Shh Stats: Mining the Library's Chat Transcripts to Identify Patterns in Noise Complaints

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"In this day and age, we do not want our libraries to be morbidly quiet."– J. A. McGrossan (1970) *American Libraries*[1]

Abstract

Library patrons at a large public university regularly submit anonymous noise complaints about their fellow students via the library's online instant message reference service. These virtual tattle-tales help build a data set of chat transcripts that allow librarians to analyze library use, traffic flow, and students' study patterns. This paper describes how one library's analysis of those chat transcripts was used to quantify the noise problem in relation to gate count numbers, identify patterns in noise complaints, and evaluate the effectiveness of designated quiet study zones. Using one academic year of the anonymous chat transcripts, the library was able to code each complaint by day of the week, time of day, week of the semester, and floor of the library. Furthermore, most online noise complainants were asked by the reference librarian to physically describe their specific location (for follow-up face-to-face shushing). This allowed the library to plot each complaint on a library floor map for further analysis and space planning considerations. This analysis has proven useful for addressing the competing student needs for quiet study space and collaborative learning areas. The library has also used the data in its considerations of quiet zone enforcement, signage, furniture placement and configuration, and the use of group study rooms within the library building.

Background

If you listen closely, you can almost hear the students' fingers on their keyboards as they type their anonymous noise complaints into the library's online chat service. An analysis of these chat transcripts reveals a trend of disappointment, frustration, and even outrage from users who come to the academic library seeking a quiet refuge as they study. This project seeks to identify patterns among the cacophony as it examines patron-initiated noise complaints from the "Ask a Librarian" online chat service at Middle Tennessee State University's James E. Walker Library, and aims to give voice to the anonymous patrons who are tired of hearing people's one-sided cell phone conversations, giggly flirtations, aggressive keyboarding, and amateur DJ sessions in the library.

The Walker Library designated the upper two floors of its four-story building as "Quiet Zones" during the fall 2009 semester in an effort to balance the competing interests of students looking for quiet study and those seeking more collaborative group learning spaces. The first and second floors were given no special designation, but the general understanding was that library staff would be more permissive of ambient noise in these areas. This new zoned approach counted on students to self-select their study areas based on their study needs so that library staff did not have to patrol quiet zones or actively enforce noise policies. Yelinek and Bressler note that this strategy appeals to librarians who are often reluctant to approach disruptive patrons.[2] This approach is further supported by research that shows students accurately self-select their acoustic study environment needs, and that academic libraries should offer multiple study environments to accommodate them.[3] Bell describes this zoning approach as a popular strategy for libraries to manage noise, but cautions that the effectiveness of quiet zones depends on student cooperation. He warns of scenarios in which "students will simply choose to not give a damn" and then "all hell breaks loose with library workers caught in the crossfire."[4]

The designation of the new quiet zones at the Walker Library was launched with much fanfare. The library installed new signage, posted updated policies, and launched a public awareness campaign through its online, print, and social media marketing outlets.

Interestingly, student noise complaints persisted after the implementation of the quiet zones. Students, now operating with an expectation of quiet, began reporting quiet zone infractions, quietly, via the library's anonymous "Ask a Librarian" online chat service. This peer-enforcement model, now channeled through the reference desk, unintentionally gave the library a new way to analyze noise complaints through chat transcripts. This analysis thus gave students a new virtual megaphone through which to offer their collective cry for quieter study spaces.

Purpose

The purpose of this study was to mine the transcripts of the library's "Ask a Librarian" online chat service in order to identify patron-initiated noise complaints and analyze these transcripts for patterns. Ultimately, the library hoped to use this new information to help balance students' competing needs for quiet study and collaborative group work in the academic library setting.

Methodology

MTSU's Walker Library began using SpringShare's LibChat platform to manage its "Ask a Librarian" chat service in the summer of 2015. LibChat allows administrators to export chat transcripts for a specified period of time. For the purposes of this study, the author downloaded all chat transcripts for one academic year (August 1, 2015 through May 5, 2016) into an Excel spreadsheet. This file contained 2,558 individual patron-initiated chat transactions.

The first step required the author to identify and sort out the noise complaints from the overall transcript file. The library had not given noise-complaints a unique code in the LibChat platform, so the author applied a keyword filter to the transcript file to find any transactions containing the following terms: loud OR nois* OR quiet OR talk* OR music OR complain*. Some false hits occurred for music reference related questions, so these were identified and removed from the filtered list. After applying this filter and removing duplicates, the author identified 115 unique patron-initiated noise complaints from the chat transcripts: 78 for fall 2015 and 37 for spring 2016.

The second step was to code the noise complaints in the Excel spreadsheet. The author was able to use existing data in the spreadsheet to code each transaction with the following fields: **transaction number**, **day of week**, and **time of day**. The date and time stamp information also allowed the author to code each transaction by the **week of the semester**. The author analyzed the content of the transcripts in order to code each transaction by the **floor** of the library in which the complaint originated. Once this information was coded, the author used pivot tables to compile summary counts of the noise complaints by day of the week, week of the semester, time of day, and floor. Using the library's gate count tallies, the author was also able to calculate the noise complaints as a percentage of total library attendance by each week of the semester.

The final step of the transcript analysis was to plot the noise complaints on a map of the library. Because each noise complaint required library personnel to physically intervene and "shush" the offender(s), librarians regularly asked for the exact location of the noise complainant. This often led to detailed descriptions of the location (e.g., "...third floor to the right, first table by the window"). Using these descriptions in the transcript file, the author was able to plot 104 of the 115 noise complaints on a map of the library.

Findings

One of the major implications of this study was that the library now had quantified data on which to base its discussions of noise and patrons' noise complaints. Heretofore, conversations were largely reacting to anecdotal evidence and intermittent complaints. Upon reviewing the findings of this study, the library observed three notable patterns:

Nights are noisier than days

Students reported more noise complaints in the evenings than in the daytime hours. Sixty-eight percent of the noise complaints occurred between 5:00 p.m. and 10:00 p.m., with 32% coming between 7:00 a.m. and 4:59 p.m. One limitation of this study is that the "Ask a Librarian" service is not staffed after 10:00 p.m., so the library's open hours between 10:00 p.m. and 2:00 a.m. (on Sunday–Thursday) were not considered. Even so, the evening hours when the library is more sparsely staffed yielded a significantly larger number of noise complaints than the daytime hours.

Most noise complaints originate in the quiet zones

Students using the library's fourth floor (a designated quiet zone) accounted for 63% of all the noise

complaints in this study. The third floor, another designated quiet zone, was responsible for 13% of the remaining noise complaints. Combined noise complaints from the first and second floors (which carry no quiet zone designation) represented 12% of the total noise complaints. The librarians speculated that patrons on the upper floors felt empowered to complain given the floors' quiet zone designation, and students on the lower flowers complained less because there were less expectations of quiet.

Fall is noisier than spring
Patrons' noise complaints were down 53% from fall 2015 (n=78) to spring 2016 (n=37). Library gate counts are typically lower in the spring semester, so the author compared the number of noise complaints to the overall gate count numbers. Overall gate count was down 16%, but this did not explain the sharp drop in noise complaints. The library made no special interventions in the spring semester, so there was no explanation for this drop in noise complaints.

Practical Implications/Value

Analysis of LibChat transcripts has given voice to quiet-seeking students and their complaints about noise. Moving forward, the library now has data on which it may center its considerations of quiet zone enforcement, signage, furniture placement and configuration, and the use of group study rooms within the library building. All of these considerations are weighed against the competing students' needs for quiet study space and collaborative learning areas. Two practical implications emerged from this study:

Group study rooms, public computing areas, and quiet zones do not make for good neighbors
Noise from the library's group study rooms and public computing areas accounted for 39% of the total complaints. The group study rooms are not soundproof, and noise from group study sessions often bleeds into the quiet zones. This friction of competing study dynamics might be alleviated by moving the designated quiet zone to another floor that has fewer group study rooms. The library is first exploring a less expensive proposition: new signage inside the group study rooms that remind occupants to be mindful of their noise levels and that the rooms are not soundproof. Similar courtesy reminders are posted periodically at the public computing areas within the quiet zones.

Noise complaints represent a small percentage of library users
The library received the most weekly noise complaints during week 15 of the fall 2015 semester. Twelve complaints in one week seemed like a lot to the library administration. But considering that gate counts recorded that 29,933 people visited the library that week, the LibChat noise complainants only represented 0.04% of the total library visitors. Most weeks, the complaints represented closer to <0.01–0.03% of total library visitors.

The library has also revised its noise policy to more clearly define "quiet." Library staff described anecdotal stories that suggested great variability in what people consider "quiet." The policy now describes examples of quiet behavior and specifically addresses whispering, music "leaking" from headphones, and cell phone conversations.[5]

Though the complaints come from a very small percentage of library visitors, the library recognizes that this count of library noise complaints is a conservative measure. This study acknowledges that not every student will take the initiative to submit a complaint when noise is a problem in the library. A separate 2012 library survey of 154 library patrons found that, while 52% of respondents identified the quiet zones as their favorite places in the library, 30% of the total respondents identified noise as a continuing problem in the library.[6] Also, some library users complain directly to the library workers and bypass the LibChat service. Finally, not all complaints are patron-initiated. Service desk staff and roaming security workers also intervene when there is excessive noise in the library.

Conclusion

The project provided a successful technique for mining the library's "Ask a Librarian" online chat service transcripts for patron-initiated noise complaints and provided baseline data on which the library can measure the effectiveness of its future noise-related interventions. The results of this study provide new information as the library seeks to balance students' competing needs for quiet study and collaborative group work in the academic library setting.

While the anecdotal evidence paints a picture of a raucous library environment, noise complaints actually represent a very small percentage of total library visitors. The study allowed librarians to

analyze the transcripts and identify noise complaint patterns by time, day, week, and location. These patterns show that most noise complaints are received in the evenings and most originate in the library's designated Quiet Zones, especially where Quiet Zones are in close proximity to group study and computing spaces.

Based on the findings of this study, the library is considering recommendations for adapting quiet zone enforcement for evening hours, additional signage in group study rooms and public computing areas near the quiet zones, reconfiguration of furniture placement in the quiet zones, and the possibility of installing sound absorbing panels in group study rooms.

Notes

1. John A. McCrossan, "Aware," *American Libraries* 1, no. 4 (1970): 396–397.

2. Kathryn Yelinek and Darla Bressler, "The Perfect Storm: A Review of the Literature on Increased Noise Levels in Academic Libraries," *College & Undergraduate Libraries* 20, no. 1 (2013): 40–51. doi:10.1080/10691316.2013.761095.

3. Susan Gordon-Hickey and Trey Lemley, "Background Noise Acceptance and Personality Factors Involved in Library Environment Choices by College Students," *Journal of Academic Librarianship* 38, no. 6 (2012): 365–369. doi:10.1016/j.acalib.2012.08.003.

4. Steven J. Bell, "Stop Having Fun and Start Being Quiet: Noise Management in the Academic Library," *Library Issues: Briefings for Faculty and Administrators* 28, no. 4 (2008): 1–4, http://www.libraryissues.com/sub/pdf2804mar2008.pdf.

5. James E. Walker Library, "Using the Library: Quiet Zones," Middle Tennessee State University, Accessed September 20, 2016, http://library.mtsu.edu/quiet.php.

6. Karen Dearing, *New Spaces and Services Survey Summary*, James E. Walker Library, Middle Tennessee State University, May 2012.