A STUDY OF THE SOURCES OF ENVIRONMENTAL NOISE AT THE UNIVERSITY OF EDUCATION WINNEBA, SOUTH CAMPUS LIBRARY (SCL).

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Abstract

Noise is generated in libraries as staff, and users move about, interact, and use equipment to retrieve information or copy text. Noise in the communication process interrupts message delivery. This study identifies inadequate space as the main inherent causative factor of noise generation at SCL. Management of scarce library space has resulted in the provision of inadequate user-traffic-space, which enhances interruption of seated users by moving users in areas of desk-shelf intercalation. Space limitation also made it impossible for Library Management to provide separate space for group work – another noise factor. Fortunately, extensions are being made to the Library; this should allow Management to take steps to mitigate the major inherent noise factors.

Inroduction

The University of Education, Winneba (UEW) has four libraries: two located at Winneba; and one each at Kumasi and Mampong. The libraries at Winneba are located on the North and the South campuses. This write up is on the South Campus Library (SCL), the largest of the four libraries.

This Library has its beginnings from the Kwame Nkrumah Ideological Institute. After the demise of the Institute due to the overthrow of Dr. Kwame Nkrumah in 1966, the Advanced Teacher Training College (ATTC) was established to use the available facilities. In 1969-1970 the current Library was built.

The University of Education, Winneba (UEW) was established in 1992 by PNDC law 322 and was an amalgamation of seven diploma-awarding institutions. The Library was subsequently renovated in 1992-1996 to befit the status of a university. The UEW Libraries have the following seating capacities: SCL-200, North Campus Library-78, Kumasi-75, and Mampong-100 (UEW Library guide 2002/2003). Their total seating capacity is thus 453. The total staff and student population of UEW in the 2002/2003 academic year is 15,411, of which 14,218 are students. (UEW Desk diary 2003).

An academic library serves as information resource centre for teaching, learning, research and leisure for the university community and its environs. When one compares the student population of UEW to the seating capacities of these libraries, one can have a feel of the kind of pressures both the human and material resources are under. It is therefore expected that there will be deprivations and infringements on the usual pleasant, comfortable and serene atmosphere conducive to library use.

This paper is a result of the informal complaints and grumbling from both library

staff and patrons about noise levels in the UEW, SCL.

The Structure and Layout of SCL

The Library is a one-storey building. The ground floor houses the Periodicals Section, the Lending Section, the Circulations Desk, the Reserve Collection and an area for documents on the United Nations, The Commonwealth, Ghana Government publications as well as an office for the Reader Services Manager.

The first floor houses the Reference Collections, the Librarian's office, a stack area for back issues of serials, rooms for a photocopier facility and an Internet/CD-ROM Secretariat.

The area for the Reference Collections is divided into two parts; one section holds the Quick Reference materials on shelves arranged along the walls and the second section the Selected Reference materials. The staircase separates the Quick Reference area from the Selected Reference area.

Seating Arrangements in the Library

The library is furnished with long desks of two lengths: 215cm and 275cm, however, both have the same width of 108cm and are divided lengthwise by wooden partitions of 24cm and 26cm high respectively. These partitions allow two groups of users to sit on opposite sides of each desk. The standard chair size in the Library has a seat size of 44cm by 43cm. Three to four users can sit on each side of a desk.

In the Quick Reference area, the desks are arranged uninterrupted in the open space available. A similar desk arrangement is available at part of the Periodicals Section where bound local newspapers are kept.

Apart from these two areas, seating arrangements are by intercalation of shelves and desks. These can be found at the Periodicals area where dissertations and journals are shelved, the Lending Section, and the Selected Reference books area. Table 1 shows the space **T** left between chairs and shelves in the various areas that shelves and desks intercalate. **T** is obtained by subtracting the chair's seat-length (44cm) from the average distance measured from the edge of each desk to each shelf. **T** is thus the space available for user traffic when retrieving material or when browsing.

TABLE 1. T:

Available User-traffic Space in Areas of Desk – Shelf Intercalation

Area	Desk Site	Av. Distance Between Desk and Shelf	T,Distance left For User traffic.
Period-icals	ROLE 1 ROLE 2	79.0 cm 51.0 cm	35.0 cm 7.0 cm
Lending	H-K L-M PA-PG PN-PR	60.0 cm 79.0 cm 64.0 cm 68.0 cm	16.0 cm 35.0 cm 20.0 cm 24.0 cm
Reference	L-MT PE-Q Q-QP	76.0 cm 102.0 cm 73.0 cm	32.0 cm 58.0 cm 29.0 cm

H – QP represent Library of Congress call marks

The Purpose of the Study

The purpose of the study is to assess noise levels in the Library and identify specific sources and causes. It is also to examine students' attitudes when disturbed and the reactions of offenders when notified.

The Scope of the Study

An assessment of noise levels in the SCL was made during the months of November 2002, January and February 2003. During these times, the writer was on extended duty from 8.00am to 10.00pm per week per month. During these periods users' reactions to noise levels were studied at three sections of the Library: the Reference, the Periodicals and the Lending Sections.

The specific objectives of the study were to:

i Monitor student traffic to and from the chosen areas;.
ii Examine student-student interactions and study styles;
iii Observe student-library staff interactions;
iv Note breaches of library ethics;
v Find out inherent factors in the library environment which enhance noisy situations; and
vi Determine any external factors that contribute to the noise levels.

The Significance Of The Study

Libraries are service organizations which endeavour at all times to satisfy users. Librarians are therefore always on the lookout for factors that negate this objective. This study is to identify factors that contribute to noise and propose feasible solutions to abate it. It also comes at a time when extensions are being made to the SCL. It is hoped that the outcomes of the study will help library management in planning layouts and in deciding what other services to add to the existing ones. According to Ann Roselle (1996) one main use of case studies is to bridge the gap between principles of librarianship as taught in library and information courses and the realities of library life. Thus, this study can act as an index which library management can use to improve upon the quality of the library environment, and also ginger up other librarians to study various minor problems in their work environments to continually improve on the work place culture.

Literature Review

The literature review looks at the following topics:

i The definition of noise in communication theory.
ii Noise in libraries.

Definition of noise in communication theory

Communication is the process of understanding and sharing meaning: It is a process because it is an activity, an exchange, or set of behaviours (Dominick, 1993). Noise is one of the eight elements in the communication process. The others are: a source; a process of encoding; a message; a channel; a process of decoding; a receiver; and the potential for feedback. Coded thoughts from a source are transmitted through a channel to an entity (the receiver). Encoding the thoughts transforms them into a form (the message) that can be perceived by the senses. The entity decodes (translates) the message into a format that has meaning. Feedback is a response transmitted back to the source by the receiver. This shapes the final message. Noise is any fluctuation or disturbance which is not a part of a wanted signal or which interferes with its intelligibility or usefulness (Oxford English Dictionary, 1989). Thus, noise is any factor that interferes with the delivery of a message. Dominick (1993) identifies at least three types of noise: semantic; mechanical; and environmental.

Semantic noise occurs when different people assign to the same word or phrase different meanings. Mechanical noise relates to noise generated by faulty machines or mistakes made by faulty encoding of messages by people and also bugs in computer software. Environmental noise comes from sources external to the communication process but interferes with the intelligibility of the message. The sources of environmental noise in the library are the subject of this paper.

Noise in libraries

Libraries in most academic institutions are centrally funded. In some cases the librarian has no input. The librarian is left to manage whatever space is provided and this can be a blockage to effective resource management and a contributor to environmental noise.

Li (1998) found library noise levels as one of the concerns of students at the City

University of New York while investigating library needs of students with diverse language and cultural backgrounds. Group study areas (or talking areas), and monitoring of reservation-times for group study rooms were suggested to reduce the noise. Mary Augusta Thomas (2000) also found noise as one of the problems future libraries have to cater for in any integration of users, computers and books.

The sources of noise are users, computer workstations, photocopiers and other devices in the library. The normal user-user, user-staff, staff-staff interactions and human traffic usually create the minimum threshold noise; this does not disrupt message delivery through the printed word. Noise in some libraries is reduced by keeping equipment such as computers, photocopiers etc. away from reading areas (Krishan Kumar, 1987). The solution to noise mitigation lies in the management of a variety of user spaces that facilitate material usage and alleviate noise. According to Mary Augusta Thomas (2000) there are, however, no easy solutions since "housing computers in an area remote from reading tables and chairs mitigates disruption, but precludes developing the seamless nature of finding information despite format"

Methodology

The observation method was used in this study. It allows one to collect data in a purposeful and systematic way about the behaviour of an individual or group of people at a specific time or place. The method studies events as they occur and also what people (the subjects) do rather than what they say they do. Observation method is mostly qualitative but some degree of quantitative analysis is possible.

There are various groups of observers: participant; non-participant; and semi-participant. In participant observation, the researcher shares the activities of the group to the extent that s/he gets the insider's view and understanding. In non-participant observation, the observer does not interact with the subjects at all. The third category, the semi-participant observer sometimes interacts with subjects, however, their relationship is strictly on researcher/observer basis.

The latter was the method used in this study. Users were observed in the library environment, as they looked for information, sought for assistance, retrieved information, interacted and studied. Three observation posts were maintained: one each at the reference; lending; and the periodical sections. The following are the user activities observed to be sources of noise.

Observations

Information Retrieval

Users who can use the catalogue go straight (with the appropriate call marks) to the shelves to retrieve material. Noise situations arise in areas where desks intercalate shelves. Spaces between shelves are not large for easy user traffic. To retrieve material s/he has to excuse other users or unintentionally disturb a seating user. The thought processes or the decoding processes through the reading of the printed page are disrupted, in which case noise is created, and the seating user has to start reading afresh.

Browsing

There are two groups of such users. One group does not know how to use the catalogue but is shy to ask for assistance. Users in this group usually browse books on the shelves for quite sometime and find material by serendipity. However, where the area of shelf being browsed has seated users, they are unable to browse for long especially if user-traffic-space is inadequate. In such a situation noise is created through interference since the seated users reluctantly refuse to allow them further access along the shelf.

The second group is made up of users who know a particular title is available on a shelf. A user in such a group might have used the book before but did not put down the call mark. Though s/he may know the title and the author s/he has to browse the shelf for the book. This situation arises as the rate of catalogue card production lags behind book processing to the shelves – cards for the title in question are not yet in the Library Catalogue. If the area has seated users, and user-traffic-space along the shelf is again inadequate, a noise situation arises.

Users Who Do Not Know What They Need

Users, especially students who are unable to explain what they need during a reference interview or bring citations, which do not pertain to an assignment become ambivalent when they receive materials retrieved for them. Such a user may not use the materials at all and may just dump them elsewhere. Sometimes the user complains that the materials provided are too many. J. Koren (1990) describes situations in which "facts or information which are not relevant to the information being sought and therefore hinder the user from obtaining or understanding the information s/he is interested in" as noise. At one time a user returned to ask for the same information rejected earlier on, and the explanation she offered was that there was not enough time at her disposal to sort out what was needed.

Human Interactions

There are times when users and staff of the library forget themselves or sometimes deliberately cause noise situations. Sometimes the noise situations are avoidable. Here are four examples:

i. A user-staff interaction at the Periodicals Section one morning made two other users at the desk to move elsewhere. Their discussions were about intimate social affairs. The staff was cordially but candidly advised to stop the conversation or move outside the library;
ii. User-user interactions, which are louder than the environmental noise threshold, are very common. Most are short lived (except group work) and therefore do not call for supervisor intervention. Those interactions that go haywire lead to noisy arguments on desks and result in supervisor intervention;
iii. Noise from staff-staff interactions occurs mostly during the afternoon break and during the 5.00pm closing time. These are usually around the Circulation Desk near the exit. They are often short lived but do sometimes disturb readers in the Periodicals Section; and
iv. User-staff interactions also cause noise especially for users who sit on desks near the Reference Librarians' desks. The distances between them are less than a meter at the Periodicals and the Quick Reference Sections; hence any extended interviews create noise situations for the other users.

Group Work Or Group Assignments

General rule number two in the UEW Library Guide is "Silence should be observed at all times" (UEW Library, 2002). It is thus clear that Library management prohibits discussions through group work, as it is a source of noise to those who are not part of the discussion. Lecturers also give assignments which need materials such as bound volumes of local newspapers or other journals. These are materials that are not allowed out of the library so since there is no other way for these assignments to be done by the group outside the library, the staff have no alternative than to ignore the above library rule. Supervisors turn a blind eye to them and only intervene when noise levels tend to go out of hand.

Noise From Mobile Phones

Mobile phones are supposed to be turned off while users are in the library. This is often not done. Both staff and student users are offenders. Student users often hide their phones and it is sometimes necessary to move to suspected desks to warn offenders since other library users on such desks would not point them out.

Noise From Other Sources

Power outages was identified as another source of noise since it interrupted reading and the continued use of computers to perform tasks such as Internet and CD-ROM searches anytime it happened. Jobs like cataloguing were also interrupted. Others were frequent interruptions of connectivity to the Internet and faults in computer databases, which pop up unexpected messages and disrupted system usage (Dominick, 1993); noise from stiletto or metal stud heeled shoes also disrupt serene reading areas. Environmental noises from sources outside the library permeate the library environment, (e.g. construction work on extensions to the library and renovations on Liberty Hall C, vehicular traffic, and shouts from students in adjacent Liberty Hall B etc). These situations are however, not part of this write up.

DISCUSSION

User traffic

This causes noise situations in areas where spaces between desks and shelves are not large enough for material retrieval or shelf browsing. Table 1 shows the average available user-traffic-space, **T** in areas where desks intercalate shelves. This space varies between 7 centimeters to 58 centimeters. All areas with user-traffic-space between 7 centimeters to 35 centimeters are potential noise locations. It was observed that locations with user-traffic-space at least half a meter wide did not cause user-traffic noise (i.e. interruption of the decoding process of seated users). Space management in existing libraries is always a pain in the neck for librarians and in the opinion of Baker (1997), it is often difficult if not impossible to rearrange and certainly replace or extend existing premises. The constraints imposed by existing and perhaps inappropriate space can be a major blockage of effective resource management. Thus, constraints of inadequate space impose noise, which affects user interactions in the library.

User-user interactions and studying styles

There are cordial user-user interactions daily in the library, except when a noise situation above the prevailing threshold occurs. Some users seem to be inured to noisy situations; they continue to study serenely no matter the noise levels. Others are unable and either vacate noisy areas or try to assert their right to have a silent study environment. Librarians are recognized as good user-user interaction managers and it is this that has given libraries the reputation of being environments in which silence is expected. This allows users to focus on their reading and study.

Teaching methods have changed and so have assignment types given to students. Lecturers have now introduced group work as well as group assignments and these have permeated the library environment. According to Rowley (1995), this has eroded the traditional image of libraries since academic libraries have to accommodate different approaches to teaching and learning. A writer like Eileen France (1990) advocates group work especially for student - teachers. According to her "group work for most teachers is an illuminating experience as they examine subtle differences in their perceptions of dependence, independence and interdependence in a group and develop a

new understanding about leadership." SCL should therefore plan to make group workspace available in the near future.

Student-Library staff interactions

User-staff interactions are excellent. It is a fact that group work, which has not been provided for in the library, could not have taken place without such relations. Unseemly interactions or behaviours are quickly nipped in the bud to restore the expected social milieu good for the library environment. Those who do not know basic retrieval procedures are always helped, and are almost always full of bonhomie.

Breaches of library ethics

In as far as noise is concerned deliberate breaches are noted from discussion groups, mobile phones not switched off, and those who refuse access to other users in very narrow desk-to-shelf locations. These problems are solved as and when they arise.

Inherent library environment factors which enhance noise

The main inherent factor, which produces noise, is the management of space. Students seated in areas where desk-to-shelf spaces are narrow experience frequent noise. The second inherent factor is the absence of space clearly allocated for group work. A university library facilitates access to information however there are some materials needed by users but which cannot be taken out such as research and reference material and thus have to be used in the library. This type of use (in group work) creates noise for others who are not participants.

External factors that contribute to noise.

The major outside factor that contributes to noise is power outages. Though not frequent, a power outage disrupts decoding of print by readers, especially at night. It ultimately also disrupts computer communications as the UPS goes off.

Conclusions and Recommendations

Communication of information is constantly taking place in the library environment. Some of these are disrupted by noise; thus the platitude: message sent is not always message received.

In UEW SCL, space is the major inherent cause of noise. Desk-to-shelf space is not large enough to provide adequate user-traffic-space in most areas where desks intercalate shelves. This also prevents easy access to the shelves in these areas. Noise situations arise when sitting users are disturbed. It is suggested that students are made aware of this during library orientation so as to reduce potential conflict situations.

The second major noise situation is the group assignments given to students. Unfortunately, some of these have to be done in the library, as some of the library materials cannot be sent out of the library. Research has shown that group work is an essential teaching method. According to Joan Green and Joan Myers (1990), "it is a matter of received orthodoxy for insightful teachers that talk is a valuable way of learning through which students marry past and present experiences and knowledge. Classrooms in which the curriculum is reduced to 'a gulp and regurgitate' cycle rarely provide the appropriate climate for the integration of new information and experience of the learner's intellectual horizons."

The solution to group work is also the problem of managing scarce space. It is recommended that for the above two major noise factors identified, management will take them into account when allocating space after the new extensions being made to the library are completed.

Another way to reduce noise is to reduce student numbers in the library, and this could be done by extending library-working hours. However, this will require increasing

library staff strength and managing an effective library shift system.

For power outages, though they are infrequent, management can think of a standby generator as a long-term solution. Management should also provide limited floor carpeting of long access walkways to, and in reading areas. This will reduce noise from studded shoes.

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