Full Length Research Paper

Noise mitigation for effective agricultural extension print message delivery and utilization

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Communication is essential to human life. Apart from interpersonal media that provide opportunities for face-to-face interaction, the mass media (print or electronic) help communicators to reach a large number of persons simultaneously. For printed educational materials to be potent in communication, they must be noise-free. This paper reviewed the phenomenon of noise as barrier to communication and content-analyzed selected agricultural extension publications for presence of semantic and mechanical noise. The linguistic analysis specifically ascertained the level of adherence to semiotic rules. Findings indicate that some of the documents studied were riddled with semantic and syntactic noise elements, a situation that challenges the gate keeping ability of our editors. The paper recommends thorough editorial work to enhance understanding and foster uniform application of extension recommendations by farmers.

Key words: Noise, semiotic rules, gatekeeping, effective communication, technical jargon.

INTRODUCTION

Human communication involves conscious or unconscious interaction of thoughts, opinion or information to educate, influence action, persuade, reinforce behavior or express feelings. It is essential to human life and is unavoidable. Watzlawick et al. (1967), communication experts, expressed this view in an axiomatic statement "one cannot not communicate", implying that every perceivable form of human behaviour is potentially communicative. The transactional model of communication (Barlund, 2008) also shows that individuals are simultaneously engaging in sending and receiving of messages.

Another issue of great importance in human communication is the desire for mutual understanding. Without this, efforts, time and resources expended in communicating come to naught. There is, therefore, need for an overlap of knowledge or information; or some experience common to both the encoder and decoder for communication to be meaningful and convey the intended message (Ross, 1974; Hennings, 1990).

A number of media are involved in human communication. These are classified according to size of the receiving audience. Thus, we have interpersonal media that provide opportunities for face-to-face interaction with individuals or small groups; and mass media channels through which a large, unspecified number of persons are simultaneously reached.

Mass media channels are grouped into two major categories, namely, print and electronic media. The former include books, newspapers, newsletters, journals, bulletins, and other forms of publications; while the latter describe the use of radio, television, computer and related gadgets in information dissemination.

In the human communication process, factors such as information communicated, communicator variables, channels used in communication, and receiver characteristics singly or jointly enhance or undermine human communication efforts, the result of which manifests as feedback. Among these factors, the phenomenon of noise appears to have received the least attention in communication studies, even though it is one element that virtually affects all others (source, message, channel, receiver, feedback) in the human communication process.
The print media suffers a lot in this regard. Sources of noise in printed materials include language vis-à-vis targeted audience, colour of printed material, composition or arrangement of message, and presentation pattern. Others are character and size of print (which affect legibility), as well as grammatical and technical accuracy.

The problem

Available records show that enrolment at all educational levels, as well as financial allocation to the educational sector, have improved over the years (Nigeria Bureau of Statistics, 2006). Expectedly, functional literacy of peasant masses and farmers in Nigeria has improved tremendously in line with enhanced educational opportunities in the country. This is expected to positively impact on access to and utilization of print materials. There is still a general feeling that printed educational media serve a little purpose in the villages of developing countries dominated by illiterates (Mody, 1991). Idike (2008) had, however, observed that, while the rural farmer may be uneducated, and may tend to resist change of his norms and procedures, available evidence suggest that the assumption about education as a major constraint is often exaggerated or overstressed. The fact remains that, presented as photographic illustrations instead of words, the less-educated, but visually-intelligent readers could benefit immensely from printed materials. This justifies the distribution of extension guides and similar documents to farmers.

Although most extension print materials appear quite attractive, some fail to convey intended meaning or produce the desired effect on farmers because they are poorly edited, and so contain undesirable elements – noise. As observed by Holmes (2004), the written message is a powerful tool that must be used with care because it delivers the message exactly as it is prepared, and is a permanent record that leaves trails of disaster behind when misused (Holmes, 2004). McClymont (1975) probably alluded to this when he likened education to “academic concrete” which, once poured, tend to set very hard. Furthermore, print messages differ from oral communication or spoken message where body language, voice tonality or cadence and other variables may impact on the actual words or message relayed, and enhance its understanding.

Given the above observations, it is expedient to focus attention on the concept of noise which is a proven source of inefficiency of extension message delivery. A possible way of misusing a print material is to be so careless in its preparation as to deliver it to recipients contaminated with extraneous materials. These constitute noise, which inevitably interfere with the decoding of messages contained. It takes a high level of visual and auditory acuity to detect noise in print and electronic media.

Objectives of the study

In the light of the foregoing, this paper (i) reviewed the concept of noise relative to human communication, (ii) examined the foci of the National Agricultural Extension Research and Liaison Services (NAERLS) publications and (iii) content-analysed selected National Agricultural Extension Research and Liaison Services (NAERLS) and the European Union Technical Centre for Agricultural and Rural Cooperation (CTA) Agricultural Extension Guides distributed to farmers in Nigeria. This was with a view to ascertaining the presence or otherwise of noise in them, the rationale being that noise in these agricultural extension guides would alter communicator’s (senders) intended meaning, thus preventing the message from achieving the desired effect of positively influencing receiver’s (farmers) farming behavior.

METHODOLOGY

Data were collected from primary and secondary sources. Publications of two international agricultural organizations were purposively selected and analyzed. The choice of the NAERLS and CTA, an African, Caribbean and Pacific (ACP) – European Union (EU) Institution, was predicated upon their reputation as credible agricultural information development and dissemination centres that provide communication support services to research institutes through their publications (Agbamu, 2006).

Six CTA agricultural extension guide series, published in 2007 which were identified in its strategic plan 2007 to 2010, and four (4) agricultural extension guides published by NAERLS within this same period, which addressed planting and post-harvest activities of major agricultural commodities were randomly selected for the study. CTA publishes between 35 and 40 titles every year, and their recent publications focus on Agriculture and related issues. NAERLS, as at 1992, had over 400 publications on agriculture and related disciplines. The titles of the ten documents studied and their foci are shown in Table 1.

Data analysis

First, extensive literature review was embarked upon by the authors, and the focus was on the phenomenon of noise in communication. Thereafter, selected NAERLS and CTA documents were subjected to linguistic analysis, and specifically to ascertain the level of adherence to semiotic rules (syntactic, pragmatics and semantics). The exercise involved identifying mistakes of grammar, ambiguity in message, with possibility of wrong interpretation of meanings. Identified noise elements were counted and categorized for each document. They were later summarized, using frequency counts and percentages, and presented in Tables.

RESULTS AND DISCUSSION

Noise factor in human communication

The term noise is commonly associated with sound that is extremely unpleasant and offensive. In human communication parlance, it has its roots in the message...
transmitted and the channel through which transmission occurs. It is nauseating, because it interferes with message fidelity and, in extreme cases, leads to cognitive dissonance and communication ineffectiveness. Berlo (1960) identified forms of noise as including:

1) Environmental noise that physically disrupts communication such as standing next to a loud speaker at a party, or the noise from a construction site next to a classroom making it difficult to hear the professor.
2) Physiological-impairment noise or physical maladies that prevent effective communication such as actual deafness or blindness preventing messages from being received as they were intended.
3) Semantic noise arising from different interpretations of the meaning of certain words, e.g. the word ‘weed’ interpreted as either an undesirable plant or a euphemism for marijuana.
4) Syntactical noise arising from mistakes of grammar such as abrupt changes in verb tense during a sentence.
5) Organizational noise involving poorly-structured communication such as unclear and badly stated direction that makes receivers even more lost.
6) Cultural noise or stereotypical assumptions that can cause misunderstanding such as unintentionally offending Jews by wishing them “Merry Christmas”.
7) Psychological noise or certain attitudes such as anger or sadness which may cause someone to lose focus for a moment and make it difficult for him or her to communicate.

Wilcox (1977) described the use of jargon, inability to use the right word and faulty sentence structure; and lack of adequate background for understanding a message, different denotative meaning and different connotation as forms of semantic noise arising from message senders and receivers respectively. The author also described illegible copy, crowded margin, poor articulations and inadequate volume as mechanical noise from the sender; while defected vision, faulty hearing, inadequate lighting and external distractions are those arising from receivers. For him too, the sender experiences psychological noise though anxiety while communicating, hostility towards receiver and emotional fatigue; while psychological noise on the part of receivers manifests as indifference, distrust or biased attitude.

National Agricultural Extension Research and Liaison Services (NAERLS) publication interest

The findings show that 36 of NAERLS agricultural extension and rural development publications, from the time of its establishment to 1992, featured as extension guides (Table 2). Others were reports of conferences and seminars (17.8%), bulletins (15.7%), and posters/handbills (14.9%). Printed materials in these categories usually have thin cover, have fewer than fifty pages, and their breadth of coverage is limited and specific. They, therefore, allow easy carrying and consulting.

Examination of the documents showed that the NAERLS innovation dissemination efforts tilted towards the crop/soil agricultural sub-sector (41%), followed by livestock (18%), and farm management/extension (15.1%) sub-sectors. Fisheries and aquaculture received the least (1.7%) attention (Table 2). The institutional setting for agricultural research and development in Nigeria from the period of the Unit farms in Moor plantation (1899), to the era of Farm Settlement Scheme (1960); favoured the crop sub-sector, as emphasis was on the development of such export crops as oil palm, rubber, cocoa and cashew. Today, over 50% of agricultural research institutions in Nigeria have the national mandate to handle crops and crop-related problems (Agbam, 2009). This may have accounted for the observed trend in publication focus of the NAERLS.

Perusal of these documents showed that they were descriptive and persuasive in form. They presented information on innovations and recommended agricultural

<table>
<thead>
<tr>
<th>S/no</th>
<th>Series No</th>
<th>Title</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CTA 4</td>
<td>Improved practices in rearing indigenous chickens</td>
<td>Livestock production</td>
</tr>
<tr>
<td>2</td>
<td>CTA 5</td>
<td>Making high quality cassava flour</td>
<td>Value addition</td>
</tr>
<tr>
<td>3</td>
<td>CTA 6</td>
<td>Making sweet potato chips and flour</td>
<td>Value addition</td>
</tr>
<tr>
<td>4</td>
<td>CTA 8</td>
<td>Preserving green vegetables and fruits</td>
<td>Food preservation</td>
</tr>
<tr>
<td>5</td>
<td>CTA 11</td>
<td>Making banana chips and flour</td>
<td>Value addition</td>
</tr>
<tr>
<td>6</td>
<td>CTA 12</td>
<td>Processing tomatoes</td>
<td>Value addition</td>
</tr>
<tr>
<td>7</td>
<td>NAERLS 71</td>
<td>Crop protection technology for Nigerian farmers</td>
<td>Crop protection</td>
</tr>
<tr>
<td>8</td>
<td>NAERLS 22</td>
<td>Snail production techniques in Nigeria</td>
<td>Snaility</td>
</tr>
<tr>
<td>9</td>
<td>NAERLS 73</td>
<td>Agricultural land clearing and operation techniques</td>
<td>Agricultural engineering</td>
</tr>
<tr>
<td>10</td>
<td>NAERLS 3</td>
<td>Bee keeping technology for farmers</td>
<td>Apiculture</td>
</tr>
</tbody>
</table>

Table 2. NAERLS publication forms and focus.

<table>
<thead>
<tr>
<th>Form focus</th>
<th>Guides</th>
<th>Bulletins</th>
<th>Circul ars</th>
<th>Flipbooks</th>
<th>Leaflets</th>
<th>Posters</th>
<th>Reports</th>
<th>Recommended practices</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop and soil</td>
<td>52</td>
<td>24</td>
<td>1</td>
<td>14</td>
<td>23</td>
<td>37</td>
<td>14</td>
<td>5</td>
<td>170(41)</td>
</tr>
<tr>
<td>Livestock and veterinary medicine</td>
<td>38</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>10</td>
<td>3</td>
<td>-</td>
<td>75(18)</td>
</tr>
<tr>
<td>Fishery and aquaculture</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>7(1.7)</td>
</tr>
<tr>
<td>Agroforestry</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>14(3.4)</td>
</tr>
<tr>
<td>Engineering and farm technology</td>
<td>29</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>3</td>
<td>14</td>
<td>1</td>
<td>53(12.7)</td>
</tr>
<tr>
<td>Farm management and extension</td>
<td>19</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>29</td>
<td>-</td>
<td>63(15.1)</td>
</tr>
<tr>
<td>Home management</td>
<td>12</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>8</td>
<td>11</td>
<td>-</td>
<td>34(8.2)</td>
</tr>
<tr>
<td>Total</td>
<td>150(36.1)</td>
<td>65(15.7)</td>
<td>6(1.4)</td>
<td>20(4.8)</td>
<td>33(7.9)</td>
<td>62(14.9)</td>
<td>74(17.8)</td>
<td>6(1.4)</td>
<td>416(100)</td>
</tr>
</tbody>
</table>


practices, and appealed to reader’s reasoning and sense of judgment to adopt such practices (Agbamu, 2006). Omotayo and Erinle (1997) described books, pamphlets, newsletters, extension folders, flipcharts and bulletins as very important resources in agricultural extension.

Adherence of documents to semiotic rules

The review also showed that the sentences in the documents were clear and emphatic. Most of the words used were quite familiar. This apparently was to make for better understanding of the extension messages. Expectedly, the occurrence of noise elements was more in NAERLS publications, because they were more voluminous than the CTA documents (Table 3). Mechanical noise featured most (X=39.1), followed by technical jargons (X= 12.7) and grammatical inaccuracy (X=10.5).

The most critical problem with the documents analyzed was, therefore, the high level of mechanical inaccuracy (Table 3). There is need to consciously and effectively use punctuation marks in writing. Punctuation helps to arrange whole passages into meaningful units and, just as human speech is characterized by pauses and intonations which help to determine effective rendition of statements, questions, commands and other elocutionary acts (Uka, 1994), effective use of punctuation marks provides a lucid, vivid and free-flowing essay for readers (Chima, 1994; Nwokocha, 2000).

Expectedly, a number of technical words appeared in the documents. In some disciplines, occupation and professions (legal, medical and agricultural etc), there are words/expressions that are very familiar or commonly used and understood by all in that particular field (Eyisi, 2004). These terms are applicable to specialized areas or situations, and are used for accurate and effective expression. (Ngumoha and Nwachukwu, 1994). As a general rule, writers are advised to use familiar words in expressing their thoughts and, when unfamiliar words are used, the writers should convey the intended meaning by association (pictures or visual definition), examples (abstract words defined by examples), and through context, to enable the receiver derive its meaning (Bernstein, 1986).

Complex and compound sentences were quite few. The authors were probably conscious of the relatively low level of education of farmers who were the target audience. Sentences are considered complex when they have excessive parenthetical expressions, subordinating clauses or excessive amount of descriptive phrases and clauses that now act as a mask, making the sentences more difficult to understand (Booth, 1984). There is no doubt that the presence of the few complex sentences detracted from the quality of these documents, the understanding of their content, and implementation of their recommendations. Hulbert (1991) advises writers to avoid such grammatical errors as dangling modifier, misplaced modifier, lack of parallelism, under pronoun reference and illogical shift in point of view. They should aim at achieving sentence unity by avoiding such grammatical errors as sentence fragments, run-on sentences and comma splices.

Conclusion

Farmers and other professionals who glean information (words and illustrations) from printed
Table 3. Occurrence of noise elements in the documents studied.

<table>
<thead>
<tr>
<th>S/No</th>
<th>Title of document</th>
<th>No. of pages</th>
<th>Grammatical inaccuracy</th>
<th>Mechanical inaccuracy</th>
<th>Technical jargon.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CTA Publications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Improved practices in rearing indigenous chickens.</td>
<td>8</td>
<td>5(10.9)</td>
<td>37(80.4)</td>
<td>4(8.7)</td>
<td>46(100)</td>
</tr>
<tr>
<td>2.</td>
<td>Making high quality cassava flour</td>
<td>8</td>
<td>5(13.5)</td>
<td>27(73)</td>
<td>5(13.5)</td>
<td>37(100)</td>
</tr>
<tr>
<td>3.</td>
<td>Making sweet potato chips and flour</td>
<td>8</td>
<td>8(13.8)</td>
<td>46(79.3)</td>
<td>4(6.9)</td>
<td>58(100)</td>
</tr>
<tr>
<td>4.</td>
<td>Preserving green vegetables and fruits</td>
<td>8</td>
<td>2(5.3)</td>
<td>33(86.8)</td>
<td>3(7.9)</td>
<td>38(100)</td>
</tr>
<tr>
<td>5.</td>
<td>Making banana chips and flour</td>
<td>8</td>
<td>6(10.3)</td>
<td>49(84.5)</td>
<td>3(5.2)</td>
<td>58(100)</td>
</tr>
<tr>
<td>6.</td>
<td>Processing tomatoes</td>
<td>8</td>
<td>1(4.2)</td>
<td>20(83.3)</td>
<td>3(12.5)</td>
<td>24(100)</td>
</tr>
<tr>
<td></td>
<td>NAERLS Publications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Crop protection technology for Nigerian farmers</td>
<td>28</td>
<td>9(10.8)</td>
<td>27(32.5)</td>
<td>47(56.6)</td>
<td>83(100)</td>
</tr>
<tr>
<td>8.</td>
<td>Snail production techniques in Nigeria</td>
<td>22</td>
<td>31(32.6)</td>
<td>58(61.1)</td>
<td>6(6.3)</td>
<td>95(100)</td>
</tr>
<tr>
<td>9.</td>
<td>Agricultural land clearing and operation techniques</td>
<td>20</td>
<td>8(17.8)</td>
<td>30(66.6)</td>
<td>7(15.6)</td>
<td>45(100)</td>
</tr>
<tr>
<td>10.</td>
<td>Bee Keeping technology for farmers</td>
<td>31</td>
<td>30(21.6)</td>
<td>64(46.0)</td>
<td>45(32.4)</td>
<td>139(100)</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>10.5</td>
<td>39.1</td>
<td>12.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Despite the different elements of noise, materials do benefit immensely from such efforts. Although agricultural research institutions have direct link with extension organizations through Monthly Technological Review meetings (MTRM) and similar activities, for purposes of transmitting their findings to the latter, another way to show responsiveness to extension needs of the farmers is for research institutes to supplement this with establishing the facility for packaging their research findings in print form. This can be done through their media and publications section. This is one way to bridge the gap created by the disproportionate extension agent to farmer ratio in Nigeria. It is important that both research and extension organizations operate publication units. This ensures prompt and accurate handling of editorial assignments sometimes with minimal costs. There is need to expand the scope of agricultural activities/enterprise covered by both the CTA and the NAERLS in their publications.

Apart from crops, there are other areas that have contributed to household and national food security which also deserve attention. This recommendation is made against the background of proven contributions of micro livestock (fish, rabbits, snails) in total dietary protein supply (Spore, 2007; Soyebo, 2006; Adeyemo, 2001), the role of agro-forestry in food supply and environmental management (Xie et al., 1998), as well as the medicinal values of bee products such as honey bee venom, bee pollen, raw honey and royal jelly (Obialor, 2003). An increase in research and publication interest in these areas will enhance the activities of the NAERLS and other institutions that provide extension support to farmers. It will also help to achieve balance and equity in the advocacy and advisory roles of these agencies.

This study revealed the presence of noise in extension publications in circulation. The area of most acute deficiency was on punctuations. This situation challenges the gate keeping capacity and ability of editorial boards of institutions with agricultural information publication and dissemination mandate. Obviously, the calibre of an organization’s editorial crew reflects on the flavour of its publications. There is, therefore, need to engage qualified and experienced persons who will ensure that the basic rules of grammar and discourse are strictly observed.

RECOMMENDATIONS

The editorial crew must be meticulous people with sharp visual acuity to enable them detect spelling mistakes, poor sentence construction, bad syntaxes, non-sequential paragraphs, and avoid what is commonly referred to as ‘the printers devil’.
Thorough editorial work for purpose of accuracy, coherence, clarity, conciseness and simplicity will make for smooth reading, quick understanding and accurate application of extension recommendations. This would in turn lead to higher productivity and enhanced food security in Nigeria.

REFERENCES


