

The Role of Academic Schema in Reading Comprehension at Intermediate Level

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Abstract

This study includes the schematic knowledge of the students in reading comprehension. The academic background and the field of the study has been considered as schematic knowledge of the students. The study observed the factors affecting reading comprehension of the learners by using academic texts. Academic text is also compared with non-academic texts to determine the relevance of academic schema in reading comprehension. This is a quantitative study and data was collected from intermediate students of Lahore, Cantt. 160 students were selected from F.Sc (pre-engineering), F.Sc (pre-medical) ICS, and I.Com, as participants of the study. Two reading comprehension tests were settled, first test was, according to student's educational field and the second one was from an English newspaper. Both tests were conducted with the same participants. Independent sample t-test, and paired sample t-test were conducted by the use of Statistical Package for social sciences SPSS version 21. The results of the study reflected that academic background knowledge helped the learners in activating academic schema for better reading comprehension than using a general text. Moreover, the demographic factors selected in the study such as, mother tongue, instructional language, and years of education did not affect the reading comprehension results. This study has left new horizons for future researches in the field of reading comprehension skills, as the factors included in this study are too limited, more demographic and cognitive factors can be included in the study to get more authentic results.

Keywords: Academic text, Academic knowledge, Non- Academic text, Reading comprehension, Schema theory.

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Introduction

Reading comprehension is an essence of reading that involves the understanding of words before moving to what is dictated by the text. It is also important to know whether a reader is comprehending or miscomprehending the text message. Smith (2004) considers comprehension as a process that links the world with the information existed in mind. So, comprehension leaves no misunderstanding or confusion in the minds of the reader. Things are stored in memories as a bulk of knowledge to understand new encountered things.

Existed knowledge in the mind of the reader during text has been related to schema theory which was originated in cognitive psychology by Bartlett (1932). The pioneers of modern schema theory were Minsky (1975), Shank and Abelson (1977) and Rumelhart (1980). Freedle (1979) considered the application of new schema theory in speech and reading, gave a new direction in the research. The theorists of modern schema theory believed that general ideas are stored in schema, this memory consists of variables and slots. So, meanings are stored in the mind of the reader not in the written or oral languages itself. Back ground knowledge of a learner can be developed due to ideological cultural, social, and religious matters. Al-Issa (2006) mentioned content knowledge is necessary with worldly knowledge. Content knowledge of the text also affected by the academic fields of the learners that helps in establishing

schema.

Schema is defined as the abstract knowledge structure that a reader use to understand a text. Anderson and Pearson (1988) has defined schema as it is abstract knowledge that helps in summarizing the known content to know unknown at the economy of our memory. Anderson (1994) posited that schema helps in understanding the missing information in the text. Dayze (2004) indicated that content schema has a direct relationship with reading comprehension. Familiar content increases the reading comprehension. So, schema is a part of our memory that includes textual, and worldly knowledge which helps in understanding a text.

Researchers of English language teaching, are focusing on the role of schema in developing reading comprehension since last two decades. Al-Issa (2006) suggested that content and formal schemata both are essential for a complete understanding of the text. Liu (2015) conducted a mix method research to investigate the effect of schema and its role in reading process. He found that people with appropriate schema performed significantly better than those having no background knowledge regarding text. Jian-ping and Li-sha (2016) included Junior high school students in his study to investigate the role of schema in reading comprehension. By the use of a questionnaire, he revealed that students lacked content and formal schemata were not as much successful in reading comprehension, further he

suggested that language schema, content schema and form schema all necessary for the process of reading comprehension. Jafri (2017) in her review article highlights that activating schemata knowledge improves the process of reading comprehension. The study has proved that schema plays a vital role in reading comprehension but still there is enough to explore. All the researches have paved the way to investigate the role of schema in reading comprehension. These researches have used the questionnaire, interviews, and observations. A few experimented to activate the schema of the students for reading comprehension, and used tests to evaluate their schematic role in reading texts, but they have not involved academic schema in reading comprehension. This study is different, as it has considered academic field of study as the background knowledge of the students. Moreover, it is not just based on perceptions, it has experimental design to collect data, which has strengthened the validity and scope of the research. This research can help English language teachers in conducting reading activities and selecting texts according to the prior knowledge of the students in language classrooms.

Aims of the Study

The purpose of the study is to investigate the role of schematic knowledge in reading comprehension. Academic schema refers the knowledge of the students according to their fields of study. The study aims to

highlight the effectiveness of using reading text according the academic field of the students.

The study involve 160 intermediate students, belonging to different fields of study such as: F.Sc (pre-medical), F.Sc (pre-engineering), ICS and I.com. For the collection data two tests were developed, the text of test-I was selected according to the academic fields of the study while the text of test-II was selected from a newspaper (The Nation, 25th March, 2019). At first stage, test-I was conducted and in second stage, test-II was conducted with the same population. In general, the current research has adopted a holistic and comprehensive view about activation of academic schema during reading comprehension.

The study contributes to the real practices of reading comprehension activities in language classrooms in Pakistani context. Past researches had main focus to investigate the effectiveness of cultural, ideological, historical and religious schemas. But in my research, I focused on academic schema which has been ignored in the past. Academic knowledge can help students in activating their schema during reading comprehension. The students get familiarity with the text feel pleasure in reading that stimulates the speed of reading too. Javid and Al-Khairi (2011) argued that pleasure reading enhances the speed of reading. The results of the study may be of benefit for the teachers in selecting text for reading activities in language

classrooms.

Statement of the Problem

The study contributes to the real practices of reading comprehension activities in language classrooms in Pakistani context. Past researches had main focus to investigate the effectiveness of cultural, ideological, historical and religious schemas. But in current study academic schema has been focused which was ignored in the past. So, the statement of the problem is "to determine the role of prior knowledge in reading comprehension".

Objectives of the Study

The objectives of the study are:

- i. To find out the factors affecting academic schema of students in reading comprehension.
- ii. To identify the effectiveness of using academic text to develop reading comprehension skills in English language classrooms.
- iii. To identify the pertinence of using non-academic text to develop reading comprehension skills in English language classrooms.

1.4 Research Questions

The research questions of the study are:

- i. What are the factors affecting academic schema of students in reading comprehension?
- ii. What is the effectiveness of using academic text to develop reading comprehension skills in English language classrooms?
- iii. What is the pertinence of using non-academic text to develop reading comprehension skills in English

language classrooms?

Research Hypothesis

Hypothesis of research are:

- i. There is a significant difference in using academic and non-academic texts in reading comprehension activities.
- ii. There is no significant difference in using academic and non-academic texts in reading comprehension activities.

Literature Review

Selection of appropriate reading text has been a widely discussed topic among language teachers and syllabus designers. This section is dealing with theoretical background of reading, evolutionary views, models and role of schema in reading comprehension, past and current researches, and its relevance with the study. The core of this section is dealing with reading comprehension and how the students relate their prior knowledge to understand a text.

Reading

In this study, reading reflects as an interactive approach, a procedure of meaning extraction. The text existing on page is linked to the prior knowledge of the reader which helps in comprehension of the text. Eskey (2005) defines reading as a psycholinguistic process that entails rapid and accurate decoding and constructs meaning based on the prior knowledge. It shows that reading is an

interaction between language and thought. There are two major sources of information for the reader to get meaning, first is the language to be decoded and the second is the thought of the reader or his existing knowledge about the text. The reader has to depend on both sources for a better comprehension of the text. Goodman (1982) has supported that process of reading involves many factors such as student's prior knowledge, hypothesis of text itself, modification and testing. He supports that prior knowledge is linked with the basic reading process. Grabe (2009) has mentioned the universal aspects of linguistics and cognitive process of reading comprehension. For example, the readers have to go through under the process of word recognition, syntactical knowledge to determine meaning, setting goals, using reading strategies, metacognitive awareness to comprehend the text and background knowledge to interpret the meaning of text. Chung (2004) also supported with the similar view by naming it universals of reading development. Reader's issues, text issues, and contextual issues influence reading process. Reader's issues involve background knowledge, genre experience and reader proficiency etc. text issues are related to content, length, genre and style, and contextual issues are linked with purpose of reading, personal and social definition of reading and place of reading. Kern (2000) considers reading a dynamic and rhetorical process, readers must understand the rhetorical functions of specific conventions, such as illustrations, comparisons, and other

elements to understand the meaning of the text. He regarded reading as individual as well as social process because it involves imagination, emotions and creativity of individual person and social in the sense that it relates with reader- author relations, shared conventions and assumptions. In his reader response theory, he presents the dynamic relationship between text and the reader. Multiple readers can understand a text differently and can assign meaning to the text. However, the interpretations of a text are not unlimited, as Fish (1980) advocated that readers and writers are interlinked with each other, not separated. They both are socialised in communities and share specific interpretive rules, assumptions and values. The readers must have to justify the interpretations according to the decoded information of the text. In addition to reader response theory, Kern (2000) argued the contribution of schema theory to the cognitive dimensions which emphasized the internal activation and organisation of knowledge in individual. Both reader response theory and schema theory proposed the idea that reader plays an active role in constructing meaning from textual and knowledge-based resources. So, reading texts can be considered as an individual activity as well as a social practice.

"On the one hand, reading is a social-embedded activity which involves reader-writer relationships, shared assumptions, and conventions established by communities. It also takes place within a certain context of

situation, purpose, and task as well as within a larger sociocultural context of values, beliefs, and attitudes. On the other hand, reading is an individual activity that involves personal knowledge, imagination, and emotions"

(Kern, 2000, P. 125).

So, the reading of texts and driving meaning from the texts involve, prior knowledge, textual knowledge, linguistic knowledge, contextual and situational knowledge, personal and social knowledge etc. add linking point to next heading.

Reading Comprehension

Reading comprehension is an essence of reading that involves the understanding of words before moving to what is dictated by the text. It is also important to know whether a reader is comprehending or miscomprehending the text message. Smith (2004) considers comprehension as a process that links the world with the information existed in mind. So comprehension leaves no misunderstanding or confusion in the minds of the reader. Things are stored in memories as a bulk of knowledge to understand new encountered things.

In present study, text comprehension and understanding are interchangeably used. Anderson (1994) has analysed the idea of comprehension in three stages. The first stage involves with perception, encoding of oral or printed message. The second stage is parsing stage, which encodes all gained

meanings into mental map. Third and the final stage is called the utilization stage. Then he maximizes the gained meaning through mental representation of brain. It ensures that what the reader has understood is the same that he wished to achieve and needs to remember and use. So, a successful proceeding of a new situation without confusion and contradiction is called comprehension, otherwise the previously acquired meaning is just like a misunderstanding that has to be confirmed.

Writers encode meaning in texts before presenting it to the reader. If reader fails in understanding the intended meaning of the writer, the process of text comprehension becomes senseless. Ur (1996) considers that understanding is essence of reading and reading words without understanding is in fact means no reading. It is just corresponding the sound letters to printed words without understanding its meaning. Nuttel (1982) emphasised understanding as the central process of reading and explains that while conducting reading activities in language classroom, teaching must focus on understanding. Reading comprehension is not a matter of just understanding the printed text but involves the creation of meaning by linking the textual meaning with previous experiences. Wray (2004) supports the idea that reading comprehension is an interaction between reader and text. It is not just like getting meaning from a text but a combination of prior knowledge and encountered information in the text.

Models of reading comprehension

Text Model and Situation Model

Presenting alternative approaches to reading comprehension is a better way to understand these models. Grabe (2009) has proposed these two models as alternative approaches to explain reading comprehension. Singer and Leon (2007) refers situation model to present the circumstances of the reader in which a discourse has occurred. It also shows the integration of prior knowledge with the information of the text (Goldman, Golden, and van den Broek, 2007, p: 32). The text model reflects the basic inferences and propositions that texts intend to signal but the situation model needs background knowledge to involve with textual information and to determine that whether the interpretation of the text is similar to their expectations. On the other hand, in text model, meaning is directly related to the text itself. Situation model is affected by the purpose of the reader, background knowledge, related resources, text's enjoyment value, importance of information, and the attitude of the reader toward its writer, story and inferences needed for interpretation. Situation model is a reader-oriented model whereas text model is an author-oriented model. Grabe (2009) believed that these two models of reading comprehension can be used to explain that how readers interpret text in different ways. It also explains reading difficulties that a reader may encounter.

Metaphorical Models

Metaphorical models explain concepts and processes involved in reading comprehension. Models included in metaphorical models are top-down model, bottom-up model, and the interactive model. Bottom up and the top down model possess different characteristics, first originated in L1 researches and afterward applied in L2 researches.

Top-down approach is similar to situation model, having focus on prior knowledge to infer meaning of the text. Whereas, the bottom-up model is much similar to the text model which proceeds from part to whole of a text. Bottom-up starts with letters then moving toward word level and then sentential and text level. Bottom-up and top-down models have been considered to describe the reading process, even then has been criticised severely, because these models were following the structure in language but lacking with interaction. The current models of reading are not purely following bottom-up nor top-down models but interactive one. In late 1970s and 1980s the interactive model emerged from the field of cognitive psychology (Rumelhart, 1977; Stanovich, 1980). The L2 researchers also acknowledged the interactivity of reading process (Bernhardt, 2000; Grabe and Stoller, 2002). They thought that top-down and bottom-up models must combine together the useful elements of both processes to make interaction more active. These models are not dominating each other but

emphasis is on coordination and cooperation. Interactive model has also been criticised by the fluent readers who cannot wait for contextual information to support automatic word recognition. Overall, metaphorical models provide ways to the reading comprehension processes. But still it needs more comprehensive view to understand the process of reading comprehension. Major factors that involve in reading comprehension are elaborated in schema theory.

The discussion above has clearly mentioned that the top-down and bottom-up processing are too general and simplistic to account for the complicated nature of reading comprehension. It has proven that through situation models, it is possible to have more profound understanding from reading skill. The Construction-Integration model was pioneer in conveying how the different levels of representation are stored in the readers' memory, But the memory of students also related with the prior knowledge of the students, and prior knowledge can also be related with their field of study.

Schema theory

Schema theory had a broad application in the field of psychology. The structure of knowledge is described. Carrell and Eisterhold (1983) emphasized the importance of prior knowledge in reading comprehension and mentioned that oral and written text do not include meaning in it. Jahwari and Humaidi (2015) mentioned the importance of schemata

and focused over the causes of failure in reading comprehension text content. Murray (1980) informed that schemata effects comprehension through information recall and information storage. Anderson (1994) posited that helps students in inferring missing information in the text. Dayze (2004) and Al-Issa (2006) Review of published research in their study that content schemata is directly linked with reading comprehension. It focuses that familiar content helps in reading comprehension. Reading schemata can be divided into three major types such as linguistic schemata, content schemata and formal schemata. Xiao-hui, Jun, and Wei-hua (2008) considers that existed language proficiency level of readers in vocabulary, grammar and idioms which is a foundation of other schemata. Carrell and Eisterhold, (1983) finds formal schemata is about the forms and rhetorical structure of the text. Xiao-hui, et al. (2007) mentioned that knowledge about the genre and type of the text helps in reading comprehension as it provides indications about the content of the text. Anderson, Picher, and Shirey (1983) included pre-existed worldly knowledge in content schema that is related to the topics which are presented in written text. So, the knowledge about the topic, familiarity of culture, previous knowledge related to the field of study construct the foundation of academic schema. Language is not a game of lexemes and grammatical structure, but its background and related issues also plays a vital role in deriving meanings from written and oral text. It has also

been observed that content schema also compensates with the weaknesses linguistic and forma schemata.

The Role of Content Schema in Reading Comprehension

Content familiarity enhances reading comprehension significantly and students comprehend better a text if they have prior knowledge of the text. Dayze (2004) has reported that if readers bear higher culture-familiarity with the written text, it becomes much easier for them to effectively comprehend implicit propositions of the text; thus, increasing the possibility of reading comprehension and reading speed. The study of Johnson (1981) has revealed that Iranian EFL learners understood stories much better when they were given stories related to known culture, though the texts were syntactically and semantically above their level. It has been posited that content schema is not a constant phenomenon and it changes with the cognitive development of a reader. The existing schema is modified through the readers' new experiences they went through while reading or being engaged in other daily affairs. Nuttall (1996, p. 8) has informed that "a schema grows and changes throughout our lives, for as long as we retain the capacity to learn." This building and modification of readers' schema is caused by the psychological and social experiences through a process called "constructivism". It is because of this constructivism that different readers perceive the same text differently. Khanam, Zahid, and Mondol (2014)

have stated that efficient readers "make connections to their reading by keying into associations, feelings, attitudes, and ideas providing the deepest interaction between reader and text" (p. 85). Therefore, it emerges that cultural, social, historical, academic and religious schemata improve readers' ability to understand the targeted text. Review of relevant research has offered valuable insights into the fact that activation of background knowledge of readers increases their reading comprehension. A host of studies have reported various teaching techniques that have been experimented and showed positive results in this regard. These investigations include use of pre-reading activities the use of cue picture and questioning (Hudson, 1982) and use of lectures, discussions and slide presentations (Floyd & Carrell, 1987) to activate reader's background knowledge and results have revealed a significant increase in the participants' reading comprehension. Furthermore, implementation of a systematic pre-reading plan by Langer (1981) and pre-planned text preview by Graves, Prenn, & Cook (1985) have also been identified as effective schemata activation strategies. All these investigations have emphasized the need of schemata teaching to increase readers' comprehension. Abraham (2002) has reported that teaching reading "demands that the teachers activate the students' schema during the prereading phase by helping students recognize the knowledge that they already have about the topic of a text" (p. 6). Chen (2003) has also emphasized that it is important for

English language teachers to be informed of their students' background knowledge and experiences so that they may be able to activate their learners' content schemata prior to the reading tasks. This information will enable them to effectively exploit schemata-activation strategies like brainstorming of key vocabulary and ideas, accumulation of text-related information, making predictions and narrowing down the purpose of reading. Al-Issa (2006) has also recommended that it is unavoidable for reading teachers to know their students' content schemata related to the target text they are going to read. Carrell & Floyd (1987) have also highlighted the significance of content schemata activation by providing them with suitable schemata they lack to bridge the gap between readers existing knowledge and the required target knowledge. Therefore, it seems extremely important for English language teachers and learners to understand the significance of the role of content schemata in reading comprehension and pedagogical implications of implementing various schemata activation strategies to enable their students read effectively and efficiently.

Reading Comprehension in Past Researches

Reading is a multileveled and interactive process in which readers construct a meaningful representation of text using their schemata. Al-Issa (2011) used both content and formal schemata for a complete understanding

of written texts in a reader's first language (L1), and has been suspected to be true in a reader's second language (L2). The purpose of his paper was threefold. The first is to give a brief overview of some of the literature that deals with schema theory as part of a reader centred psycholinguistic processing model for both native and non-native readers. The second goal was to show how familiarity with the subject matter (i.e., content schema) as one aspect of schema theory, affects L2 reading comprehension. The third goal was to discuss the implications of schema theory in L2 classrooms. His study involved both native and non-native speakers in the study, but my study is different as it deals with only non-native intermediate students where selection of reading passages to conduct reading activities is a crucial task for the teachers because students of all fields of study sits together in English language classrooms. This current study can help in deciding to teach reading comprehension in the same class with the same text or the text should be selected according to their field of study.

Another study attempted by Zhang (2010) has explored the effects of formal schemata or rhetorical patterns on reading comprehension through detailed analysis of a case study. The subjects were selected from three classes of comparable English level and were divided into three groups. Each group was asked to recall the text and finish a cloze test after reading one of three versions of a passage with identical content but

different formal schemata: description schema, comparison and contrast schema, and problem-solution schema. In my study, I used a multiple item test for reading comprehension tests and the data was analysed quantitatively only. Moreover, Zhang (2010), has not taken student's academic field of study as prior knowledge, which is prominent in my study.

Bensoussan (2002) examined the effects of faulty schemata on reading comprehension. At the end of an advanced English reading course at Haifa University, a test of reading comprehension was administered to 125 students. The text was about love and marriage, a text close to the personal experience of the examinees. Bensoussan (2002) allowed using dictionaries, students translated expressions and sentences and answered short-answer comprehension questions in English, and results indicated that 23% of the wrong answers to the comprehension questions were driven by schemata which differed substantially from the actual content of the text. In this current study the students were not allowed to use dictionary while attempting reading tests. Moreover, current study is related with academic schema but Bensoussan (2002) focused on faulty schema on reading comprehension. So, the current research is different in various ways. Such as, Bensoussan (2002) included university students but in this current research involved college students to administer the reading comprehension tests.

Different researches have been conducted by various researchers in this area that deals with prior knowledge in reading comprehension. Currently, the significance of the study is that learners have now encountered the texts related to their academic field of study and the text selected from a newspaper. While making navigation decisions during reading texts, readers need to comprehend both the individual texts and its relationships with prior knowledge. Prior knowledge and reading comprehension ability may impact the ways in which students are able to utilize their reading skills in understanding the subject related concepts versus general ideas in a general newspaper text. This study further investigated the relationships among reading comprehension ability, prior content knowledge, navigation behaviours in academic field related texts, and learning outcomes. It is assumed that there is significant relationship between comprehension ability in subject related text and non-subject related texts. The results are discussed under the effect of prior knowledge of the students and further research in term of these results is suggested to improve the selection of reading materials used in language classrooms.

So, the discussion above is showing the importance of prior knowledge in reading comprehension. Having prior knowledge and lacking of it can affect the comprehension level of the students. The current research is interested in finding out the role of academic schema in reading

comprehension at intermediate level. This present study has used multiple choice item tests to explore the utility of academic schema in reading comprehension tests at intermediate level. Academic schema of students was determined according to their fields of study such as medical, engineering, commerce, computer sciences and arts.

Methodology

This section of the study includes discussion of best suited methodological approach and research design to answer the research questions of the study. Quantitative method is proposed to answer the research questions. A brief description of research design follows the key points of reading comprehension tests which were used as a tool for data collection. The importance of designing tool, its validity and reliability, and justification for selecting tests as instrument is provided. In the subsequent section, the process of data collection is illustrated, that follows an overview of the process of data analysis. Moreover, ethical concerns related to the study are also mentioned. This section concludes with a brief summary of proceeding section.

Methodological Approach

Quantitative approach uses statistical data that saves times and resources. Bryman (2001) argued that quantitative research deals with numbers and figures in data collection and analysis, it is scientific in nature, and reduces time and effort that a

researcher have to invest in describing results. Quantitative variables are based on paradigm to measure variables. Payne and Payne (2004) mentioned that, quantitative method resolves regularities of social world into empirical constituents, recognised as variables which can be interpreted numerically as frequency and rate, statistical techniques can be used to find association among them in a systematic way.

This research has also social and academic variables such as: mother tongue and instructional language in addition with academic fields of intermediate learners: F.A, ICS, I.Com, F.Sc (pre-medical) and (pre-engineering). Data collected by the use of testing, was evaluated statistically by the use of statistical package for social sciences (SPSS) version 21.

Participants

All intermediate students enrolled in Government Degree College Mustafabad Lahore were the population of the study. Approximately, 468 students were enrolled in Government degree College Mustafabad Lahore in different disciplines such as F.Sc (Pre-medical), F.Sc (pre-engineering) ICS, and I.Com. 160 students were included in the study which was 25% of whole population of the study.

Tool development

Two reading comprehension tests were developed to collect data. As

Weir (2005) mentioned that test scores reflect student's ability in a specific area such as, vocabulary knowledge, grammatical activities, reading and writing skills. The text of first reading comprehension test was selected according to the related fields of the students, so that their academic schema could work while solving test items, and the text of second test was selected from "The Dawn" English newspaper. According to J.B Heaton (1990) in reading tests, it is useful to include newspaper articles in reading comprehension tests.

Procedure

This experimental research is based on two phases. In the first phase, all students were provided with a reading comprehension test according to their academic fields. 20 mins were provided to all students to read the text and answer the multiple-choice items given at the end of the text. In the second phase, all these students were equally provided with the same reading comprehension test based on non-academic text. In both phases the participants of the study remain the same. To avoid experimental threats such as timing for the tests, length of the tests, text selection, and selection of participants were carefully selected. All the students were provided with equal time period in both phases. Texts of these tests contain an average Length of 300-400 words as suggested by Anderson (2000) and the text was almost equal in both tests. Equal number of participants were selected from all disciplines to enhance the

validity of the results.

Pilot testing

These tests were pilot tested before data collection. Forty students were included in pilot testing. These forty students were sharing the same characteristics of the total population of the study.

Validity and Reliability

Validity and reliability of research instrument is the most important aspects of any research. According to Fraenkel and Wallen (2009) validity denotes to the suitability, meaningfulness, accuracy, and usefulness of the conclusions and suggestions that a researcher makes. He further described reliability as the consistency of scores, points or answers from one application of an instrument to another, and from one group of items to another. Both concepts are essential to consider when it comes to design an instrument that a researcher aims to use.

The questionnaire was validated by a panel of experts comprised of the following:

1. Mr. Safwan Ahmad Bajwa, Lecturer English, NUML Lahore
2. Research Supervisor

The reliability of the scale and subscales were established by the researcher. The reliability of instrument was 0.879. Reliability of scale and subscale is given below in table 3.2

Table 3.2

Sr. no	Reliability of subscales	Reliability	No. of items
1	FS.C (pre-medical)	0.924	10
2	FS.C (pre-Engineering)	0.833	10
3	ICS	0.765	10
4	I.Com	0.854	10

This section of study is presenting the data analysis with its interpretation. Analysed data in this section was collected through reading tests. Reading tests were consisting of two parts. First part was related to a few questions about the demographics of the participants. Descriptive and inferential statistics were used to analyse data. Data were analysed with the help of Statistical Package for Social Sciences (SPSS) version 21.

To produce clarity in this section, data is analysed according to the research questions mentioned in section I. To answer the first research question the factors like, instructional language, mother tongue, field of study and year of studies of the students were analysed by the use of independent sample t-test, and to answer the second and third research question, paired sample t-test was used to check the effectiveness of using academic and non-academic texts for reading comprehension.

Characteristics of the Sample

Demographic Analysis

The researcher has developed two reading comprehension tests to collect data from the sample of the study. The tests were consisting of two major parts. First part of the tests contained the demographics of the respondents like year of education, area of studies, mother tongue, and instructional language. Demographic analysis is helpful in understanding the settings and characteristics of participants. Frequencies and percentage is used to presents the characteristics of the data set.

Table 4.1

Distribution of respondents by year of studies

Gender	F	%
Inter Part-I	80	50
Inter Part-II	80	50
Total	160	100.0

Table 4.1 shows the frequency of participants according to their year of studies. There were 80 (50 %) students related to inter part-I and 80 (50 %) students were enrolled in inter part-II. Total numbers of students were 160, which was the 25% of the population of the study. Equal numbers of participants were included in the study from Inter Part-I and Inter Part-II to strengthen the results of reading comprehension test.

Table 4.2

Distribution of respondents according to the academic field of study

Program of Studies	<i>F</i>	%
F. Sc (Pre-Medical)	40	25
F.Sc (Pre-Engineering)	40	25
I.C.S	40	25
I.COM	40	25
Total	120	100.0

Frequency of the participants according to their field of study was presented in table 4.2. There were 40 (25%) students selected from F.Sc (pre-medical), 40 (25%) students from F.Sc (Pre-Engineering), 40 (25%) from ICS and 40 (25%) students from I.Com. Equal numbers of students were included from each discipline to fortify the results.

Table 4.3

Distribution of respondents according to their mother tongue

Mother Tongue	<i>F</i>	%
Urdu	68	56.6
Punjabi	52	43.3
Total	120	100.0

Table 4.3 is reflecting distribution of students according to their mother tongue is different. 68 (56.6%) students were counted as Urdu speakers and 52 (43.3%) as Punjabi speakers. Students with different mother tongue background has produced diversity in the study.

Table 4.4

Distribution of respondents according to medium of instruction

Language of Instruction	<i>F</i>	%
Urdu	64	53.3
English	56	46.7
Total	120	100.0

Table 4.4 shows that 64 (53.3%) students were taught in Urdu language and 56 (46.7%) students were instructed in English language. It is evident that the numbers of participants vary according to medium of instruction.

Inferential Analysis

The researcher has used t-test to identify differences in groups about use of academic and non- academic text in reading comprehension tests in English language classrooms. Independent sample t-tests was performed to answer the first research question, the factors such as mother tongue, instructional language, and year of education. Number of students, mean, standard deviation, result of t-test and significant values has been mentioned in tables and then result, evidences and explanation is provided under these tables.

Paired sample t-test was used to answer the second and third research question, difference between using academic and non-academic text in reading comprehension activities. The results, evidences and explanation are provided to lead discussion section.

Table 4.5

Independent sample t-test comparing using of academic and non-academic texts on the basis of their year of studies.

Sr.No	Dependent Variables	Year	N	M	SD	T	Sig
1.	F.Sc (Pre-Medical)	Inter Part-I	20	6.20	1.43637	-1.321	.194
	Academic	Inter Part-II	20	6.80	1.43637		
2.	F.Sc (Pre-Medical)	Inter Part-I	20	5.80	1.82382	-.767	.448
	Non-Academic	Inter Part-II	20	6.25	1.88833		
3.	F.Sc (Pre-Engineering)	Inter Part-I	20	7.60	1.18766	.000	1.000
	Academic	Inter Part-II	20	7.60	.94032		
4.	F.Sc (Pre-Engineering)	Inter Part-I	20	6.70	.86450	1.463	.152
	Non-Academic	Inter Part-II	20	6.30	.86450		
5	ICS (Academic)	Inter Part-I	20	6.35	1.22582	.849	.401
		Inter Part-II	20	6.05	.99868		
6	ICS (Non-Academic)	Inter Part-I	20	6.00	1.48678	1.448	.156
		Inter Part-II	20	5.35	1.34849		
7	I.Com (Academic)	Inter Part-I	20	7.10	1.25237	.853	.399
		Inter Part-II	20	6.80	.95145		
8	I.Com (Non-Academic)	Inter Part-I	20	6.35	1.13671	1.108	.275
		Inter Part-II	20	5.95	1.14593		

Table 4.5 is presenting the differences of scores among students belonging to different field of studies such as F.Sc (pre-medical), F.Sc (pre-engineering), ICS and I.Com under the effect of independent variable, the year of education. Independent sample t-test was performed (table 4.4) to compare the results on the basis of their years of education. There was no significant difference about responses of inter part-I and part-II students in reading comprehension by using academic and non-academic text related to above mentioned disciplines. As the results has shown, F.Sc (pre-medical) academic, ($t=-1.321$, $p=.194$) F.Sc (pre-medical) non-academic ($t=-.767$, $p=.448$) F.Sc (pre-engineering) academic ($t=.000$, $p=1.000$) F.Sc (pre-engineering) non-academic ($t=1.463$, $p=.152$), ICS academic ($t=.849$, $p=.401$) ICS non-academic ($t=1.448$, $p=.156$) and I.Com academic ($t=.853$, $p=.399$) I.Com non-academic ($t=1.108$, $p=.275$). The results indicate that $p\text{-value} > .05$ and reflecting that both groups (inter part-I and inter part II) both have equal performance while using academic and non-academic text in reading comprehension.

Table 4.6

Independent sample t-test comparing using academic and non-academic texts on the basis of their mother tongue.

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

Sr.No	Dependent Variables	Mother tongue	N	M	SD	T	Sig
1.	F.Sc (Pre-Medical)	URDU	22	6.8636	1.12527	1.803	.079
	Academic	PUNJABI	18	6.0556	1.69679		
2.	F.Sc (Pre-Medical)	URDU	22	6.5455	1.26217	2.050	.047
	Non-Academic	PUNJABI	18	5.3889	2.25281		
3.	F.Sc (Pre-Engineering)	URDU	21	7.9524	.97346	2.340	.025
	Academic	PUNJABI	19	7.2105	1.03166		
4.	F.Sc (Pre-Engineering)	URDU	21	6.5714	.87014	.537	.595
	Non-Academic	PUNJABI	19	6.4211	.90159		
5.	ICS (Academic)	URDU	21	6.0476	1.20317	-.907	.370
		PUNJABI	19	6.3684	1.01163		
6.	ICS (Non-Academic)	URDU	21	5.4286	1.43427	-1.143	.260
		PUNJABI	19	5.9474	1.43270		
7.	I.Com (Academic)	URDU	25	6.9200	1.25565	-.218	.828
		PUNJABI	15	7.0000	.84515		
8.	I.Com (Non-Academic)	URDU	25	6.0400	1.13578	-.781	.440
		PUNJABI	15	6.3333	1.17514		

Independent sample t-test was performed (table 4.6) to compare the results on the basis of their mother tongue. There was no significant difference about responses of inter part-I and part-II students in reading comprehension by using academic and non-academic text related to different field of studies such as F.Sc (pre-medical), F.Sc (pre-engineering), ICS and I.Com. No difference has been observed among students belonging to different field of studies such as F.Sc (pre-medical), F.Sc (pre-engineering), ICS and I.Com under the effect of independent variable, mother tongue. As the results has shown, F.Sc (pre-medical) academic, ($t=1.803$, $p=.079$) F.Sc (pre-medical) non-academic ($t=2.050$, $p=.047$) F.Sc (pre-engineering) academic ($t=2.430$, $p=.025$) F.Sc (pre-engineering) non-academic ($t=.537$, $p=.595$), ICS academic ($t=-.907$, $p=.370$) ICS non-academic ($t=-1.143$, $p=.260$) and I.Com academic ($t=-.218$, $p=.828$) I.Com non-academic ($t=-.781$, $p=.440$). The results indicate that $p\text{-value} > .05$ and reflecting that both groups (mother tongue; Urdu and Punjabi) both have equal performance while using academic and non-academic text in reading comprehension. Only F.Sc (pre-engineering) students have a significant difference while using academic text for reading comprehension as their $p\text{-value}$ is less than $.05$, but the mean score is reflecting that it had a minor difference under the effect of mother tongue. Urdu speakers performed better than Punjabi speakers while use academic text in reading comprehension test.

Table 4.7

Independent sample t-test comparing using of academic and non-academic texts on the basis of their instructional language.

Sr.No	Dependent Variables	Instructional language	N	M	SD	T	Sig
1.	F.Sc (Pre-Medical)	URDU	25	6.6000	1.19024	.558	.580
	Academic	ENGLISH	15	6.3333	1.83874		
2.	F.Sc (Pre-Medical)	URDU	25	6.2400	1.53514	.949	.348
	Non-Academic	ENGLISH	15	5.6667	2.28869		
3.	F.Sc (Pre-Engineering)	URDU	25	7.5600	.86987	-.305	.762
	Academic	ENGLISH	15	7.6667	1.34519		
4.	F.Sc (Pre-Engineering)	URDU	25	6.6000	.95743	.929	.359
	Non-Academic	ENGLISH	15	6.3333	.72375		
5.	ICS (Academic)	URDU	22	6.0909	1.23091	-.680	.501
		ENGLISH	18	6.3333	.97014		
6.	ICS (Non-Academic)	URDU	22	5.6364	1.39882	-.185	.854
		ENGLISH	18	5.7222	1.52646		
7.	I.Com (Academic)	URDU	17	6.7647	1.09141	-.907	.370
		ENGLISH	23	7.0870	1.12464		
8.	I.Com (Non-Academic)	URDU	17	6.0588	1.02899	-.429	.671
		ENGLISH	23	6.2174	1.24157		

Table 4.7 is presenting the differences of scores among students belonging to different field of studies such as F.Sc (pre-medical), F.Sc (pre-engineering), ICS and I.Com under the effect of independent variable, instructional language. Independent sample t-test was used to compare the results on the basis of their instructional language. No significant difference was observed in results of inter part-I and part-II students while using academic and non-academic text in reading comprehension. As the results has shown, F.Sc (pre-medical) academic, ($t=-.558$, $p=.580$) F.Sc (pre-medical) non-academic ($t=.949$, $p=.348$) F.Sc (pre-engineering) academic ($t=-.305$, $p=.762$) F.Sc (pre-engineering) non-academic ($t=.929$, $p=.359$), ICS academic ($t=-.680$, $p=.501$) ICS non-academic ($t=-.185$, $p=.854$) and I.Com academic ($t=-.907$, $p=.370$) I.Com non-academic ($t=-.429$, $p=.671$). The results indicate that $p\text{-value} > .05$ and reflecting that both groups of instructional languages (Urdu and English) have equal performance while using academic and non-academic text in reading comprehension.

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

Table 4.8

Paired sample t-test comparing the results of tests based on using academic text and non-academic text in reading comprehension

Sr.No	Pairs	N	M	SD	T	Sig
1.	F.Sc (Pre-Medical) Academic VS F.Sc (Pre-Medical) Non-Academic	40	.47500	1.0857	2.767	.009
2.	F.Sc (Pre-Engineering) Academic VS F.Sc (Pre-Engineering) Non-Academic	40	1.10000	1.2568	5.536	.000
3.	ICS (Academic) VS ICS (Non-Academic)	40	.52500	1.0124	3.280	.002
4.	I.Com (Academic) VS I.Com (Non-Academic)	40	.80000	.8829	5.731	.000

Paired sample t-test was performed to compare the results on the basis of academic text and non-academic text among students of different fields of study. Significant difference is observed in results (table 4.8). Students performed better while using academic text for reading comprehension than using non-academic text. Though all disciplines have reflected better performances in academic related text but the students of Pre-Engineering and I.Com has shown extremely significant difference, they found better to use academic related text in reading comprehension activities as it provides them a healthy and subject related input. The results of F.Sc pre-medical, ($t=2.767$, $p=.009$), F.Sc pre-

engineering ($t=5.536$, $p=.000$), ICS ($t=3.280$, $p=.002$) and I.Com ($t=5.731$, $p=.000$) indicating that $p\text{-value} < .05$ and reflecting that all groups have significant difference in results. Students found academic text more comprehensible than non-academic text for reading comprehension activities, as their academic schema activated and helped them in reading comprehension.

Findings and Discussion

The first research question addressed the factors affecting academic schema of the students in reading comprehension. The results of the study has reflected that there was no

difference in reading comprehension under the effect of mother tongue and instructional language and year of education. Almost all the disciplines included in the study have the same results. Only the students of F.Sc (pre-engineering) have reflected better performance under the effect of mother tongue, as the results have indicated that Urdu speakers comprehended academic text more easily than Punjabi speakers. Shen (2003) have mentioned that command over the L1, and L2 effects the level of reading comprehension of the students, but the results of my study has shown that mother tongue and instructional language did not affect the reading comprehension results.

The second and the third research question dealt with the effectiveness of using academic and non-academic texts in reading comprehension. To answer this question paired sample t-test was used to compare the results of reading comprehension tests based on academic and non-academic texts Field related background knowledge activated the schema of the students while reading the text and students scored better in academic related texts rather than the text extracted from a newspaper. Meniado (2016) supported the point that reading comprehension has a sequence of cognitive activities such as understanding the words, meaning, analytical and synthesis reactions. Academic schema helped the students in comprehending the text as the vocabulary existed in the text was not always new for them, students were

familiar with the words and their meanings in the text, which helped them to guess the meaning of unknown words and in synthesising the structure and the meaning of the text.

Students preferred to read the field related text and it has enhanced the level of interest among students and they performed better. Anderson and Pearson (1984) argued that these studies provide support for schema-instantiation inferencing: To understand such passages, readers must use an already selected schema to make sense of the vague passage by instantiating its slots and filling the slots and gaps within the activated schema. Here the intermediate students used their academic schema to make sense of the text, and to fill the slots and gaps within the activated schematic knowledge.

Conclusion and Recommendation

This section has summarised the findings of the study and each research question was discussed in the light of past researches. The study confirmed that schema helped students in reading comprehension of the text. In my study academic field of the students was considered as background knowledge of the students. As the students provided with academic text according to their field of education, they performed significantly better than when the same students were provided with a general text selected from an English newspaper. Moreover, the demographic factors selected in the study such as, mother tongue,

instructional language, and years of education did not affect the reading comprehension results.

This study has left new horizons for future researches in the field of reading comprehension skills, as the factors included in this study are too limited, more demographic and cognitive factors can be included in the study to get more authentic results. This study has used multiple choice item reading comprehension test which was just able to judge only four levels of Bloom Taxonomy (1956), a subjective written test can be very helpful in analysing the comprehension of reading passages. Moreover, written answers can be analysed through corpus to get more deep analysis of errors and mistake patterns committed by the students.

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APPENDIXE-1

Reading test

Class Inter: Part I/ II _____ **Date:** _____

Program: F.Sc (Pre-engineering) _____

Mother Tongue/ Language Used At Home: _____ (Punjabi/ Urdu)

Medium of Instruction (Language) At School: _____ (Urdu/English)

Reading section

Directions: *The Reading section measures your ability to understand academic passages written in English. You will read one passage and answer questions about it. You have 20 minutes to read the passage and answer the questions.*

Paragraph 1

Nation-building refers to the process of constructing or structuring a national identity using the power of the state. Engineers are technically skilled professionals who are responsible for solving problems. Their main focus is on making things work efficiently and effectively by applying the theories and principles of sciences and mathematics to research, and develop economic solutions to technical problems. The Engineer differs from the scientist by the nature of their training. While the scientists try to explore the natural world and discover new knowledge about the universe and how it works, engineers apply that knowledge to solve real problems. The purpose of engineering is to innovate, design, create, and maintain products, system and equipment for the benefit and wellbeing of humans. Their work are the link between the perceived social needs and economic applications. They are the bridge between science and art.

Paragraph 2

Engineers are the backbone of nation building and the purpose of engineering is to innovate, design, create and maintain product system and equipment for the benefit and wellbeing of humans. Collapse of building and structures under construction are no longer breaking news in Nigeria. One might be patriotic enough to ask, in a building under construction supposed to collapse if it was well designed and executed? When you look further, you might be tempted to extend the question a bit; are you supposed to be witnessing power failures and other failures in a region blessed with abundant natural and human resource. If a country fail to realise the role of engineers in her nation building and the engineers are leaving for better opportunities abroad, then the country will continue to experience collapsed buildings and bridges, substandard products, failed roads, communication failures, environmental hazards, epileptic power supply to mention but the few as it is in Nigeria today.

Paragraph 3

Meanwhile, as nations in the world are undergoing reformation and the economy is getting more modernized, consumption patterns have expanded and demand is constantly on the increase. There is therefore a growing consciousness of quality control at every level of production. The engineers have to realize their responsibility and play an effective role in tackling today's complex issues in the nation building. To build a nation is to make it habitable for the citizenry by providing social amenities, infrastructural facilities, job creation and security and many more; the engineers therefore have a serious role to play. Thus, they are duty bond to design products, machineries and plants to manufacture these products, and systems to ensure quality and efficiency. They are to design, plan and supervise construction

of buildings, and ensure their safety and stability against hazards; design highways, bridges, railways and transit systems, dams, irrigation canals, power system, ports, harbours as well as off-shore structures.

Answer the following questions

1	Who are engineers? a) Technically skilled persons b) Technically skilled professionals c) Technically skilled professionals having responsibility of solving problems d) A problem solver.
2	What is the main focus of engineers? a) Making things work efficiently and effectively by applying the theories and principles of sciences and mathematics. b) Making things work efficiently and effectively by applying the theories and principles of philosophy. c) Making things work efficiently and effectively by applying the theories and principles of psychology. d) Making things work efficiently and effectively by applying the theories and principles of neurology.
3	The task of engineers is to create a connection between a) Economic needs and social application b) Social interaction and economic application c) social needs and economic applications d) economic issues and its solutions
4	Collapse of building and structures under construction are no longer breaking news in Nigeria means a) Collapse of building and structure is common in Nigeria. b) Collapse of building and structure is rare in Nigeria. c) News channels portray the beautiful structure of buildings in Nigeria. d) Nigeria is famous for its building structure.
5	Collapsed buildings and bridges, substandard products, failed roads, and communication failures are because a) Engineers are facing financial issues. b) Engineers are leaving country for better opportunities. c) Engineers finds no time to work. d) Engineers are not provided with necessary facilities.
6	If a building under construction is supposed to collapse, who is responsible? a) A doctor b) Teacher c) An engineer d) None of these.
7	Nations in the world are undergoing reformation. Here the word “reformation” means... a) improvement b) renovation c) restructuring d) restoration
8	Quality control is needed at every level of..... (paragraph 3) a) Consumption

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

	<ul style="list-style-type: none">b) Measurementc) Managementd) Production
9	<p>The duty of engineers is to a system to ensure quality and</p> <ul style="list-style-type: none">a) Efficiencyb) Efficacyc) Effectivenessd) Flexibility
10	<p>“Consumption patterns have expanded and demand is constantly on the increase” is referring the concept.</p> <ul style="list-style-type: none">a) Consumption and production are increasing.b) Consumptions are increasingc) Productions are increasingd) none of these

APPENDIXE-2

Reading test

Class Inter: Part I/ II _____ **Date:** _____

Program: Pre- Medical

Mother Tongue/ Language Used At Home: _____ (Punjabi/ Urdu)

Medium of Instruction (Language) At School: _____ (Urdu/English)

Reading section

Directions: *The Reading section measures your ability to understand academic passages written in English. You will read one passage and answer questions about it. You have 20 minutes to read the passage and answer the questions.*

Paragraph 1

Populations of different species (plants and animals) living in the same habitat form a community. Communities are dynamic collections of organisms, in which one population may increase and others may decrease due to fluctuation in abiotic factors. Some communities are complex and well interrelated, other communities may be simple. In a simple community any change can have drastic and long lasting effects. The foregoing account makes it clear that an organism can be studied at different levels of organization. It can be studied at subatomic, atomic, molecular, macromolecular, organelle, cell, tissue, organ and organ system level. The organisms, interaction can take many shapes. It may be predation, parasitism, commensalism, mutualism and competition.

Paragraph 2

Living world of today is enormous in size. It has been reproducing and evolving since the time of its origin on this planet. Today almost all parts of the world abounds in living organisms. The distribution of organisms in space can be studied through biomes. The major biomes of the world you will study in the chapter of ecology. Since the time of origin of life on this planet, various organisms were evolved and dominated this planet during various periods of geological time chart. This has been found by the evidence obtained from the discovery and study of fossils which allows biologists to place organisms in a time sequence. As geological time passes and new layers of sediments are laid down. In addition it is possible to date/age rocks by comparing the amounts of certain radioactive isotopes they contain. The older sediment layers have less of these specific radioactive isotopes than the younger layers. A comparison of the layers gives an indication of the relative age of the fossils found in the rocks.

Paragraph 3

When we look at the biodiversity (the number and variety of species in a place), we find that there are nearly 2,500,000 species of organisms, currently known to science. More than half of these are insects (53.1%) and another 17.6 % are vascular plants. Animals other than insects are 19.9 % (species) and 9.4 % are fungi, algae, protozoa, and various prokaryotes. This list is far from being complete. Various careful estimates put the total number of species between 5 and 30 million. Out of these only 2.5 million species have been identified so far. The life today has come into existence through phyletic lineages or evolving populations of

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

the organisms living in the remote past. Evolutionary change often produces new species and then increases biodiversity. We lack that record because many soft bodied organisms of the past had not left their preserved record as fossils.

Answer the following questions

1	Word “fluctuation” in paragraph 1 is closest in meaning to a) Variation b) Change c) Inconsistency d) Compressed
2	The organisms, interaction can take many shapes. a) Abiotic b) Predation, parasitism, commensalism, mutualism and competition. c) molecular, macromolecular d) both “a” and “c”
3	What forms a community? a) Population of different species living in the same habitat. b) Living animal at the same place. c) Living plants at the same place. d) Population of different species living in the different habitat.
4	Word “indicate” is closest in the meaning to a) Pinpoint b) Point out c) Prove d) Reveal
5	“Enormous” in paragraph 2 means a) Titanic b) Gross c) Large in size d) Huge
6	The older sediment layers have less of these specific radioactive ____ a) Organism b) Isotopes c) Metals d) Liquids
7	Evolutionary change often produces new species and then increases biodiversity a) Biodiversity b) Death c) phyletic lineage d) ecosystem
8	Biologists find that there are nearly ----- species of organisms a) 3,500,000 b) 1,500,000 c) 2,500,000 d) 250,000
9	How life has come into existence today? (paragraph 3) a) By preserving the old species. b) Due to soft body organism

	c) Evolving populations of the organisms living in the remote past d) Due to low temperature.
10	“estimates” is used to a) Measure b) Propagation c) Addition d) Rating

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

APPENDIXE-3

Reading test

Class Inter: Part I/ II _____ **Date:** _____

Program: I.Com

Mother Tongue/ Language Used At Home: _____ (Punjabi/ Urdu)

Medium of Instruction (Language) At School: _____ (Urdu/English)

Reading section

Directions: *The Reading section measures your ability to understand academic passages written in English. You will read one passage and answer questions about it. You have 20 minutes to read the passage and answer the questions.*

Paragraph 1

The general assumption is that older workers are paid more in spite of, rather than because of their productivity. That might partly explain why, when employers are under pressure to cut costs, they persuade a 55-year old to take early retirement. Take away seniority-based pay scales, and old workers may become a much more attractive employment proposition. But most employers and many workers are uncomfortable with the idea of producing someone's pay in later life. Although manual workers on piece-rates often earn less as they get older. So the training the services of older workers may mean employing them in different ways.

Paragraph 2

One innovation was devised by IBM Belgium. Faced with the need to cut staff costs, and having decided to concentrate cuts on 55 to 60-year olds, IBM set up a separate company called Skill Team, which re-employed any of the early retired who wanted to go on working up to the age of 60. An employee who joined Skill Team at the age of 55 on a five-year contract would work for 58% of his time, over the full period, for 88% of his last IBM salary. The company offered services to IBM, thus allowing it to retain access to some of the intellectual capital it would otherwise have lost.

Paragraph 3

The best way to tempt the old to go on working may be to build on such 'bridge' jobs: part-time or temporary employment that creates a more gradual transition from full-time work to retirement. Studies have found that, in the United States, nearly half of all men and women who had been in full-time jobs in middle age moved into such 'bridge' jobs at the end of their working lives. In general, it is the best-paid and worst-paid who carry on working. There seem to be two very different types of bridge job-holder – those who continue working because they have to and those who continue working because they want to, even though they could afford to retire.

Paragraph 4

If the job market grows more flexible, the old may find more jobs that suit them. Often, they will be self-employed. Sometimes, they may start their own businesses: a study by David Storey of Warwick University found that in Britain 70% of businesses started by people over 55 survived, compared with an overall national average of only 19%. But whatever pattern of

employment they choose, in the coming years the skills of these ‘grey workers’ will have to be increasingly acknowledged and rewarded.

Answer the following questions

1	In paragraph one, the writer suggests that companies could consider a) Abolishing pay schemes that are based on age. b) Avoid pay that is based on piece-rates. c) Increase pay for older workers. d) Equipping older workers with new skills.
2	e) Skill Team is an example of a company which a) Offers older workers increase in salary. b) Allow people to continue working for as long as they want. c) Allow the expertise of older workers to be put to use. d) Treat older and younger workers equally
3	According to the writer, ‘bridge’ jobs a) Tend to attract people in middle salary ranges. b) Are better paid than some full-time jobs. c) Originated in the United States. d) Appeal to distinct groups of older workers.
4	David Storey’s study found that a) People demand more from their workers as they get older. b) Older people are good at running their own business. c) An increase number of old people are self-employed. d) Few young people have their own businesses.
5	“innovation” in paragraph 2 means e) Introduction f) Induction g) modernization h) A new idea
6	The text is about..... e) Unemployment f) Old workers g) Job seekers h) None of these
7	The job market grows more flexible, here the word “flexible” mean e) Plasticity f) Impressionable g) Stretchable h) Adaptable
8	“Grey workers” represents the people a) Middle aged persons b) Young persons c) Old persons d) None of these
9	What are the indication of future for “grey workers” e) Bright and fantastic f) Will be acknowledged

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

	<p>g) They will be highly paid</p> <p>h) They will not be given incentives. .</p>
10	<p>Manual workers on piece-rates often earn.....</p> <p>e) More than average as they get older.</p> <p>f) Less as they get older.</p> <p>g) Nothing as they get older</p> <p>h) A high income as the get older.</p>

APPENDIXE-4

Reading test

Class Inter: Part I/ II _____ **Date:** _____

Program: I.C.S

Mother Tongue/ Language Used At Home: _____ (Punjabi/ Urdu)

Medium of Instruction (Language) At School: _____ (Urdu/English)

Reading section

Directions: *The Reading section measures your ability to understand academic passages written in English. You will read one passage and answer questions about it. You have 20 minutes to read the passage and answer the questions.*

Paragraph 1

The last few years have been known by the emergence of many new fields in addition to the quick development and advancement of different existing ones. In fact, within the technological fields such as internet has had advances in its usage and techniques in a way that's been converging with the improvement in computer science.

Paragraph 2

Now days, everyone uses computer technology developed, generally we do communication between machine to human, human to machine. In Internet of things what are things, it can be any anything like appliances, goods, objects, vehicles, buildings, animals, plants, and trees. IOT is a communication between machine to machine communications. We can connect physically anything anytime anywhere.

Paragraph 3

Internet of things also called internet of everything it connects with software, sensors, embedded etc. Internet of things, also called internet of objects, refers to wireless network between objects, usually the network will be wireless and self-configuring, like household application. Various internet applications are available in market. Wearable's is the application where we can wear it on body. It connects via phone, Bluetooth, Wi-Fi, and laptop.

Paragraph 4

It is best for smartphone peripherals, instant UI usage, nearby things. Wearable is used directly on body, tracks the information. And related to security and identification. Fit bit is the wrist bracelet provides indication of location of thing where we left. It related to health and fitness it provides biometric measurement such as heart rate, oxygen levels, blood pressure. It also gives the information about how many calories burned, steps climbed, and walking distance. We can connect wrist band with other things it can maintain your room temperature and car temperature.

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

Answer the following questions

1	Internet of things refers a) We can connect physically anything anytime anywhere. b) We can use metals as computer device. c) Internet can be connected on computers only d) Internet can be connected on mobile-phones only
2	Advancement in technology field improved due a) Advancement in computers. b) Advancement in science c) Improvement in chemicals d) Advancement in the field of bio-technology
3	Everyone uses computer technology, generally we do communication between a) Human to human b) Human to machine, machine to human c) Machine to machine d) None of these
4	Internet of things also called a) Internet for everyone b) Internet for someone c) Internet for everything d) Internet for all
5	Internet of things, also called internet of objects, refers a) Wired connections between objects b) No connection between objects c) Wireless connection between objects. d) None of these
6	Wearable's is the application a) That we can wear on body b) That can be available in computer lab c) That we can keep in touch d) None of these
7	Word "embedded" refers the meaning in text a) Fixed b) Installed c) Planted d) added
8	Fit bit can be wear on a) Neck b) Arm c) Wrist d) Leg
9	Wrist band with other things can maintain a) Room and car temperature b) Human temperature c) Human temper d) None of these

10	The text is about..... <ul style="list-style-type: none">a) Advantages of computer technologyb) Disadvantages of computer technologyc) Advantages of internetd) Advancement in internet and computer technology.
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APPENDIXE-5

Reading test

Class Inter: Part I/ II _____ **Date:** _____

Program: I.C.S/I.Com/ F.Sc (Pre-medical) _____

Mother Tongue/ Language Used At Home: _____ (Punjabi/ Urdu)

Medium of Instruction (Language) At School: _____ (Urdu/English)

Reading section

Directions: *The Reading section measures your ability to understand academic passages written in English. You will read one passage and answer questions about it. You have 20 minutes to read the passage and answer the questions.*

What to Celebrate—and Mourn—This International Women’s Day

(The Nation, 15th March, 2019)

Paragraph 1

Did you know that you’re supposed to give women flowers on March 8, International Women’s Day? Teleflora is on it. What a come down for a holiday started by socialists in 1909. Then again, every celebration of women, no matter how radical its beginnings—Mother’s Day began as a pacifist holiday—eventually devolves into an occasion for faintly guilt-ridden offerings from men and children. It’s as if they know there’s something seriously amiss, but can’t quite figure out what it is—so please, take these flowers and put them in a vase... and while you’re in the kitchen, do we have any of that nice cheese left in the fridge?

Paragraph 2

Speaking of laws, according to the World Bank, in only six countries in the world—Belgium, Denmark, France, Latvia, Luxembourg, and Sweden—do women and men have equal legal rights in the workplace, and the US comes in at a mediocre 62nd. A half-dozen countries might not seem like much, but that’s up from zero a decade ago, so cheer up—just 190 left to go!

Paragraph 3

Feminism, often derided by its detractors as a Western colonial imposition, has been breaking out all over. Lebanon, Morocco, and Jordan repealed laws that absolved rapists who married their victims. Saudi Arabia lifted its ban on women drivers—but put activists who’d fought the ban in prison, where they’ve reportedly been tortured. In a movement called “My Stealthy Freedom,” Iranian women are taking off their legally required hijabs and posting pictures of their uncovered hair on social media. In South Korea, women are campaigning for abortion rights (abortion is virtually illegal but flourishes underground, with possibly more abortions per year than births). Feminists there are also attacking the “corset” of rigid and elaborate beauty standards—hours spent daily on makeup regimes, and the highest rate of cosmetic surgery in the world (one in three twentysomethings has had work done). Meanwhile, skin care has become a booming industry in the country, with \$13.1 billion in annual sales last year and rapidly growing exports to the US.

Paragraph 4

More good news: Iceland was deemed the most equal country in the world for women by the World Economic Forum (the United States was 51st, between Mexico and Peru). And, unlike here, where women are always being told they're lucky not to be living in an Afghan harem, Iceland isn't resting on its laurels; it just passed the world's first law requiring employers to prove that they're paying men and women equally. Think what that means: Instead of having to prove discrimination—a lengthy process that can involve mandatory arbitration, losing your job, and getting blacklisted by employers in your field—the employer has to prove he's fair.

Answer the following questions

1	“Mother’s Day began as a pacifist holiday” here the word “Pacifist” mean... e) Soothing f) Pacific g) Comforting h) Peace loving
2	March 8, International Women’s Day started as holiday in by e) Economists f) Journalist g) Formalist h) Socialists
3	“guilt-ridden” in paragraph 1 refers to the meaning e) Remorseful f) Tormented g) Fearful h) Anguished
4	Women equal rights in workplace has been accepted by e) 8 countries f) 3 countries g) 4 countries h) 6 countries
5	Derided in paragraph 3 refers to the meaning e) Ridiculed f) Mocked g) Scorned h) Put Down
6	Saudi Arabia lifted its ban on ----- e) Men drivers f) Women drivers g) Women teaching h) Hoteling outside
7	Feminists there are also attacking the “corset” of rigid and elaborate beauty standards means e) Beauty in households f) Beauty of character g) Spending lots of time and money on physical beauty h) None of these

*Running head: ACADEMIC SCHEMA
IN READING COMPREHENSION*

8	Iceland passed the first law of paying a) Women equally to men b) Women lesser than men c) Women more than men d) None of these
9	Arbitration in paragraph 4 is equal in meaning to a) Mediation b) Settlement c) compromise d) adjustment
10	Iranian women are taking off their legally required Hijab shows e) women dislike hijab f) women like hijab g) removing hijab is giving them a sense of freedom h) none of these