**Quiet in the Library:**

**An Evidence-Based Approach to Improving the Student Experience**

Ciara McCaffrey and Michelle Breen

**abstract:** This article deals with the management of noise in an academic library by outlining an evidence-based approach taken over seven years by the University of Limerick in the Republic of Ireland. The objective of this study was to measure the impact on library users of noise management interventions implemented from 2007 to 2014 through retrospective analysis of LibQUAL+® survey data. The data indicate that readers' perceptions of the provision of quiet space in the library greatly improved in that period. The study provides evidence showing the effectiveness of interventions, such as the development of a noise policy, zoning, rearranging of furniture, removal of service points from reader spaces, and structural improvements. There is evidence to indicate that the creation of a separate graduate reading room may be an effective noise management intervention not previously identified in the literature. Academic libraries struggling with noise problems and those with low scores on the LibQUAL+® quiet space question may find some helpful interventions that have an underlying evidence base to indicate their effectiveness when dealing with noise and the provision of quiet space.

**Introduction**

The library as a learning space has transformed in the last two decades from a traditional quiet space to an energized, busy environment that meets a variety of user needs. The evolution of group learning, technology-enhanced learning, information commons, learning grids, and other new spaces has enhanced the position of the “library as place” in the university, but such success has brought with it new challenges. One consequence of such a transformation is that libraries appear to be growing noisier. It is a common experience for a library to conduct a feedback exercise, such as the LibQUAL+® survey, hereafter referred to simply as LibQUAL, to better understand
library users’ learning styles and needs, only to be assailed by an alarming volume of criticism and comment focused on that mundane and most difficult issue to resolve—noise.

International LibQUAL data from academic libraries in the United Kingdom and North America indicate that, for a great many libraries, noise is one of the biggest issues students have with their library spaces and services.1 The quiet space question (LP2) is frequently the lowest-scoring question in the LibQUAL survey. International data indicate that the desire for quiet space is steadily growing. Somewhat conversely, libraries increasingly need to provide collaborative and social spaces as part of their mandate to meet the needs of diverse learning styles and changing pedagogies. Students working on group presentations and assignments require spaces that facilitate active collaboration. Academic libraries must perform a delicate balancing act in the provision of both quiet and collaborative spaces.

The importance of quiet space to users should not be underestimated. Noise in the library is not a trivial matter; along with other quality of life factors, as Steven Bell says, “Noise makes the difference between an academic library that is avoided at all costs and one that is a prime campus destination.”2 As virtually all universities prioritize the student experience in their institutional strategic plans, libraries cannot ignore the unfavorable student encounters that come from library spaces perceived by their customers as too noisy.

The Glucksman Library at the University of Limerick in the Republic of Ireland ran the LibQUAL library survey for the first time in 2007. The results identified noise as a critical issue for a majority of the 1,119 respondents. The library implemented a series of interventions in response to the feedback and ran the survey again in 2009, 2012, and 2014. Each time, the scores on quiet space improved. A continuous improvement program of noise management evolved over seven years, with the impact of each series of interventions measured at intervals by rerunning the survey.

The main objective of this study was to measure the impact on library users of the noise management interventions implemented at the University of Limerick over seven years through the retrospective analysis of LibQUAL survey data. Based on the case of the University of Limerick Library, a number of questions are explored. What actions can libraries take to manage issues with noise? How can the impact of those actions be measured to ensure that things are actually improving? Are some interventions more effective than others in dealing with noise? For librarians who manage LibQUAL data, is longitudinal analysis of the quiet space question an effective method of measuring improvement? Libraries struggling with a noise problem may find some helpful and affordable interventions that have an underlying evidence base to indicate their effectiveness when dealing with noise and the provision of quiet space.
Literature Review

Literature on noise management in libraries, while not extensive, has grown in the last decade, as library spaces have become more social, less traditional, and consequently noisier. Darle Bressler and Kathryn Yelinek provide a comprehensive literature review on increased noise levels in American academic libraries, spanning 1980 to 2010. The authors sought to identify best practices for noise management through their review but noted the dearth of evidence-based studies investigating means of combating the problem.

Much of the literature on noise management consists of opinion-style articles, Jeffrey Gayton’s 2008 piece being among those that lament the rise of social spaces at the expense of silence. Susan DiMattia, on the other hand, embraces the new and lively environment that librarians find themselves occupying. Library managers dealing with a noise problem in their library may identify with Alan Bernstein’s witty opinion piece, in which the author parallels a library’s journey through noise management with Elisabeth Kübler-Ross’s five stages of grief—denial, anger, bargaining, depression, and acceptance.

Michael Crumpton’s “Sounding Off about Noise” and Bell’s “Stop Having Fun and Start Being Quiet” provide advice on solutions such as zoning, policies, rearranging furniture, signage, and better utilization of spaces. However, the effectiveness of these changes remains unmeasured. Some studies surveyed a number of libraries to identify common interventions, such as Janet Franks and Darla Asher’s study of four academic libraries, which identified interventions focusing on space definition and separation.

Evidence-based studies that explore the effectiveness of noise interventions are rare, due to the subjectivity of what is perceived as “noisy” and “quiet” and the difficulty in identifying metrics by which improvement can be measured. A small number of studies measured noise in decibels using sound-level meters; examples include the studies by Paul Luyben and his coauthors in 1981 and by Beth Hronek in 1997. While decibel tests are an exact measure of actual noise, Luyben notes that perceived noise is a better measuring stick than actual noise because machines cannot measure disruptions such as “fierce whispering,” which might not be loud but can be extremely annoying. This University of Limerick study is original in its evidence-based approach by bringing together the LibQUAL metric that assesses perceived noise with the interventions put in place to manage the problem.
There is a sizable body of research published about LibQUAL since its inception in 2001. The bibliographies in the standard LibQUAL results notebook and on the LibQUAL website provide a comprehensive collection of papers that emerged in the first decade of LibQUAL implementation. These largely focus on the instrument itself, especially its reliability and validity, and on the implementation and impact of the survey in individual institutions. Prolific authors on LibQUAL include its creators and contributors Colleen Cook, Fred Heath, Martha Kyrillidou, and Bruce Thompson. Some studies delve deeper into institutional survey results to focus on the perceptions of particular user groups, such as graduate students at the University of Idaho in Moscow and faculty at Washington State University in Pullman.

As more libraries build a bank of LibQUAL data over a number of successive surveys, longitudinal analysis will likely develop as an area of research. To date, however, few studies take a longitudinal approach to LibQUAL results. In 2010, Colleen Cook and Michael Maciel identified trends among user groups across a decade of LibQUAL at Texas A&M University Libraries in College Station, as compared with national Association of Research Libraries (ARL) data. Judy Greenwood, Alex Watson, and Melissa Dennis reviewed 10 years of LibQUAL data at the University of Mississippi in Oxford in 2011 and found no direct relationship between changes in library policy and changes in adequacy gap scores. A follow-up study by the same authors added new LibQUAL data for a further year and again found that adequacy gap scores seemed not to reflect fairly major changes. The findings of this University of Limerick study differ from the University of Mississippi experience, with the Limerick results reflecting the impact of library policy changes in many areas. Longitudinal studies that focus on a specific question or topic are rare. Carlson Erica Nicol and Mark O’English looked at results from 2003 to 2009, focusing on the website question IC2 and related questions, to explore how faculty perceptions of the library website have changed over three iterations of the survey. In 2013, Michelle Breen and Ciara McCaffrey conducted a small exploratory study to identify the noise interventions made by libraries that had seen the greatest increase in LP2 scores between two iterations of LibQUAL. A number of articles about LibQUAL in individual institutions mention the quiet space question as being particularly low scoring. This University of Limerick study is unique in its retrospective longitudinal approach that focuses specifically on LP2, the quiet space for individual work question, and how its scores have changed over four surveys across seven years.

Background

The story of the Glucksman Library in the University of Limerick will resonate with many academic libraries that struggle with a noise problem. The Glucksman Library is one of the most popular places on campus, with consistently high occupancy and a footfall of over 1 million people annually. The library was built in 1997 to accommodate a population of 7,000. That population grew to 13,000 by 2014. The student-to-seat ratio is high in comparison to U.K. averages and all other Irish university libraries. By 2007, the library had added shelving and seating into every available space. In addition to the high demand, which increases year on year, many of the architectural features of the building did not support a quiet environment. Two wide, brightly lit, open atria and an
open staircase ran through the library. The entrance to the library was a large open foyer with marble flooring where students naturally congregated. The foyer amplified noise, which then traveled throughout the building. Service desks spread across the library, close to atria, staircases, and study spaces.

The 2007 survey provided a new opportunity for students and faculty to give feedback on all aspects of library service and provided library management with quantitative metrics to use in its performance assessment activities. The library has run the survey four times at intervals of two to three years. After each survey, the results are analyzed by cross-referencing the areas that are most highly prioritized by readers with the areas where readers feel we are performing below minimum requirements. A quality action plan is then put in place as part of the library’s planning cycle.

The library’s quality processes are aligned with the principles set out in the university’s Quality Management System for Support Divisions. It is a customized framework adapted from recognized management system frameworks, such as the Baldrige Performance Excellence Program, managed by the U.S. National Institute of Standards and Technology; the EFQM (formerly the European Foundation for Quality Management) Excellence Model; and ISO (International Organization for Standardization) International Standards. Customer focus is a cornerstone of the University of Limerick Quality Management System, and the survey is one of the library’s key methods to gather and respond to feedback from users. The principle of measure-improve-measure is a central element of the library’s quality processes. In addition to noise management, the same principle has been applied to other areas highlighted by the survey. Other interventions have focused on greater investment in collections, enhancing the website, improving access from home, the provision of self-service facilities, and targeted training for staff at service desks, to name but a few. In the four iterations of the survey, the overall scores have consistently risen, indicating that the quality action plans have an impact and that readers’ perceptions of the quality of library services have improved.

Methodology

The University of Limerick Library LibQUAL survey data form the basis of this study. The library administered the survey four times across a seven-year period, in 2007, 2009, 2012, and 2014, with a total of 7,219 surveys completed over the period. Each year, the sample size was deemed representative of the user group populations, with overall response rates increasing from 9 percent in 2007 to 17 percent in 2014.

The investigators analyzed survey data retrospectively to identify trends, patterns, and changes from 2007 to 2014. Internal benchmarking of data between each of the four surveys was also undertaken. In addition, the investigators conducted external benchmarking with consortium data from ARL in North America and the Society of College, National and University Libraries (SCONUL) in the United Kingdom to put the University of Limerick’s results in an international context.

This study analyzed data for each of the 22 core LibQUAL questions and the three LibQUAL dimensions of “library as place,” “information control,” and “affect of service.” The study focused specifically on one of the “library as place” questions, LP2, “Quiet space for individual work.” (In North America, this question is worded as “Quiet
Table 1.
Surveys completed from 2007 to 2014

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2009</th>
<th>2012</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>715</td>
<td>1,221</td>
<td>1,687</td>
<td>1,780</td>
</tr>
<tr>
<td>Graduates</td>
<td>217</td>
<td>247</td>
<td>308</td>
<td>420</td>
</tr>
<tr>
<td>Faculty</td>
<td>103</td>
<td>91</td>
<td>105</td>
<td>112</td>
</tr>
<tr>
<td>Staff</td>
<td>84</td>
<td>61</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td>Overall</td>
<td>1,119</td>
<td>1,620</td>
<td>2,137</td>
<td>2,343</td>
</tr>
</tbody>
</table>

space for individual activities.”) The University of Limerick’s overall, undergraduate, and graduate scores were analyzed. Because faculty and staff use the library building to a much lower degree, their perceptions of noise in the building and their subsequent LibQUAL scores, while not excluded from this study, were not explored in depth. In addition to the quantitative LibQUAL data, the frequency of noise or quiet issues in the qualitative free-text comments that accompany each survey was also measured.

Libraries take different approaches to analyzing their LibQUAL data. Some focus on the adequacy or superiority means, while many find the perceived and desired scores most useful in determining user perceptions of service quality. For the purposes of this study, improvement is determined by the adequacy mean. Therefore much of the analysis, comparisons, benchmarking, and conclusions is based on this metric. A similar approach is taken in the longitudinal studies of the teams of Greenwood, Watson, and Dennis and of Cook and Maciel. The adequacy mean score is calculated by subtracting the minimum mean score from the perceived mean score.

At the University of Limerick in 2007, users scored their minimum standard for quiet space at 6.56 out of a total of 9 and their perceived score at 5.36, resulting in an adequacy mean of –1.2. A negative adequacy mean indicates a failure to meet users’ minimum expectations and is illustrated in red in the LibQUAL notebooks.

Analysis: Longitudinal Data 2007 to 2014

This study considered how the adequacy mean for the quiet space question changed over the four surveys in the seven-year period. Figure 1 illustrates this continuous improvement, where the adequacy mean for the quiet space question went from –1.2 to –0.13, showing a degree of improvement of 1.07 from 2007 to 2014. In the same period, the overall LibQUAL adequacy mean for all 22 questions increased from 0.02 to 0.38, showing an overall degree of improvement of 0.36 in the seven years. The improvement on the quiet space question amounted to three times the overall improvement.

To put this into further context, the investigators similarly compared all other LibQUAL questions to see whether this degree of improvement was typical. The other
most-improved questions from 2007 to 2014 included a 0.64 improvement in IC3, “the printed library materials I need for my work”; a 0.5 improvement in IC1, “making electronic resources accessible from my home or office”; and a 0.49 improvement in IC6, “easy to use access tools that allow me to find things on my own.” The overall improvement in the quiet space question over the four iterations of the survey was almost double that of any other question, indicating that the improvement was indeed noteworthy when compared with the other questions.

The impact varied by user group, as detailed in Table 2. Perceptions improved most among graduates, with a 2.03 degree of improvement, suggesting that the noise management program had the greatest impact on the graduate student experience, whether the interventions targeted that user group or not. Undergraduates showed a 0.82 degree of improvement, and, as less frequent users of the library space, faculty reported the lowest degree of improvement.

A further step in the longitudinal analysis of the University of Limerick’s data was to determine the level of improvement in quiet space compared with the other “library as place” questions. The purpose was to query whether the interventions to deal with noise had a specific impact on the quiet space question, or whether these and other interventions had a more general impact on the “library as place” dimension. None of the other “library as place” questions improved to the same degree (see Table 3), supporting the conclusion that the interventions focused on improving quiet space indeed had a targeted and specific impact. A further conclusion was that improving the provision of quiet space by itself did not greatly enhance scores of the other “library as place” questions.

When considering the changes in the “library as place” questions, it is notable that the group space question (LP5) was the only one for which the adequacy mean dropped. Interventions to improve group space between 2007 and 2014 were few, due to a lack of available space in the building. User perceptions of group space dropped over the
Table 2.
Difference in adequacy mean by user group

<table>
<thead>
<tr>
<th>User type</th>
<th>Year</th>
<th>LP 2 adequacy mean</th>
<th>N</th>
<th>Adequacy mean difference between consecutive surveys</th>
<th>Adequacy mean difference 2007–2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>All users</td>
<td>2007</td>
<td>-1.5</td>
<td>1,071</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All users</td>
<td>2009</td>
<td>-0.8</td>
<td>1,581</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>All users</td>
<td>2012</td>
<td>-0.42</td>
<td>511</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td>All users</td>
<td>2014</td>
<td>-0.13</td>
<td>553</td>
<td>0.29</td>
<td>1.07</td>
</tr>
<tr>
<td>Undergraduates</td>
<td>2007</td>
<td>-0.96</td>
<td>706</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduates</td>
<td>2009</td>
<td>-0.69</td>
<td>1,219</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>Undergraduates</td>
<td>2012</td>
<td>-0.27</td>
<td>42</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>Undergraduates</td>
<td>2014</td>
<td>-0.14</td>
<td>428</td>
<td>0.13</td>
<td>0.82</td>
</tr>
<tr>
<td>Graduates</td>
<td>2007</td>
<td>-2.14</td>
<td>205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>2009</td>
<td>-1.47</td>
<td>237</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>2012</td>
<td>-1.62</td>
<td>63</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>2014</td>
<td>-0.11</td>
<td>98</td>
<td>1.54</td>
<td>2.03</td>
</tr>
<tr>
<td>Faculty</td>
<td>2007</td>
<td>-0.29</td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>2009</td>
<td>-0.25</td>
<td>71</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>2012</td>
<td>1.2</td>
<td>15</td>
<td>1.45</td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>2014</td>
<td>0.23</td>
<td>22</td>
<td>-0.97</td>
<td>0.52</td>
</tr>
</tbody>
</table>
seven-year period, and by 2014 the group space question was the second lowest-scoring of the 22 core questions. The decline of LP5 as the other LP questions improved raises a number of avenues of exploration. Is there a connection between improved quiet space scores and declining group space scores? In academic libraries generally, is the demand for group space increasing, and how does it relate to the need for quiet space? These questions present opportunities for further study at both a local and international level.

A final step in considering the University of Limerick data on the quiet space question was to compare it with international LibQUAL data, using the British and North American consortium notebooks from 2007 to 2014. This exercise unearthed trends relating to users’ perceptions of quiet space in libraries. In every year since 2007, LP2 has been the lowest scoring of the 22 questions in the SCONUL consortium results and has had a negative adequacy gap for seven out of eight of those years, indicating that users’ perceptions of how well U.K. libraries provide quiet space are generally low. In Irish libraries, scores for the quiet space question are lower still.18 Perceptions of quiet space in North American libraries that have run LibQUAL are not as low as in the United Kingdom; however, LP2 in the ARL consortium notebooks usually ranks in the five lowest-scoring questions. What is most notable in both the North American and U.K. LibQUAL data is that desired scores for quiet space have increased from 2007 to 2014, indicating that the demand for quiet space for individual study is intensifying (see Figure 2).

Table 3.
Adequacy mean difference in all “library as place” questions

<table>
<thead>
<tr>
<th>Question</th>
<th>2007–2014 adequacy mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library space that inspires study and learning (LP1)</td>
<td>0.5</td>
</tr>
<tr>
<td>Quiet space for individual work (LP2)</td>
<td>1.07</td>
</tr>
<tr>
<td>A comfortable and inviting location (LP3)</td>
<td>0.21</td>
</tr>
<tr>
<td>A getaway for study, learning, or research (LP4)</td>
<td>0.43</td>
</tr>
<tr>
<td>Community space for group learning and group study (LP5)</td>
<td>–0.23</td>
</tr>
</tbody>
</table>

...users’ perceptions of how well U.K. libraries provide quiet space are generally low. In Irish libraries, scores for the quiet space question are lower still.

The growing importance of quiet space for individual work at the University of Limerick reflects this trend. Users prioritized the quiet space question as the eighth most important in 2007, as measured by the desired mean. This score increased for each survey, to third in 2009, second in 2012, and first in 2014. The minimum standard score, as measured by the minimum mean, has remained relatively unchanged, from 6.56 in 2007 to 6.57 in 2014, while desired scores have increased from 7.99 in 2007 to 8.06 in...
2014. The University of Limerick data and the international consortium data suggest that quiet space is becoming increasingly important for library users.

Discussion: Noise Management Interventions

The full list of interventions to manage noise from 2007 to 2014 is outlined in Table 4. It began with small steps, involved some trial and error, and evolved over time as the positive impact became apparent. Here follows a discussion of these interventions and their implementation and impact, both on library users and staff.

The first survey in 2007 identified, or rather confirmed, a noise problem. The quiet space question was the lowest scoring of the 22 core questions asked in the survey, and 35 percent of the 546 free-text comments related to noise. Library management found the strength of feeling behind the results impossible (though tempting) to ignore. The library had limited resources, and there was a general feeling of helplessness among the staff, who seemed to regard the noise problem as impossible to resolve due to the nature of the building. However, with a university strategic goal of providing “an outstanding and distinctive experience for every one of our students,” the library was compelled to take action on noise management, even if the staff doubted anything would actually work.

2007 to 2009: Noise Policy and Relocation of Services

The initial interventions that followed the 2007 survey were fairly simple. They were
Table 4.
Noise management interventions 2007–2014

2007–2009
Created a noise management policy
Removed all staffed service desks on library floors and centralized services on the ground floor, away from reader spaces
Ran campaigns to raise awareness among users
Issued guidelines and training for staff and security on managing noise
Issued guidelines for external support staff using the building
Created a small silent area on floor 2
Created phone-friendly areas in back stairwells and bathrooms
Increased patrols by staff and security
Increased signage

2009–2012
Glassed off the two open atria running through all levels of the library
Installed doors in reading areas, to facilitate sealing off rooms

2012–2014
Created a graduate reading room
Comprehensively zoned all areas of library (silent, quiet, group, or phone)
Relocated silent zones to naturally quiet areas
Increased silent areas and group areas
Moved group tables out of main reading areas
Employed student noise monitor
Moved desks away from stairwells and replaced with shelving
Clariﬁed and communicated policy regarding access for non-University of Limerick users
Issued staff badges to facilitate patrolling
Met with Students’ Union, Security Service, and library staff to raise awareness

not hugely expensive but were resource-intensive in terms of staff time and effort. The first step was to create a noise management policy, which was communicated extensively to university students and library staff. This alone was a useful exercise because it required clearly establishing what was and was not permitted before communicating the policy to students, staff, and security. Guidelines for library staff were documented, encouraging staff to lead by example while working in the building, interacting with others, addressing disturbances, and so on. The library produced posters, leaflets, and bookmarks to raise awareness about the new policy, and library management met with external stakeholders such as the Buildings and Estates Department, the Security Service, and the Students’ Union, the representative body of all University of Limerick students. Staff and security patrols increased in reading areas. The library designated a small area
as silent and encouraged students to use their phones in bathrooms and back stairwells. There was a general library-wide effort to take noise management seriously.

The most resource-intensive action in this period was to centralize all customer-facing service points. This involved relocating two circulation desks and an information desk spread across all floors of the library into a single service area on the busy ground floor. The rationale behind this initiative had as much to do with improving customer service and staffing efficiencies as with noise management. However, one of the most welcome and noticeable outcomes was a removal from the reader spaces of staff-generated noise emanating from desk transactions, cash registers, staff phones, and customer interaction.

2009 to 2012: Structural Improvements

The library ran the survey for the second time in April 2009. The LibQUAL scores showed an overall improvement in all areas. The overall adequacy mean went from 0.02 to 0.19, showing an overall degree of improvement of 0.17. The adequacy mean for the quiet space question went from –1.2 in 2007 to –0.8 in 2009, showing a 0.4 degree of improvement, with perception levels among graduate students showing the most progress. The quiet space question improved the most of the 22 core questions in the 2009 survey—a gratifying confirmation that the actions taken had an impact. However, the quiet space question again scored the lowest of all the questions, and 46 percent of the 761 comments in the 2009 survey related to noise—indicating that users were still unhappy with the provision of quiet space in the library.

Solutions to dealing with the noise problem were not immediately obvious following the 2009 library survey. In a building that amplified noise throughout, it seemed to staff that they had done all that could be done. However, having used the strong survey data from 2007 and 2009 to argue the case with senior university management, the library director succeeded in gaining capital funding for building refurbishment to deal with a number of “library as place” issues. As part of this refurbishment, the Buildings and Estates Department wanted to improve the fire management capabilities of the building. The two open atria at the center of the library, which carried noise from the ground floor to the top floor, were glazed in. Doors were installed at the entrance to many wings and reading spaces. While the glazing of the atria had more to do with fire management than noise reduction, the resulting quiet, together with the ability to close off areas and reading spaces, was immediately noticeable to library staff.

This refurbishment took place in the summer of 2011, and the library ran the survey a third time in March 2012. Again, all areas improved across the board; the overall adequacy mean went from 0.19 to 0.29, showing an overall degree of improvement of 0.1. The adequacy mean for the quiet space question went from –0.08 to –0.42, a degree of improvement of 0.38. That this degree of improvement was less than the 0.4 of the previous survey was concerning. The investigators had hoped that such a significant structural change would have greater impact than the first wave of human-led interventions. However, the improvement became more apparent when analyzed in detail by user group. Undergraduate scores showed greater improvement than the previous survey, with a 0.42 degree of improvement. On the other hand, perceptions sharply decreased among graduate students, who were clearly deeply unhappy with the noise in the library, regardless of the structural changes.
A further complicating factor was the transition from LibQUAL in 2009 to LibQUAL Lite in 2012. With the conventional LibQUAL survey, all respondents answer all 22 core questions. With LibQUAL Lite, all respondents answer three core questions, and the remaining survey questions are answered by a randomly selected subset of users, thereby shortening the survey for respondents while still gathering data on all questions. At the University of Limerick in 2012, this change meant that not all respondents answered the quiet space question, thus reducing the number of responses from each user group. This particularly affected graduate and faculty responses. A total of 237 graduates answered the quiet space question as part of the full survey in 2009, compared with 63 out of 308 graduate respondents who answered the quiet space question in 2012.

However, while the quiet space question again improved the most of the 22 questions, it again scored the lowest. Of the 1,075 comments, 30.5 percent related to noise. Somewhat disappointingly, the refurbishment alone seemed insufficient to deal with the noise problem. More needed to be done.

2012 to 2014: Zoning and the Graduate Reading Room

When responding to the 2012 survey results, the library developed much of its action plan with a focus on graduate students. They ranked as the least satisfied user group, and their scores caused concern in the library. Their unhappiness was not just confined to space, but the comments indicated that overcrowding and noise remained among their biggest issues. One of the first actions taken as part of the plan was to create a graduate reading room by removing the reference collection from a wing of the library and increasing the study spaces. Following the refurbishment, this area was more enclosed with glazing and had doors that could be shut. It provided 120 study spaces solely for graduates and was one of the most naturally quiet spaces in the library.

The other noise-related intervention that took place following the 2012 survey was library-wide zoning. In the five years since the first survey, the idea of zoning the library into silent, quiet, group, and phone zones was often discussed. Unfortunately, prior to the glazing of the atria, it was impossible to zone areas effectively, since noise traveled almost everywhere. However, the refurbishment provided a new opportunity to look at spaces that were naturally quiet or naturally noisy and to zone accordingly. While the refurbishment dealt with the structural factors that contributed to noise, zoning dealt with the behavioral issues. Between 2012 and 2014, the entire library was zoned to silent, quiet, group, and phone zones. Every desk was individually signed so that it was clear to readers which zone they were in and what was permitted in that area.

The noise policy was further developed and updated. This necessitated many long discussions clarifying the appropriate language to describe conduct such as whispering versus talking, short interactions versus congregating, and the many descriptions around food, such as the definitions of hot, noisy, strong-smelling, snacks, and takeaway (called takeout in the United States). Furniture was rearranged so that it supported the atmosphere of each zone. Traditional study desks with partitions were moved to silent zones. A small group zone was created by moving round tables out of quiet areas and into a cluster on the busy ground floor, and the new group zone immediately became a heavily used space. The library assessed the effectiveness of initiatives on an ongoing
basis and discontinued actions that had greater costs than benefits, such as the appointment of a student noise monitor.

In the 2014 survey, overall scores again improved. The adequacy mean for all questions went from 0.29 to 0.38, showing a degree of improvement of 0.09. For the first time in the University of Limerick’s LibQUAL history, LP2 no longer scored the lowest, having been overtaken by the group space question LP5 and the inspiring space question LP1. The degree of improvement in the LP2 score between 2012 and 2014 was 0.29, a modest improvement compared with previous years. Further analysis showed that the greatest improvement in scores came from graduate students, where the adequacy mean went from –1.62 in 2012 to –0.11 in 2014, showing (by the University of Limerick’s LibQUAL experience) a remarkable improvement of 1.51 between two surveys. This user group emphatically welcomed the creation of the graduate reading room.

The degree of improvement among undergraduates was 0.13—a respectable improvement but not a resounding recognition of the impact of zoning. An element that may have been at play was that this survey cohort came from a population of new undergraduates who had not taken part in the survey in the early years. Library staff in the building, however, had no doubt that zoning had the biggest impact on noise levels and complaints, and the frequency of dealing with offending students dropped significantly. The free-text comments provided the greatest indication of improvements that year, when only 8.6 percent of the 1,075 comments dealt with noise, as compared with 30.5 percent in the previous year. This presented a major achievement for the library.

Conclusions

This study set out to determine the impact on library users of the noise management interventions implemented at the University of Limerick over seven years. Analysis of the LibQUAL quiet space question shows that the noise management program adopted from 2007 to 2014 had an impact and that readers’ perceptions of the provision of quiet space in the library greatly improved. This study found that the level of improvement in quiet space was almost double that of the other most-improved LibQUAL questions and three times greater than the overall improvement in the period. This supports the conclusion that the long-term investment of resources and effort focused on this specific issue had a measurable impact. Analysis of the comments supports this interpretation, with a mere 8.6 percent of the 2014 comments relating to noise, compared with 35 percent in 2007.

The evidence from this study suggests that interventions such as the development of a noise policy, zoning, rearranging of furniture, removal of service points from reader spaces, and structural improvements to reduce noise travel are worthwhile interventions for libraries to consider when faced with noise problems. The development of a clear and detailed noise policy, rearranging service spaces, and perhaps the acknowledgement of the existence of a noise problem had the greatest overall impact on LibQUAL scores. The large-scale structural refurbishment had the greatest effect on undergraduates, and
the creation of a graduate reading room and zoning had the greatest impact on graduate students. Because more than one intervention was put in place between surveys, it was not possible to conclude the degree of effectiveness of each individual intervention.

Perceptions improved most among graduates in the seven-year period, suggesting that the noise management program had the greatest impact on the graduate student experience, whether the interventions targeted that user group or the more general population. This study suggests that focusing on this user group, particularly through the creation or improvement of a dedicated space for graduate students, may be an effective noise management intervention not previously identified in the literature. Libraries dealing with noise issues should consider the needs of this user group when developing overall noise management strategies.

For librarians who manage LibQUAL analysis, retrospective analysis of the quiet space question over a number of surveys can be an effective method of measuring improvement. Areas of future study might take a similar question-level approach to other LibQUAL questions for which the issue can be linked to specific interventions, such as, for example, the library website question or the access from home or office question. A major effort or long-term investment of resources directed at a specific issue should be visible by taking a longitudinal approach to the data. Exploration of the group space question and how it connects with and possibly impacts the quiet space question may warrant further study. Analysis at a question level would be less useful for questions that are less specific or more subjective, for example, the library as a haven or easy-to-use access tools. However, the reduction in sample size due to the transition to LibQUAL Lite needs to be taken into account when analyzing trends at an individual question level. Comparisons between two surveys should be approached with some caution, where unexpected or disappointing overall scores may be better explained by further analysis at a user group level.

Where Do We Go from Here?

After four iterations of LibQUAL and a seven-year-long program of noise management at the University of Limerick, the improvement in the quiet space question is almost double that of any other question. In 2014, for the first time, the quiet space question no longer ranked as the lowest-scoring question, bucking the trend in Ireland and the United Kingdom. Frustratingly, the quiet space question is still among the lowest-scoring questions and still has a negative adequacy mean. A library built for a population of 7,000 but catering for 13,000 may always have a challenge with meeting the expectations of its users when it comes to quiet space. With some amazement and relief, we can now
say that noise is no longer the biggest issue for readers, although we have not solved the noise problem entirely. We may merely have reached the stage of acceptance in Kübler-Ross’s cycle. However, plans are in place for a major library expansion due to open in 2017. Phase 2 of the Glucksman Library will expand the library by two-thirds and will provide a variety of spaces for different needs. The story of noise management at the University of Limerick may yet have a happy—and quiet—ending.

International data indicate that quiet space for individual work is becoming increasingly important to library users and that dissatisfaction with noise in many libraries is common. A final inference of this paper is that library managers who find themselves faced with a serious noise problem or low LibQUAL scores on the quiet space question may take heart from the University of Limerick experience. What felt like an intractable problem in 2007 became manageable one through the trial and error of a continuously evolving noise management program that began with simple and affordable improvements. The cycle of measure, improve, and measure again using the LibQUAL data has led to a program of interventions that has grown far beyond what was thought possible in 2007. The LibQUAL data provide encouraging evidence that this program has indeed greatly improved the student experience at the University of Limerick Library.

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Notes


15. Melissa Dennis, Judy Greenwood, and Alex Watson, “LibQUAL Revisited: Further Analysis of Qualitative and Quantitative Survey Results at the University of Mississippi,” *Journal of Academic Librarianship* 39, 6 (2013): 512–16.


