READABILITY ASSESSMENT OF PRINTED MATERIALS: GOING BEYOND
READABILITY FORMULAS

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ABSTRACT

Readability is the ease with which we read and understand a particular written text. The measurement of readability of a written text by using readability formulas is solely based on linguistic factors such as word and sentence length which can be easily measured and quantified. But as research in readability gained grounds, researchers depicted that qualitative analysis involving the readers of the text is also one important feature for measuring the difficulty level and readability of the text. This paper presents a survey of researches on readability, taking into consideration the limitations of quantitative approaches and importance of inculcating the qualitative approaches to readability studies which involves the addition of readers’ analysis in the determination of readability of a particular text. Moreover, the paper also features a critical evaluation of readability by analyzing the objective and subjective testing of a literary poetic text. Detail analysis reveal that along with vocabulary and sentence structure, the reader’s reading ability, prior knowledge, familiarity, interest and expertise on the subject or related field in which the text is written are powerful contributors to determine text readability.

KEYWORDS: Readability; Readability Formula; Linguistic Factors; Quantitative Measurement; Objective Testing; Subjective Testing; Reading Ability; Prior Knowledge

INTRODUCTION

Readability is a term used to determine the ease with which people read and understand a particular text. It is one of the most important factors that depict the comprehensibility of the concerned text. “Readability is what makes some texts easier to read and understand than others” (DuBay, 2004, 2007a, 2007b). The concept is different from “legibility”, which is concerned with typeface and layout. George Klare (1963) defines readability as “the ease of understanding or comprehension due to the style of writing.” This definition focuses solely on writing style which focuses on the semantic and syntactic elements and excludes such issues as content, coherence, and organization within the written text. Edgar Dale and Jeanne Chall (1949) gave a very comprehensive definition of readability as: “The sum total (including all the interactions) of all those elements within a given piece of printed material that affect the success a group of readers have with it. The success is the extent to which they understand it, read it at an optimal speed, and find it interesting.”

The origin of the earliest readability study was the concept of studying literature from a statistical view point by English literature professor, L.A. Sherman in the 1880s (DuBay, 2004, 2007b). He discovered that using shorter sentences and concrete terms increases the overall readability of the text. During the 1920s, a new interest in the readability studies culminated in the field of education. Psychologist Edward L. Thorndike of Columbia University published The Teacher’s Word Book in 1921 which listed 10,000 words by frequency of use. Thorndike found that the more frequently a word is used, the more familiar it is and the easier to use (DuBay, 2007b). This concept of vocabulary frequency lists proved to be a great help for teachers to evaluate the readability of reading materials for their students and classes. Gradually in USA, the adult literacy studies were the first studies conducted to evaluate the reading ability of the general readers. The first
systematic testing of the reading ability of the adult civilians began in 1937 in Chicago (DuBay, 2004). The respondents were graded accordingly on the basis of their different reading abilities.

Still, the main concern of educators, writers, journalists, corporations and government agencies was the issue of a lack of a generalized method for measuring readability of a particular text. Thereafter, a series of research studies were conducted by a community of readability scholars such as Edgar Dale and Ralph Tyler (1934), Bernice Leary and William S. Gray (1935), Irving Lorge (1938), Rudolf Flesch (1946, 1949, 1964, 1979), Edgar Dale and Jeanne Chall (1948), Robert Gunning (1952), Wilson Taylor (1953), George Klare (1963, 1975, 1976, 1980), G. Harry McLaughlin (1968), Edward Fry (1963, 1968, 1969, 1977) and many more (DuBay, 2004, 2007b). These scholars were credited for developing formulas for measuring the readability of a given text and it proved to be a boon for those groups of people who were really concerned about the readability factors in their texts. Some of the commonly used readability formulas are Flesch Reading Ease Score, Flesch-Kincaid Grade Level, SMOG Readability Formula, Fog Index and Fry Readability Graph.

Full-fledged research in readability began in the 1920s. There was a great deal of development in research in the area of readability from 1920 to the middle of the 1990s. According to Gilliland (1975), matching the reader and the text has come to be called “readability”. In the past, research on readability has focused on the development of practical methods to match reading materials to the abilities of students and adult readers. Through the beginning years of the study of readability, researchers believed that reading difficulty was related to reading material. Readability research focused on devising procedures and instruments that would reliably and validly distinguish easier from more difficult reading materials. Hence, the study of readability was concerned with the search for factors in reading material which could be easily counted and measured. The results of these investigations led to the formulation of “readability formulas” which were used to count, measure and quantify the difficulty level of a given text.

The measurement of readability by using readability formulas were quantitative approach. They focus solely on linguistic factors such as words and sentences, i.e. number of words and sentences, word complexity, word and sentence length which can be easily measured and quantified. As such, this shows that readability was totally conceptualized from a paradigm found outside the reader where reading difficulty or comprehension were predicted by looking through reading material instead of looking through the reader. But as researches in readability gained grounds, researchers counter depicted that linguistic structure cannot be the sole criteria for knowing the readability of a particular text. They were of the opinion that involving the readers of the text is also one important feature for measuring the difficulty level and readability of the text. Since the idea of measuring readability is meant exclusively for the readers, it is imperative to know the reader’s varying reading skills for depicting how much readable a concerned text is.

Readability research became one of the most important and valuable considerations in mass communication process, i.e. in the printed sector. Various forms of print media such as newspapers, magazines, journals and books require predictions of readability of their printed text prior to publication in order to make their audiences understand the printed materials easily. If a printed text is not readable enough, the purpose of writing in its first place will be defeated. The writing needs to be linguistically structured in such a way that it fits the reading skills of the intended audience. Hence, the issue of readability factor in printed media is a serious concern for journalists, writers, editors, publishers, and all those who are involved in the print media industry in order to increase the readership and circulation of their printed materials. Many researchers have also been reported where increasing the readability of the printed materials directly leads to a steep increase in the readership and circulation of their printed medium (DuBay, 2004).
This paper presents a survey of researches on readability, taking the term in a much more general and wider sense than it is usually taken. There are wider and narrower senses in which the term readability can be taken. In the narrower sense, it refers to the development and use of readability formulas and related objective methods which use a small number of measures of variables such as average number of words, syllables, etc., in a sentence or text. This is where readability research has started. In the wider sense, readability is discussed by inculcating the qualitative approaches to its study. This involves the addition of readers’ analysis in the determination of readability of a particular text. Through a series of reviews on readability researches conducted on a wider sense, the paper will explore interesting insights into different aspects of readability researches. Moreover, the paper will also feature a critical evaluation of readability by analyzing the text-specific objective (quantitative) and reader-specific subjective (qualitative) testing of a literary text. This will take into consideration the efficacy of the readability formulas in regard to reading grade and subject specific reader analysis.

**READABILITY RESEARCHES WITH A QUALITATIVE APPROACH: A CHRONOLOGICAL REVIEW**

The art of readability studies came to be looked from a wider perspective by 1970s. Critics and researchers expressed discontent over the readability formulas stating that they measured “mere surface factors”, not real sources of difficulty. The difficulty lies not in words and sentences but in ideas. Readability is an interaction between texts and readers and that difficulty in reading stems from locating and maintaining relationships between ideas. This is best shown by the increased time needed to read the material, by the amount recalled of the material read, and the time per unit of information recalled. Some critics acknowledged that the classic formulas had practical validity and value, but were essentially a theoretical and purely quantitative approach (Chall, 1996). Many researchers too came up with the idea that prediction of readability should go beyond readability formulas.

Urquhart (1979) found out that comprehension, learning and creative thinking appear to be closely linked in reading. Clearly, the reader’s purposes and interest are important considerations in learning and in alteration of learning behavior. This corresponds to the fact that readability is much related to the reading and learning behavior of the reader. According to Selzer (1981), reading is a highly individualistic activity and the readability formulas cannot be applicable to a generalized set of readers. Since the formulas are typically based on two variables – sentence length and word length, text often limit themselves to two simple stylistic tenets – “use short words and short sentences”. This becomes a very over simplistic approach for predicting readability. The formulas, in fact, have not been calibrated for highly skilled adult readers.

Spiro et al. (1981) compared the efficacy of comprehension test (cloze procedure) and readability formulas in order to examine the readability of marketing texts. It was found that the comprehension test which focuses on reader analysis provides a better measure than does the readability formulas which focus solely on textual characteristics in evaluating the readability. The cloze procedure is a better measure of text difficulty because it was actual reader comprehension as the base upon which it estimates text difficulty. It is the reader who decides how easily a text can be understood but not the text that decides how easily it can be understood by the reader.

Davison (1985) pointed out that the other aspect of readability research which does not make use of readability formulas cannot be ignored. This aspect takes into consideration features or variables such as the type of readers involved, abilities of the reader, as well as the reader’s background knowledge, purpose of reading, the reader’s personal interest in the text and perception of the situation in which reading a particular text is taking place. This fact is supported by Nunan (1985) by stating that content familiarity and background knowledge of the readers have an important effect on the levels
of comprehension. Readers with different background knowledge (including different cultural knowledge) may read an identical text in quite different ways.

Stevens et al. (1992) pointed out a serious limitation of readability formulas by stating that the formulas do not consider the prior knowledge, language ability or motivation of the reader. Communication involves not only the elements of text difficulty but also elements of reader ability. That is, the formula scores do not assess the interactive nature of reading comprehension. Reading readers is a way of assessing readability according to Steinke (1995). He noted that the reader’s impression of a particular text such as individual predispositions, social affiliations and information processing ability can influence the comprehensibility of the text. So, understanding reader’s response and addressing their concerns can make writers and journalists prepare more readable articles, attract more readers and invoke greater interest from readers.

Oliver et al. (1998) found out that quantitative measurement of text by using Flesch readability formula cannot capture the holistic evaluation of readability. For example, readers’ individual interest in a specific subject may influence familiarity with the concerned topic and written text, thereby affecting the perception of readability of the text. This implies that along with objective testing (quantitative measurement) to examine readability by calculating the readability scores using readability formulas, subjective testing (qualitative measurement) by analyzing the responses of the readers in regard to subject specific characteristics is equally important for assessing a holistic view of readability of the concerned text.

Woods et al. (1998) indicated that comprehensibility tests and directly asking for readers’ comment were much more valuable in revising text than the readability measures examined. They also stressed on the importance of reader analysis in predicting how readable a concerned text is. Friedman et al. (2006) found out that none of the readability instruments (readability formulas such as Flesch Reading Ease formula, Flesch-Kincaid formula, Fog Index, Fry Readability Graph) were designed to determine the effects of visuals on design factors that could influence readability and comprehension of print and web-based cancer information. They made a point that readability formulas are too much oriented on the linguistic characteristics and fail to acknowledge other visual factors necessary to understand the overall text.

In one of the recent studies on the development of readability studies and researches over the years, Janam et al. (2010) pointed out that most of the earlier readability studies were conducted in a quantitative manner (measuring readability scores by using readability formulas) known as “Positivist Paradigm” which was not at all adequate and effective because such measurements were focused outside the readers only. So, the researchers predicted a new and a qualitative approach to readability studies known as “Interpretative Paradigm” where the researcher will try to find out what is in the readers’ mind when they are reading by interpreting what these readers say. The authors hope this new paradigm will open new doors to the development of readability research.

**READABILITY ANALYSIS: A CRITICAL EVALUATION**

Quantitative measurement of readability focuses mainly on two aspects – word length and sentence length within the application of well defined readability formulas. This means that using shorter words and sentences will yield higher readability of the text. Now how do we explain the readability of poetries? Poetries, which are a product of pure literary work, tend to use extremely short words and sentences, but the ideas contained in poems are too complex and multidimensional to understand in the first instance. With very few words and sentences, poetries do give us a lot of
connotative and denotative meaning. They are also embedded with a lot of latent meaning which otherwise needs a lot of thinking, imagination and analysis to decode and extract the intended meaning of the text.

Let us consider the famous poem “Blow, Blow, Thou Winter Wind” written by William Shakespeare. We shall try to measure the readability of the following poetic text by using four most widely used readability formula. Thereafter, we shall also conduct a subjective testing by analyzing its readers’ comprehensibility through a survey.

**Blow, blow, thou winter wind**

Blow, blow, thou winter wind  
Thou art not so unkind  
As man's ingratitude;  
Thy tooth is not so keen,  
Because thou art not seen,  
Although thy breath be rude.

*Heigh-ho! sing, heigh-ho! unto the green holly:*  
Most friendship if feigning, most loving mere folly:  
Then heigh-ho, the holly!  
This life is most jolly.

Freeze, freeze thou bitter sky,  
That does not bite so nigh  
As benefits forgot:  
Though thou the waters warp,  
Thy sting is not so sharp  
As a friend remembered not.  
*Heigh-ho! sing, heigh-ho! unto the green holly:*  
Most friendship is feigning, most loving mere folly:  
Then heigh-ho, the holly!  
This life is most jolly.

William Shakespeare

The four most widely used readability formulas for measuring text difficulty i.e., Flesch Reading Ease Score, Flesch-Kincaid Grade Level, Gunning Fog Index and SMOG (acronym for Simple Measure of Gobbledygook) Index are used to calculate the readability score of the poetic text. These readability formulas when applied to the written text produces a numerical score based on certain textual variables such as word and sentence length, number of syllables, etc. Each readability score has a specific description such as easy, standard, difficult, and so on, along with the corresponding reading grade level. The mathematical formulas are given below:

(i) **Flesch Reading Ease Score**

\[
RE = 206.835 - (1.015 \times ASL) - (84.6 \times ASW)
\]
Where,

\[ \text{RE} = \text{Reading Ease (Readability score)} \]
\[ \text{ASL} = \text{Average sentence length (i.e., the number of words divided by the number of sentences)} \]
\[ \text{ASW} = \text{Average number of syllables per word (i.e., the number of syllables divided by the number of words).} \]

The formula produces a numerical score known as Reading Ease (RE), ranging from 0 to 100. The higher the number, the easier the text is to read. This means a score of 100 means the highest readability and a score of 0 means the lowest readability. A score of 60-70 is regarded as a standard or ideal score which means highly readable by all people.

(ii) Flesch-Kincaid Grade Level

\[ \text{FKRGL} = (0.39 \times \text{ASL}) + (11.8 \times \text{ASW}) - 15.59 \]

Where,

\[ \text{FKRGL} = \text{Flesch-Kincaid Reading Grade Level (Grade-school level)} \]
\[ \text{ASL} = \text{Average sentence length (i.e., the number of words divided by the number of sentences)} \]
\[ \text{ASW} = \text{Average number of syllables per word (i.e., the number of syllables divided by the number of words).} \]

The formula produces a numerical score known as Flesch-Kincaid Reading Grade Level which indicates a grade-school level. It is used to determine the difficulty of the text written between lower school grade and college level. Its standard grade score is 7-8th grade.

(iii) Gunning Fog Index

\[ \text{Fog Index} = 0.4 \times (\text{ASL} + \text{PHW}) \]

Where,

\[ \text{Fog Index} = \text{Grade level} \]
\[ \text{ASL} = \text{Average sentence length (i.e., the number of words divided by the number of sentences)} \]
\[ \text{PHW} = \text{Percentage of hard words (i.e., percentage of words with three or more syllables)} \]

The formula produces a score representing the number of education grade required to be able to read the written information. Gunning Fog Index assesses the readability level of text ranging from grade 4 to collegiate level. Its ideal score is 7-8th grade level.

(iv) SMOG Index

\[ \text{SMOG Index} = 3 + \text{Square Root of Polysyllable Count} \]

Where,

\[ \text{SMOG Index} = \text{Grade Level} \]
\[ \text{Polysyllable Count} = \text{Number of words with three or more syllables per 30 sentences.} \]

The formula produces a score representing the number of education grade required to be able to read the written information. SMOG Index assesses the readability level of text ranging from grade 4 to collegiate level. Its ideal score is 7-8th grade level.
The readability score of the poetic text is given below in the table.

### Table 1: Readability Score of the above Text

<table>
<thead>
<tr>
<th>Readability Formula</th>
<th>Readability Score</th>
<th>Description</th>
<th>Reading Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flesch Reading Ease Score</td>
<td>88</td>
<td>Easy to read</td>
<td>6th grade</td>
</tr>
<tr>
<td>Flesch-Kincaid Grade Level</td>
<td>3.9</td>
<td>Easy to read</td>
<td>4th grade</td>
</tr>
<tr>
<td>Gunning Fog Index</td>
<td>5.7</td>
<td>Easy to read</td>
<td>6th grade</td>
</tr>
<tr>
<td>SMOG Index</td>
<td>3.6</td>
<td>Easy to read</td>
<td>4th grade</td>
</tr>
</tbody>
</table>

By applying the four popular readability formulas, i.e. Flesch Reading Ease Score, Flesch-Kincaid Reading Grade Level, Gunning Fog Index and SMOG Index on the above poetic text, it is found that on an average, the text is easy to read, in fact, much easier than the ideal or standard level score of readability assigned for each readability formula. For instance, Flesch formula considers a score between ‘60 to 70’ as a standard score which means highly acceptable by all the people (Flesch, 1948, 1949, 1974). Considering the average score of the four readability formulas, we get an average grade level of 5. This means a 5th grader would be easily able to understand the above poetic text. We get a high readability score because the whole poetic text consists only of short words and sentences.

Let us evaluate the comprehensibility and understandability of the above poetic text practically through a subjective testing on 5th school grade readers (the results of the earlier quantitative analysis depicts that the text is best suited for 5th graders). A random sample of 100 students of 5th grade standard based in Delhi (India) is collected from four Delhi schools (picked up randomly from East, West, North and South Delhi government schools). After the students were made to read carefully the above poetic text, only 2% of the respondents replied that they understood the text. Majority of the respondents, i.e. 95% promptly replied that they cannot understand the meaning of the text at all and a meager 3% replied that they are not sure whether they are understanding the meaning of the text or not. Regarding the degree of understandability of the given text, out of the 2 students who replied that they understood the text, 1 of them understood the text moderately and the other student slightly understood the text. So, this implies that even though the poetic text is meant to be easily understood by lower school grade students, in practical terms it may not be easily understood by them so easily. So, readability formulas have a lot of counterproductive aspects in certain circumstances in regard to semantic and subject specific factors.

In another instance, a survey was again conducted among 200 college going students of Delhi University (India) north campus, picked up randomly irrespective of age, gender, culture and religion. However, the students are picked up and grouped into four different categories on the basis of their subject specialization. Hence, 50 students each from literature, science, social science and commerce disciplines are selected as sample of the study. The students were made to read the poetic text to know their understandability of the text. Out of 50 students from literature discipline, 48 responded that they understood the text clearly. 24, 38 and 32 students respectively from science, social science and commerce stream responded that they understood the poetic text clearly. This means that out of all these college students from different subject backgrounds, maximum number of students with specialization in literature discipline has the understandability regarding the poetic text while least number of the students from the science background understood the text.
This finding suggests that predicting readability is not just a product of interplay of numbers by applying readability formulas on the concerned text. Determination of readability depends a lot on the reader’s prior knowledge, familiarity, interest and expertise on the subject or related field in which the text is written. Since students with literature discipline have more interest, knowledge, familiarity, expertise and motivation in regard to literature specific text, the readability of the poetic text was highest among literature students. Along with vocabulary and sentence structure, the reader’s reading ability, prior knowledge and motivation are powerful contributors to text readability (DuBay, 2004).

The results of the above study on college students indicated that the same poetic text has different levels of readability among students of same grade level (college students). This is because of the fact that the students have different interest, knowledge level and motivation regarding the concerned text. Moreover, the depiction of the readability scores by applying four popular readability formulas stating that the poetic text was meant for 5th grade students was totally refuted by the results of the survey conducted on its readers. This makes a point that reader-specific analysis (subjective testing) is also one of the most important undeniable factors in evaluating textual readability. The above study depicts that text-specific objective analysis (quantitative testing) is not enough to predict a holistic view of how much readable the text is for the readers unless and until we undergo reader-specific subjective analysis (qualitative testing) in regard to the concerned text.

As Selzer (1981) had already depicted that reading is a highly individualistic activity, the readability of a particular text will absolutely differ among different readers. No two readers have the same reading skills. Moreover, the psychological nature of two or more readers will not be the same. A reader with a high educational background and perception on science subject will find a scientific article highly readable than a reader with a strong literature background (and having little or no educational background on science subject). Readability, hence, is a complex issue especially when it is a concern of public reading such as books, magazines and newspapers. Public concerns should always be focused in mind while preparing public messages. This will, to some extent, make texts more readable for public.

DISCUSSIONS

Reading process involves a considerable amount of interplay and blending between the text and the reader. Reading habit of the reader is very much dependent on the reader’s reading ability and comprehensibility of the text. William H. DuBay (2004) has rightly said that when text exceeds the reading ability of the readers, they usually stop reading. The creator of the SMOG readability formula G. Harry McLaughlin (1969) defines readability as: “the degree to which a given class of people find certain reading matter compelling and comprehensible.” This definition stresses the interaction between the text and readers of known levels of reading skill, knowledge, and interest. There are two contributors to easy reading – the reader and the text.

Those features of the “reader” that make reading easy are:

1. Prior knowledge
2. Reading skill
3. Interest
4. Motivation

Those features of the “text” that make reading easy are:

1. Content
2. Style
3. Design

Readability formulas, in one way or the other are mere statistical measurements which takes into consideration only the textual and linguistic factors. If readability is a result of the interaction of the text and the reader, then prediction of readability should obviously take into account the reader’s perspective also. Readability formula scores do not assess the interactive nature of reading comprehension. Formulas only give us an estimated grade difficulty score based solely on the length of the sentence or word difficulty. They do not (and cannot) measure such reader specific factors as “motivation, interest, competitiveness and purpose” (Davison, 1985; Nunan, 1985). They do not consider the varied backgrounds of the readers but instead compute a reading score for an “average” reader. These scores are particularly inadequate measures of the comprehension ability of highly educated adult readers who possess a specialized vocabulary and knowledge base not held by the “average” reader (Stevens et al., 1992).

We have already seen that most of the critics focused on the fact that the readability formulas use only two features of style – the length of words and sentences. Within the textual structure also, there are also certain areas apart from the writing style which require attention while preparing the text. While the formulas are highly predictive of the difficulty of a text, they do not use other readability features such as design and organization (DuBay, 2007a). According to Klare (1984), one of the reasons for the weakness of classic readability formulas is because of the fact that certain factors relating to organization, format and illustrations (verbal and pictorial) are missing in readability formulas. Design in the written text includes elements of typography, format and illustration while organization refers to structuring of chapters, headings and navigation. Word and sentence variables are not the only contributors to readability. Elements of design and organization also contribute a lot in making the reader easily understand the text. In fact, they help the reader in enhancing the reading speed and retention of the written text. So, apart from word and sentence length used in readability formulas, it is important to use broader considerations and techniques of good writing for judging the readability of a text (DuBay, 2007a).

Today, many writers and scholars use the readability formulas as standards for testing readability. They are widely used in education, publishing, business, health care, law, the military, industry and government organizations. In spite of the success of the readability formulas, they were always the center of controversy (DuBay, 2007b). “The major discontent with the classic readability formulas expressed by the critics was that they measured ‘mere surface factors’, not real sources of difficulty. Some critics acknowledged that the classic formulas had practical validity and value, but were essentially a-theoretical” (Chall, 1996). “Another reason why readability studies are now considered unrelated to the comprehension process stems from research in cognitive science in the 1980s that identified problems with texts that had been manipulated or written to satisfy readability constraints” (Janam et al., 2010). Cognitive research, which has marked a paradigm change in readability research claims that meanings reside in the cognitive nature of readers. Interpretation and construction of meanings therefore, comes from the readers’ mind in an interaction with the text depending a lot on the cognitive capabilities of the reader.

Research in readability has gone through tremendous changes during the last 50 years. Quantitative measurement of written text by using readability formula is not enough to provide a holistic evaluation of readability (Oliver et al., 1998). A qualitative technique of readability assessment by analyzing certain characteristics of the reader such as reading skills, knowledge and interest level, purpose of reading, etc. is found to be acceptable by many researchers. The new transformation in readability research tends to focus on what is happening in the readers’ mind during reading (Janam et
CONCLUSIONS

As evident from the series of literature reviews and critical evaluation presented above, readability formulas still cannot be the sole reliable factor for predicting the understandability of a particular text. Readability formulas were originally developed with the aim of ranking school textbooks in terms of difficulty in order to assist teachers in the selection of appropriate texts for children of different ages (DuBay, 2004, 2007a, 2007b). The most common criticism of readability tests is that they are too simple and fail to consider, or examine, any of the many other variables which may influence reading or comprehension (Klare, 1974, 1975, 1976). Readability tests do not measure how interesting the material will be to the intended audience and a readability score can be computed even for random sequences of words or sentences that have no meaning. It is certainly true that a positive readability score does not guarantee that a piece of text can in fact be successfully read.

Considering the diversity of public printed texts in different fields, the readers for such printed messages are also diverse in nature. So, quantitative approach to readability measurements which focus on the textual characteristics should always be accompanied by qualitative approach which focuses on reader’s characteristics. The combined approach in analyzing the readability of printed texts would prove to be a wider approach because it touches both the textual and reader aspects. Authors, writers, journalists, editors, publishers and academicians who are the main producers of public messages should not ignore their readers’ varying characteristics such as reading skills, educational, social and cultural background, interest, motive of reading, etc. In this way, they can write according to the likes of their readers. Hence, this approach would yield more productive results.

“Language can be very well written – and very plain – and yet written at the wrong reading level” (DuBay, 2007a). Most written messages fail to give an impact on their readers because of the fact that they (the written materials) are written for the wrong audience. Public instructions such as medical information leaflets, child safety traffic instructions, legal rules on tax payment, social awareness campaign, and so on, are found to be ineffective as many researches indicated that they are beyond the comprehensibility of the intended audiences. Even though such instructions are not badly written, they still fail to make people understand. So, many experts recommended that materials for public instructions should be written taking into consideration the reading level and reading skills of the readers. Writers should carefully adjust the readability of their text to the reading ability of the audience.

Effective communication is all about making the receiver/audience understand the sender’s intended meaning of the message. One of the most important factors that cannot be ignored while preparing a message is that the sender should know the target audience first. The type of reader, the purpose of reading (by the reader), the nature of the language and text involved, the reader’s impression about the subject are certain factors that need to be considered while preparing a written text. The linguistic considerations such as vocabulary, word length, sentence structure, etc. while preparing a written text should follow after analyzing the above characteristics of readers. This will ultimately facilitate greater public understanding of the concerned text. Writing for the right audience will expand the readership and efficacy of the written materials. It is high time that researches in readability should go beyond formulas to explore more practical factors concerned with the readers also.
REFERENCES


