teach courses on entrepreneurship to incorporate research tools and strategies. Collaborations with faculty have resulted in the library staff creating various online tutorials to support the needs of learners 24/7. Librarians use TechSmith’s Camtasia Studio program to create instructional videos which can be integrated by faculty into Blackboard course sites. We are evolving to meet the needs of aspiring entrepreneurs, with just-in-time online tutorials on opportunity assessment, company and industry research, and patent searching. The boundary of our “highly technological environment … staffed by skilled experts who assist and instruct users wherever they may be” is being put to the test. Our information literacy vision of aligning with the WPI curriculum has been invigorated by our outreach and partnership with the Collaborative for Entrepreneurship & Innovation.

Bibliography

19. ibid. pg. 2.