If You Build It, Will They Come?

Reality-Based Emerging Services Planning for Millennial Students

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Introduction

The Student Expectations working group was established to conduct research on University of Guelph students’ use of technology and expectations of online services. The research was intended to help the Emerging Services Steering Team (ESST) and other units to establish priorities, and to inform and guide ESST groups and other initiatives. The Student Expectations working group was more research based than other ESST groups. The membership consisted of two academic liaison librarians, the coordinator of Learning Services, and an IT support person.

The topic of the Millennial generation has become very popular in the library and higher education literature. The Student Expectations working group began by conducting a review of this literature on Millennials in order to identify common themes and trends. Much of what has been written focuses on characteristics of the Millennials that supposedly distinguish them from previous generations, and there do seem to be a number of common themes with respect to these characteristics. Upon reviewing the literature and the sources used by authors to develop their arguments, we discovered that many authors make assertions about the Millennials which do not seem to be substantiated by any solid research. These reservations were discussed in our first report.

The Student Expectations working group then conducted a survey and a series of focus groups designed to test the generalizations made in the literature and to better understand our own students here at the University of Guelph. Rather than focusing on their expectations of the Library, which we felt might influence how students answered the questions, we looked at their broader expectations and preferences for the use of technology in their personal lives and in higher education. We believe that we can extrapolate from this and apply the findings to the development of emerging services. A primary goal of this research is to help the ESST working groups and other services, in the Library and beyond, to establish priorities and to inform and guide them and their initiatives. This information is, along with some of the other surveys that have been done, another source that helps us to understand whom our students are and how to meet their
needs. While this research focuses on their online behaviour and use of technology, these issues have much broader implications and the results touch on many areas of the library in some way.

Many of the findings from our survey are contrary to commonly held assumptions about Millennials and to the trends in the library science and higher education literature. Some results do seem to be more in line with these trends. We have organized the results in this way, by highlighting what was and was not consistent with the literature.

Methodology

Before sending the survey out, we tested the questions with a group of students and asked them to provide comments about clarity of the questions and length of time it took to complete the survey. The survey was also sent to the Information Technology Student Advisory Group for comment. It was constructed using the SelectSurvey software and was sent to all undergraduate and graduate students via university mass e-mail. The message was sent from the CIO’s office rather than the library, as we wanted to avoid influencing answers by causing students to focus on the library. The data was collected using the survey software and then analyzed with the assistance of the Library’s Manager of Evaluation and Analysis. The survey was administered in January, 2007.

While our sample is a fairly large one, it is not random and is therefore not necessarily representative of the entire university of Guelph population. Because the survey was sent to the entire UG student population and all members of this population were invited to participate, we have a self-weighting sample, also referred to as an Equal Probability of Selection Method (EPSEM) sample. An EPSEM sample is one in which every individual, or object, in the population of interest has an equal opportunity of being selected for the sample. In order to ensure that this document provides a clear understanding of how the sample relates to the entire campus, we have provided relevant population percentages for gender and degree programs.
The focus group questions were developed after reviewing the survey results. They were intended to flesh out what we learned from the survey by asking questions that did not lend themselves well to the survey format, or that we wanted to explore further by talking to students. The focus groups were conducted by an external facilitator and were divided into groups of 1st year, 2nd and 3rd year, 4th and 5th year, and graduate students. Transcripts of the focus groups were analyzed for recurring themes. They were conducted in April, 2007.

Results and discussion

Respondents

Over 2,700 students responded to the survey. This is a response rate of 14.3%. The average age of the respondents was 21.6 years
Full Time VS Part Time

- Full Time: 96%
- Part Time: 4%
Hardware Ownership and Usage

Before asking students about their online behaviour and preferences, we first wanted to get an idea of what types of electronic “gadgets” they own. Lee Rainie of the Pew Internet project and others have asserted that Millennials are immersed in a world of technology and gadgets, that they expect to be able to gather and share information using multiple devices, and that they expect their technology/services to be mobile (Jones, Steve et al. (2002). *The Internet Goes to College*. Pew Internet & American Life Project).

![Computer Ownership Pie Chart]

- **98%** Yes
- **2%** No
Analysis:

According to our research, relatively few respondents own a PDA and few use their cellphones to access the Internet. Perhaps due to cost, respondents do not frequently use features such as web browsing, despite claims made in the literature that they expect all services to be available from mobile devices. We therefore need to carefully consider how much we should currently invest in making our services available through these mobile devices.

Recommendations:

- Delay the investment of significant resources in making services available on mobile devices.
- Continue to monitor trends in terms of students’ use of mobile devices, as this could change rapidly and may determine investment priorities in the future.
Distance Education (DE)

We next asked a series of questions about distance education (DE) and course-management technologies such as WebCT (now Blackboard). The literature tends to suggest that students prefer everything to be online, including course content and we wanted to test these claims.

### Have Taken a Distance Ed Course

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<td>%</td>
<td>63%</td>
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### Distance Ed, preferences

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<th>Preferred to In-class</th>
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<td>43%</td>
<td>24%</td>
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N/A
Analysis:

Contrary to what the literature suggests, our respondents do not prefer online courses to in-person contact. When the data is broken down by age, we see no significant difference among the younger students (under 20 years of age). However, the youngest respondents have the highest level (45.5%) of uncertainty, suggesting that these students haven’t taken a DE course yet and therefore don’t know their preference. Students were also asked to specify what they liked or disliked about DE courses. Many of the “likes” were about flexibility, convenience, and the ability to work at your own pace – topics primarily related to the course structure. The “dislikes” were more relevant to the actual affect on student learning, for example:

- dependence on one’s own study skills
- high level of independence required
- lack of interaction with faculty and classmates
- disconnect between course content and exam questions
- impersonal and isolating nature of distance courses
- amount of reading from a screen
- motivation and distraction difficulties
- learning only from reading with no listening or discussion
- ease of falling behind and procrastinating
- putting courses on the back burner” and not “taking them as seriously.”

Students in the focus groups also expressed concerns with DE courses. The main problem identified was a lack of accountability in an online environment. Most participants said that if they were going to be asked to work on group projects, they preferred in-person contact, as they could more easily ensure that each group member was accountable. The prevalence of comments about the need for interaction with instructors and classmates suggests that Guelph students still prefer to learn through human contact rather than strictly through technology.
Recommendations:

- Maintain a balance of online and in-person library educational experiences for students.

**WebCT/Desire 2 Learn**

**Have Taken a Course with a WebCT/D2L Component**

- 91% Yes
- 8% No
- 1% Not Sure

**WebCT/D2L Preference**

- 74% Preferred to In-class only
- 12% Did NOT prefer to In-class only
- 8% Not Sure
- 6% Not Sure
- N/A
**Analysis:**

Many courses now bridge the divide between online courses and traditional in-class courses by adding an online component to a traditional course through software such as WebCT (now called Blackboard). Most of our respondents had taken a hybrid course (which we defined as an in-class course paired with either WebCT or Desire2Learn, although the survey did not use this term). Of those respondents, 74% preferred traditional courses paired with a WebCT/D2L component to traditional courses alone. When asked why they liked the online component, respondents mentioned reasons such as course notes being easily available, organizational features (course calendar and grades) all accessible from one place, and the ease of communicating with professors and students through the message boards. The trend that emerged in the focus groups was that students found WebCT useful for reading class notes and accessing grades. While students liked the idea of being able to send messages to professors and classmates through WebCT, they generally weren’t enthusiastic about online meeting spaces.

**Recommendations:**

- Explore the use of online environments as a follow up to workshops and in-class sessions
- Pursue a method of standardizing the placement of links to the Library and Learning Commons websites on course websites in Blackboard.
Instant Messaging and Online Social Networks (OSNs)

The literature suggests that Millennials use online social networks (OSNs) such as Facebook regularly, and the libraries must consider integrating these tools into their services. We were interested in whether or not students use, or would be inclined to use, OSNs for academic purposes.
Frequency of IM Use Percent

Chat Use For Academic Work

Never: 25%
Once a Month or Less: 5%
Several Times a Month: 13%
Several Times a Week: 20%
Several Times Per Day: 36%
Social Software Use For Academic Work

- **Never**: 35%
- **Few Projects**: 11%
- **Most Projects**: 50%
- **Every Project**: 3%

Frequency of Use of Social Software for Academic Purposes by Age

- **<20**
- **20-21**
- **22-23**
- **24-25**

- **Never**: 40%<br>**All or Most Projects**: 60%
Analysis:

Our sense from the survey as well as the focus groups, which explored social software more thoroughly, is that students are reluctant to mix personal and academic computing. They enjoy the social aspect of sites such as Facebook and want to keep these separate from their academic lives. As a result, the uptake on online social networks (OSNs) for academic use has been slow, but may increase as younger students more accustomed to these sites move through the system.

The survey also asked students an open-ended question about how online social communities could be useful for academic work. We reviewed several hundred of the almost 1500 responses to this question. A majority of respondents felt that social communities could be useful for communicating and collaborating with group members. Google Documents was mentioned by a number of respondents as a tool that many are already using for group work.

Many students felt that online social communities could also be used to connect with other students in their courses and program to exchange information about courses, professors, jobs, and to sell textbooks. Facebook was mentioned a number of times as a tool for this. Some students also thought beyond the university and saw the potential of these sites for communicating with a wide range of people in the same field, or as a means of bringing together people with different academic backgrounds to brainstorm to solve a problem. Some students didn’t understand what a social community was, and not all comments were positive.

Our focus group participants confirmed what we found in the survey. They prefer to use social software for social purposes. They were asked specifically about Facebook, and there was a clear lack of interest in using it for academic purposes. Most participants said that tools like Facebook simply wouldn’t be as fun if they had to use them for academic work. This was the consensus in all of the groups that used OSNs, including the younger students. The graduate students did not mention social software.
Recommendations:

- The investment of resources to develop services for OSNs may be premature at this point, although we should continue to monitor trends.
- Students will only use library tools and services developed using OSNs if they perceive that these are useful and address a need that they have. They won’t use them simply because we think these tools are “cool”.
- The priority for the investment of resources should be making the library website and search interfaces more user friendly, as this is an issue that was brought up frequently by respondents.
- Promote and perhaps provide training and support for existing technologies that may be useful for academic purposes, such as Google Documents, which students are already using for academic tasks.
- The survey should be repeated in two-three years to measure these trends.
Online Activities

**Frequency of Online Gaming**

- 26% Never
- 15% Once a Month or Less
- 11% Several Times a Month
- 4% Several Times a Week
- 11% Several Times Per Day
- 42% Several Times Per Day

**Frequency of Online Gaming by Gender**

- Male
- Female
Analysis:

Much of the research we reviewed in our first report suggested that Millennials were very much into online gaming. However, the results of our survey showed quite the opposite: 42% of respondents had never played online games and 26% played online games once a month or less. This low number could have something to do with the fact that the University of Guelph has a very high percentage of female students. We anticipated that female students are less likely to be involved in online gaming than males. When we tallied our results, we saw that 3 times more males played online games several times per day than females.

There has been a great deal of interest recently surrounding online virtual worlds such as Second Life. We asked our students how often they participated in online virtual worlds such as Second Life. A staggering 96% of respondents had never participated in an online virtual world. Our survey results also showed significant differences in responses based on gender: 1.2% of males participated in virtual worlds several times per day, versus a meager 0.1% of females for the same frequency. There is no significant age effect to speak of here, although not a single respondent beyond the 30-34 age group had used virtual worlds.
Recommendations:

- Use of virtual worlds is very low, and gaming is not as high as expected, therefore we do not recommend investing resources in building gaming features into online library services or using Second Life to deliver services.

- Given the fact that many student aren’t into gaming, and females much less so, we must wonder if we would we be leaving some behind by adopting these technologies.
Research and tools

According to the literature, the vast majority of students claim to use the Internet more than the library. Another trend in the literature is the association of Millennials with the idea that authority and knowledge are secondary to simply getting enough “stuff” - in short, a preference for quantity over quality.

![Frequency of Use of Research Tools & Services](image)
How likely would you be to spend 30 minutes learning a new search engine if the results were more relevant than a Google search?

![Bar chart showing the percentage of respondents for 'Very Likely', 'Somewhat Likely', and 'Not Likely'.]

Importance of Search Engine Characteristics

- **Accuracy**
  - Essential: 80%
  - Very Important: 40%
  - Somewhat Important: 20%
  - Not Important: 10%

- **Ease of Use**
  - Essential: 50%
  - Very Important: 40%
  - Somewhat Important: 10%
  - Not Important: 5%

- **Quantity of Results**
  - Essential: 40%
  - Very Important: 30%
  - Somewhat Important: 20%
  - Not Important: 10%
Whom & How Respondents Ask for Research Help

Method of Finding Information on Library's Website
Analysis:

Our research shows that UG students do use the library in large numbers, and that students appear to understand that they must use a variety of resources, including academic sources, to conduct academic research. When asked to note the first place they go to find information and sources for research assignments, respondents provided a wide range of answers. They were given the opportunity to provide open-ended answers to avoid suggesting library-related resources. The vast majority of respondents who responded to this question did, in fact, indicate that they begin their research using library-related resources. The most common answer was the UG Library or library website (n=915), followed by Google (n=661), academic journals or journal indexes (n=399), Trellis (n=136), and Google Scholar (n=126). Many respondents also provided the name of a particular journal index, such as CAB Direct or PsychInfo. If all the library-related answers are combined (website, journal indexes, Trellis, etc.) they would account for more than 80% of the answers provided for this open-ended question. This suggests that vast majority of UG students are aware of the importance of using library resources for their research and turn to the library first when beginning a research project.

The focus groups confirmed that most students generally use a combination of library databases, Google Scholar, and Google to find sources for their assignments. They tend to start off doing a “massive search” and then try to refine the results. Students seem to realize that the library website has the best information for research projects, but they also find it to be the most complicated option. The library website, journal indexes, and Trellis are considered to be frustrating and confusing. Students know they must rely on “library stuff,” but they find it hard to get to sources and complain that they have to jump through too many hoops. They feel Google is much easier to use.

The literature also claims that, due to the Google mental model, students expect one search box gateway to all knowledge. In the focus groups, the difficulty of using the library website and online resources was one of the most commonly recurring themes. The focus group participants confirmed that students want just one search box for everything. We already suspected this, but the focus group feedback makes it clear that
this is the main problem that students experience with the library’s website. Still, both
the survey and focus groups suggest that students will use other tools, such as library
databases, if they believe they must do so to get better quality material for assignments.

In our first report we expressed scepticism about the claims made in the literature
about Milenials as learners. We noted, with reservations, several common themes. No
one question in the survey addressed any of these themes directly. However, there are a
number of related questions that enable us to make some inferences about our students’
learning and study preferences with respect to technology.

Students were asked whom they ask for help with their research, and how they
communicate with these individuals. This question examines our students’ behaviour in
the specific context of requesting help on a research assignment. The mode used to seek
help may be used to gauge the preference of Milenials to use technology for
communication, particularly chat. For our respondents email is the most commonly used
mode of communication for asking for research help from faculty, TAs, and lab
instructors, followed closely by personal contact. Focus group participants also claimed
repeatedly that they prefer e-mail to other forms of online communication to
communicate with group project members. For research help from library staff, personal
contact is most commonly used with email a distant second. It is worth noting that 34%
of respondents marked this item as not applicable, suggesting that almost 65% of
respondents had asked library staff for help with a research assignment. Contact with
friends was the only area where chat contact appears to be significant. Less than 5% of
respondents in total report chatting with a course instructor, TA, lab instructor or library
staff for help on a research assignment, suggesting that this mode of communication,
though popular for contact with friends, has not yet crossed over into common use for
communication on academic issues. Email and personal contact remain the standard
method of contact for TAs and course and lab instructors for research help.

The focus groups revealed that students may consider using library staff/librarians
for technical issues, such as gaining access to a particular issue of a specific journal, but
do not consider librarians to have the necessary level of subject expertise to actually help them with the search/research process. Participants in all groups indicated that they prefer to figure things out for themselves.

**Recommendations:**

- Enhance existing tools. Student feedback suggests two priorities:
  - Making the library website more user-friendly and
  - Making the search process easier, with more user-friendly, less complicated interfaces.
Multi-tasking

According to most of the literature, Millennials are multi-taskers, and our survey asked a number of questions designed to look at multi-tasking. One question asked students what other things they are likely to be doing when using a chat program.

![Percent of Students Who Do Academic Work While Chatting by Gender](image-url)
**Percentage of Students Who Do Academic Work While Chatting by Age**

- **Frequently**
  - <20
  - 20-21
  - 22-23
  - 24-25
  - 26-29

- **Sometimes**
  - <20
  - 20-21
  - 22-23
  - 24-25
  - 26-29

- **Rarely**
  - <20
  - 20-21
  - 22-23
  - 24-25
  - 26-29

- **Never**
  - <20
  - 20-21
  - 22-23
  - 24-25
  - 26-29

**Percentage of Students Who Play Games While Chatting by Gender**

- **Frequently**
  - Male
  - Female

- **Sometimes**
  - Male
  - Female

- **Rarely**
  - Male
  - Female

- **Never**
  - Male
  - Female
Analysis:

Perhaps surprisingly, mid to upper level undergraduate students are more likely to chat while doing academic work (54% of 22-23 year olds compared to 40% of under 20 year olds). Graduate students are also more likely than undergraduates (52% vs. 46%) to chat and do academic work at the same time. Respondents also chat while surfing the Internet (78% of females and 80% of males), listening to music (92% of females and 90% of males) and while doing e-mail correspondence (97% of females and 92% of males). It is interesting to note that the lowest result for frequent use of chat is when playing games, at just under 12%. 30% of respondents never chat while playing games, compared to 2% who never chat when doing academic work. It appears that playing games requires far more concentration than academic work.

Recommendations:

- In further study, it would be interesting to ask a more specific question about academic work, choose a task that requires sustained, intensive concentration such as studying for an exam or writing a paper, and ask what other activities students are engaging in during these particular academic tasks.
General Conclusions

Share information and perspectives

It would be useful to have a discussion with people from various areas in the Library/Learning Commons to discuss how the information in this report can be used and applied to our work. We therefore recommend that a series of meetings be held for further discussion of the report and these recommendations.

Take a balanced approach to implementing new services

Libraries are at the cutting edge of many new technologies on university campuses, and so caution must be exercised that the development of new services does not become one dimensional, driven only by what is reportedly new or “hot”, and/or the pressure to keep up with what other institutions are doing. (We noted in our first report, and it bears repeating, that the library literature too quickly accepts assertions made about technology and students without appropriate critical analysis.) While it is essential to understand and keep up with new technologies and adapt services to them, it is equally important to set priorities and make decisions in a context that is informed by a knowledge of local users and their needs. As the academic town square in a learner-centred institution, the Library must keep in close touch with our own students’ behaviours, trends, and practices, and these should play a key role in shaping the direction of emerging service development. To this end, we recommend that a study be undertaken to identify our students’ research and technology needs and to recommend solutions to meet these needs.
Focussing only on meeting students’ needs, however, can be short sighted. Therefore, we advocate the pursuit of a balanced approach to the development of new services, one that does not automatically embrace new trends, but examines them (and research about them) critically, and takes into careful consideration the implications and applications for Guelph’s students and learning contexts. To achieve this, we recommend the establishment of a series of ongoing study groups, in which librarians and staff could explore new technological trends of interest, assess their potential and relevance to user needs, and share their findings and recommendations with others.

The mandate of these groups should include envisioning the academic applications of new technologies with potentials that students may not be aware of, and ensuring that the development of new services is not confined by local needs and contexts, even while giving them careful consideration.
Executive Summary

- Relatively few respondents own a PDA and few use their cellphones to access the Internet. We therefore need to carefully consider how much we should currently invest in making our services available through these mobile devices, but we should continue to monitor trends, as this could change rapidly and may determine investment priorities in the future.

- Students appreciate many features of online course management systems such as WebCT, however they do not prefer courses that are delivered entirely online. The prevalence of comments about the need for interaction with instructors and classmates suggests that Guelph students still prefer to learn through human contact rather than strictly through technology. We should therefore maintain a balance of online and in person library educational experiences for students, explore the use of online environments as a follow up to workshops and in-class sessions, and pursue a method of standardizing the placement of links to the Library and Learning Commons website on course websites in Blackboard.

- Students are reluctant to mix personal and academic computing. They enjoy the social aspect of sites such as Facebook and want to keep these this separate from their academic lives. The investment of resources to develop services for OSNs may therefore be premature at this point, although we should continue to monitor trends. An important point to keep in mind when conceptualizing services using OSNs is whether these services will actually address a need the students have expressed. Students will only use library tools and services developed using OSNs if they perceive that these are useful and address a need that they have. The priority for the investment of resources should be making the library website and search interfaces more user friendly, as this is an issue that was brought up frequently by respondents. This should be done using the most appropriate technologies, whether that be OSNs or something else.
• Use of virtual worlds is very low, and frequency of gaming is not as high as expected, so we must be careful about building gaming features into online library services or using Second Life to deliver services.

• In terms of research and tools, we should concentrate on enhancing existing services. The students seemed to be telling us to work on two things: making the library website more user-friendly and making the search process easier, with more user-friendly, less complicated interfaces. Most respondents, at all academic levels, seemed to recognize the importance of using “library” sources for academic work, but they found this the most complicated and frustrating option.

• In terms of multitasking, it would be interesting to ask a more specific question about academic work, choose a task that requires sustained, intensive concentration such as studying for an exam or writing a paper, and ask what other activities students are engaging in during these particular academic tasks.