Taxonomy of Communication Noise Impacting the Quality of Library Resources

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Abstract

Frequently media reports draw attention to errors in published books and other publications. Sometimes the reports emanate from libraries and schools that bicker with suppliers of flawed publications. Notwithstanding much of the noise-related research in information science literature focus on noise within and around libraries and schools; and fail to explore the breadth and depth of this phenomenon described as communication noise. This study, therefore, aims to explore the breadth and depth of communication noise by identifying, describing and classifying the various types affecting information quality with a view to finding solutions to them. This is a taxonomical study of noise types identified online and offline in information science and communication literature through document analysis. Noise types were described to be mutually exclusive and classified into audible, verbal and non-verbal noise. A total of five audible, seven verbal and eight non-verbal noise types, and 12 associated concepts are identified, described and classified. The roles of various gatekeepers at various stages were also highlighted towards theorizing on communication noise, and to aid a more detailed study of this otherwise under-researched phenomenon. This study successfully brings into the purview of information science literature noise types that were hitherto gleaned through adjoining disciplines. And by exploring the breadth and depth of communication noise and describing how they impact information content and delivery, it lays foundation for a more meaningful conversation on possible solutions.

Keywords: Communication noise, published errors, information delivery, content creation, editing gatekeeping

1. INTRODUCTION

The communication industry feeds libraries with diverse products—books, journals, magazines, newspapers and electronic resources such as audio books and compact discs. These products sometimes come with imperfections and errors which communication researchers interrogate as communication noise, noise that often interferes with effective use of books and other products. Notwithstanding, information science literature has paid inadequate, if any, attention to this phenomenon (Ifeduba, 2020).

The available researches conducted on this subject from communication perspective have also been viewed as inconclusive and in-exhaustive (Woolner and Hall, 2010) on the one

hand. On the other hand, they point to the negative impact of communication noise on all forms of written, spoken and non-verbal information (Ifeduba, 2020b).

 Communication noise is naturally "silent", existing only in text, images, audio and video contents, a characteristic which has made its pervasive and debilitating effects on information delivery and consumption less obvious to information scientists. The situation is currently such that the impact of communication noise on learning is beginning to make newspaper headlines discrediting publishers and approving authorities (The Citizen, 2017; Igadwah, 2018). There have also been instances of schools and libraries rejecting approved texts (Lowson and Alphonso, 2018). Yet this phenomenon is hardly understood from the perspective of information management, notwithstanding that a clear understanding of its depth and breadth is vital for effective information creation, management and transmission.

The Problem: To draw the attention of information scholars and professionals to the widespread but highly under-researched challenge posed by communication noise, a clear identification, description and classification of noise types affecting information content and transmission should be a starting point. This study, therefore, identifies, describes and classifies all available categories of communication noise, especially noise that stand in the way of effective information creation and consumption. The study aims to achieve this objective by answering the following questions:

1. What is the range of audible noise affecting effective understanding of information products?
2. How many verbal and non-verbal noise types affect effective understanding of information products?
3. How many associated concepts aid our understanding of communication noise?
4. What are the theoretical perspectives to communication noise?

Clarification of Concepts: Generally, any over-loud sound, or normal sound made in an inappropriate place, which could disturb its hearer could be defined as noise. This type of noise is commonly understood and widely researched unlike communication noise. When humans communicate, they share meaning, and whatever impairs or interferes with a faithful sharing of that meaning is defined as noise (Karell, 2017).

Viewed differently, anything that shares the same channel as a message and interferes with the receiver's ability to perceive it amounts to noise in communication terms, according to

Morgan and Welton (1992). In other words, anything added to a spoken, written or non-verbal information signal but not intended by the information source, causes distortion in the message, thereby amounting to noise (Folarin, 1998). This definition agrees with the views of both Shannon and Weaver and Morgan and Welton, which hold that some portion of the intended message of the communicator may be lost between the original conception and the impression on the mind of the receiver.

Baran and Davis (2003) defined noise simply as the difference between the signal sent and the meaning received, implying that successful communication occurs when the mental images of the sender and receiver match. But when, for instance, a constructive suggestion is taken as criticism, a carefully phrased question is misunderstood, a friendly joke is taken as an insult, a hinted request is missed entirely, then, something must have caused the difference between what was meant and what was understood, and noise accounts for this.

2. METHODS

The method employed is a systematic review of literature based on secondary data collected through online and offline search. The inclusion criteria and classification methods are explained:

Inclusion Criteria: Documents dealing in communication, information content creation, content quality and information delivery were targeted; and a total of 46 purposively selected print documents (textbooks and journal articles) dealing in communication and information quality were selected after a preliminary search, and were examined by document analysis. In addition, a computerized search was carried out by using multiple keywords in the Google search engines. The online search initially yielded 23,212 web documents containing many irrelevant ones. After sorting, 146 web pages were purposively selected because they met predetermined criteria--dealing in communication and information quality, or relating to "communication noise, communication failure, factors affecting understanding, readability and legibility." Data associated with these key words were collected and analysed. In the second phase, the search was diversified to include synonyms of communication noise such as error in books, printers devil, erratum and errata.

Classification Methods: To arrive at mutually exclusive classification of noise types and associated concepts, the deductive approach, which involves analyzing qualitative data based

on a structure that is predetermined by the researcher, was used since it had been predetermined to categorize data into four content categories: audible noise, verbal noise, non-verbal noise and associated concepts. In doing this, attention was given to typicality and similarity. While the first, typicality, is assessed by relating one item to the whole collection, similarity is assessed by relating one item to another one at a time depending on the number of common properties shared by them.

3. Classification of Noise Types

The literature search and document analysis yielded a range of noise types which could be broadly classified audible noise and silent noise.

Audible Noise: Audible noise encompasses physical sound in a reading or teaching environment, noise in audio information products, noise in video information products, channel noise and noise arising from phonology. Physical noise could be described as any loud sound from the environment interfering with a signal or message (Grimsley, 2015). With regard to information product delivery, this type of noise may only be considered important in situations where they impact negatively on learning in libraries and schools. Otherwise, they could be considered as marginal to the topic under discussion.

Of more significance to information science and information management is noise in audio information products such as electronic books of various descriptions: contents in mp3, cassette, compact disc, or in radio transmissions of distance learning classes. In the same vein, noise in video information has gained greater significance in this information age with Youtube playing increasing roles in information transmission and learning. When there is too much of background sound interfering with speech, the speech can become difficult to understand whether in audio or video. Ideally there should be a balance between background noise and speech. This is referred to as speech-to-noise ratio, and experts state that increasing the speech-to-noise ratio is beneficial not only for recording, but also for on-set communication channels (Dzhambov and Dimitrova, 2014).

Studies across disciplines indicate that physical noise pollution has become a major concern to societies across the globe (Hunashal and Patil, 2012). Psychologists and medical researchers, especially, have studied it from causes, effects, regulations and prevention perspectives (Dzhambov and Dimitrova, 2014). Other scholars observed that irrespective of

level of understanding, physical noise may result in greater pains on the part of the communicators and their audience due to interference with the communication process (Berglund and Hassmen, 1996), and may lessen the capacity to work effectively since communication difficulties may lead to irritation and lack of self-confidence as well as poor concentration. Physical noise emanating from an external source within or outside a classroom, library or discussion venue is also directly associated with a decline in concentration and increase in aggression (Blue Bic, 2018). It is thus, believed that as the population of a community grows with attendant pressure on the environment, environmental noise increases with corresponding effects on lives of learners (Onwumere, 2019).

Phonological noise is an aspect of audible noise and has to do with the speech sound of a language. For instance, when a broadcaster or a teacher means to use a word which should be pronounced in a certain acceptable way but ends up pronouncing it wrongly, this may confuse the listeners. In the case of a receiver in a mediated communication engagement, the situation could be worse (Khoury, 2011). Phonological noise applies to audio and video messages equally. Closely related to this is channel noise.

When Shannon and Weaver wrote about channel noise, they had in mind anything that interfered with the signal coded to a communication channel. This could manifest as static noise on recorded audio or video messages or what mobile telephone service providers generally call network problem. Griffin (2003:24) observed that this kind of noise is "the enemy of information" because it cuts into the information carrying capacity of the channel between the transmitter and the receiver. It is important to note that a situation where dull paper makes readability difficult could also be described as channel noise. Details are presented in Table 1:

Table 1: Audible Noise Types, Sources and Possible Impacts

SN	Noise Type	Noise Source	Possible Impact
1	Physical Noise	From the environment	Distractions that affect understanding and impair hearing, sometimes with health implications.
2	Noise in Audio Contents	From recording equipment and production errors	Distracting sounds interfering with message comprehension.

3	Noise in Video Contents	From recording equipment and production errors	Sounds and sights interfering with message clarity and comprehension.
4	Phonological Noise	From presenter or Editor	Wrongly pronounced word may convey the wrong meaning. It may be totally meaningless.
5	Channel Noise	From transmission lines and substrates	Disruptions interfering with message clarity and comprehension.

Silent noise: The term "silent noise" is operationlised in this paper to mean every part or aspect of a message (printed or pictured), whether intended or not, which interferes with and impairs the received meaning. This type of noise often manifests as error or poor production and is silently observed or perceived by a reader who often would not think that it is a type of noise eventhough it interferes with his understanding. This contrasts sharply with physical noise which interferes with a reader's understanding primarily by disturbing and distracting him or her.

A survey of 51 textbooks showed an average of one error or misconception per page (King, 2010) whereas another study reported numerous errors, irrelevant photographs, complicated illustrations and diagrams that represented impossible situations in approved textbooks (Davenport, 2001). There have been cases of approved texts distributed with errors and omissions (Lowson and Alphonso, 2018), typographical errors, blank pages and careless binding interfering with readers' understanding (Khawaja, 2015; Khoury, 2011). Such errors, including misspellings, errors of grammar and punctuation have clearly impeded learning and, in some instances earned reprimands for erring public officers (Malik, 2017).

In recent times, the mass media in Africa have been awash with stories of errors in published books (Igadwah, 2018). Errors of fact and anti-cultural contents have been accommodated in secondary school textbooks (Ojetunde, 2013; Tijani, 2017; This Day, 2017). In relation to causes of such errors, it was reported that little attention was given to the poor quality of textbooks which teachers were required to work with in an African country (Evaluation Office, 2013). In the same vein, a media survey of publishing indicated that approved books were profuse with factual and grammatical errors (Ampadu, Ceesay and Green, 2018). In some cases, authorities could not contemplate a reprint because of the huge costs involved (Odour, 2018). In one of the instances that attracted government disapproval, a public officer

stated that the nation's children had been studying with badly written books, textbooks that were full of mistakes, distributed by no lesser institution than the institute of education in that nation (The Citizen, 2017).

Two studies drew attention to the fact that these errors in published works erode knowledge and undermine learning, making the work of teachers more difficult and often leading to industrial conflict. They also described how ubiquitous this phenomenon had become, using data from eight countries (Ifeduba, 2020a; Ifeduba, 2020b). Silent noise types identified in the literature are further divided into verbal and non-verbal noise.

Verbal Noise: Traditionally, verbal noise should refer to noise that occurs in written or spoken information. But since audible noise is assigned a separate category in this study, verbal noise in this section refers to written information only. The broadest of the noise types under this category is linguistic noise which refers to the correctness, appropriateness or the textual quality of a message. Scholars have been able to further differentiate graphological, semantic and syntactic noise as kinds of linguistic noise.

Graphological noise refers to interference coming from the readability, legibility or other problems associated with the quality of written text. In the words of Morgan and Welton (1992:16) "The most obvious example would be a set of dirty finger-prints on the otherwise pristine surface of a drawing". When handwriting is illegible and typesetting is so badly done as to distract the reader, we describe the resulting interference as noise. Bitner (1989) explained that when the printing press malfunctions and creates blurred pages that make it difficult to read a story, this amounts to noise and affects readers' ability to comprehend. This is different from semantic noise.

The word semantic is used in connection with the meanings of words and sentences. Thus, when a communicator means to say or write one thing but ends up saying it or writing it in a way that gives it a meaning other than the one intended, it is called semantic noise. Examples of this abound. John Bittner (1989:10) narrated the story of a television reporter from Idaho who visited New York to be interviewed for a job. During the interview, the reporter said that "after a hard day on the job, she would literally come apart at the seams' before sitting down for dinner". By this expression she meant relaxing before eating her dinner, but the interviewer reported that the reporter "can't withstand pressure, becomes mentally deranged and goes berserk before dinner". The noise came from her use of a cliché which was not known to the receiver of the message. Semantic noise can also be introduced through

ambiguous statements. Sometimes there is only a thin line separating semantic noise from syntactic noise.

Syntactic noise refers to interferences that arise from the misapplication of the rules of grammar and how words are arranged in a language to form a sentence. When a sentence is grammatically wrong, the meaning may not be understood by the reader (LoveToKnow Corp, 2018). In this case, the noise is in the meaningfulness of the sentence unlike cultural noise which occurs when there are differences in the cultural backgrounds of an author, a difference that may lead to wrong choice of words, illustrations, examples and proverbs (Chinenye and Emmanuel, 2018). Sometimes, modernity could lead to light pollution thereby causing over- illumination of an area in a way that is considered obtrusive to information transmission. It produces visual noise because it can impinge on paper or computer screens and degrade the quality of learning for students (Azeema, 2015). Visual noise may be a visual pollution, such as an eyesore caused by other types of pollution or just by undesirable, unattractive views surrounding textual information or images (Kyba, Mohar, Andrej, Pintar and Stare, 2018).

Another important type of verbal noise occurs in photographs and illustrations. According to Davis (2019) in photography, the term digital noise refers to *visual* distortion which often looks like tiny colored pixels or specks in a photograph, and sometimes resembles the grain that is seen in film photography. Noise is noticed more in photographs taken in low light situations. It distorts the visual detail of a photograph (Cox, 2018). Details are presented in Table 2:

Table 2: Verbal Noise Types, Sources and Possible Impacts

SN	Noise Types	Noise Source	Possible Impact
1	Factual Noise	Author or Editor	Inadvertent falsehood conveys the wrong meaning and becomes counter-productive.
2	Semantic Noise	Author or Editor	Incorrect sentence may convey the wrong meaning. It may also be totally meaningless.
3	Syntactic Noise	Author or Editor	Incorrect sentence may convey the wrong meaning. It may also be totally meaningless.

4	Linguistic Noise	Author or Editor	Incorrect sentence may convey the wrong meaning. It may also be totally meaningless.
5	Photographic Noise	Photographer or Photo Editor	Vital details may be lost, thereby affecting the integrity of the photograph.
6	Chronology Noise	Author or Editor	Presenting facts in an incorrect sequence may convey the wrong meaning. It may also be totally meaningless.
7	Graphological Noise	Author or Editor	Unclear writing, print or sign may convey the wrong meaning. It may be totally meaningless.

Non-Verbal Noise: Pearson et al. (2003) defined non-verbal communication as the behaviour of people other than their use of words which have socially shared meaning. Guided by this definition, the search for non-verbal noise types yielded seven classes of communication noise including noise in kinesics communication. Kinesics is the study of bodily movements, including posture, gestures and facial expression. When a teacher is using gestures to teach deaf students in a classroom or on television or in a video, movement of the hand signifying something other than what is intended can cause noise leading to possible confusion and lack of understanding. Whether the context is a formal or an informal setting, information sharing is impeded (Shukla, 2004). The same goes for proxemics.

Proxemics is the study of human use of space for communication purposes. Pearson et al (2003) stated that a distance of 0 to 18 inches is intimate distance; 18 inches to 4 feet is personal distance, 4 feet to 12 feet, social distance and 12 feet to infinity, public distance. In a culture where this is understood, standing too close to students or library users could send the wrong signal and may produce unintended feedback. Consistent with this is the explanation offered in *Encyclopedia Britannica* (2010), which explains that distance and closeness maintained between individuals, angle of vision they maintained while talking and the pace of their behaviour could all contribute either effectiveness or noise to communication.

Messages are created by the way people organize and use time; and this is called chronemics or temporal communication. People communicate urgency or casualness with the starting time of an event; just as casting a glance at one's wrist watch in the middle of a speech in an

educational video may suggest time consciousness and may influence the information seeking behaviour of members of the audience (Shapiro, 2017).

In the same vein, there could be noise in tactile communication. Tactile communication refers to the use of touch to share ideas, meanings and knowledge. A handshake means "welcome" in many cultures. Whereas outstretched arms and open fist communicate welcome, a clenched fist communicates a punch, a blow or an impending fight. When a clenched fist is accompanied with a frown and a fast pace towards an offender, clear and imminent danger is understood. A touch on the back can be either a slap or a pat depending on the context. A touch that suggests friendship on one occasion can suggest sexual harassment on another (Suvilehto, 2016). Related to this is noise conveyed by style of dressing.

Noise in Dressing could occur if someone should turn up at a wedding ceremony in rags. The celebrants would feel insulted. The same is the case in a classroom video where a student enters wearing a dress that clearly violates the school dress code. Dressing can communicate obscenity, sex appeal, gentleness, decency and piety. Colours of dresses also communicate mourning, danger and patriotism, depending on the context. It follows, therefore that any misapplication in dressing whether in print or otherwise could extend the wrong meaning (Shukla, 2004; Saiki, 2015). Noise can also occur in paralanguage. Paralanguage refers to acts like whistling and humming. Since meaning is expected from the communicator using this kind of communication, noise is also possible if the communicator fails to exchange the intended meaning (Chliaras, 2019). Closely related to these non-verbal types of noise are physiological and psychological noise.

Physiological noise has to do with biological factors in the receiver that interfere with accurate reception and assimilation of information. Illness, hearing loss, physical discomforts such as pain produced by an uncomfortable chair are examples of physiological noise (Adler and Rodman, 1991; Shawn Grimsley, 2015). Library and school furniture are generally designed to eliminate physiological conditions that might create communication noise. However, they cannot address psychological noise problems. Psychological or emotional noise refers to forces within a communicator that interfere with the ability to express or understand a message accurately. These forces often have to do with emotions such as love, fear, anger and sorrow. For instance, someone who lost a loved one may be absent minded while reading a book, and may not be able to find any "interesting" story in a newspaper, due to sorrow (Jani, 2012; Psychologist World, 2019). Details are presented in Table 3:

Table 3: Non-verbal Noise Types, Sources and Possible Impacts

SN	Noise Types	Sources	Possible Impacts
1	Kinesics Noise	From the body movement of a presenter/teacher in a recorded message.	Inhibits understanding thereby impeding learning.
2	Proxemics Noise	From the setting of a recorded lesson, for instance.	Inhibits understanding thereby impeding learning.
3	Chronemics Noise	From the behaviour of teacher in a recorded lesson, for instance	Distracts and inhibits understanding thereby impeding learning.
4	Tactile Noise	From the touch of a presenter/teacher in a recorded message.	May disorganize a learner thereby inhibiting understanding impeding learning.
5	Dress Noise	From an illustrator, teacher, presenter in a recorded video.	May send the wrong message, distract and confuse.
6	Paralanguage Noise	From an illustrator, teacher, presenter in a recorded video.	Misunderstanding, getting the wrong meaning.
7	Physiological Noise	Experienced by a reader, listener or viewer	Pain and sorrow may occur, making learning difficult.
8	Psychological Noise	Residing in a reader, listener or viewer	Absent mindedness may occur, making learning difficult.

Associated Concepts that Aid the Understanding of Communication Noise

The concept of communication noise is made clearer when it is examined in the context some related concepts as well as causes and effects. The concepts include feedback, that is, the

response given by a receiver of a piece of information. According to Folarin (1998) this is the signal relayed from the receiver back to the source about the accuracy of the reception of the message. The feedback conveys approval or applause on the quality or usefulness of the original message. It is important to the communicator in the sense that he often needs to assess and appraise his performance with a view to performing better in future. In Shannon and Weaver's information system, feedback loops were designed to enable sources to monitor the influence of their message on receivers (Baran and Davis, 2003).

In contrast, feed-forward is a relatively new concept which means being proactive and imagining what is likely to be communicated and preparing to respond to it. When this is successful, noise is minimized since part of what could constitute noise is preempted and taken care of by the receiver. It also enhances the fidelity of received message, that is, the degree of faithfulness achieved in the communication process, or the degree to which the sent message matches the received message. On the one hand when there is loss of quality or quantity, it means that there is low degree of fidelity. On the other hand, when the system amplifies, enhances or sustains the message to retain the original meaning and quality of message, we say there is high level of fidelity. It is all about faithfulness in reproducing the original message as intended by the originator (Griffin, 2015).

 John Bittner explained that "our background, knowledge, beliefs and other things about us make up our field of experience, and this is sometimes referred to as plane of reflection or frame of reference. If there is no overlap of experience or stock of knowledge, including language skills shared by two communicators, it is practically impossible to interact meaningfully, and the more overlap there is between the substances of the speaker and the substances of the listener, the greater the identification is (Griffin, 2003).

The overlapping of fields of experience is termed homophily. This term is used to describe the perceived similarity between the speaker and the listener. A high level of homophily increases chances of communicating meaningfully without much noise. In other words, homophily increases isomorphism, that is, the degree of similarity between what is sent and what is received (Griffin, 2015). Heterophily, the opposite of homophily, describes the degree of dissimilarity between two communicators' field of experience. Greater the dissimilarity greater the noise component would be. Both homophily and heterophily can exist among senders, gatekeepers and consumers of information contents, enhancing or inhibiting information flow.

The ability of a communication channel to accommodate and carry or transmit faithfully the message sent through it is known as channel capacity. According to Baran and Davis (2003), every channel has a certain capacity to transmit an accurate signal. When the capacity is high, it permits a very complex signal to be carried with a few errors or little noise. When the capacity is low, it permits a very complex signal to be accurately carried. In the digital environment, bandwidth may reflect capacity whereas in the print environment space reflects capacity while in the broadcast environment, time determines capacity. This should not be confused with redundancy.

Redundancy was defined by Morgan and Welton (1992:25) as "the inclusion of the same information at more than one point in a massage." When a signal contains many bits–illustrations, words, phrases, systems carrying the same information that shows that it has the element of redundancy. Audio and video contents are known to contain a high degree of redundancy as against books, newspapers and magazines. *Encyclopedia Britannica* (2010) describes redundancy as the greatest antidote to entrophy (Gordon, 2018), a term that refers to outside influences that diminish the integrity of communication and possibly distort the message. However, where a receiver can feed forward, he may be in position to fill in missing details despite the incompleteness of a message (*New Encyclopedia Britannica, 2010).* Closely related to this is another word—over-coding.

Over-coding relates to the connection communicators create between different features of a message. Morgan and Welton (1992: 53) put it this way: "over-coding occurs whenever the receiver makes a link between different elements of a massage to infer a meaning which is not present in either element". This reduces noise in information content whereas under-coding, the process whereby communicators, through repeated observations, gradually establish the meaning a particular sign has for a group. When the meaning is established, the observer begins to modify his interpretation of the sign or communication, eliminating unnecessary aspects that might be interpreted as noise. Details are presented in Table 4:

Table 4: Associated Concepts that Aid the Understanding of Communication Noise

SN	Noise Types	SN	Noise Types
1	Feedback	7	Redundancy

2	Feed forward	8	Channel capacity
3	Fidelity	9	Entropy
4	Isomorphism	10	Over-coding
5	Heterophily	11	Under-coding
6	Homophily	12	Field of Experience, Frame of Reference or Plane of Reflection

Theoretical Perspectives on Communication Noise and Quality Control: Nineteenth century social science research laid the foundation for the understanding of the communication process and the cognitive processes, thereby contributing substantially to what is currently studied as communication theory (Psychologist World, 2019). The Stimulus--Response theory, the Magic Bullet theory or the Hypodermic Needle effects theory which assume that all human beings respond inescapably and uniformly to powerful stimuli from information media—book, newspaper, magazine and electronic media—opened a floodgate of research that only served as commencement for the media effects debate (Griffin, 2006; Psychologist World, 2019). Subsequently several studies presented fresh evidence to show that individual differences, social categories and other cognitive processes could interfere with and attenuate the intended effects of written or spoken communication (Griffin, 2006; Zoltán Dörnyei, 2014). It has also become clear that the participants' state of mind, health, skill or environmental conditions can interfere with the fidelity of a message received, thereby constituting noise (Valkenburg, Peter, and Walther, 2016). All such added, unintended or unwanted word, sound or marks and conditions which impair the faithfulness of a message are known in communication terms as noise.

However, these phenomena were not known by this name "noise" until Claude Shannon and Warren Weaver produced a model of communication to show what happens to "information bits" as they travel from the sender to the receiver (Robert Lewis, 2019), and discovered a disparity between what was sent and the meaning reflected in the feedback (Gordon, 2018; Bajracharya, 2018). What accounts for the difference is noise (Neuman and Guggenheim, 2011).

One of the outcomes of this discovery is the Gatekeeping Theory of communication which states that information moves step by step through channels and must pass through a human-gate to move from one stage to another stage (Stacks and Salwen, 2009). Whereas such gatekeepers in the publishing industry and the mass media perceive themselves as gatekeepers, others in the libraries hardly perceive their jobs in this light, which probably may be why there is little or no research addressing quality control or gatekeeping from information science perspective (Wallace, 2018). In recent years, teachers and professors have begun to recognize their gatekeeping roles as they increasingly decide what information should be consumed by students and learners (Alfzaal, 2014). A further explanation of the various gatekeeping stages in the information chain, as adapted from Ifeduba (2015) is presented in Table 5:

Table 5: Gatekeeping or Quality Control Steps in the Book Chain

SN	Gatekeeper	Function
1	Author	Writes a book, including facts and figures, excluding unwanted ideas and facts
2	Editor	Edits a book, including, excluding and modifying facts and figures
3	Reviewer	Cross checks the work, pointing out errors, oversights, omissions, confusions and ambiguities
4	Approving Authorities	Examine work to ensure that standards, specifications and user expectations are met
5	Library Acquisitions Staff	Examines the physical and literary qualities of a book against established standards in order to reject or accept it
6	Adopting Schools	Examines the physical and literary qualities of a book against approved curriculum and established standards
7	Reader	Any error spotted by the reader is an evidence of a failure in the process of gatekeeping, a silent noise standing in the way of effective learning

Adapted from Ifeduba, 2015

The importance of the present study is underscored by the fact that these gatekeepers would only keep out noise if only they can recognize them as such, thus having a comprehensive list of communication noise affecting their work would enhance their understanding towards ensuring quality.

CONCLUDING REMARKS

This review indicates that there are five audible noise types, seven verbal, eight non-verbal and seven gatekeeping steps at which noise could be spotted and eliminated. There are 12 associated concepts that shed light on the phenomenon and may be useful in the search for noise reduction solutions. There is, however, an urgent need for research into the various ways that these noise types affect information delivery through different media and in contexts such as school, library, personal study, online reading and mobile reading.

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