AUDITORY AND VISUAL LEARNING OF BILINGUAL INPUT: A PSYCHOLINGUISTIC STUDY OF LANGUAGE COMPREHENSION AND RETENTION IN URDU-ENGLISH SPEAKERS

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ABSTRACT

Title: Auditory and Visual Learning of Bilingual Input: A Psycholinguistic Study of Language Comprehension and Retention in Urdu-English Speakers

The study is motivated by the link between learners' learning style preference and the modality through which they learn better in the different languages they use. In the previous studies involving bilinguals and learning modalities, Urdu-English bilinguals have not been paid much attention. The study aims to investigate the impact of two different modalities, i.e., auditory and visual, on the performance of Urdu-English bilingual learners on comprehension and retention tasks. It involves two languages, i.e., Urdu and English, in order to find out whether the impact of different modalities on the participants' learning is similar or different for the two languages. Furthermore, the study is concerned with ascertaining whether the preferred modalities of Urdu-English bilinguals are the same as the ones through which they perform better on comprehension and retention tasks in the two languages. The study is based on two models: the first model is Visual, Auditory, Read/write and Kinesthetic (VARK) model, and working memory model. The study uses Language History Questionnaire, VARK questionnaire and comprehension and retention tests to find out the participants' language background, learning styles and performance on comprehension and retention tasks, respectively. Findings of the study reveal that the relationship between learning style preferences and the modalities in which the participants perform better are different for retention and comprehension tasks. Moreover, the results obtained for Urdu and English language are similar in the case of retention tests but different in the case of comprehension tests. Furthermore, the findings show that bimodality does not necessarily enhance learning. The present study helps in bringing into view the importance of modalities in learning and their connection to learning styles. Moreover, it uncovers the difference in the effect of modalities on learning when an individual is learning in two different languages.

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LIST OF ABBREVIATIONS

WM	Working Memory
LTM	Long Term Memory
STM	Short Term Memory

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DEDICATION

This thesis is dedicated to my loving parents for their prayers, endless support and encouragement.

CHAPTER 1

INTRODUCTION

Information can be provided and received using different modalities. In order to improve learning, it is important to improve the way information is received. The most commonly used modalities in learning and receiving information in everyday life, especially in an educational setup, are visual, auditory and kinesthetic. The importance of modality in learning, which involves the comprehension and retention of information, is evident in the amount of attention given to the theories and models that revolve around the idea of modality. One such model is that of working memory. According to this model, visual stimuli and auditory stimuli are stored and processed by different components in a system (Baddeley & Hitch, 2010). Hence, information in different modalities follows different routes in working memory (Henry, 2012).

Another theory that revolves around the concept of modalities is that of learning styles, which comprises of various types of models. Although, these different models are based on different concepts such as personality and right or left hemisphere dominance, one of the most well-known models among these is the VARK model which is concerned with modalities (Meyers, 2017). According to this model, learners learn better when they receive information in their preferred modality (Fleming & Baume, 2006). Moreover, since these modalities involve language, bilingualism has also become an important part of research revolving around modalities. This is because in the case of bilingualism, the matter becomes more complicated due to a higher number of languages being involved. This makes it important to have awareness regarding the impact of these modalities on learning in different languages used by the same individual.

1.1 Background of the Study

Developed by Neil Fleming, VARK model is based on the idea that different learners prefer to receive information through different modalities (Meyers, 2017). According to this model, learners learn better when they receive information in their preferred modality; whereas, using their weaker preferences can hamper learning and hence negatively influence their performance (Fleming & Baume, 2006).

Working memory is another model which prompted numerous studies that were concerned with modalities and their effect on comprehension and retention of information with their focus being on auditory and visual stimuli. Over the years, different studies have focused on drawing a comparison between the two modalities with regard to different types of activities and performances such as reaction time, recognition memory, scene analysis, memory recall, accuracy and comprehension (Kondo et al., 2017; Lindner et al., 2009; Cohen et al., 2009; Nakayama & Iwata, 2012). The idea of simultaneous use of auditory and visual input and whether they facilitate or distract each other when used together has also enjoyed its share of limelight (Hamada, 1990; Goolkasian & Foos, 2005b; Chang, 2009; Cheetham, 2019).

Despite its popularity and widespread use, the concept of learning style has not been able to avoid its fair share of controversy (Meyers, 2017). Some are of the view that there is a link between learning styles and working memory and learning performance and that learning performance can be improved by having knowledge regarding learning styles (O'Brien, 1989; Fleming & Baume, 2006; Othman & Amiruddin, 2010; Xu, 2011; Dirette & Anderson, 2016). Others are of the view that there is not enough evidence to uphold the idea of learning style and its link to learning performance and working memory (Rogowsky et al., 2015; Lodge et al., 2016; Aslaksen & Lorås, 2019).

Other than working memory and learning style, another concept that is worth paying attention to is bilingualism. “Bilingual is a person who uses at least two languages with some degree of proficiency” (Moradi, 2014). Language is undoubtedly the most important medium of communication and hence is highly significant for learning. Modality of the language used, i.e., in the auditory or visual form, plays a very important role in the models of working memory and learning style. In the case of bilinguals, the situation becomes more complicated since in this case two or more languages are involved and these languages may be similar or different in their characteristics or in terms of their age of acquisition. Bilingualism has increased over the years due to various reasons and is likely to further increase in the future. This has also resulted in the increase of the number of bilingual students in educational institutes. Hence, it is important to cater the needs of bilinguals by not treating them the same as monolinguals but to understand and consider both of their languages. This can be done by having awareness regarding which modality is preferred by the bilingual students

and which modality is better suited for them for retention and comprehension of input in both of their languages.

1.2 Statement of the Problem

Bilinguals might not be able to perform equally well in both the modalities, i.e., visual and auditory, in the different languages used by them. They might perform better in one modality in one language and vice versa. Also, it is important to be aware of whether or not there is a link between learners' learning style preference and the modality through which they learn better in the different languages used by them. By taking into account the previous studies involving bilinguals and learning modalities, it has been observed that Urdu-English bilinguals have not been paid much attention. Keeping this issue in view, the present study intends to identify which learning style, read/write or auditory, is preferred by Urdu-English bilinguals and through which modality, visual or auditory, do the Urdu-English bilinguals perform better in Urdu and English language. Moreover, the present study intends to find out how the Urdu-English bilinguals perform on comprehension and retention tasks when they are provided with bimodal input in Urdu and English language. The present study further aims at finding out whether there is an association between Urdu-English bilinguals' preferred learning style and their actual performance in comprehension and retention tasks or not.

1.3 Objectives of the Study

1. To examine the effect of auditory and visual input on the comprehension and retention of Urdu-English bilinguals in Urdu and English language.
2. To investigate the relationship between Urdu-English bilinguals' learning style preference and their actual performance on comprehension and retention tasks in Urdu and English language.
3. To find out the effect of bimodal input on the performance of Urdu-English bilinguals in retention and comprehension tasks in Urdu and English language.

1.4 Research Questions

1. What is the effect of auditory and visual input, one modality at a time, on the comprehension and retention of Urdu-English bilinguals in Urdu and English?

2. What is the link between Urdu-English bilinguals' learning style preference and their actual performance on comprehension and retention tasks in Urdu and English language?
3. How do Urdu-English bilinguals perform on retention and comprehension tasks when provided with bimodal input in Urdu and English?

1.5 Delimitation

The present study is based on two models, both of which are concerned with modality. One model is working memory and the other is that of learning styles. The model of working memory has been used in the study since it is concerned with the idea that information in different modalities is dealt with separately in our memory system. Although there are a number of models based on learning styles, only VARK model has been used in the present study since this model deals with modality while the other models focus on factors other than modality. The present study is further delimited to the context of learning since the study deals with Urdu-English bilingual learners to test how they learn through different modalities in two different languages. Furthermore, the present study has been conducted on 39 English diploma students since the study required Urdu-English bilingual learners, fairly proficient in Urdu and English language.

Since the present study is concerned with language, it is delimited to auditory and visual learning modalities and does not include kinesthetic learning. Moreover, the present study is only focused on linguistic input, i.e., language in the auditory and written form and does not consider non-linguistic input, such as: lip movement, diagrams, pictures, facial gestures, music and other types of non-linguistic sounds. For this reason, among the four VARK learning styles, i.e., visual, auditory, read/write and kinesthetic, only read/write and auditory styles have been used in the study since this model categorizes written language and other types of visuals separately. The study is further delimited to the study of linguistic input, i.e., listening and reading, and not output, i.e., speaking and writing.

1.6 Rationale of the Study

During the researcher's previous experience with teaching, it was observed that the learners' performance differed with different learning modalities. Some learned better if they could listen to the information, some learned better if they could see the

information while some required information to be heard and seen at the same time. This shows that different learning modalities affect an individual's learning differently, indicating the importance of having awareness regarding the influence of learning modalities on an individual's learning.

Since language, being a medium of communication, is an important part of learning, it is important to be aware of the effects of language modality, i.e., language in the auditory form and language in the visual (written) form, on learning. Since a sizable number of learners receiving education in Pakistan comprise of Urdu-English bilinguals, it makes it important to be aware of the effects of learning modalities on learning in both Urdu and English languages due to the possibility that these effects might be different for the two languages. Since figuring out the effects of learning modalities on learning in two different languages for each learner can be time consuming, making use of the learners' own modality preferences can be more time efficient.

Hence, the present study intends to identify which learning style, read/write or auditory, is preferred by Urdu-English bilinguals and through which modality, visual or auditory, Urdu-English bilinguals perform better in Urdu and English languages. Moreover, the present study intends to find out how Urdu-English bilinguals perform on comprehension and retention tasks when they are provided with bimodal input in Urdu and English language. The present study further aims at finding out whether there is an association between Urdu-English bilinguals' preferred learning style and their actual performance in comprehension and retention tasks or not.

1.7 Significance of the Study

Pakistan is a bilingual country with majority of the people being proficient in at least two languages. Urdu, being the national language of Pakistan, and English, being the official language of Pakistan, are the two commonly used languages among educated Pakistanis. The importance of these two languages in Pakistan and the fact that both these languages are used by the same person, i.e., Urdu-English bilinguals, make it extremely important to make sure that the learning strategies being used for Urdu-English bilinguals are well-suited for them. This can be achieved by being aware of which modality the Urdu-English bilinguals prefer and perform better through in the two languages. This will help ensure that the modality being used to design the learning

strategies is suitable for the language that the learner is using at that time and is not instead confused with the modality that is suitable for the other language used by the learner.

The present study will be helpful for Urdu-English bilingual learners and their teachers since it aims to provide insight into how Urdu-English bilinguals perform on retention and comprehension tasks when they are provided with verbal input that is in the auditory form, visual form or both these forms at the same time (i.e., bimodal input). The present study will further provide insight into whether or not their preferred learning style is the same as their actual performance when they are learning through these different modalities.

These insights will be helpful for Urdu-English bilingual learners and their teachers since they will show through which modality Urdu-English bilinguals perform and learn better on retention and comprehension tasks in Urdu and English language. The study will further help in showing whether bimodal verbal input will improve retention and comprehension when it is provided Urdu and English language or not. Moreover, the study will also reveal whether or not learning style or modality preferences of the learners (found out through the VARK questionnaire) are reliable for judging how the learners will actually perform when they receive verbal input through these different modalities in both their languages.

1.8 Chapter Breakdown

1.8.1 Chapter 2: Literature Review

The second chapter provides the review of literature. It includes a critical review of previous studies and the theories and models relevant to the present research.

1.8.2 Chapter 3: Research Methodology

This chapter presents research methodology for the study. It includes details regarding the research design, data collection tools, sample, procedure and theoretical framework of the study.

1.8.3 Chapter 4: Data Analysis

This chapter is dedicated to the presentation and analysis of the data collected for the research study which is followed by the results and discussion of the analyzed data.

1.8.4 Chapter 5: Conclusion

The fifth and final chapter highlights the findings of the study and provides answers to the research questions. The chapter ends with recommendations for further research on the basis of the findings of the study.

CHAPTER 2

LITERATURE REVIEW

This chapter provides the review of relevant literature for the present study. It includes an overview of the models that the present study is based on. First, the model of working memory (WM) and its various components are discussed. This is followed by the review of some previous studies that revolve around the concept of working memory. Second, an overview of some of the numerous learning style models is provided, followed by a more detailed discussion of the VARK model, which is one of the two models that the present study is based on. This is also followed by the review of some previous studies that revolve around the concept of learning styles. Finally, the concept of bilingualism is explained, which is also an important concept for the present study, alongside an overview of the previous studies that have used either the concept of working memory or learning styles to study bilinguals. The chapter concludes with an overall discussion of the studies discussed in the chapter and the gap that the present study aims to fill.

How such a complex system as human language is processed in the mind has always been a source of curiosity for researchers which has resulted in numerous models being formed with the intention to explain this complicated process. One such model is the highly popular WM model, which was formed as an alternative to a previous, multi-store, model after questions were raised against that model for being over-simplistic (McLeod, 2012). According to the model of WM, visual stimuli and auditory stimuli are stored and processed by different components in a system (Baddeley & Hitch, 2010). Hence, WM is not simply a single storage unit but rather consists of four different components with each component having a different function (Young, 2019). Both these models have been explained in more detail below.

2.1 Multi-Store Model

Atkinson and Shiffrin proposed a structure of memory through their multi-store model in 1968, which comprised of three components (McLeod, 2021). According to Atkinson and Shiffrin (1968), the first component, called sensory register, briefly stores the information it receives from the sense organs. The information that is paid attention

to moves on to the second component called short-term memory (STM) while the information that is not paid attention to decays (Atkinson & Shiffrin, 1968). The information received by the second component decays within thirty seconds unless it is rehearsed and sent on to the third component, known as long-term memory (LTM), where information is stored more permanently (Atkinson & Shiffrin, 1968). Despite this model being lauded for its ability to prompt further research by providing a structure that allowed researchers to modify it, it has, however, faced immense criticism for portraying STM as an over-simplified and uncomplicated system (McLeod, 2021). This oversimplification led to the formation of another model which introduced working memory as a replacement for STM (McLeod, 2012).

2.2 Working Memory

Baddeley and Hitch developed a model of working memory (WM) in 1974 as an alternative to Atkinson and Shiffrin's STM (as cited in Chai et al., 2018). Instead of being a system of simple storage, WM involves four subsystems, which are different but interactive, with each performing different functions (Baddeley, 2010). Working together, these different components store as well as manipulate information (Baddeley & Hitch, 2010). These four components have been named phonological loop, visuospatial sketchpad, episodic buffer and central executive (Baddeley & Hitch, 2010).

2.2.1 Central Executive

Central executive, which is one of the four WM components, is considered to have the highest importance among these components due to its role as the main controller of the entire system of WM (McLeod, 2012). Central executive has the responsibility of processing information instead of storing it (Baddeley & Hitch, 2010). It is in charge of making decisions regarding which among the information it receives is to be paid attention to, while the rest is ignored, and which component will be next to receive that information (McLeod, 2012). Furthermore, it also has access to the information stored in LTM (Baddeley & Hitch, 2010).

2.2.2 Phonological Loop

One of the subsystems that central executive passes on information to is termed phonological loop (McLeod, 2012). Phonological loop has the responsibility to briefly

store as well as manipulate auditory input (Baddeley, 2009). It further involves two components (Baddeley & Hitch, 2010). One component is called phonological store that retains speech-like information for no more than two seconds (Baddeley, 2010). This information is prevented from fading with the help of another component (Henry, 2012). This second component is an articulatory system that allows subvocal rehearsal and this subvocal rehearsal may as well be turned into overt speech (Baddeley et al., 1998). To keep from fading, this information moves back and forth between the store and articulatory system in the form of a loop (Henry, 2012).

2.2.3 Visuospatial Sketchpad

The second subsystem that central executive passes on information to is termed visuospatial sketchpad (McLeod, 2012). It has the responsibility to manipulate visuals as well as spatial details and briefly store this information (Baddeley, 2009). Visuals mean the appearance of something or someone while spatial means where an object or the person themself is present in a given space (Henry, 2012). According to Logie (1995), visuospatial sketchpad involves two components. One is termed visual cache which briefly stores visual information while the other is termed inner scribe which briefly stores information regarding spatial details and also rehearses information in both the forms to keep them from fading (Logie, 1995).

When it comes to language, written input is visually analyzed and briefly stored in visuospatial sketchpad (Baddeley, 2010). Experiments conducted to test the effects produced by auditory input on the rehearsal and retention of written input show that auditory input can interfere with the retention of written input and that written input gains entry into the articulatory system in phonological loop in order to be rehearsed (Gathercole & Baddeley, 1993). According to Tavakoli (2013), tests regarding word length suggest that in order to be rehearsed for retention, written input is required to be changed into its phonological form. The idea that this change is required to take place is further supported by the hindrance to the rehearsal process due to overt speech in articulatory suppression and the idea that reading is accompanied by covert speech (Tavakoli, 2013). According to Baddeley (2012), experiments regarding the speed at which written letters are processed show that after a letter becomes visible it is retained for just two seconds after which it is followed by its phonological form. This indicates that visuals can be retained for no more than two seconds after which they require to be

rehearsed to avoid fading and that written input is rehearsed in its phonological form (Baddeley, 2012).

After being visually analyzed, written input moves on to the articulatory system so as to be changed into its phonological form through subvocal speech (Baddeley, Gathercole, & Papagno, 1998). According to Henry (2012), phonological store takes in information in two ways, one being optional and the other obligatory. Auditory input takes the obligatory pathway since phonological store lets it in directly while written input takes the optional pathway since it requires to go through the articulatory system, so as to be changed into its phonological form, prior to making its way into the store (McLeod, 2012). The articulatory system does not only produce subvocal speech but is also in charge of producing overt speech (Baddeley et al., 1998). For this reason, uttering irrelevant sounds can stop the rehearsal of the stored information (Baddeley, 2010). This articulatory suppression prevents both subvocal rehearsal as well as phonological recoding (Gathercole & Baddeley, 1993). This shows that auditory and written input follow different pathways to make their way into the phonological store (Henry, 2012).

2.2.4 Episodic Buffer

Episodic buffer was added to the model about 25 years after the model's initial presentation (Baddeley, 2012). Baddeley (2000) introduced episodic buffer as the model's fourth component since the model was unable to explain how the different subsystems were able to collaborate and how LTM managed to connect with the information in those subsystems (as cited in Baddeley & Hitch, 2010). This component is termed episodic since it can support multidimensional information in the form of episodes, also known as chunks (Baddeley, 2012). It is called a buffer since it briefly stores the contents of the different subsytems and allows these contents to connect with content from LTM (Baddeley, 2010). Even though the coding systems of the contents from these various sources are different, they can still come together in the episodic buffer, making it multidimensional (Baddeley, 2009). Due to having a small capacity, episodic buffer can just support around four episodes at a time (Baddeley, 2012).

According to Baddeley et al. (2010), it was earlier thought that episodic buffer was actively involved in merging information of different types into chunks but after further research it was found to be rather passive with the purpose of storing

information in multiple codes. This merging process is believed to take place in perceptual system where tasks like combining various features of an object or connecting words to form sentences are performed (Baddeley et al., 2010). The different working memory subsystems, LTM and perception are all connected to episodic buffer so that a link can be formed between these various systems (Baddeley, 2009). In spite of input from these various sources having dissimilar systems of coding, episodic buffer, being multidimensional, can support all the information (Baddeley, 2010). After information obtained from these various sources come together in episodic buffer, it then reaches conscious awareness (Baddeley et al., 2010).

2.3 Previous Studies Regarding Working Memory

In a study conducted by Goolkasian and Foos (2002), recall of information presented in the form of pictures, auditory words and written words was compared. According to the results of the study, items were recognized and recalled better when they were presented in the form of pictures and auditory words while they were recognized and recalled the least when they were presented in the form of written words (Goolkasian & Foos, 2002). In another study conducted by Goolkasian and Foos (2005a), the affect of attention on the recall of information in the form of pictures, auditory words and written words was compared which showed that degarding and articulating the presented information enhances performance in the case of written words while degrading decreases performance and articulation produces no affect in the case of pictures and auditory words. These results indicate that written words require more attention in order to reach the level of performance produced in the case of auditory words and pictures (Goolkasian & Foos, 2005a).

In another study conducted by Lindner et al. (2009), participants took tests, one immediate and the other one delayed, which required them to recall information from a text after either reading that text or listening to the auditory form of that same text. According to the results, learners performed better on recalling tasks when they received visual input as compared to auditory input in immediate as well as delayed test which shows that recalling is easier when the information to be recalled is presented visually as compared to the auditory form.

Similarly, in a study conducted by Nakayama and Iwata (2012), the difference between comprehension of written and auditory form of the same input in the

participants' second langauge was investigated. According to the findings of the study, in comparison to auditory input, visual input is comprehended better. It is further suggested that it requires more effort to comprehend auditory input in the second language for it to be able to reach the reading comprehension level in that language.

Yang et al. (2015) conducted a study to find out the effect of using different modalities, for the purpose of receiving and recalling instructions, on performance of working memory. The experiment was conducted by providing instructions to the participants for performing a task with the instructions being given in either auditory form, written form or a silent demonstration form and, after performing the task, the participants had to repeat the instructions either orally or through enactment. According to the results of this experiment, the participants followed and recalled the instructions better when they received the instructions through demonstration in comparison to doing it verbally while recalling through enactment was better when it followed verbal instructions as compared to demonstrated instructions.

Auditory and visual stimuli have not only been compared by investigating their effect on performance in tasks such as comprehension, recall and so on, but their effect has also been investigated in these tasks when both these stimuli are received simultaneously. Bird and Williams (2002) investigated how recognition memory is affected by unimodal presentation in either text or auditory form and bimodal presentation using auditory and text form simultaneously. The study was carried out by assessing English speaking participants through memory tests for auditory ,written and non-words. The results obtained through these tests showed better word recognition for auditory as well as non-words when presentation was bimodal in comparison to unimodal presentation.

According to a study conducted by Goolkasian and Foos (2005b), information presented with the help of words in the auditory form in combination with either written words or pictures produces better recall as compared to information presented in a single format. On the other hand, when two different forms are used simultaneously with each form carrying different information, spoken words act as a stronger distractor as compared to pictures and written words.

In another study by Delogu et al. (2009), the recall of verbal input was compared to the recall of non-verbal input when these inputs were presented visually, auditorily

or both these forms simultaneously. According to the results of the study, non-verbal input was recalled better when it was presented in the auditory and visual form simultaneously, in comparison to just auditory or visual presentation. For verbal input, however, which consisted of words in the written and auditory form, recall was equally high when the input was presented in just the auditory form or in the audio-visual form while recall of words in both these forms was higher than words just presented in the visual (written) form.

Yang et al. (2015) carried out an experiment to find out the difference between the effect of using single and dual modality, for the purpose of receiving and recalling instructions, on performance of working memory. The experiment was conducted by providing instructions to the participants for performing a task with the instructions being given in either auditory form, a silent demonstration form or demonstration and auditory form simultaneously and, after performing the task, the participants had to repeat the instructions either orally or through enactment. According to the results of this experiment, the participants followed the instructions better and equally well after receiving instructions through demonstration and in dual-modality form as compared to only in auditory form while the participants performed better on the recalling task when verbal instructions were followed by repetition through enactment and demonstrated instructions were followed by verbal repetition.

Jaroslawska et al. (2016) investigated the role played by working memory abilities in following instructions on both real-life and virtual tasks was investigated. The study was conducted on schoolchildren by using standardized tests for measuring their working memory abilities while their ability to perform according to the provided instructions was measured through tasks performed in real-life and virtual setups which required them to perform actions by following oral instructions. The results of the study showed that students with better verbal working memory performed better on both real-life and virtual tasks since the instructions were oral while visual and spatial working memory had no association with their performance despite the actions involving visuals and spatial information.

Allen et al. (2020) investigated the difference between the influence of demonstration, oral instructions and self-enactment on recalling instructions. The study was conducted by providing participants with four different situations for performing a

task which involved oral instructions with and without self-enactment and silently demonstrated instructions with and without self-enactment and after receiving the instructions the participants had to then orally recall the intructions. The results of the study showed that demonstration and enactment proved to be highly advantageous and helpful for verbal recall which shows that visual, motor and spatial information aid in verbal recall but the advantage provided by self-enactment was observed only with oral instructions and it did not have an additive effect with demonstration hence the use of either one of them would be sufficient for better verbal recall.

2.4 Learning Styles

Along with the concept of working memory, another concept that has received immense attention is that of learning styles. Different individuals differ with regard to which way they favour when it comes to learning (Meyers, 2017). The particular way that a learner likes better when it comes to learning is called learning style (Pritchard, 2014). Learning style has no relationship with intelligence but is rather associated with how information is received or comprehended by a learner (Othman & Amiruddin, 2010) . A learner may have a single learning style or have two or even more style preferences (Pritchard, 2009). A person's learning style cannot be considered to be permanent, but it does remain rather stable (Fleming & Baume, 2006).

According to O'Brien (1989), awareness regarding one's own learning style is essential for students in order to learn better. Hence, it is important for educational institutes to provide awareness to their students regarding their learning styles and also make the teachers adapt their lessons and instructions to the learning styles of their students (O'Brien, 1989). If a instructor uses only one particular approach it may prove to be helpful for some learners while hampering the learning of others (Pritchard, 2009). Learning style differs in different individuals and an individual's learning style is like personality in that it is difficult to make changes to (Xu, 2011). Hence, the activities or strategies designed for teaching should be based on the learners' preferred styles of learning (Xu, 2011).

2.4.1 Learning Styles Models

For five decades, numerous models have been formed by different researchers with the goal to describe the various types of learning styles (Meyers, 2017). Developed in 1984, Kolb's model differentiates between learning styles based on

whether a learner relies on observation, logic and organization, practical application and reflection or practical application and instinct (as cited in Meyers, 2017). A similar model, developed in 1986 by Honey and Mumford, differentiates between learners as either being activists who prefer performing instead of simply reading and listening about something, reflectors who make observations and analyse them, theorists who build frameworks in order to relate their observations to each other or pragmatists who are concerned with finding new ideas and their practical implications (as cited in Pritchard, 2009).

Another learning styles model, developed in 1988 by Felder and Silverman, differentiates between learners on the basis of four different aspects (as cited in Graf et al., 2006). The first aspect categorizes learners as either sensing, who are practical, or intuitive, by whom theories and concepts are preferred (Pritchard, 2009). The second aspect categorizes learners as either active, who prefer experimenting, or reflectors, who think through rather than actually apply the information they are working with (Graf et al., 2006). Moreover, learners who are active are more social and work comfortably while being part of a group whereas reflectors like to work individually (Pritchard, 2009). The third aspect categorizes learners as either visual, who learn better through visuals, or verbal, who learn better through written or auditory texts (Graf et al. 2006). The fourth and final aspect categorizes learners as either sequential, who learn in a gradual and orderly way, or global, who learn better through a holistic and overall view (Pritchard, 2009).

Another model that classifies learners into their different types is that of Meyers and Briggs (Pritchard, 2014). According to this model, learning style of a person can be identified through the type of personality the individual has (Cherry, 2019). Personality types are identified with the help of four different scales with each scale consisting of two personality types between which individuals have to choose the one they prefer (Cherry, 2019). As a result, an individual ends up with a combination of four such preferences and this combination indicates the learning style of the individual (Pritchard, 2009). These scales can produce sixteen different combinations (Pritchard, 2014). Hence, a person can have any one of these sixteen learning styles (Cherry, 2019). The scales consist of extroverts and introverts, sensors and intuitors, thinkers and feelers, and judgers and perceivers (Pritchard, 2009).

Yet another approach towards describing learning styles is that of neuro-linguistic programming or NLP (Pritchard, 2014). It became popular after being developed in the 1970s by Bandler and Grinder (Kandola , 2017). The role of NLP is to find out how an individual's learning is affected by their way of communication (Pritchard, 2009). Hence, the learning style of individuals can be identified by observing their way of communication (Pritchard, 2014). Learning styles identified by NLP are visual, in which visuals are preferred, auditory, in which listening is preferred, and kinaesthetic, in which experiencing and doing everything by themselves is preferred (Pritchard, 2009). Later on, NLP was extended to form another learning styles model called VARK (Pritchard, 2009).

2.4.2 VARK Model

The VARK model was first proposed by Neil Fleming in 1987 (as cited in Cherry, 2019). This model is based on the idea of how learning requires the use of a learner's senses and how some learners may use one of the senses more often than the rest (Pritchard, 2009). Hence, learners may find it difficult to understand and learn certain information or content due to its mode of presentation (Fleming & Mills, 1992). According to Fleming and Baume (2006), although preferences for the mode of input are not permanent, they do remain rather stable. Matching modal preferences with learning strategies can lead to better understanding and higher motivation and hence better learning (Fleming & Baume, 2006). The VARK model describes four learning styles based on the sense a learner prefers to use more (Pritchard, 2014). These learning styles have been discussed below:

2.4.2.1 Visual

Visual learners are those learners who learn better when information is provided visually (Pritchard, 2009). Hence, tools such as diagrams, pictures, videos, graphs and illustrations work better for these learners (Pritchard, 2014).

2.4.2.2 Auditory

Learners who learn better through listening are called auditory learners (Pritchard, 2009). Such learners learn better through lectures, audio tapes, oral summaries, discussions and so on (Pritchard, 2014).

2.4.2.3 Read/write

Read/write learners learn better when information is in text form (Cherry, 2019). They prefer reading, taking notes and making presentations and lists (Cherry, 2019). VARK, unlike NLP, differentiates read/write learners from visual learners due to the observation that an individual may not necessarily prefer both of them together and usually shows preference for either one of them (Fleming & Baume, 2006). Read/write learners prefer written words whereas visual learners prefer information in the symbolic form (Fleming & Baume, 2006).

2.4.2.4 Kinaesthetic

Kinaesthetic learners are more active and practical and learn better by actually doing and experiencing things (Cherry, 2019). According to Fleming and Mills (1992) kinaesthetic learners learn better by practicing, whether it is through real experiences or through simulations. Since experiences cannot be restricted to only one mode, such type of learning may involve either or all of the five senses (Fleming & Mills, 1992). Hence, using examples to teach concepts can prove helpful for such learners even if only read/write or auditory mode is being used (Fleming & Mills, 1992). Other ways of learning which kinaesthetic learners prefer include physical interaction, touching objects, role play, gestures, movement, memorizing by repeatedly writing things, finger-point reading and so on (Hussain, 2017).

2.5 Previous Studies Regarding Learning Styles

A study conducted by Robertson et al. (2011) shows how students can improve their learning experience by having knowledge about their preferences regarding learning styles. The study was conducted by using three students, doing fieldwork, as participants and having them to reflect on and analyse their experiences during fieldwork after first identifying the learning style preferred by them with the help of VARK questionnaire. The analyses and feedback provided by the students showed that their learning was better when their strategies for learning were in accordance with their learning styles.

Another study, by Gholami and Bagheri (2013), was conducted on Iranian university students to find out whether sensory learning styles are linked with problem solving strategies, gender and academic major. The study was conducted with the help

of different questionnaires to gather information regarding the participants' learning styles, problem solving strategies, gender and academic major. The findings of the study revealed a lack of connection of sensory learning styles with the students' academic major and gender. On the other hand, sensory learning styles were found to be linked to problem solving strategies since students whose learning styles differed also used different problem solving strategies while students with a common learning style used similar problem solving strategies.

In a study by Wright and Stokes (2015), the influence of learning styles on achievements and overall learning experiences of economics students studying at an Australian university was investigated. The study was conducted by using VARK questionnaire along with two other questionnaires to collect data regarding the students' learning styles and evaluation regarding their course and learning experience, achievements and teaching strategies used by their teachers. According to the analysis of the data, learners learn better and achieve more if their learning styles are catered for by the approach adopted for teaching and learning since this will help in developing students' interest, skills and content relevance.

Sarabi-Asiabar, et al. (2015) conducted a study to find out the learning styles preferred by Iranian students studying medicine were identified using VARK questionnaire and the connection of those learning styles to the students' gender and their educational major was investigated. According to the findings of the study, all the participants with different majors were almost equally divided into those preferring a single mode of learning and those who were multimodal. Furthermore, among the students preferring a single mode, different students preferred different modes with auditory learning being more popular among females and kinaesthetic learning being more popular among the male students. These findings show that simply listening to lectures and reading are not equally beneficial for all the students, with some students requiring much more variety and hence learning styles should be identified and taken into account from the very beginning of their university education.

In an expriment conducted by Sintia et al. (2019), students studying the subject of impulse momentum were divided into two groups with experimental group receiving instructions in a way that matched their styles of learning and control group receiving instructions in a way that did not match their styles of learning. The students were then

tested and scored, the results of which showed that the performance of experimental group was better than the control group and this further shows that students learn better when instructions provided to them and their styles of learning are matched.

Md Zain et al. (2019) investigated the association of learning styles with the academic achievements of students studying at a Malaysian university. After collecting information through VARK questionnaire, it was found that none of the students were multimodal and all of them preferred only a single modality over the others, with kinaesthetic being the most popular learning style. Moreover, the high achievers were found to be mostly kinaesthetic while most of the low achievers were found to be read/write learners. This shows that a learner's learning style should be matched with their learning so as to achieve greater learning outcomes.

Some studies have also been conducted in which learning styles have been advocated even though the association between learning styles and learning outcomes have not been found to be significant in those studies. In a study conducted by Awang et al. (2017), the association between academic performance and preferred learning styles of Malaysian students studying business was investigated. According to the findings of the study, learning style of a learner is not significantly related to their academic performance since there are also some other factors that play a role in academic achievement but learning styles should still be kept under consideration while designing courses since they help in increasing learners' attention and motivation which in turn will have a positive effect on learning.

Similarly, Espinoza-Poves et al. (2019) conducted a study investigating the link between academic outcomes and learning style preferences of university students enrolled in different courses of business at professional schools. Although, association between the two variables was not found to be significant, the result still shows the importance of having knowledge regarding learning styles since majority of the students of a certain set of courses were found to have a certain learning style that dominated the other learning styles, with the dominant learning style matching the requirement of their training. For instance, majority of the general training students were kinaesthetiic learners, research training students were read/write learners while professional training students were multimodal learners which shows the importance of

using teaching strategies that are in accordance with the students' learning styles so that the students can become professionally competent.

There are also some studies, the findings of which are not in favour of learning styles and their association with actual learning performance. In a study conducted by Rogowsky et al. (2015), the learning styles of educated adults were tested and found to be either visual or auditory. After this, the participants were divided randomly into two groups with one group receiving input in the form of auditory texts and the other in the form of written texts and then asked to complete two comprehension tests, one immediately and one two weeks later. The results showed a lack of association between an individual's preference for a learning style and their actual performance when using different modes for receiving information.

Similar results were found by Leung et al. (2014) in a study investigating the effects of learning styles, gender and age on performance of the students of economics, who were mainly taught through lectures and visuals. The study was conducted by first identifying the students' learning styles, through VARK questionnaire, along with their gender and age and then using the students' final grades to find out the effects of these three factors on the students' learning. The results show that the microeconomics students' performance was affected by gender and age, with female and older students performing better, but not by learning styles. On the other hand, macroeconomics students' performance was not affected by gender or age but, with respect to learning styles, kinaesthetic learners performed better than the other type of learners. This shows that despite lectures and visuals being used, visual and auditory learners did not have a significant advantage over the students with other type of learning styles.

In another study by Aslaksen and Lorås (2019), university students having learning styles that were either auditory or visual were randomly provided with either auditory or visual input to test the association between their learning style and actual performance with respect to auditory or visual input. According to the findings of the study, there is no link between working memory and style of learning and hence matching these two does not necessarily produce better learning.

2.6 Bilingualism

"Bilinguals are those who use two or more languages . . . in their everyday lives" (Grosjean, 2010). Although there is a generally accepted definition of bilingualism,

there is little agreement on how proficient a bilingual needs to be in each language (Moradi, 2014). Instead, it is considered to be a continuum with two ends, with monolingual on one end and bilingual, with equal proficiency in the different languages used by them, on the other end (Moradi, 2014).

Bilinguals can be divided into two types based on the age at which the different languages are acquired (Goodman, 2007). The first type is simultaneous bilingualism in which two languages are acquired concurrently (Ray-Subramanian, 2011). The second type is sequential bilingualism in which one language is learnt later than the other (Goodman, 2007). Other than the age, bilinguals can differ on the bases of proficiency in each language, functions for which each language is used and the amount of time spent using each language (Li et al., 2006). In order to get this information, researchers are required to make use of a language history questionnaire when conducting a research involving bilingualism (Li et al., 2006). Due to the increase in bilingualism throughout the world, there has also been an increase in research studies focusing on bilingualism (Byers-Heinlein & Lew-Williams, 2013). Hence, along with monolinguals, the working memory and learning styles of bilinguals have also been studied.

In a study conducted by Ibrahim (2008), the difference in the performance of native speakers of Arabic language in word identification task of written and spoken words in their first language (Arabic) and second language (Hebrew) was investigated by measuring their error rates and response time. According to the findings of the study, the participants performed better in their first language (Arabic) when they had to identify spoken words and they performed better in their second language (Hebrew) when they had to identify written words. The reason for this difference was found in the language history of the participants according to which their exposure to and the use of these two languages resulted in such language processing abilities. This shows that the performance of bilinguals in their first and second language when using auditory and visual modalities is a result of their exposure, experience and use of both their languages.

Kaushanskaya and Marian (2009) studied the difference in the abilities of monolinguals and bilinguals to learn artificially created words. The study included an equal number of monolinguals and bilinguals with the monolinguals being users of

English and the bilinguals being users of Spanish in addition to English. The words to be learned by the participants were novel but were similar to English in terms of orthography while being different in terms of phonology. The participants were, in one case, provided with words in the auditory form along with their written translations in English and in another case they were provided with words in the auditory form along with the written translations and the written form of the words themselves. The participants were then tested immediately and after a week to find out the number of words they had learned. According to the results of the study, bilinguals performed better than the monolinguals at learning new words in the case of both auditorily presented words and bimodally presented words. The study suggests that the reason behind these results is phonological interference that takes place in the case of monolinguals but not bilinguals.

Küntay et al. (2014) conducted a study to investigate how bilingualism affects WM. The study required WM tasks to be performed by monolingual participants who only used Dutch and bilingual participants who used Turkish in addition to Dutch language. The results showed that bilinguals were better at performing WM tasks than monolinguals and these results, when compared to the results from previous studies, further showed that this cognitive advantage developed by bilinguals increases with increase in bilingual proficiency.

According to Macedonia (2015), language shapes the brain anatomy and its function depending on how many languages are learned/used and to what extent and for what funtions they are used. For this reason, the brain anatomy and hence the learning performance of monolinguals and bilinguals is different. The WM performance of monolinguals and bilinguals differs due to bilinguals having to constantly switch between their two languages for different functions. The WM performance of bilinguals also depends on whether or not they are highly proficient in their second language.

A study by Yang (2017) investigated the WM difference between three dissimilar language groups consisting of near-monolingual Koreans, intermediate Korean-English bilinguals and high Korean-English bilinguals. The study required the participants from all three groups to memorize a sequence of visual and auditory digits. According to the findings of the study, the difference between the performance of high bilinguals and near-monolinguals was not significant while both these groups were

outperformed by intermediate bilinguals by a large difference. These findings showed that the auditory and visual memory maintenance in intermediate bilinguals is higher than the high bilingual and near-monolingual groups. The reason behind this difference is not the possible difference in the IQ levels of individuals from these groups but rather from the different use of the second language by intermediate bilinguals due to which they are required to hold the incoming information in their second language while it is being decoded.

Boerma et al. (2017) also investigated how being bilingual affected WM performance. The study was conducted on four groups of participants from Netherlands with one group containing monolinguals and the rest of the three containing bilinguals. Moreover, each group containing bilinguals had a different second language with all three second languages being used by the country's minorities. The participants were given four tasks to test their WM performance and the resulting scores showed that the performance of bilinguals and monolinguals was not significantly different on tasks that involved verbal, visual and spatial information while the performance of bilinguals was better on tasks involving attention. Furthermore, it was found that, among the bilinguals, one group performed lower than the two other groups since both the languages used by that group were often mixed together and used for similar functions. According to these findings, bilingual advantage on tasks involving attention increases with increased seperation between both the languages.

Another study conducted by Lukasik, et al. (2018), investigated the relationship between WM and bilingualism by comparing three groups. Two of the groups consisted of bilinguals, one early and the other late bilinguals, while the third one consisted of monolinguals. The participants were tested on numerous WM tasks in order to compare their performances. The results showed that the groups' performances did not differ on tasks that were verbal and visuospatial while the late bilinguals performed better than the other two groups on n-back task. This study is of the view that the bilingual advantage may not be present in every aspect of WM.

Studies regarding learning styles have also been extended to bilinguals. Mulalic et al. (2009) conducted a study using participants with three different ethnicities studying ESL. The study was conducted to find out the difference in learning styles of the students who belong to different countries and hence have different first languages. PLSPQ was used to find out the learning styles of the participants. According to the

results of the study, the dominant styles of learning were visual and auditory for the Indian participants and kinesthetic for Malay as well as Chinese participants. Moreover, the Indian participants preferred to learn individually while Malay as well as Chinese participants preferred to learn in groups. The study further stated that students not only have different styles of learning, but their learning styles also have an impact on the students' performance. Hence, not only the students but also their teachers should be aware of the students' styles of learning. This is so that not only their learning can be improved by using their dominant style but to also make them more flexible learners by helping them get better at using their less preferred styles of learning.

Tight (2010) investigated the association between learning style and acquisition of second language vocabulary. According to the findings of the study, vocabulary in second language is acquired better using multimodal input and these vocabulary items are also acquired better when learning styles are matched with the mode of acquisition in comparison to when the mode of acquisition is different than the preferred learning style. This study shows that the preferred modality and the modality through which the learners perform better is the same for the learners' first and second language.

Another study by Emamipour and Esfandabad (2010) investigated the difference in the learning styles of monolingual and bilingual students. The study consisted of monolingual users of Persian and bilingual users of Turkish and Persian language. The study used an inventory designed by Felder and Solomon to find out the learning styles of the students. According to the results of the study, learning styles of the monolingual and bilingual participants were different with majority of the bilinguals being verbal learners and majority of the monolinguals being visual learners. Moreover, bilinguals were found to be sensitive while monolinguals were more intuitive.

In a study by Moenikia and Zahed-Babelan (2010), the learning styles of Iranian university students and their performances in using different language skills in English were compared. All the participants in the study were learners of English as a second language. According to the results of the study, the scores of the participants in different language skills differed between participants whose learning styles were different. Verbal learners were found to be better at speaking and writing, social learners were found to be better at structure while learners having both of these learning styles were found to be better at reading in comparison to other learners. Based on these results, the

study suggested that learning styles of the students should be kept in mind while designing programs for language learning.

A similar study conducted by Zhang and Evans (2013) compared the learning styles and proficiency in English of Chinese learners of English in order to find a link between the two. According to the results of the study, learners have different preferences when it comes to learning styles and matching those learning styles with teaching methods improves learning. Hence, learners' style preferences should be taken into account when designing classroom activities and assignments for learners of a second language. These style preferences are influenced by the learners' gender, their age and specialization in different fields.

Far et al. (2017) conducted a study in which the learning styles of monolingual and two types of bilingual students of EFL from Iran were compared. The comparison was made on the bases of age, marital status, gender and parents' language. Among the two types of bilinguals, one type was of those bilinguals whose both parents had the same mother-tongue and the other type was of those bilinguals whose parents had two different mother-tongues. Using a modified version of ILS, a questionnaire designed by Silverman (1988) to assess learning style preferences, learning styles of the participants are identified and compared. According to the results, the impact of age, marital status and gender on learning styles was found to be insignificant. On the other hand, participants with the same maternal or paternal language had similar learning styles. This effect was also found in the case of monolinguals depending on whether the language used by them matched the maternal or paternal language of the other participants.

Some studies, based on the concept of bilingualism and learning styles, have found differences in the learning styles of different individuals but have failed find any significant connection between their learning styles and academic performance. In a study conducted by Esfandabad and Emamipour (2008), the learning styles of students of Iranian middleschools are identified in order to find out how the learning styles of monolingual students differ from bilingual students. Furthermore, the study aimed at investigating the link between learning styles and academic performance of the students. Results were obtained using a questionnaire designed by Felder and Solomon. According to the results, monolinguals were mostly visual and intuitional learners while

bilinguals were mostly verbal and sensational learners. On the other hand, the study failed to find a link between learning styles and academic performance of the students.

Ababneh (2015) conducted a study to investigate whether the learning styles of students from Jordan had any relation with their performance in English language or not, with English being a foreign language. According to the results of the study, the learning styles of the participants were different from each other but the relation between their learning styles and performance in English was not found to be significant. Based on these results, the study suggested that despite this insignificant relationship, the learning styles preferred by the students should be used by them for learning and that on learning style cannot be suitable for every learner.

The studies discussed above have come up with a number of important findings. First, a number of studies have concluded that learning style preferences and the modalities in which learners (especially bilinguals) perform better are a result of their language background and experiences (Zhang & Evans, 2013; Ibrahim, 2008; Macedonia, 2015; Yang, 2017). Some studies have also shown that learning style or modality preference is learner-specific rather than being language specific and hence the same learning style will apply to both the langauges of a bilingual (Tight, 2010). It is also believed that since these modality preferences and the better performance in one modality rather than the other remains fairly stable, if not fixed, for the learners, these modalities should be used when designing strategies and activities for the learners (O'Brien, 1989; Othman & Amiruddin, 2010; Xu, 2011; Tight, 2010; Zhang & Evans, 2013).

Despite the results of such studies, the association of learning style preferences with the learners' actual performance when using different modalities is still questioned. A number of studies have managed to show this lack of association (e.g., Rogowsky et al., 2015; Aslaksen & Lorås, 2019). The contradictory findings of these studies show that there is a need for further research to be conducted on bilinguals regarding the modality (including bimodality) in which they learn and perform better in the different languages used by them, keeping in view their language background and experiences. Moreover, whether there is a link between learners' learning style preference and the modality in which they learn better or not (especially in the case of

bilinguals who use two or more languages) needs to be explored further. Also, in the case of such studies, Urdu-English bilinguals have not been paid much attention.

Hence, the present study intends to explore the performance of Urdu-English bilinguals on comprehension and retention tasks using the two modalities (i.e., auditory and visual), separately as well as simultaneously, in Urdu and English languages. Furthermore, the present study is concerned with whether there is an association between the learning style (i.e., auditory and read/write) of Urdu-English bilinguals and the modality through which bilingual learners perform better on comprehension and retention tasks in Urdu and English languages.

2.7 Chapter Summary

This chapter provides the literature review for the present study. It discusses the models of WM and learning styles as well as the concept of bilingualism. Each discussion has been followed by an overview of the previous studies that revolve around relevant concepts. The chapter concludes with an overall discussion of the studies discussed in the chapter along with the gap that the present study aims to fill.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter provides research methodology for the present study. It includes the research design for the study. Moreover, it provides details regarding the sample of the study, the sampling technique and the research tools used to carry out the research. Furthermore, it discusses the overall procedure through which the study has been carried out. Lastly, the theoretical framework of the study is discussed.

3.1 Research Design

The present study uses a quantitative approach. The data has been collected through questionnaires along with comprehension and retention tests which have then been analyzed in numerical form and the analyzed data has also been interpreted. Furthermore, the present study is experimental as the participants in the study have been tested on comprehension and retention tasks by providing them with input in different modalities (i.e., auditory, visual and bimodal) in two different languages (i.e., Urdu and English).

The present study is exploratory in nature since it aims to find out whether the preferred modality of Urdu-English bilinguals for learning is the same or different than the modality through which the learners perform better on comprehension and retention tasks. The present study further explores whether the modality through which Urdu-English bilinguals perform better on retention and comprehension tasks is the same or different for Urdu and English language. Next, the present study aims to describe with the help of numerical data the nature of the link between Urdu-English bilinguals' learning style preference and their actual performance on comprehension and retention tasks in Urdu and English language. Finally, the study explains how different modalities can have different effects on comprehension and retention of provided input and how these effects may differ for the two languages. The present study is comparative in nature as it compares the two languages used by Urdu-English bilinguals in terms of the modality in which the bilinguals perform better on comprehension and retention tasks in each of these languages.

3.2 Theoretical Framework

A theoretical framework acts as a link between formal theories and the study that is using those theories as a guide by relating the two in a structured way (Ravitch & Carl, 2016). The theoretical framework for the present study includes two models, both of which are concerned with modality. One of the two models is VARK. This model differentiates between different learning styles based on different modalities (Pritchard, 2014). The other model is that of working memory. According to this model, information in different modalities is handled by different subsystems (Baddeley & Hitch, 2010).

3.2.1 VARK

VARK model, developed by Neil Fleming in 1987, is one of the concepts used in the present study. According to this model, individual learners have their own preferred modalities for learning, and they learn better when they use their preferred modalities as compared to the other modalities (Fleming & Mills, 1992). Hence, learners may find it difficult to understand and learn certain information or content due to its mode of presentation (Fleming & Mills, 1992). Matching modal preferences with learning strategies can lead to better understanding and higher motivation and hence better learning (Fleming & Baume, 2006).

These preferred modalities are called learning styles and they can be divided into four basic categories which are visual learning, auditory learning, learning through reading/writing and kinesthetic learning (Pritchard, 2014). Visual learners are those learners who learn better when information is provided visually (Pritchard, 2009). Learners who learn better through listening are called auditory learners (Pritchard, 2009). Read/write learners learn better when information is in text form (Cherry, 2019). Kinaesthetic learners are more active and practical and learn better by actually doing and experiencing things (Cherry, 2019).

VARK questionnaire consists of questions that make use of practical examples to help identify an individual's preference for a certain modality (Fleming & Baume, 2006). VARK differentiates read/write learners from visual learners (having preference for pictures, graphs, diagrams, etc.) due to the observation that an individual may not necessarily prefer both of them together and usually shows preference for either one of

them (Fleming & Baume, 2006). Since the present study is only concerned with written and auditory input, only auditory and read/write learning styles have been included.

3.2.2 Working Memory

The second model used in the present study is the model of working memory (WM). The model of WM was first developed by Baddeley and Hitch in 1974 and is defined as a system of memory in which information is temporarily stored and manipulated (Baddeley & Hitch, 2010). WM is not simply a single storage unit but rather consists of four different components with each component having a different function (Young, 2019). These different components work together in order to store as well as manipulate information (Baddeley & Hitch, 2010).

Among the WM components are two subsystems which are named phonological loop and visuospatial sketchpad (Baddeley & Hitch, 2010). Phonological loop has the responsibility to briefly store as well as manipulate auditory input (Baddeley, 2009). It further involves two components (Baddeley & Hitch, 2010). One component is called phonological store that retains speech-like information for no more than two seconds (Baddeley, 2010). This information is prevented from fading with the help of another component (Henry, 2012). This second component is an articulatory system that allows subvocal rehearsal and this subvocal rehearsal may as well be turned into overt speech (Baddeley et al., 1998). To keep from fading, this information moves back and forth between the store and articulatory system in the form of a loop (Henry, 2012)

Visuospatial sketchpad has the responsibility to manipulate visuals as well as spatial details and briefly store this information (Baddeley, 2009). Visuals mean the appearance of something or someone while spatial means where an object or the person themself is present in a given space (McLeod, 2012). When it comes to language, written input is visually analyzed and briefly stored in visuospatial sketchpad (Baddeley, 2010). Experiments regarding the speed at which written letters are processed show that after a letter becomes visible it is retained for just two seconds after which it is followed by its phonological form (Baddeley, 2012). After being visually analyzed, written input moves on to the articulatory system so as to be changed into its phonological form through subvocal speech (Baddeley et al., 1998). Phonological store takes in information in two ways, one being optional and the other obligatory (Henry, 2012). Auditory input takes the obligatory pathway since

phonological store lets it in directly while written input takes the optional pathway since it requires to go through the articulatory system, so as to be changed into its phonological form, prior to making its way into the store (Henry, 2012).

Another component, called the central executive, is considered to have the highest importance among these components due to its role as the main controller of the entire system of WM (McLeod, 2012). Central executive has the responsibility of processing information instead of storing it (Baddeley & Hitch, 2010). It is in charge of making decisions regarding which among the information it receives is to be paid attention to, while the rest is ignored, and which component will be next to receive that information (McLeod, 2012). Furthermore, it also has access to the information stored in LTM (Baddeley & Hitch, 2010). Lastly, episodic buffer, the fourth component, is connected to the different working memory subsystems, LTM and perception so that a link can be formed between these various systems (Baddeley, 2009). After information obtained from these various sources come together in episodic buffer, it then reaches conscious awareness (Baddeley et al., 2010).

According to this model, auditory and written input follow different pathways to make their way into the phonological store (Henry, 2012). This shows that these two modalities are handled differently in WM.

The two models used for the present study are both concerned with modality. The VARK model is concerned with how different learners prefer different modalities for receiving information (Fleming & Baume, 2006) and the model of WM is concerned with how the two modes, auditory and visual, are processed in two separate subsystems (Baddeley & Hitch, 2010). Based on the concept of WM, numerous studies have been conducted to show how individuals or learners may perform better when using one modality instead of the other and to show whether bimodal information improves their performance or not. Similarly, according to the VARK model, learners learn better when they receive information in their preferred modality as compared to the other modalities (Fleming & Baume, 2006).

The present study deals with not only two modalities i.e., auditory and visual, but also two languages i.e., Urdu and English. This is to see whether the impact of the different modalities on the participants' learning is similar or different for the two languages. The present study is concerned with whether the performance of Urdu-

English bilinguals on comprehension and retention tasks using the two modalities i.e., auditory and visual, separately as well as simultaneously, in Urdu and English language, is the same or different. Furthermore, the present study is concerned with whether the preferred modality of Urdu-English bilinguals, according to the VARK questionnaire, is the same as the modality through which learners perform better on comprehension and retention tasks in Urdu and English language or not.

3.3 Psycholinguistic Experimental Research

In experimental research, participants are studied under different conditions while those conditions are under the control of the researcher (Bhattacherjee, 2012). These different conditions are compared with regard to how they affect the phenomena that is being investigated (Vorwerg, 2012). In psycholinguistics, psychological processes responsible for allowing a human to learn and use a language are investigated (Ratner & Gleason, 2004). In the case of psycholinguistic experimental research, conditions are varied for the purpose of finding out how these conditions affect processing of language (Vorwerg, 2012).

3.4 Variables

"Experiments study the effects of one variable on another" (Vorwerg, 2012, p. 363). Variables that a researcher is able to manipulate are known as independent variables while the variables in which changes occur because of independent variables are termed as dependent variables. It is also possible to have multiple variables in a study (Harland, 2011). The aim of the present study is to find out the effect of modalities, i.e, auditory, visual and bimodal, on the scores of Urdu-English bilinguals on comprehension and retention tests in Urdu and English language. Hence, modality in which the linguistic input is provided to the participants is the independent variable and test scores (performance) on comprehension and retention tests is the dependent variable in the present study.

3.5 Tools

Every research requires a certain amount and type of data and that data is collected with the help of research tools (Pandey & Pandey, 2015). It is important to use research tools that are appropriate for the type of data to be collected (Bhattacherjee, 2012). The tools used for the collection of data for the present study consist of tests and questionnaires.

3.5.1 Placement Tests

The purpose of using placement tests is to find out how proficient the students are to ensure that the content provided to them is appropriate for their level (Al-Adawi & Al-Balushi, 2016). Two placement tests have been used in the present study, one for English language and the other for Urdu language. The test used for checking the proficiency of the participants in English language is a professionally designed test developed by National Geographic Learning for assisting the providers of courses with placing the students according to their levels of proficiency (Outcomes placement test, n.d.). The test used for checking the proficiency of the participants in Urdu language is an adapted version of a chapter from a textbook designed for students moving on to the secondary level (Abdul Qayyum et al., 2012). The results of these tests were used to select the level of the passages that were to be used to test the comprehension and retention of the participants in both English and Urdu language.

3.5.2 Language History Questionnaire

Despite extensive research, there is little clarity and consistency in relation to how bilinguals can be defined and classified with regard to how proficient they are in the different languages they use, the age at which those languages are acquired and the functions for which they use those languages (Marian, 2008). Hence, language history questionnaires (LHQ) are commonly used in studies involving bilingualism so as to get information regarding those factors since any of those factors may have an influence on the results of such studies (Li, Sepanski, & Zhao, 2006). In the present study, LHQ3 has been adapted and used which is the third version of a questionnaire designed to assess a bilingual's language background, proficiency and functions and also to find out which language of the user is more dominant than the others (Li , Zhang, et al., 2019). LHQ3 is a result of improvements and modifications made to the second version, based on the feedback received for it, which includes the different modes of each language being weighted separately (Li , Zhang , et al., 2019). Hence, an adapted form of LHQ3 is suitable for use for the present study.

3.5.3 VARK Questionnaire

VARK questionnaire helps its users identify the mode(s) preferred by them for learning (Fleming & Baume, 2006). An adapted version of VARK questionnaire has been used in the present study. Since the present study is only concerned with read/write

and aural style of learning, the questionnaire has been adapted to ask questions regarding only these two learning styles while excluding visual and kinesthetic styles.

3.5.4 Comprehension Tests

3.5.4.1 English Comprehension

Comprehension passages and worksheets from ereadingworksheets.com, which provides free material for practicing reading and writing skills for different levels of learners (ereadingworksheets.com, n.d.), have been used in the present study in order to test the participants' comprehension in different modalities. This particular source was chosen because the comprehension passages provided by this source were suitable for the present study in terms of length and topics of the passages and the type (i.e., multiple choice) and number of questions following those passages. A pilot study was conducted prior to the data collection of the present study to establish reliability of these comprehension passages. Since participants of the present study belonged to different fields of study, the selected passages were such that their topics were general (e.g., seat belts, TV, hummingbirds, etc.) and did not require knowledge related to a particular field of study.

3.5.4.2 Urdu Comprehension

Comprehension passages and their subsequent questions (adapted) from the textbook "Safina Urdu" (Abdul Qayyum et al., 2012) have been used in the present study in order to test the participants' comprehension in different modalities in Urdu language.

3.5.5 Retention tests

Words from the Urdu and English passages, which have been used to test the participants' comprehension, have been selected to test the participants' ability to retain information.

3.6 Sampling

Sampling is a procedure through which a small part of a larger population is selected that can be used to represent the whole population (Pandey & Pandey, 2015). This procedure was carried out through the following steps:

3.6.1 Population

A population is a group consisting of all the items or individuals that have characteristics aimed to be studied by the researcher (Bhattacherjee, 2012). The population for the present study consists of educated Pakistani learners who are Urdu-English bilinguals, i.e., who are fairly proficient in both Urdu and English languages. The present study is not concerned with the field of study of the participants.

3.6.2 Sample

Since it is not usually possible to use the whole population in a study, researchers use only a sample that represents the whole population (Majid, 2018). A sample is a small part of a larger population that is used to represent the whole population (Pandey & Pandey, 2015). The sample for the present study comprises of 39 Urdu-English bilingual learners. The participants were selected from among the English Diploma students at NUML, Islamabad.

3.6.3 Sampling technique

The sample was selected from NUML, Islamabad. NUML was chosen through convenience sampling. The selection of a sample from the population due to its easy accessibility is known as convenience sampling (Kothari, 2004). Students of English Diploma were chosen as participants for the present study through purposive sampling since the participants were required to be learners with at least some level of proficiency in not only Urdu but also English language. In purposive sampling, the participants are intentionally chosen as the sample for a study on the basis of a certain quality that they have (Etikan et al., 2016).

3.7 Procedure

3.7.1 Questionnaires

The participants were first given an LHQ to find out their language background. The participants were then given the VARK questionnaire to find out their preferred learning styles between read/write, auditory and bimodal learning style.

3.7.2 Placement tests

After the questionnaires, the participants were given English and Urdu placement tests to find out how proficient they are in both the languages. The results of

those tests were then used to select the level of the English and Urdu passages that were to be used next for testing the participants comprehension and retention abilities.

3.7.3 English and Urdu Comprehension tests

A total of fifteen passages in English language in different modalities were used to test the comprehension of the participants in English language. Five of those passages were in the visual (written) form, five in the auditory form and the other five in the bimodal form. First, the participants were given the written passages, one at a time, which they had to read silently. After each passage, the participants had to answer ten comprehension questions, related to the passage, without being able to look through the passage again. The second set of passages provided to the participants was in the auditory form. The participants had to listen to the passages without being able to see the passages in their written form. Each passage was followed by ten comprehension questions, related to the passage, without being able to listen to the passage again. The third set of passages provided to the participants was in the bimodal form i.e., the participants were provided with both the written and auditory form of the passages, simultaneously. Hence, the participants listened to the auditory form of the passages while being able to look at their written forms. After each passage, the participants had to answer ten comprehension questions, related to the passage, without being able to listen to or read the passage again.

The same procedure was repeated for testing the comprehension of the participants in Urdu language. A total of fifteen passages in Urdu language in different modalities were used. Five of those passages were in the visual (written) form, five in the auditory form and the other five in the bimodal form. In the case of written passages, the participants silently read the passages, in case of auditory passages the participants only listened to the passages, while in the case of bimodal passages, the participants listened to and read the passages simultaneously. After each passage, the participants had to answer ten comprehension questions, related to the passage, without being able to look through or listen to the passages again.

All the comprehension questions in both English and Urdu language, no matter what the modality of the passages, were in written form. Moreover, all the comprehension questions were multiple choice i.e., each question was followed by options to choose from. The audio for the auditory and bimodal passages were played

on a large screen while the screen was blank. Furthermore, the audio for the auditory and bimodal passages were recorded in the same voice in order to keep the pitch and reading speed constant throughout the different audio recordings. The written form of the passages in the case of written and bimodal passages was provided to the participants the form of handouts.

3.7.4 Retention test

Words from within the English and Urdu passages were used to test the ability of the participants to retain information. Just as the passages, the words were provided in different modalities in order to test the abilities of the participants to retain information when that information is presented in different modalities. Hence, the words were provided in visual (written) form, auditory form and bimodal form.

Words in the visual (written) form were selected from the reading passages. Ten words were chosen from each passage which were used to test the retention of the participants after the participants were done answering the comprehension questions for that passage. For this test, participants were shown the words in the written form, one by one, through power point slides on a large screen. Each word was shown for same time duration i.e., two seconds. After the display of all ten words, the participants were then asked to write down as many of those words as they could remember.

Words in the auditory form were selected from the auditory passages. Ten words were chosen from each passage which were used to test the retention of the participants after the participants were done answering the comprehension questions for that passage. For this test, participants listened to the words without any written form, one by one, through power point slides on a large screen, with the screen being blank. The time interval between the words was one second. After listening to all ten words, the participants were then asked to write down as many of those words as they could remember.

Words in the bimodal form were selected from the bimodal passages. Ten words were chosen from each passage which were used to test the retention of the participants after the participants were done answering the comprehension questions for that passage. For this test, participants were shown words in the written form, one by one, through power point slides on a large screen with each word being accompanied by its auditory form. The time interval between the words was one second. After the display

of all ten words, the participants were then asked to write down as many of those words as they could remember.

No matter what the modality of the passages, the recall of the retained words by the participants was carried out in the written form. The participants were not allowed to write anything while the words were being played or displayed.

3.7.5 Data Analysis

The VARK questionnaires filled by the participants were scored and converted into percentages in order to find out the extent to which each participant preferred the different modalities i.e. auditory and read/write. These percentages were then tabulated separately for each participant. Moreover, the age at which each of the language skills were started to be used by the participants have also been tabulated separately for each participant.

In order to compare the overall performance of each participant in the different modalities, the mean scores of the participants in the different modalities were calculated and converted into percentages. These percentages have been presented graphically using bar graphs. The percentage mean scores in different modalities for both comprehension and retention tests have been presented on a single bar graph for each participant.

The different modalities along with the percentage of participants preferring them have also been presented graphically using bar graphs. Moreover, a comparison between the modalities in which the participants performed better in English and Urdu language on comprehension and retention tasks has also been presented in the form of tables.

Data regarding the participants' language history and the results obtained from the VARK questionnaire and comprehension and retention tests have not only been tabulated or represented through graphs but have also been interpreted through words.

3.8 Chapter Summary

This chapter provides research methodology for the present study. It includes the research design for the study. Moreover, it provides details regarding the sample of the study, the sampling technique and the research tools used to carry out the research.

Furthermore, it discussed the overall procedure through which the study has been carried out. Lastly, the theoretical framework of the study was discussed.

CHAPTER 4

DATA ANALYSIS

This chapter provides the data analysis for the present study. First, the data received from each participant is analyzed and presented separately in the form of tables and graphs which have also been interpreted. This is followed by the results section in which the overall results of the study are presented in the form of tables and graphs along with an interpretation of them. The chapter concludes with a detailed discussion of the results obtained from the study.

4.1 Presentation of the Data

4.1.1 Participant 1

4.1.1.1 Language background

Table 1

Age at which Language Skills were Started to be Used by Participant 1

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 3	At age 3	At age 3	At age 3	19
English	At age 6	At age 6	At age 6	At age 6	16

Table 1 shows that the participant started to learn Urdu language at the age of 3 years while English language was started to be learned at the age of 6 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 2

Learning Style Preference of Participant 1

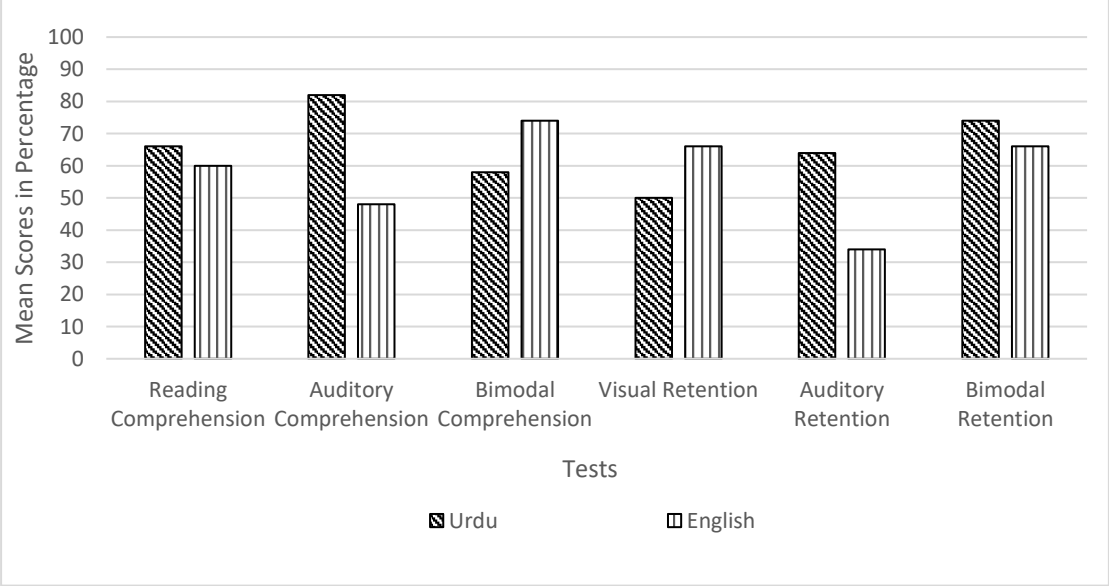
Learning style	Percentage
Auditory	88%
Read/write	12%

Table 2 shows that the participant's preference for auditory learning is 88% and for read/write learning it is 12%. A large difference between the two percentages makes the participant an auditory learner.

4.1.1.2 Urdu and English comprehension and retention:

Figure 1

Scores of Participant 1 on Comprehension and Retention Tests in Urdu and English



According to figure 1, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 82%), has scored the second highest on reading comprehension tests (with mean percentage score of 66%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 58%). Moreover, the participant has scored the highest on bimodal retention tests (with mean percentage score of 74%), has scored the second highest on auditory retention tests (with mean percentage score of 64%) and has scored the lowest on visual retention tests (with the mean percentage score of 50%). In the case of English

language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 74%), has scored the second highest on reading comprehension tests (with mean percentage score of 60%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 48%). Furthermore, the participant has scored the highest on bimodal and visual retention tests (with mean percentage score of 66%) and has scored the lowest on auditory retention tests (with mean percentage score of 34%).

4.1.2 Participant 2

4.1.2.1 Language background:

Table 3

Age at which Language Skills were Started to be Used by Participant 2

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 10	At age 11	At age 11	At age 12	14
English	At age 12	At age 18	At age 13	At age 17	12

Table 3 shows that the participant started to learn Urdu language at the age of 10 years while English language was started to be learned at the age of 12 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 4

Learning Style Preference of Participant 2

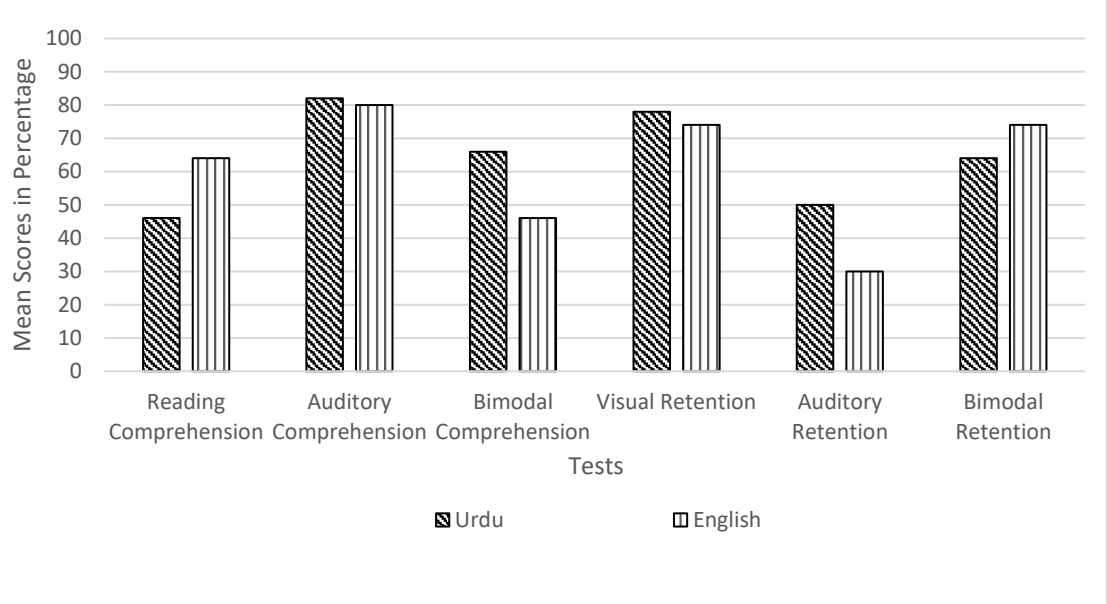
Learning style	Percentage
Auditory	69%
Read/write	31%

Table 4 shows that the participant's preference for auditory learning is 69% and for read/write learning it is 31%. A large difference between the two percentages makes the participant an auditory learner.

4.1.2.2 Urdu and English comprehension and retention:

Figure 2

Scores of Participant 2 on Comprehension and Retention Tests in Urdu and English



According to figure 2, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 82%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 66%) and has scored the lowest on reading comprehension tests (with mean percentage score of 46%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 78%), has scored the second highest on bimodal retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 50%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 80%), has scored the second highest on reading comprehension tests (with mean percentage score of 64%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 46%). Furthermore, the participant has scored the highest on both bimodal and visual retention tests (with

mean percentage score of 74%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.3 Participant 3

4.1.3.1 Language background

Table 5

Age at which Language Skills were Started to be Used by Participant 3

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 4	At age 6	At age 6	At age 6	18
English	At age 5	At age 6	At age 6	At age 5	17

Table 5 shows that the participant started to learn Urdu language at the age of 4 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 6

Learning Style Preference of Participant 3

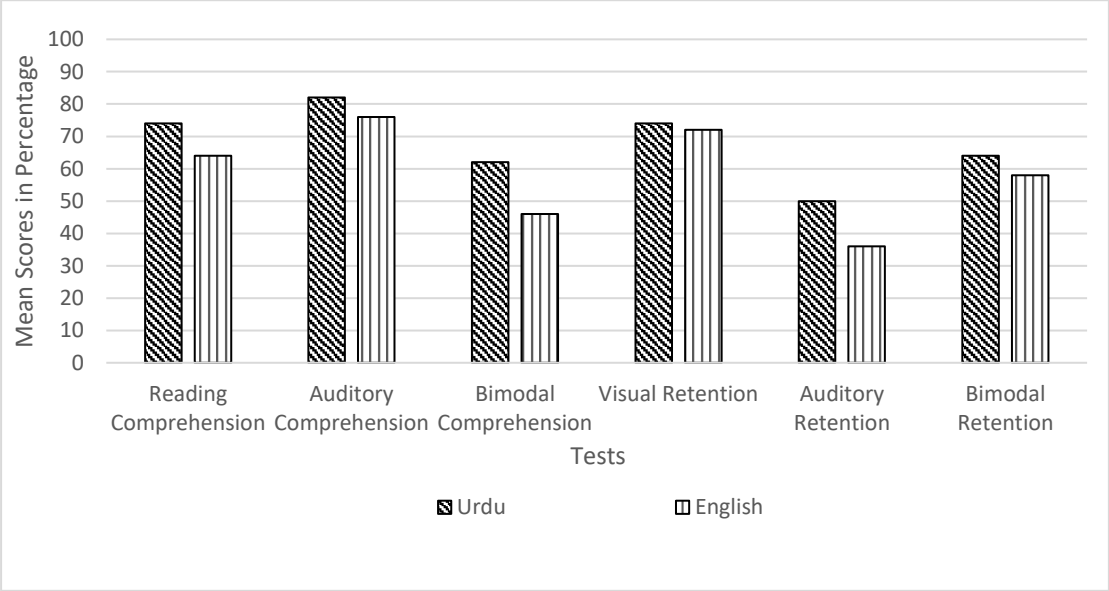
Learning style	Percentage
Auditory	63%
Read/write	37%

Table 6 shows that the participant's preference for auditory learning is 63% and for read/write learning it is 37%. A large difference between the two percentages makes the participant an auditory learner.

4.1.3.2 Urdu and English comprehension and retention:

Figure 3

Scores of Participant 3 on Comprehension and Retention Tests in Urdu and English



According to figure 3, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 82%), has scored the second highest on reading comprehension tests (with mean percentage score of 74%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 74%), has scored the second highest on bimodal retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 50%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 76%), has scored the second highest on reading comprehension tests (with mean percentage score of 64%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 46%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 72%), has scored the second highest on bimodal retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%).

4.1.4 Participant 4

4.1.4.1 Language background

Table 7

Age at which Language Skills were Started to be Used by Participant 4

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6 months	At age 1	At age 3	At age 3	18
English	At age 3	At age 3	At age 3	At age 3	15

Table 7 shows that the participant started to learn Urdu language at the age of 6 months while English language was started to be learned at the age of 3 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 8

Learning Style Preference of Participant 4

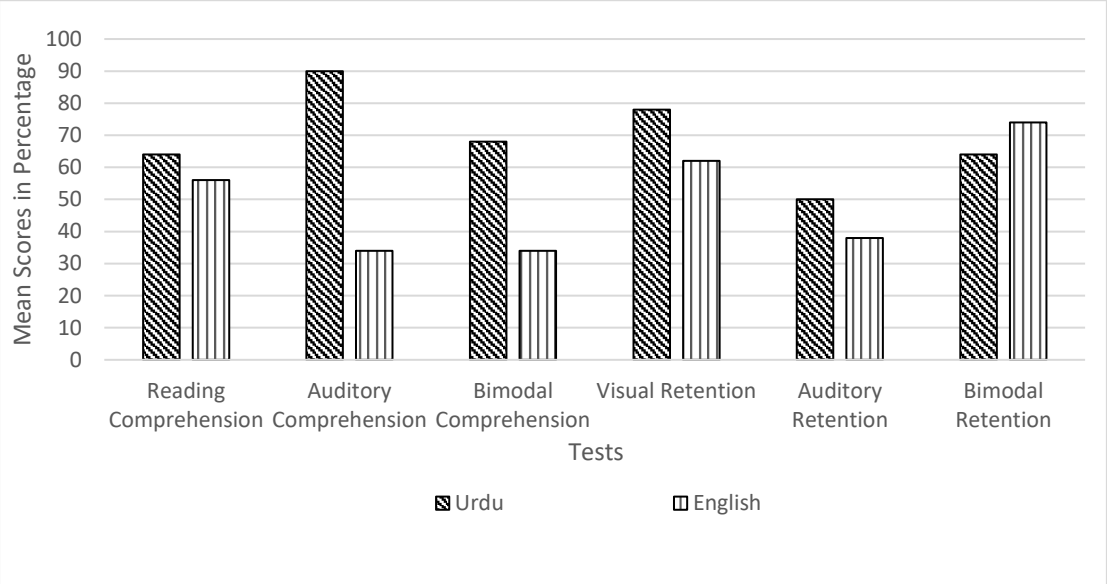
Learning style	Percentage
Auditory	81%
Read/write	19%

Table 8 shows that the participant's preference for auditory learning is 81% and for read/write learning it is 19%. A large difference between the two percentages makes the participant an auditory learner.

4.1.4.2 Urdu and English comprehension and retention:

Figure 4

Scores of Participant 4 on Comprehension and Retention Tests in Urdu and English



According to figure 4, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 90%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 68%) and has scored the lowest on reading comprehension tests (with mean percentage score of 64%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 78%), has scored the second highest on bimodal retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 50%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 56%) and has scored the lowest on auditory and bimodal comprehension tests (with mean percentage score of 34%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 74%), has scored the second highest on visual retention tests (with mean percentage score of 62%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%).

4.1.5 Participant 5

4.1.5.1 Language background

Table 9

Age at which Language Skills were Started to be Used by Participant 5

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	19
English	At age 3	At age 4	At age 3	At age 3	17

Table 9 shows that the participant started to learn Urdu language at the age of 1 years while English language was started to be learned at the age of 3 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 10

Learning Style Preference of Participant 5

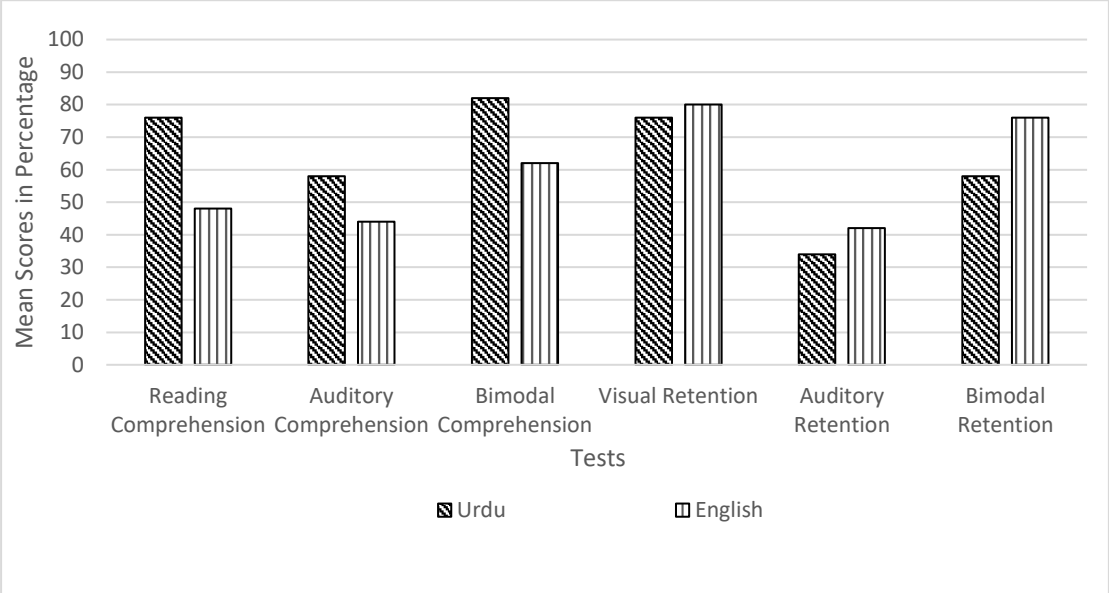
Learning style	Percentage
Auditory	53%
Read/write	47%

Table 10 shows that the participant's preference for auditory learning is 53% and for read/write learning it is 47%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.5.2 Urdu and English comprehension and retention:

Figure 5

Scores of Participant 5 on Comprehension and Retention Tests in Urdu and English



According to figure 5, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 82%), has scored the second highest on reading comprehension tests (with mean percentage score of 76%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 58%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 76%), has scored the second highest on bimodal retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 34%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 62%), has scored the second highest on reading comprehension tests (with mean percentage score of 48%) and has scored the lowest on the auditory comprehension tests (with mean percentage score of 44%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 80%), has scored the second highest on bimodal retention tests (with mean percentage score of 76%) and has scored the lowest on auditory retention tests (with mean percentage score of 42%).

4.1.6 Participant 6

4.1.6.1 Language background

Table 11

Age at which Language Skills were Started to be Used by Participant 6

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	24
English	At age 5	At age 5	At age 5	At age 5	20

Table 11 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 4 years.

Table 12

Learning Style Preference of Participant 6

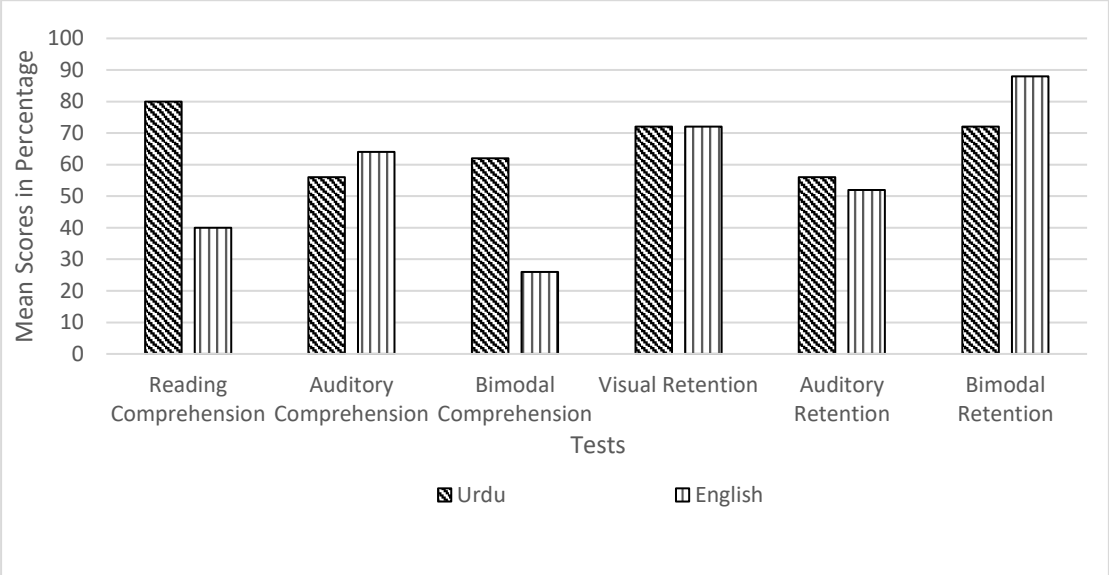
Learning style	Percentage
Auditory	58%
Read/write	42%

Table 12 shows that the participant's preference for auditory learning is 58% and for read/write learning it is 42%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.6.2 Urdu and English comprehension and retention:

Figure 6

Scores of Participant 6 on Comprehension and Retention Tests in Urdu and English



According to figure 6, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 80%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 62%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 56%). Moreover, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 72%) and has scored the lowest on auditory retention tests (with mean percentage score of 56%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 64%), has scored the second highest on reading comprehension tests (with mean percentage score of 40%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 26%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 88%), has scored the second highest on visual retention tests (with mean percentage score of 72%) and has scored the lowest on auditory retention tests (with mean percentage score of 52%).

4.1.7 Participant 7

4.1.7.1 Language background

Table 13

Age at which Language Skills were Started to be Used by Participant 7

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	19
English	At age 2	At age 2	At age 3	At age 3	18

Table 13 shows that the participant started to learn Urdu language at the age of 1 years while English language was started to be learned at the age of 2 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 14

Learning Style Preference of Participant 7

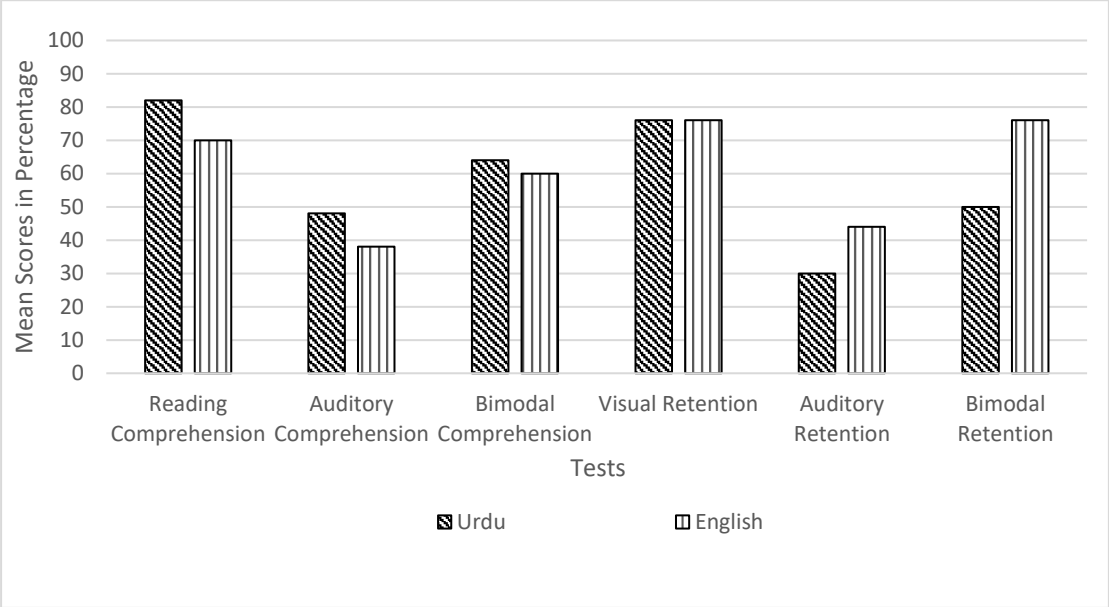
Learning style	Percentage
Auditory	54%
Read/write	46%

Table 14 shows that the participant's preference for auditory learning is 54% and for read/write learning it is 46%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.7.2 Urdu and English comprehension and retention:

Figure 7

Scores of Participant 7 on Comprehension and Retention Tests in Urdu and English



According to figure 7, in the case of Urdu, language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 82%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 64%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 48%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 76%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%). In the case of English, the participant has scored the highest on reading comprehension tests (with mean percentage score of 70%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 60%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 38%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 76%) and has scored the lowest on auditory retention tests (with mean percentage score of 44%).

4.1.8 Participant 8

4.1.8.1 Language background

Table 15

Age at which Language Skills were Started to be Used by Participant 8

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	20
English	At age 7	At age 7	At age 7	At age 7	14

Table 15 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 7 years. The difference between the number of years for which each of the two languages were used by the participant is 6 years.

Table 16

Learning Style Preference of Participant 8

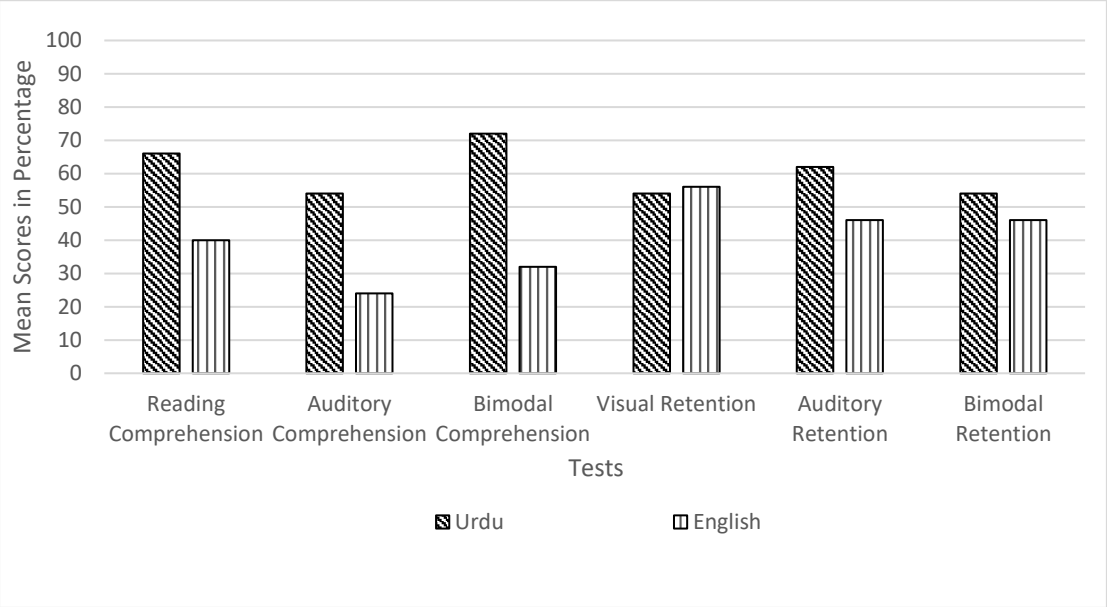
Learning style	Percentage
Auditory	53%
Read/write	47%

Table 16 shows that the participant's preference for auditory learning is 53% and for read/write learning it is 47%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.8.2 Urdu and English comprehension and retention:

Figure 8

Scores of Participant 8 on Comprehension and Retention Tests in Urdu and English



According to figure 8, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 72%), has scored the second highest on reading comprehension tests (with mean percentage score of 66%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 54%). Moreover, the participant has scored the highest on auditory retention tests (with mean percentage score of 62%) and has scored the lowest on both visual and bimodal retention tests (with mean percentage score of 54%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 40%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 32%) and has scored the lowest on auditory comprehension tests (with the mean percentage score of 24%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 56%) and has scored the lowest on both auditory and bimodal retention tests (with mean percentage score of 46%).

4.1.9 Participant 9

4.1.9.1 Language background

Table 17

Age at which Language Skills were Started to be Used by Participant 9

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 3	At age 3	At age 4	At age 4	18
English	At age 7	At age 7	At age 7	At age 7	14

Table 17 shows that the participant started to learn Urdu language at the age of 3 years while English language was started to be learned at the age of 7 years. The difference between the number of years for which each of the two languages were used by the participant is 4 years.

Table 18

Learning Style Preference of Participant 9

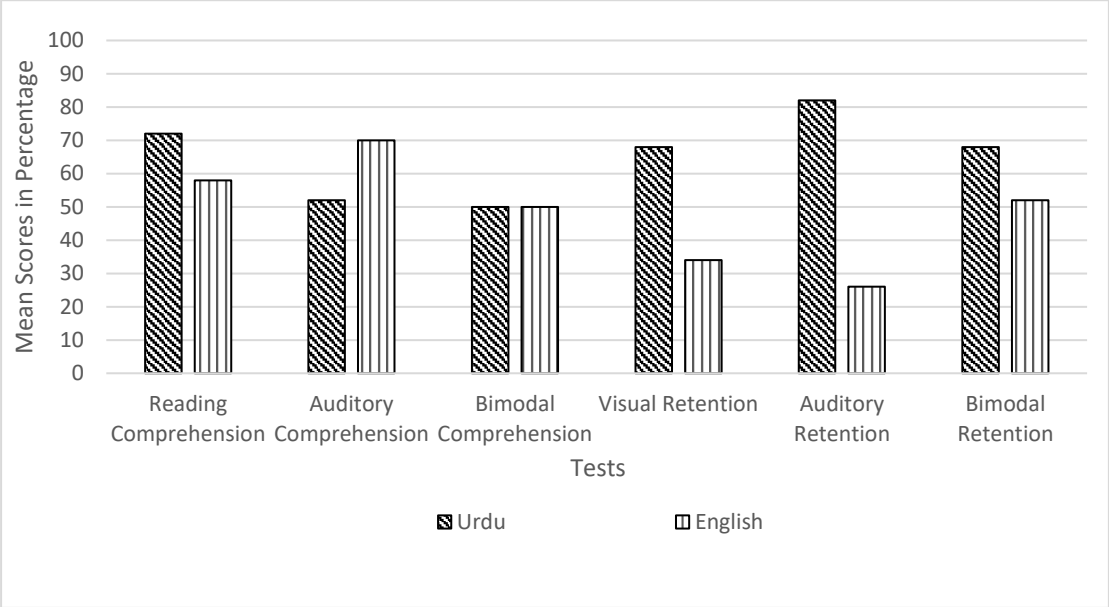
Learning style	Percentage
Auditory	58%
Read/write	42%

Table 18 shows that the participant's preference for auditory learning is 58% and for read/write learning it is 42%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.9.2 Urdu and English comprehension and retention:

Figure 9

Scores of Participant 9 on Comprehension and Retention Tests in Urdu and English



According to figure 9, in the case of Urdu, the participant has scored the highest on reading comprehension tests (with mean percentage score of 72%), has scored the second highest on auditory comprehension tests (with mean percentage score of 52%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 50%). Moreover, the participant has scored the highest on auditory retention tests (with mean percentage score of 82%) and has scored the lowest on both visual and bimodal retention tests (with mean percentage score of 68%). In the case of English, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 70%), has scored the second highest on reading comprehension tests (with mean percentage score of 58%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 50%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 52%), has scored the second highest on visual retention tests (with mean percentage score of 34%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%).

4.1.10 Participant 10

4.1.10.1 Language background

Table 19

Age at which Language Skills were Started to be Used by Participant 10

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 5	At age 5	21
English	At age 7	At age 10	At age 7	At age 7	15

Table 19 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 7 years. The difference between the number of years for which each of the two languages were used by the participant is 6 years.

Table 20

Learning Style Preference of Participant 10

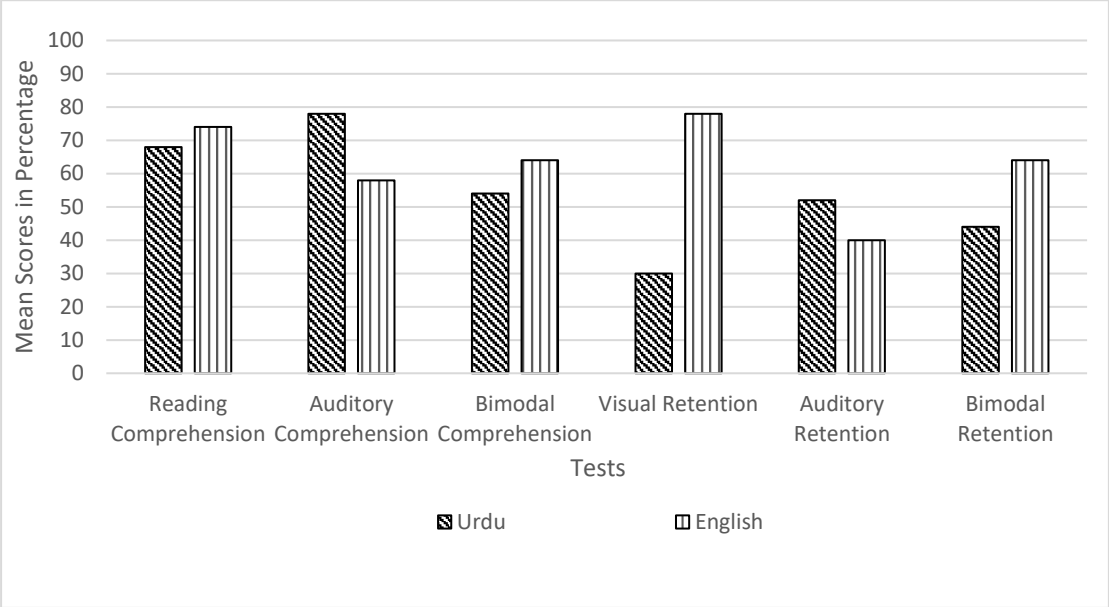
Learning style	Percentage
Auditory	63%
Read/write	37%

Table 20 shows that the participant's preference for auditory learning is 63% and for read/write learning it is 37%. A large difference between the two percentages makes the participant an auditory learner.

4.1.10.2 Urdu and English comprehension and retention:

Figure 10

Scores of Participant 10 on Comprehension and Retention Tests in Urdu and English



According to figure 10, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 78%), has scored the second highest on reading comprehension tests (with mean percentage score of 68%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 54%). Moreover, the participant has scored the highest on auditory retention tests (with mean percentage score of 52%), has scored the second highest on bimodal retention tests (with mean percentage score of 44%) and has scored the lowest on visual retention tests (with mean percentage score of 30%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 74%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 64%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 58%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 78%), has scored the second highest on bimodal retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%).

4.1.11 Participant 11

4.1.11.1 Language background

Table 21

Age at which Language Skills were Started to be Used by Participant 11

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 1	At age 1	17
English	At age 4	At age 5	At age 4	At age 5	14

Table 21 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 22

Learning Style Preference of Participant 11

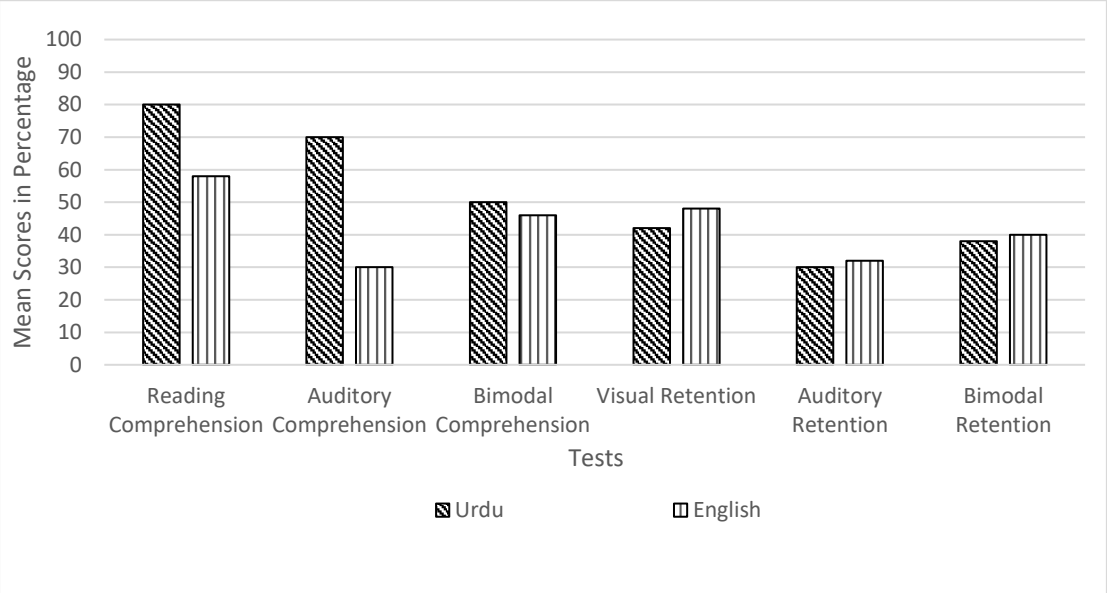
Learning style	Percentage
Auditory	43%
Read/write	57%

Table 22 shows that the participant's preference for auditory learning is 43% and for read/write learning it is 57%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.11.2 Urdu and English comprehension and retention:

Figure 11

Scores of Participant 11 on Comprehension and Retention Tests in Urdu and English



According to figure 11, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 80%), has scored the second highest on auditory comprehension tests (with mean percentage score of 70%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 50%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 42%), has scored the second highest on bimodal retention tests (with mean percentage score of 38%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 58%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 46%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 30%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 48%), has scored the second highest on bimodal retention tests (with mean percentage score of 40%) and has scored the lowest on auditory retention tests (with mean percentage score of 32%).

4.1.12 Participant 12

4.1.12.1 Language background

Table 23

Age at which Language Skills were Started to be Used by Participant 12

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 1	At age 3	-
English	At age 6	At age 6	At age 7	At age 7	-

Table 23 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 6 years. The difference between the number of years for which each of the two languages were used by the participant is 5 years.

Table 24

Learning Style Preference of Participant 12

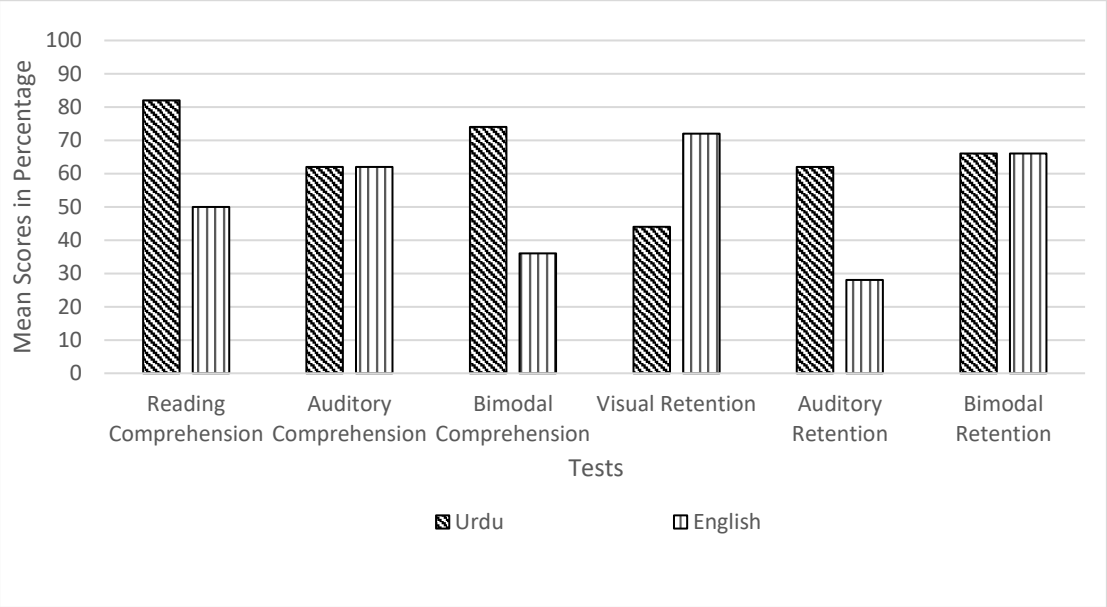
Learning style	Percentage
Auditory	55%
Read/write	45%

Table 24 shows that the participant's preference for auditory learning is 55% and for read/write learning it is 45%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.12.2 Urdu and English comprehension and retention:

Figure 12

Scores of Participant 12 on Comprehension and Retention Tests in Urdu and English



According to figure 12, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 82%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 74%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on bimodal retention tests (with mean percentage score of 66%), has scored the second highest on auditory retention tests (with mean percentage score of 62%) and has scored the lowest on visual retention tests (with mean percentage score of 44%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 62%), has scored the second highest on reading comprehension tests (with mean percentage score of 50%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 36%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 72%), has scored the second highest on bimodal retention tests (with mean percentage score of 66%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.13 Participant 13

4.1.13.1 Language background

Table 25

Age at which Language Skills were Started to be Used by Participant 13

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6 months	At age 1	At age 5	At age 5	28
English	At age 5	At age 5	At age 5	At age 5	23

Table 25 shows that the participant started to learn Urdu language at the age of 6 months while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 5 years.

Table 26

Learning Style Preference of Participant 13

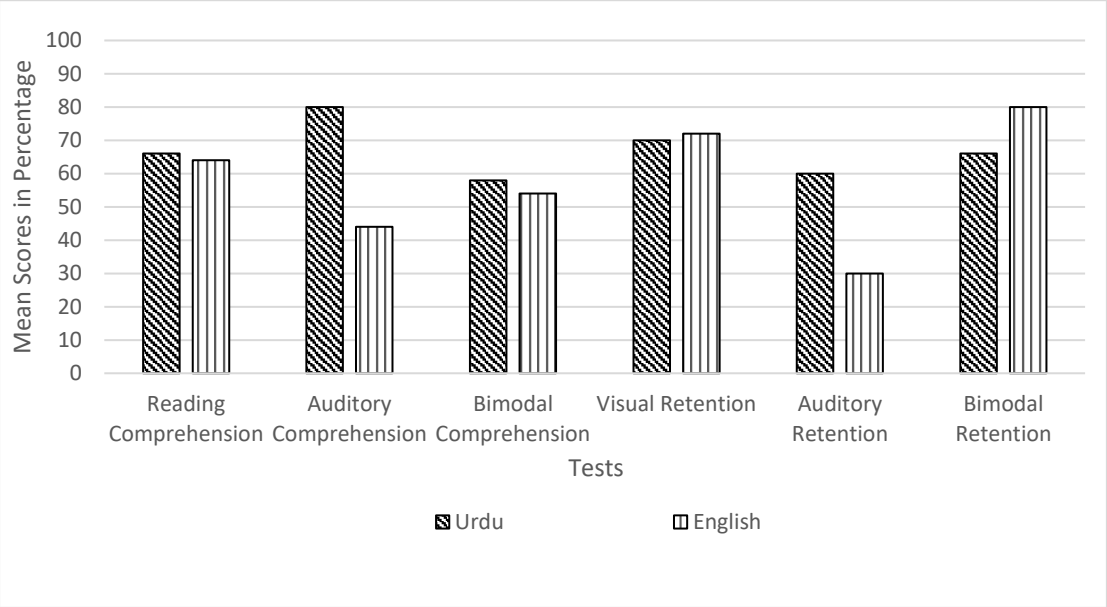
Learning style	Percentage
Auditory	62%
Read/write	38%

Table 26 shows that the participant's preference for auditory learning is 62% and for read/write learning it is 38%. A large difference between the two percentages makes the participant an auditory learner.

4.1.13.2 Urdu and English comprehension and retention:

Figure 13

Scores of Participant 13 on Comprehension and Retention Tests in Urdu and English



According to figure 13, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 80%), has scored the second highest on reading comprehension tests (with mean percentage score of 66%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 58%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 70%), has scored the second highest on bimodal retention tests (with mean percentage score of 66%) and has scored the lowest on auditory retention tests (with mean percentage score of 60%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 64%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 54%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 44%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 80%), has scored the second highest on visual retention tests (with mean percentage score of 72%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.14 Participant 14

4.1.14.1 Language background

Table 27

Age at which Language Skills were Started to be Used by Participant 14

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6	At age 7	At age 9	At age 8	18
English	At age 10	At age 14	At age 10	At age 8	16

Table 27 shows that the participant started to learn Urdu language at the age of 6 years while English language was started to be learned at the age of 8 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 28

Learning Style Preference of Participant 14

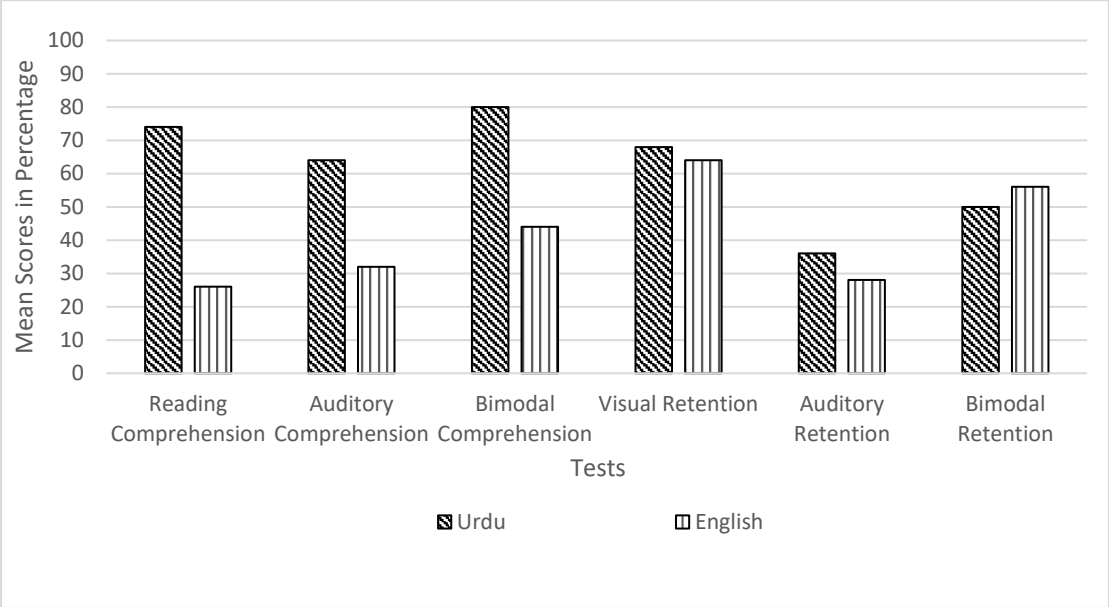
Learning style	Percentage
Auditory	48%
Read/write	52%

Table 28 shows that the participant's preference for auditory learning is 48% and for read/write learning it is 52%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.14.2 Urdu and English comprehension and retention:

Figure 14

Scores of Participant 14 on Comprehension and Retention Tests in Urdu and English



According to figure 14, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 80%), has scored the second highest on reading comprehension tests (with mean percentage score of 74%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 64%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 44%), has scored the second highest on auditory comprehension tests (with mean percentage score of 32%) and has scored the lowest on reading comprehension tests (with mean percentage score of 26%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 64%), has scored the second highest on bimodal retention tests (with mean percentage score of 56%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.15 Participant 15

4.1.15.1 Language background

Table 29

Age at which Language Skills were Started to be Used by Participant 15

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 7	At age 7	At age 9	At age 9	11
English	At age 18	At age 18	At age 12	At age 12	6

Table 29 shows that the participant started to learn Urdu language at the age of 7 years while English language was started to be learned at the age of 12 years. The difference between the number of years for which each of the two languages were used by the participant is 5 years.

Table 30

Learning Style Preference of Participant 15

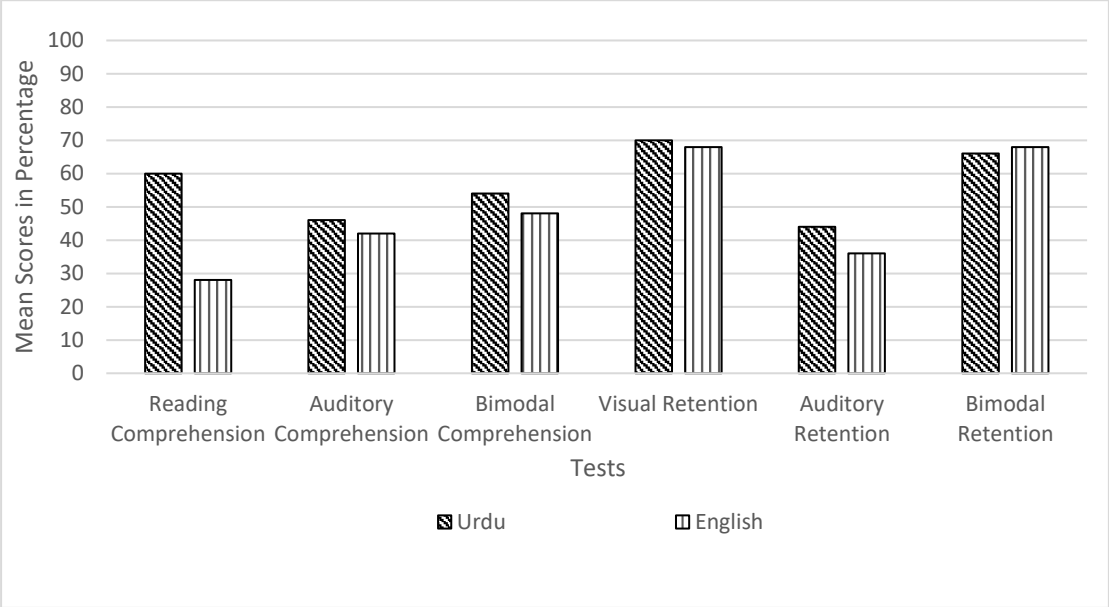
Learning style	Percentage
Auditory	48%
Read/write	52%

Table 30 shows that the participant's preference for auditory learning is 48% and for read/write learning it is 52%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.15.2 Urdu and English comprehension and retention:

Figure 15

Scores of Participant 15 on Comprehension and Retention Tests in Urdu and English



According to figure 15, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 60%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 54%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 46%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 70%), has scored the second highest on bimodal retention tests (with mean percentage score of 66%) and has scored the lowest on auditory retention tests (with mean percentage score of 44%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 48%), has scored the second highest on auditory comprehension tests (with mean percentage score of 42%) and has scored the lowest on reading comprehension tests (with mean percentage score of 28%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 68%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%).

4.1.16 Participant 16

4.1.16.1 Language background

Table 31

Age at which Language Skills were Started to be Used by Participant 16

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 2	At age 3	At age 4	At age 3	23
English	At age 4	At age 4	At age 4	At age 3	22

Table 31 shows that the participant started to learn Urdu language at the age of 2 years while English language was started to be learned at the age of 3 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 32

Learning Style Preference of Participant 16

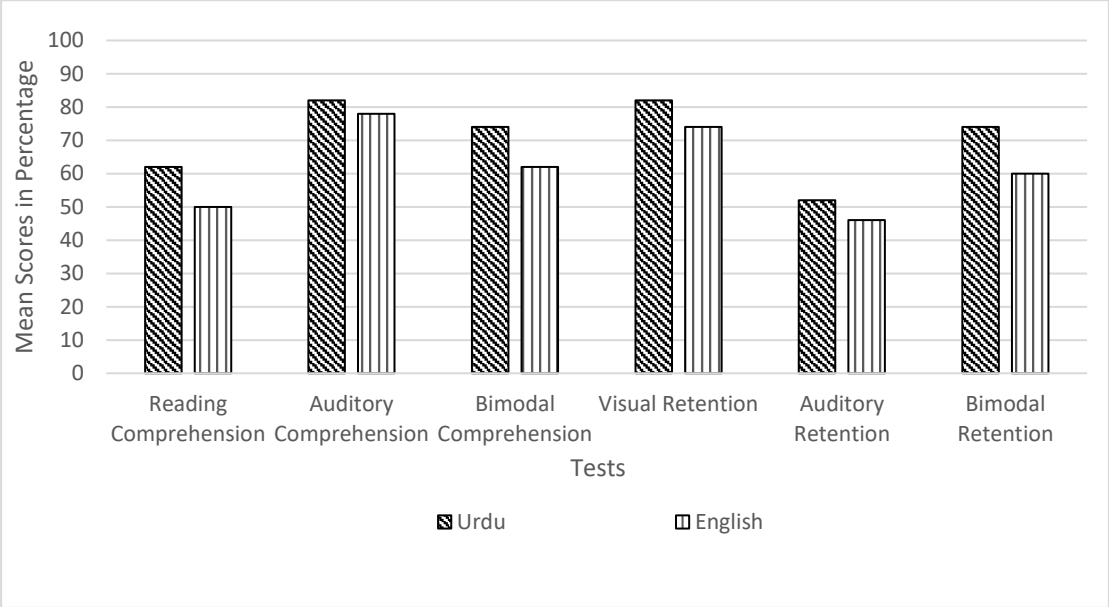
Learning style	Percentage
Auditory	71%
Read/write	29%

Table 32 shows that the participant's preference for auditory learning is 71% and for read/write learning it is 29%. A large difference between the two percentages makes the participant an auditory learner.

4.1.16.2 Urdu and English comprehension and retention:

Figure 16

Scores of Participant 16 on Comprehension and Retention Tests in Urdu and English



According to figure 16, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 82%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 74%) and has scored the lowest on reading comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 82%), has scored the second highest on bimodal retention tests (with mean percentage score of 74%) and has scored the lowest on auditory retention tests (with mean percentage score of 52%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 78%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 62%) and has scored the lowest on reading comprehension tests (with mean percentage score of 50%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 74%), has scored the second highest on bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 46%).

4.1.17 Participant 17

4.1.17.1 Language background

Table 33

Age at which Language Skills were Started to be Used by Participant 17

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 2	At age 9	At age 5	At age 5	18
English	At age 10	At age 15	At age 5	At age 5	15

Table 33 shows that the participant started to learn Urdu language at the age of 2 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 34

Learning Style Preference of Participant 17

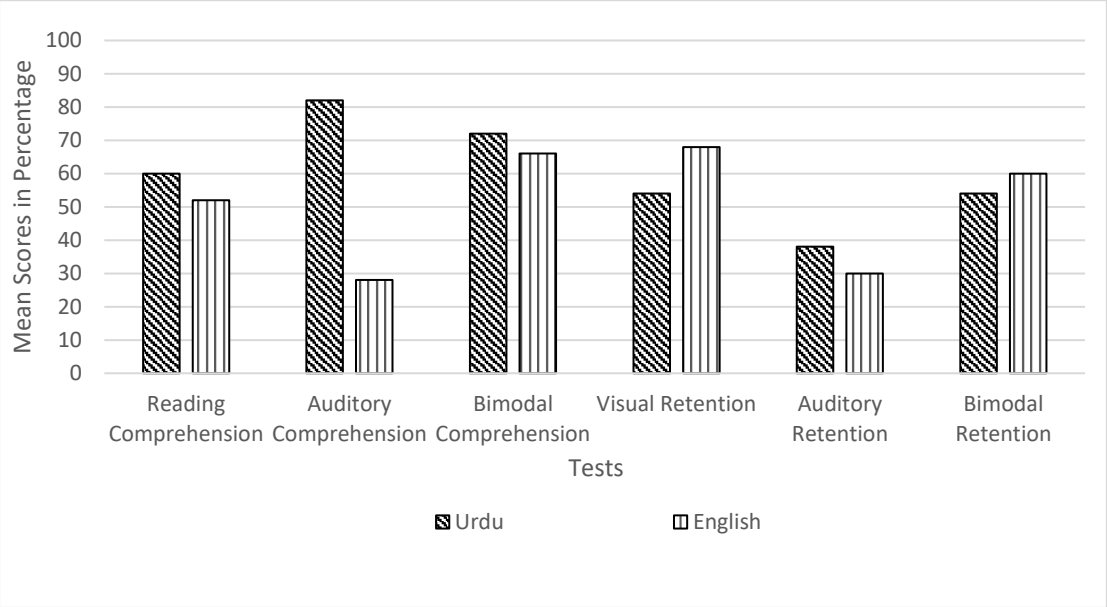
Learning style	Percentage
Auditory	68%
Read/write	32%

Table 34 shows that the participant's preference for auditory learning is 68% and for read/write learning it is 32%. A large difference between the two percentages makes the participant an auditory learner.

4.1.17.2 Urdu and English comprehension and retention:

Figure 17

Scores of Participant 17 on Comprehension and Retention Tests in Urdu and English



According to figure 17, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 82%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 72%) and has scored the lowest on reading comprehension tests (with mean percentage score of 60%). Moreover, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 66%), has scored the second highest on reading comprehension tests (with mean percentage score of 52%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 28%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.18 Participant 18

4.1.18.1 Language background

Table 35

Age at which Language Skills were Started to be Used by Participant 18

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 2	At age 3	At age 5	At age 5	21
English	At age 5	At age 5	At age 5	At age 5	18

Table 35 shows that the participant started to learn Urdu language at the age of 2 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 36

Learning Style Preference of Participant 18

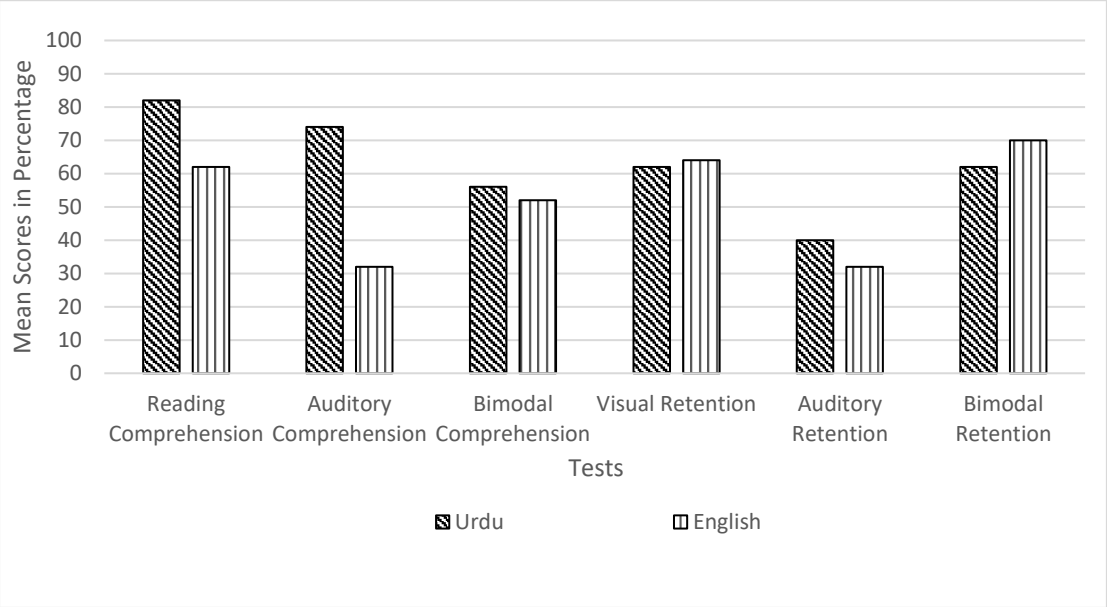
Learning style	Percentage
Auditory	64%
Read/write	36%

Table 36 shows that the participant's preference for auditory learning is 64% and for read/write learning it is 36%. A large difference between the two percentages makes the participant an auditory learner.

4.1.18.2 Urdu and English comprehension and retention:

Figure 18

Scores of Participant 18 on Comprehension and Retention Tests in Urdu and English



According to figure 18, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 82%), has scored the second highest on auditory comprehension tests (with mean percentage score of 74%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 56%). Moreover, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 62%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 62%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 52%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 32%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 70%), has scored the second highest on visual retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 32%).

4.1.19 Participant 19

4.1.19.1 Language background

Table 37

Age at which Language Skills were Started to be Used by Participant 19

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 2	At age 3	At age 5	At age 5	19
English	At age 6	At age 10	At age 7	At age 5	16

Table 37 shows that the participant started to learn Urdu language at the age of 2 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 38

Learning Style Preference of Participant 19

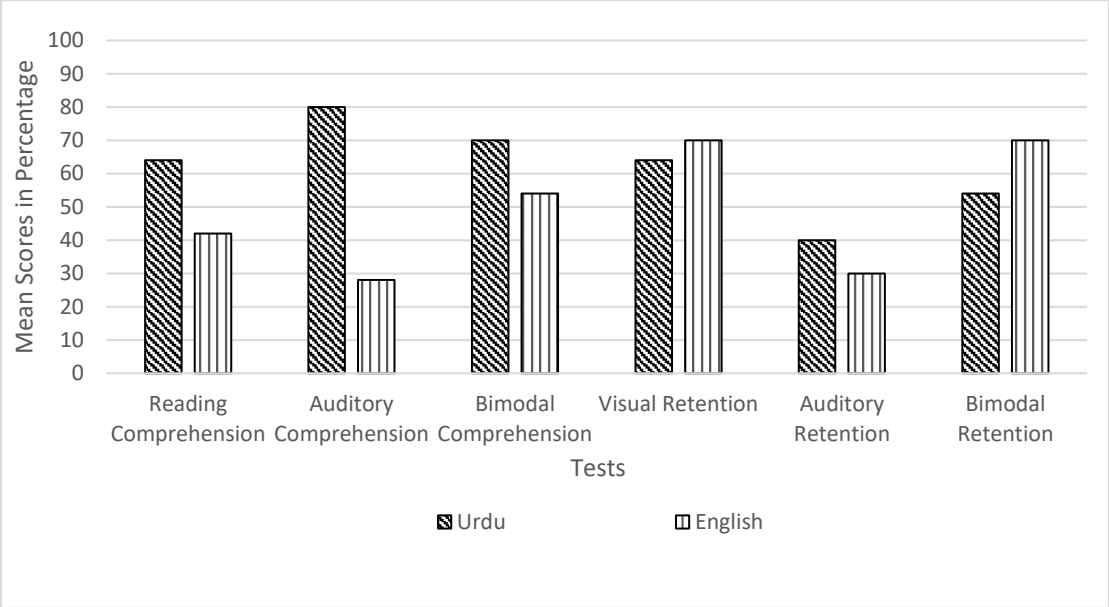
Learning style	Percentage
Auditory	67%
Read/write	33%

Table 38 shows that the participant's preference for auditory learning is 67% and for read/write learning it is 33%. A large difference between the two percentages makes the participant an auditory learner.

4.1.19.2 Urdu and English comprehension and retention:

Figure 19

Scores of Participant 19 on Comprehension and Retention Tests in Urdu and English



According to figure 19, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 80%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 70%) and has scored the lowest on reading comprehension tests (with mean percentage score of 64%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 64%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 54%), has scored the second highest on reading comprehension tests (with mean percentage score of 42%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 28%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 70%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.20 Participant 20

4.1.20.1 Language background

Table 39

Age at which Language Skills were Started to be Used by Participant 20

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 3	At age 7	At age 8	19
English	At age 7	At age 9	At age 7	At age 7	13

Table 39 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 7 years. The difference between the number of years for which each of the two languages were used by the participant is 6 years.

Table 40

Learning Style Preference of Participant 20

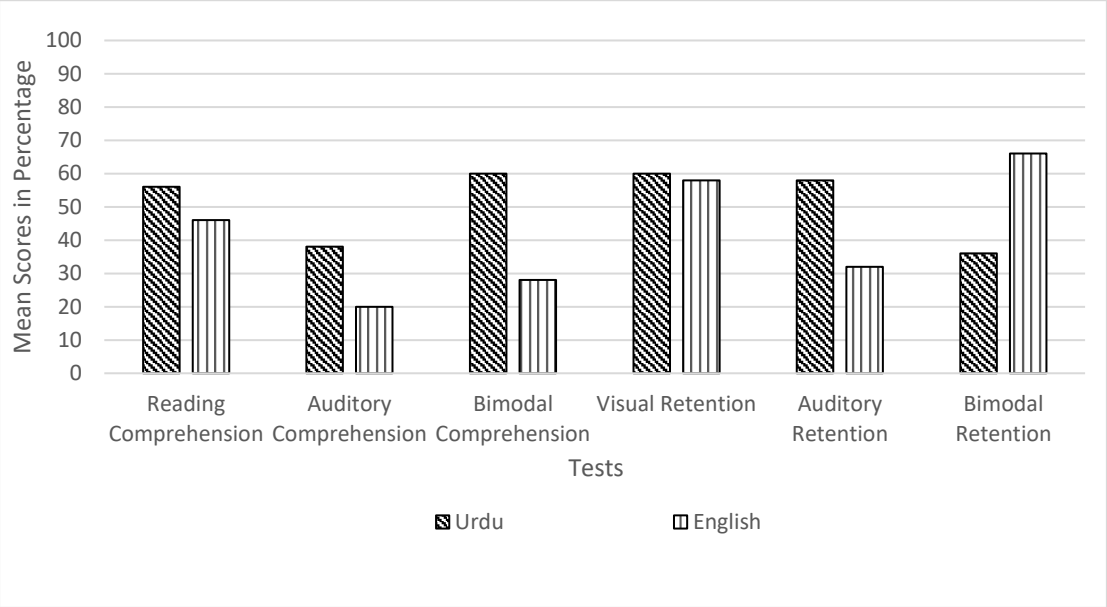
Learning style	Percentage
Auditory	54%
Read/write	46%

Table 40 shows that the participant's preference for auditory learning is 54% and for read/write learning it is 46%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.20.2 Urdu and English comprehension and retention:

Figure 20

Scores of Participant 20 on Comprehension and Retention Tests in Urdu and English



According to figure 20, In the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 60%), has scored the second highest on reading comprehension tests (with mean percentage score of 56%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 38%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 60%), has scored the second highest on auditory retention tests (with mean percentage score of 58%) and has scored the lowest on bimodal retention tests (with mean percentage score of 36%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 46%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 28%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 20%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 66%), has scored the second highest on visual retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 32%).

4.1.21 Participant 21

4.1.21.1 Language background

Table 41

Age at which Language Skills were Started to be Used by Participant 21

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 4	At age 5	At age 5	24
English	At age 5	At age 6	At age 5	At age 5	20

Table 41 shows that the participant started to learn Urdu language at the age of 1 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 4 years.

Table 42

Learning Style Preference of Participant 21

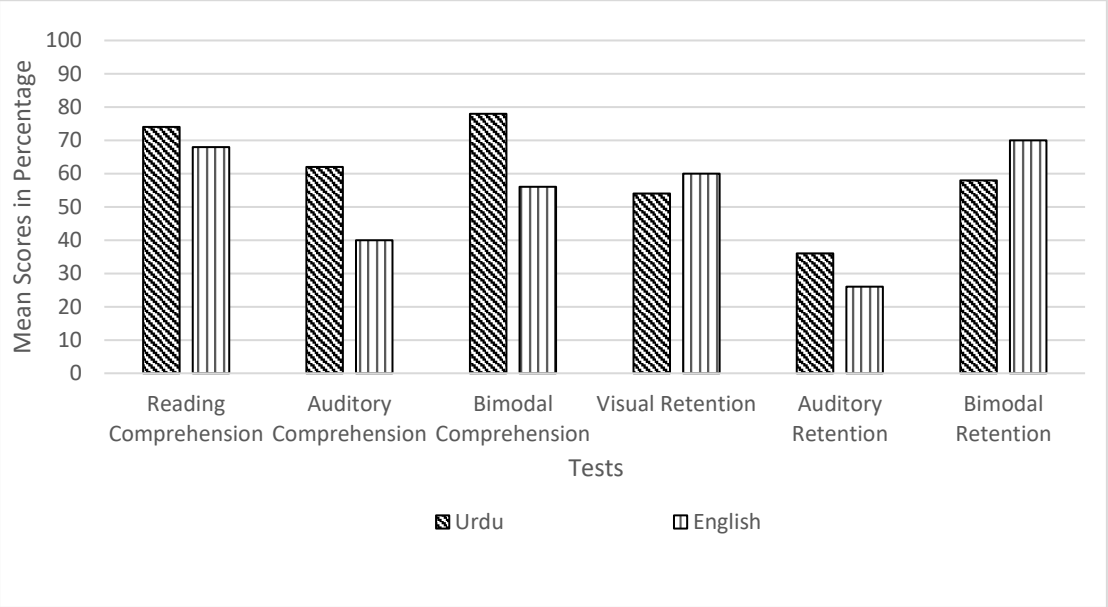
Learning style	Percentage
Auditory	54%
Read/write	46%

Table 42 shows that the participant's preference for auditory learning is 54% and for read/write learning it is 46%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.21.2 Urdu and English comprehension and retention:

Figure 21

Scores of Participant 21 on Comprehension and Retention Tests in Urdu and English



According to figure 21, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 78%), has scored the second highest on reading comprehension tests (with mean percentage score of 74%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on bimodal retention tests (with mean percentage score of 58%), has scored the second highest on visual retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 68%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 56%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 40%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 70%), has scored the second highest on visual retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%).

4.1.22 Participant 22

4.1.22.1 Language background

Table 43

Age at which Language Skills were Started to be Used by Participant 22

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 9	At age 13	At age 13	At age 13	13
English	At age 13	At age 13	At age 13	At age 13	9

Table 43 shows that the participant started to learn Urdu language at the age of 9 years while English language was started to be learned at the age of 13 years. The difference between the number of years for which each of the two languages were used by the participant is 4 years.

Table 44

Learning Style Preference of Participant 22

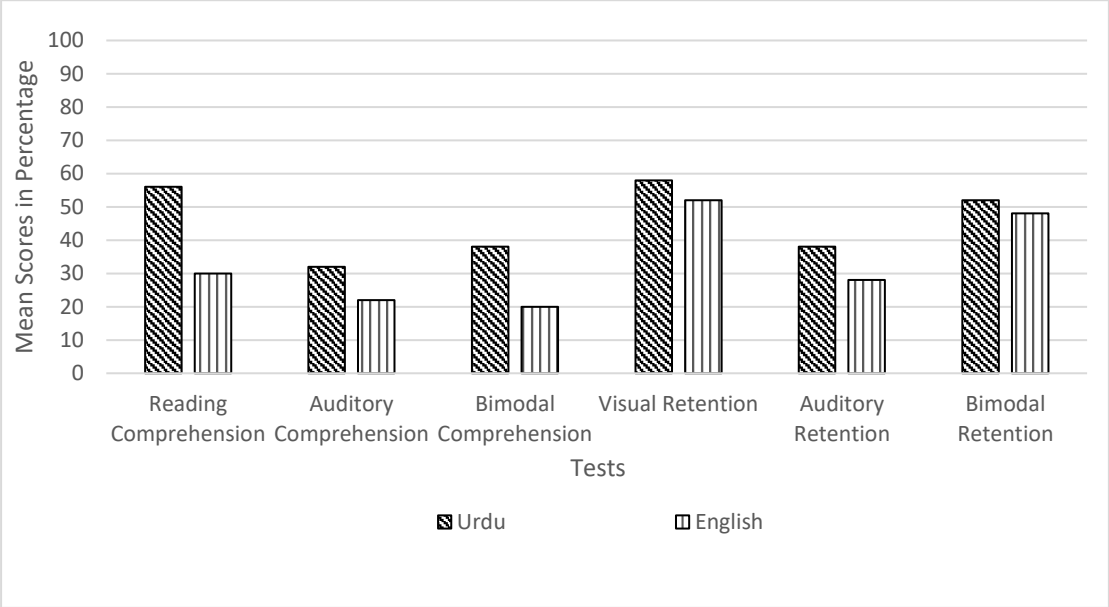
Learning style	Percentage
Auditory	41%
Read/write	59%

Table 44 shows that the participant's preference for auditory learning is 41% and for read/write learning it is 59%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.22.2 Urdu and English comprehension and retention:

Figure 22

Scores of Participant 22 on Comprehension and Retention Tests in Urdu and English



According to figure 22, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 56%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 38%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 32%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 58%), has scored the second highest on bimodal retention tests (with mean percentage score of 52%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 30%), has scored the second highest on auditory comprehension tests (with mean percentage score of 22%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 20%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 52%), has scored the second highest on bimodal retention tests (with mean percentage score of 48%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.23 Participant 23

4.1.23.1 Language background

Table 45

Age at which Language Skills were Started to be Used by Participant 23

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6	At age 8	At age 10	At age 11	12
English	At age 8	At age 10	At age 10	At age 12	10

Table 45 shows that the participant started to learn Urdu language at the age of 6 years while English language was started to be learned at the age of 8 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 46

Learning Style Preference of Participant 23

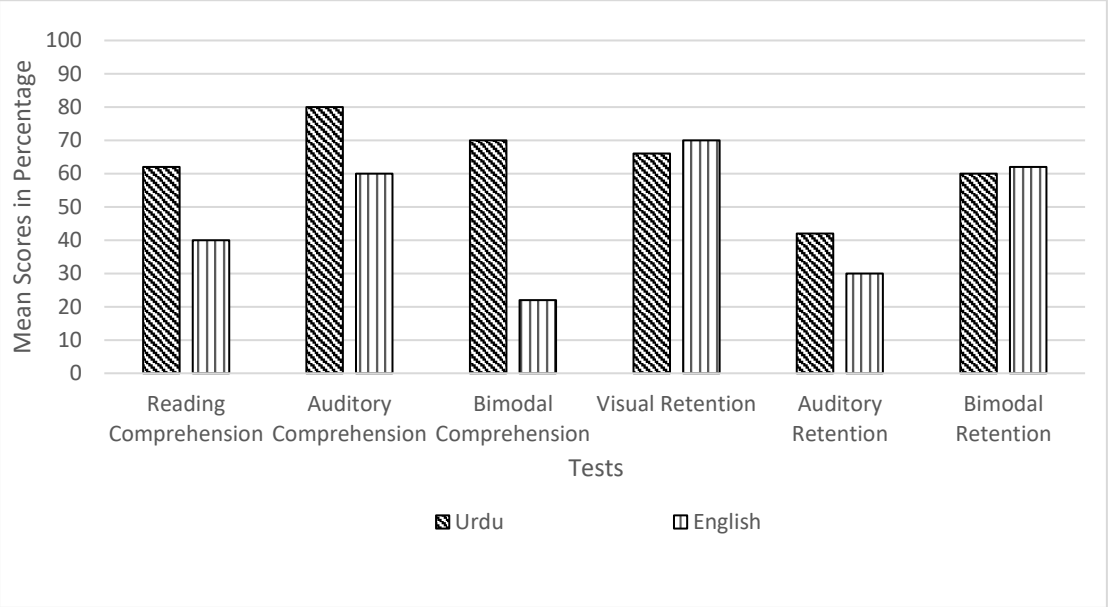
Learning style	Percentage
Auditory	70%
Read/write	30%

Table 46 shows that the participant's preference for auditory learning is 70% and for read/write learning it is 30%. A large difference between the two percentages makes the participant an auditory learner.

4.1.23.2 Urdu and English comprehension and retention:

Figure 23

Scores of Participant 23 on Comprehension and Retention Tests in Urdu and English



According to figure 23, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 80%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 70%) and has scored the lowest on reading comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 66%), has scored the second highest on bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 42%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 60%), has scored the second highest on reading comprehension tests (with mean percentage score of 40%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 22%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 70%), has scored the second highest on bimodal retention tests (with mean percentage score of 62%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.24 Participant 24

4.1.24.1 Language background

Table 47

Age at which Language Skills were Started to be Used by Participant 24

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 2	At age 5	At age 5	18
English	At age 4	At age 5	At age 5	At age 5	15

Table 47 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 48

Learning Style Preference of Participant 24

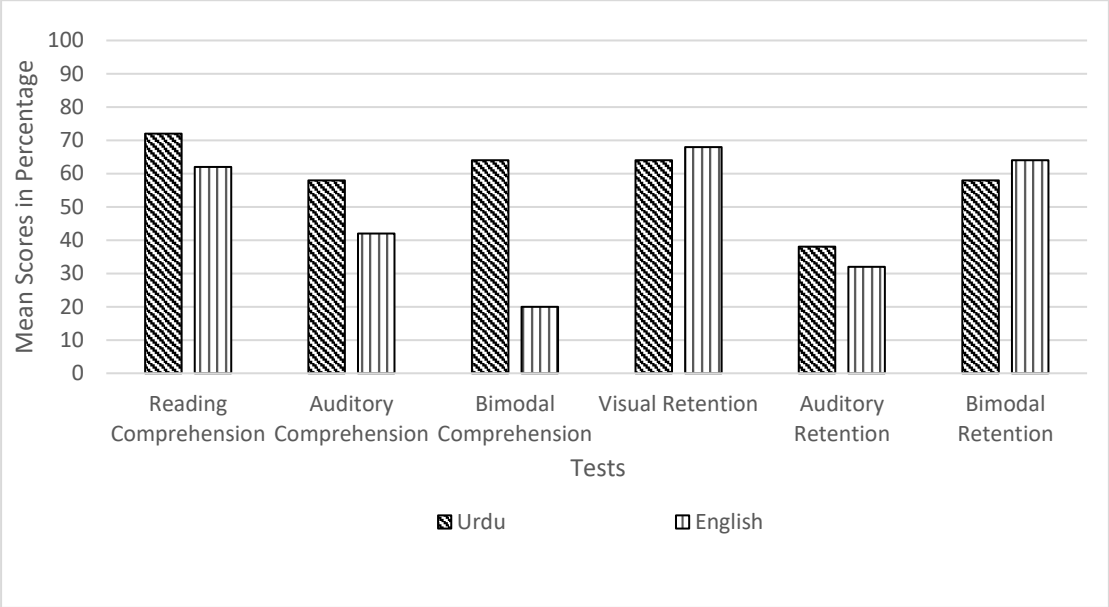
Learning style	Percentage
Auditory	52%
Read/write	48%

Table 48 shows that the participant's preference for auditory learning is 52% and for read/write learning it is 48%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.24.2 Urdu and English comprehension and retention:

Figure 24

Scores of Participant 24 on Comprehension and Retention Tests in Urdu and English



According to figure 24, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 72%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 64%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 58%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 64%), has scored the second highest on bimodal retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 62%), has scored the second highest on auditory comprehension tests (with mean percentage score of 42%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 20%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 64%) and has scored the lowest on auditory retention tests (with mean percentage score of 32%).

4.1.25 Participant 25

4.1.25.1 Language background

Table 49

Age at which Language Skills were Started to be Used by Participant 25

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 3	At age 4	At age 4	19
English	At age 5	At age 7	At age 5	At age 5	15

Table 49 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 4 years.

Table 50

Learning Style Preference of Participant 25

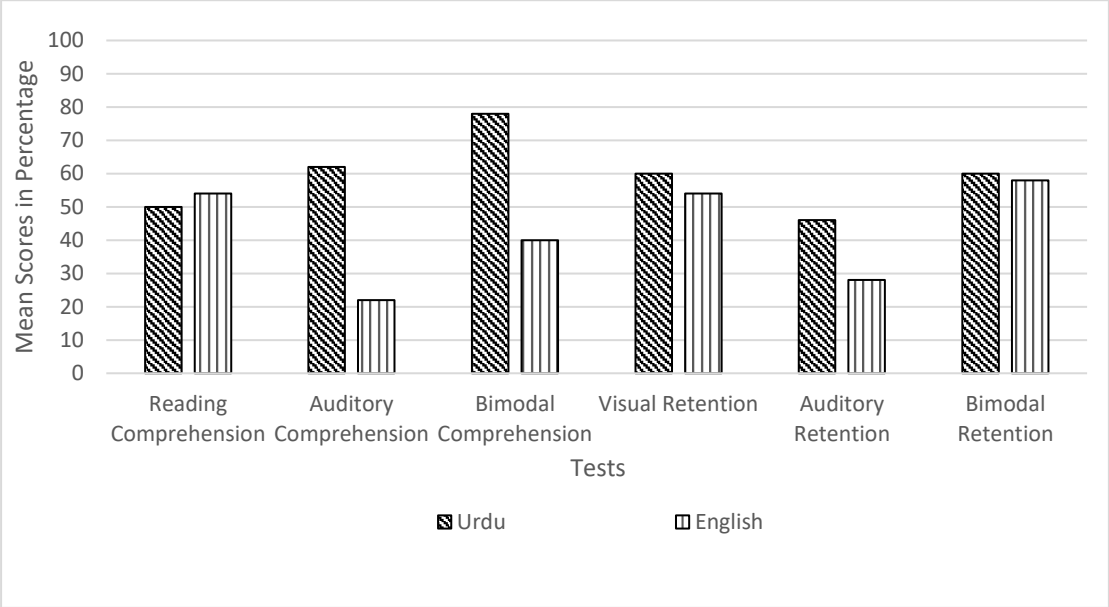
Learning style	Percentage
Auditory	68%
Read/write	32%

Table 50 shows that the participant's preference for auditory learning is 68% and for read/write learning it is 32%. A large difference between the two percentages makes the participant an auditory learner.

4.1.25.2 Urdu and English comprehension and retention:

Figure 25

Scores of Participant 25 on Comprehension and Retention Tests in Urdu and English



According to figure 25, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 78%), has scored the second highest on auditory comprehension tests (with mean percentage score of 62%) and has scored the lowest on reading comprehension tests (with mean percentage score of 50%). Moreover, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 46%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 54%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 40%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 22%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 58%), has scored the second highest on visual retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.26 Participant 26

4.1.26.1 Language background

Table 51

Age at which Language Skills were Started to be Used by Participant 26

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 5	At age 5	At age 5	At age 5	19
English	At age 10	At age 23	At age 23	At age 23	14

Table 51 shows that the participant started to learn Urdu language at the age of 5 years while English language was started to be learned at the age of 10 years. The difference between the number of years for which each of the two languages were used by the participant is 5 years.

Table 52

Learning Style Preference of Participant 26

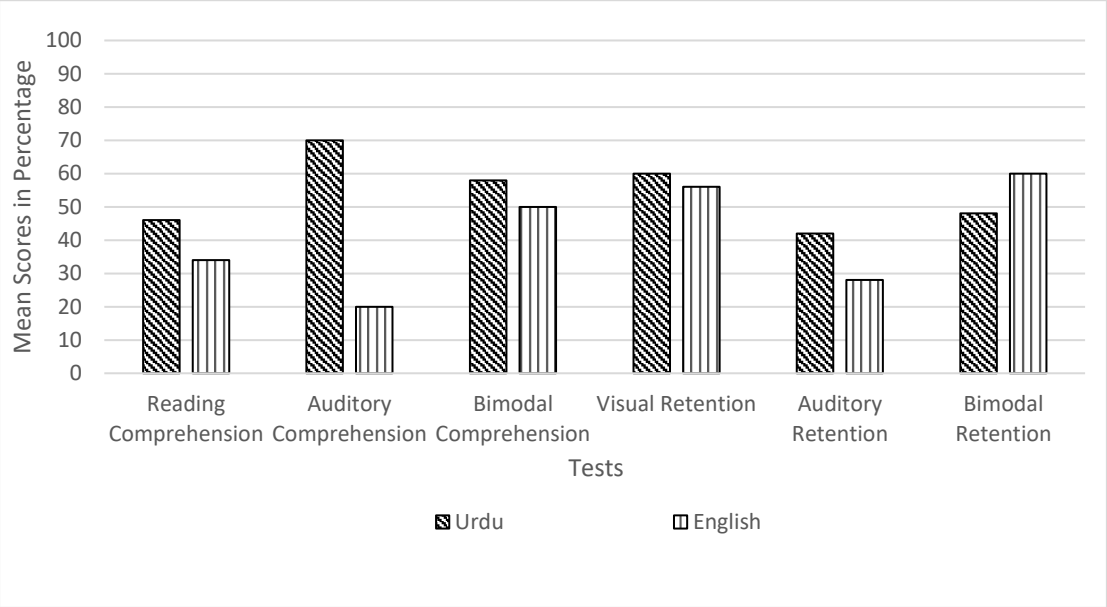
Learning style	Percentage
Auditory	71%
Read/write	29%

Table 52 shows that the participant's preference for auditory learning is 71% and for read/write learning it is 29%. A large difference between the two percentages makes the participant an auditory learner.

4.1.26.2 Urdu and English comprehension and retention:

Figure 26

Scores of Participant 26 on Comprehension and Retention Tests in Urdu and English



According to figure 26, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 70%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 58%) and has scored the lowest on reading comprehension tests (with mean percentage score of 46%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 60%), has scored the second highest on bimodal retention tests (with mean percentage score of 48%) and has scored the lowest on auditory retention tests (with mean percentage score of 42%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 50%), has scored the second highest on reading comprehension tests (with mean percentage score of 34%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 20%). Furthermore, the participant has scored the highest on bimodal retention tests (with mean percentage score of 60%), has scored the second highest on visual retention tests (with mean percentage score of 56%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.27 Participant 27

4.1.27.1 Language background

Table 53

Age at which Language Skills were Started to be Used by Participant 27

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 1	At age 1	32
English	At age 16	At age 27	At age 4	At age 4	29

Table 53 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 54

Learning Style Preference of Participant 27

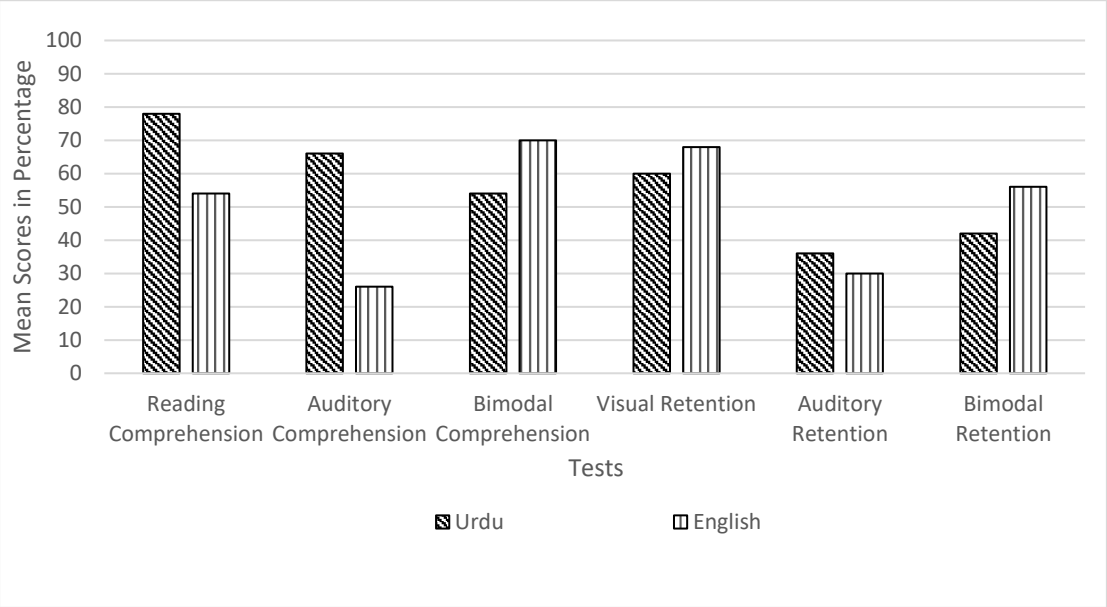
Learning style	Percentage
Auditory	47%
Read/write	53%

Table 54 shows that the participant's preference for auditory learning is 47% and for read/write learning it is 53%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.27.2 Urdu and English comprehension and retention:

Figure 27

Scores of Participant 27 on Comprehension and Retention Tests in Urdu and English



According to figure 27, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 78%), has scored the second highest on auditory comprehension tests (with mean percentage score of 66%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 54%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 60%), has scored the second highest on bimodal retention tests (with mean percentage score of 42%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 70%), has scored the second highest on reading comprehension tests (with mean percentage score of 54%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 26%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 56%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.28 Participant 28

4.1.28.1 Language background

Table 55

Age at which Language Skills were Started to be Used by Participant 28

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	18
English	At age 4	At age 5	At age 4	At age 4	15

Table 55 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 56

Learning Style Preference of Participant 28

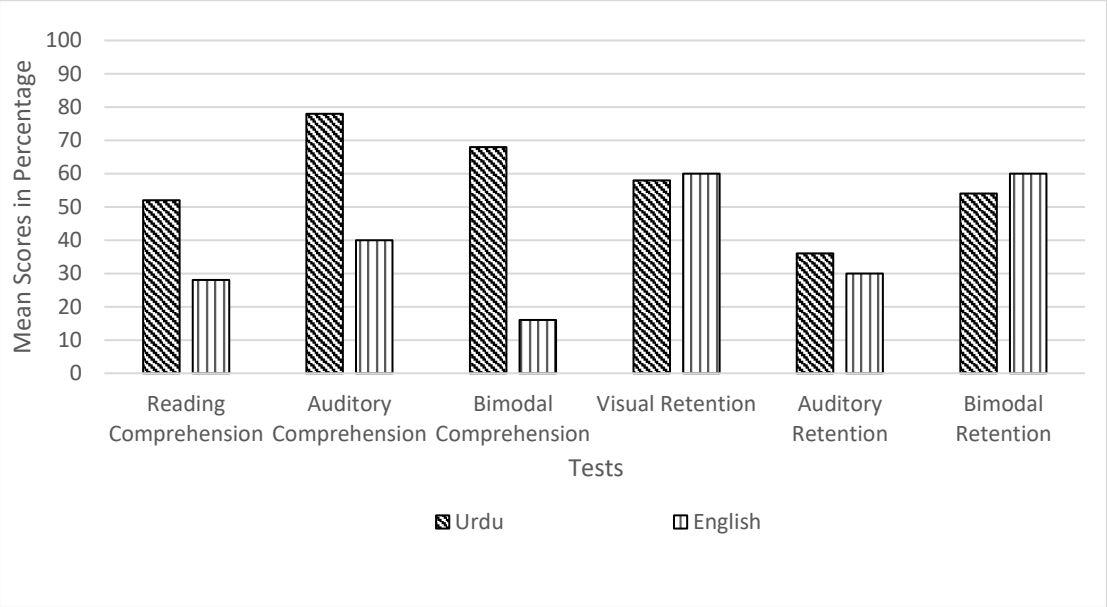
Learning style	Percentage
Auditory	76%
Read/write	24%

Table 56 shows that the participant's preference for auditory learning is 76% and for read/write learning it is 24%. A large difference between the two percentages makes the participant an auditory learner.

4.1.28.2 Urdu and English comprehension and retention:

Figure 28

Scores of Participant 28 on Comprehension and Retention Tests in Urdu and English



According to figure 28, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 78%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 68%) and has scored the lowest on reading comprehension tests (with mean percentage score of 52%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 58%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 36%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 40%), has scored the second highest on reading comprehension tests (with mean percentage score of 28%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 16%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.29 Participant 29

4.1.29.1 Language background

Table 57

Age at which Language Skills were Started to be Used by Participant 29

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 3	At age 3	At age 3	At age 3	15
English	At age 4	At age 4	At age 4	At age 4	14

Table 57 shows that the participant started to learn Urdu language at the age of 3 years while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 58

Learning Style Preference of Participant 29

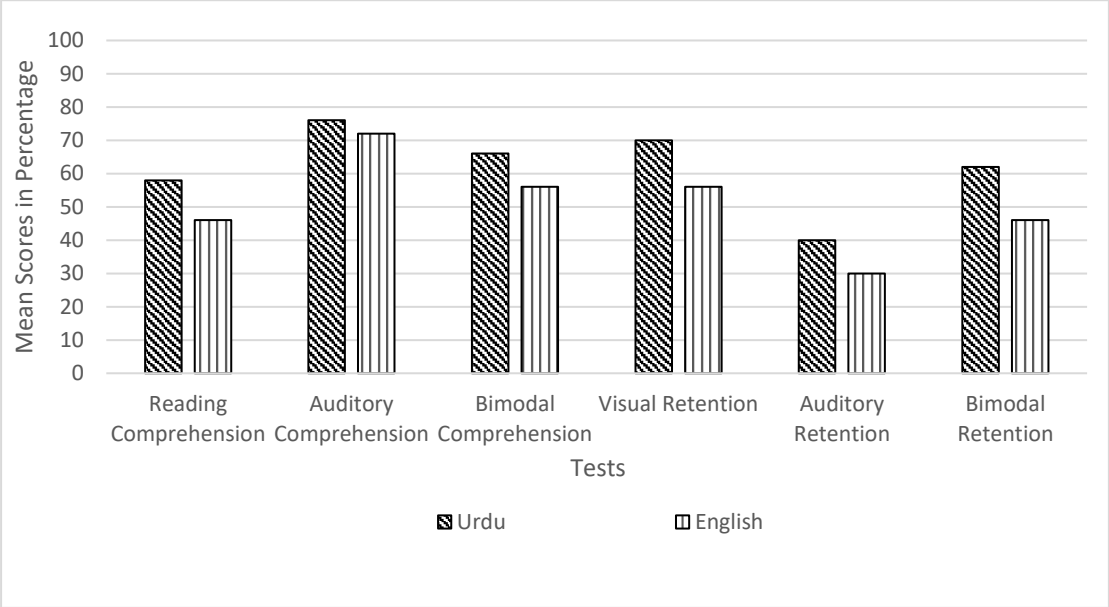
Learning style	Percentage
Auditory	71%
Read/write	29%

Table 58 shows that the participant's preference for auditory learning is 71% and for read/write learning it is 29%. A large difference between the two percentages makes the participant an auditory learner.

4.1.29.2 Urdu and English comprehension and retention:

Figure 29

Scores of Participant 29 on Comprehension and Retention Tests in Urdu and English



According to figure 29, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 76%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 66%) and has scored the lowest on reading comprehension tests (with mean percentage score of 58%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 70%), has scored the second highest on bimodal retention tests (with mean percentage score of 62%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 72%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 56%) and has scored the lowest on reading comprehension tests (with mean percentage score of 46%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 56%), has scored the second highest on bimodal retention tests (with mean percentage score of 46%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.30 Participant 30

4.1.30.1 Language background

Table 59

Age at which Language Skills were Started to be Used by Participant 30

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 3	At age 4	At age 3	At age 3	18
English	At age 6	At age 9	At age 6	At age 6	15

Table 59 shows that the participant started to learn Urdu language at the age of 3 years while English language was started to be learned at the age of 6 years. The difference between the number of years for which each of the two languages were used by the participant is 3 years.

Table 60

Learning Style Preference of Participant 30

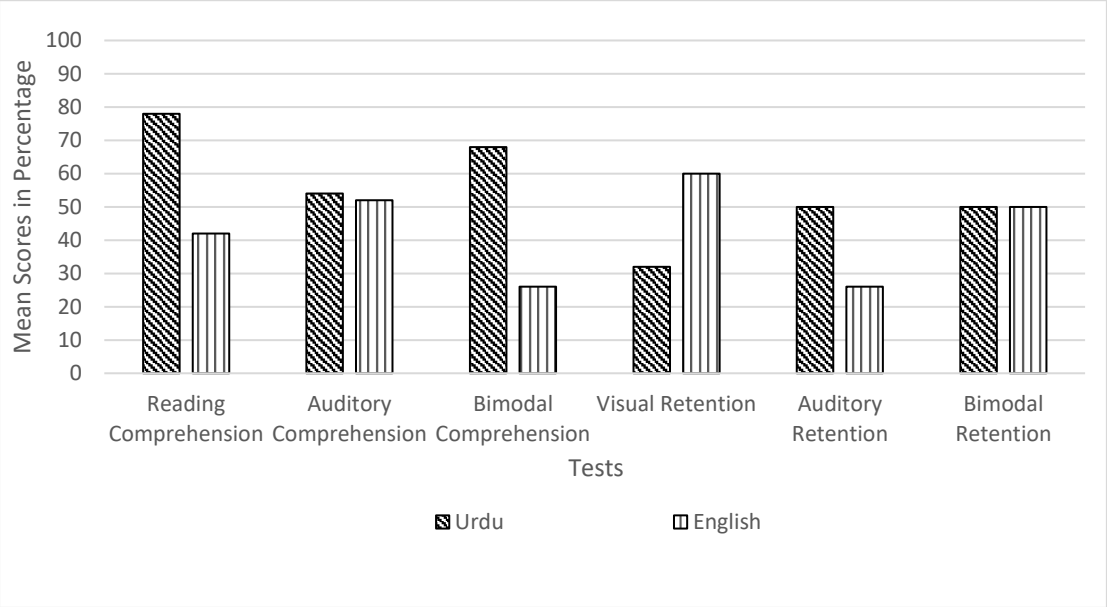
Learning style	Percentage
Auditory	58%
Read/write	42%

Table 60 shows that the participant's preference for auditory learning is 58% and for read/write learning it is 42%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.30.2 Urdu and English comprehension and retention:

Figure 30

Scores of Participant 30 on Comprehension and Retention Tests in Urdu and English



According to figure 30, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 78%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 68%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 54%). Moreover, the participant has scored the highest on both auditory and bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on visual retention tests (with mean percentage score of 32%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 52%), has scored the second highest on reading comprehension tests (with mean percentage score of 42%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 26%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 60%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%).

4.1.31 Participant 31

4.1.31.1 Language background

Table 61

Age at which Language Skills were Started to be Used by Participant 31

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	19
English	At age 3	At age 9	At age 3	At age 3	17

Table 61 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 3 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 62

Learning Style Preference of Participant 31

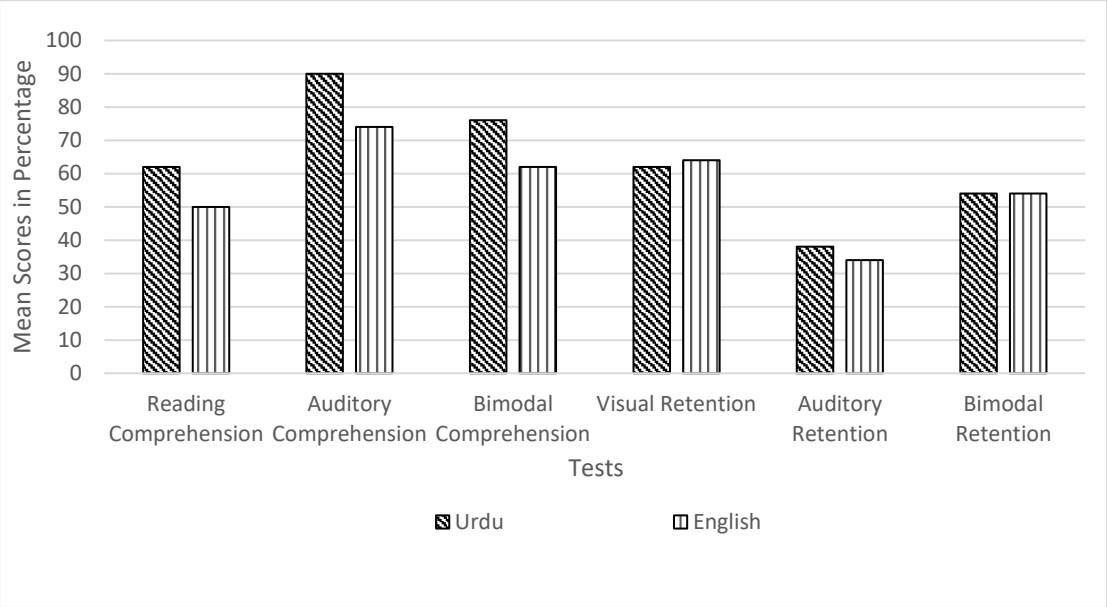
Learning style	Percentage
Auditory	67%
Read/write	33%

Table 62 shows that the participant's preference for auditory learning is 67% and for read/write learning it is 33%. A large difference between the two percentages makes the participant an auditory learner.

4.1.31.2 Urdu and English comprehension and retention:

Figure 31

Scores of Participant 31 on Comprehension and Retention Tests in Urdu and English



According to figure 31, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 90%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 76%) and has scored the lowest on reading comprehension tests (with mean percentage score of 62%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 62%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 74%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 62%) and has scored the lowest on reading comprehension tests (with mean percentage score of 50%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 64%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 34%).

4.1.32 Participant 32

4.1.32.1 Language background

Table 63

Age at which Language Skills were Started to be Used by Participant 32

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 3	17
English	At age 2	At age 2	At age 3	At age 3	16

Table 63 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 2 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 64

Learning Style Preference of Participant 32

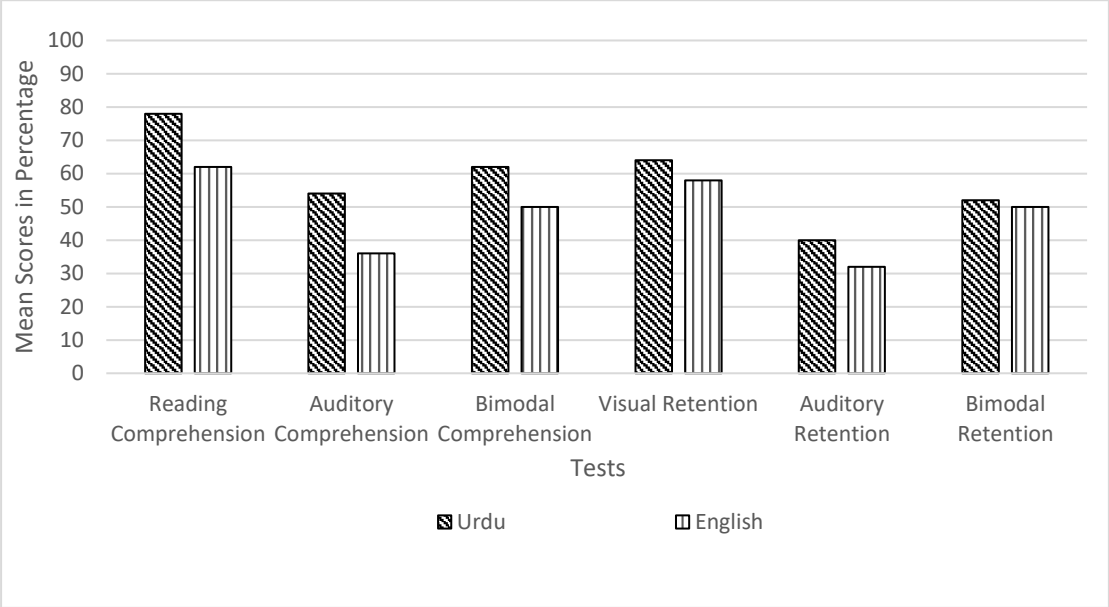
Learning style	Percentage
Auditory	41%
Read/write	59%

Table 64 shows that the participant's preference for auditory learning is 41% and for read/write learning it is 59%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.32.2 Urdu and English comprehension and retention:

Figure 32

Scores of Participant 32 on Comprehension and Retention Tests in Urdu and English



According to figure 32, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 78%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 62%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 54%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 64%), has scored the second highest on bimodal retention tests (with mean percentage score of 52%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 62%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 50%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 36%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 58%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 32%).

4.1.33 Participant 33

4.1.33.1 Language background

Table 65

Age at which Language Skills were Started to be Used by Participant 33

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 4	At age 5	At age 4	At age 4	18
English	At age 5	At age 9	At age 5	At age 5	17

Table 65 shows that the participant started to learn Urdu language at the age of 4 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 66

Learning Style Preference of Participant 33

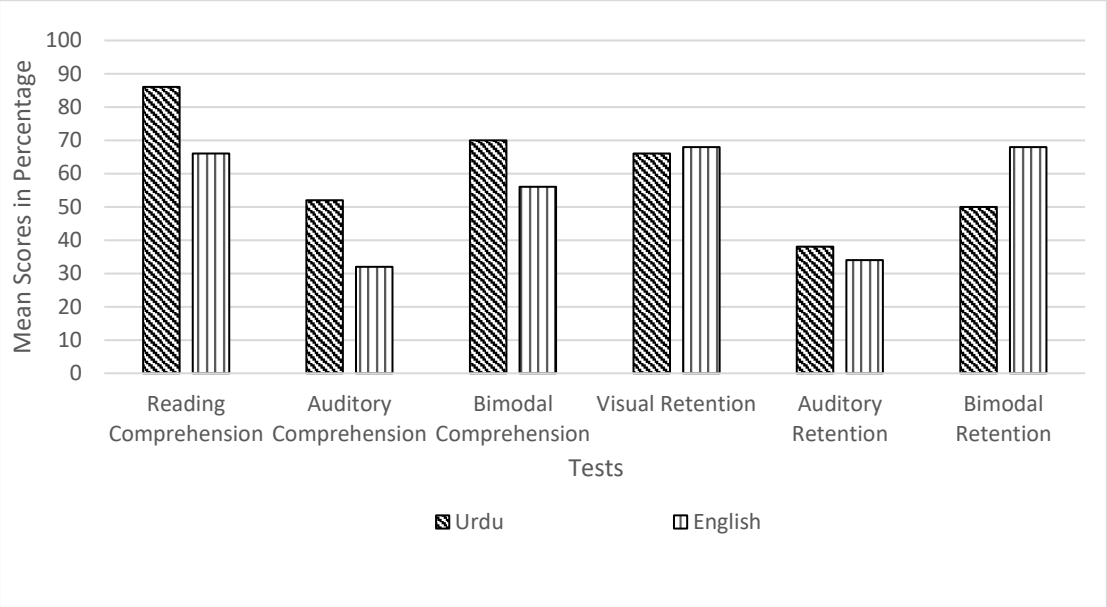
Learning style	Percentage
Auditory	44%
Read/write	56%

Table 66 shows that the participant's preference for auditory learning is 44% and for read/write learning it is 56%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.33.2 Urdu and English comprehension and retention:

Figure 33

Scores of Participant 33 on Comprehension and Retention Tests in Urdu and English



According to figure 33, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 86%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 70%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 52%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 66%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 66%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 56%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 32%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 68%) and has scored the lowest on auditory retention tests (with mean percentage score of 34%).

4.1.34 Participant 34

4.1.34.1 Language background

Table 67

Age at which Language Skills were Started to be Used by Participant 34

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 1	At age 1	At age 3	At age 2	18
English	At age 3	At age 5	At age 3	At age 3	16

Table 67 shows that the participant started to learn Urdu language at the age of 1 year while English language was started to be learned at the age of 3 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 68

Learning Style Preference of Participant 34

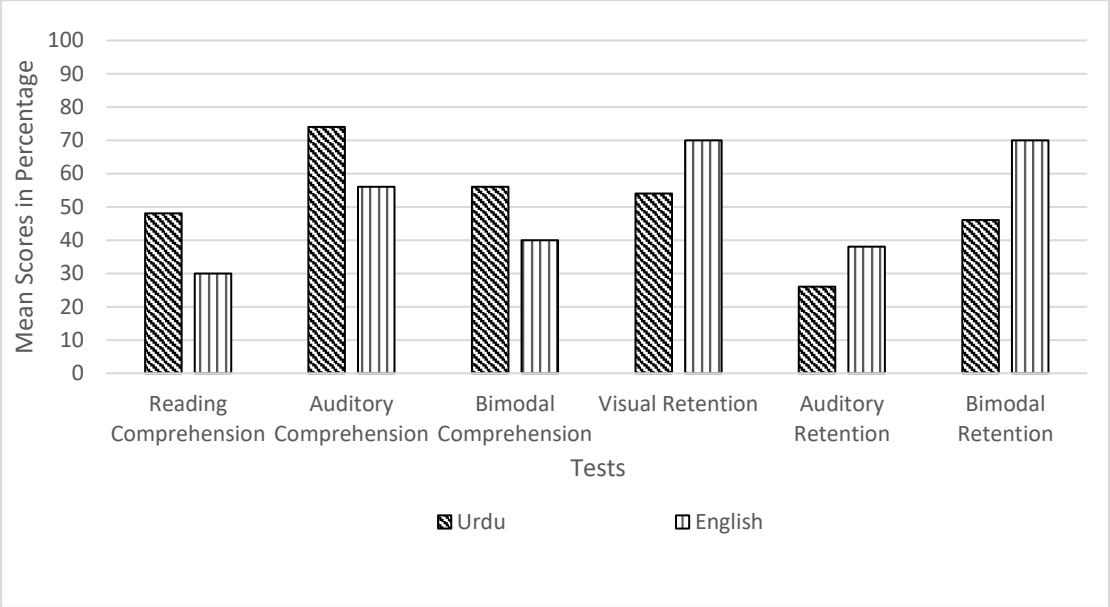
Learning style	Percentage
Auditory	68%
Read/write	32%

Table 68 shows that the participant's preference for auditory learning is 68% and for read/write learning it is 32%. A large difference between the two percentages makes the participant an auditory learner.

4.1.34.2 Urdu and English comprehension and retention:

Figure 34

Scores of Participant 34 on Comprehension and Retention Tests in Urdu and English



According to figure 34, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 74%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 56%) and has scored the lowest on reading comprehension tests (with mean percentage score of 48%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 54%), has scored the second highest on bimodal retention tests (with mean percentage score of 46%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 56%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 40%) and has scored the lowest on reading comprehension tests (with mean percentage score of 30%). Furthermore, the participant has scored the highest on both visual and bimodal retention tests (with mean percentage score of 70%) and has scored the lowest on auditory retention tests (with mean percentage score of 38%).

4.1.35 Participant 35

4.1.35.1 Language background

Table 69

Age at which Language Skills were Started to be Used by Participant 35

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6	At age 6	At age 6	At age 6	16
English	At age 7	At age 16	At age 7	At age 7	15

Table 69 shows that the participant started to learn Urdu language at the age of 6 years while English language was started to be learned at the age of 7 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 70

Learning Style Preference of Participant 35

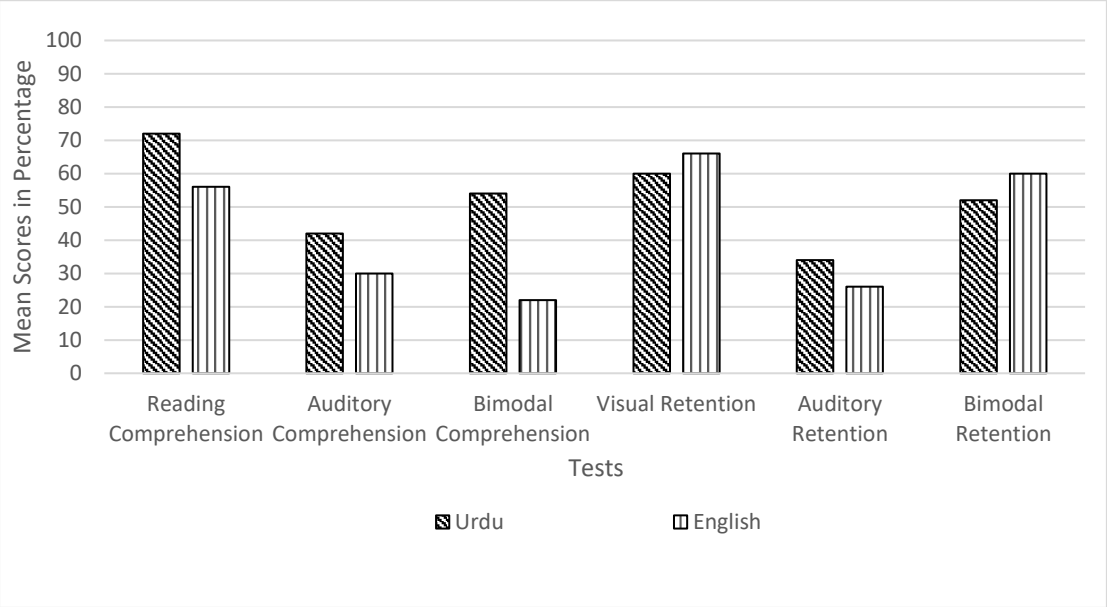
Learning style	Percentage
Auditory	55%
Read/write	45%

Table 70 shows that the participant's preference for auditory learning is 55% and for read/write learning it is 45%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.35.2 Urdu and English comprehension and retention:

Figure 35

Scores of Participant 35 on Comprehension and Retention Tests in Urdu and English



According to figure 35, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 72%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 54%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 42%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 60%), has scored the second highest on bimodal retention tests (with mean percentage score of 52%) and has scored the lowest on auditory retention tests (with mean percentage score of 34%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 56%), has scored the second highest on auditory comprehension tests (with mean percentage score of 30%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 22%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 66%), has scored the second highest on bimodal retention tests (with mean percentage score of 60%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%).

4.1.36 Participant 36

4.1.36.2 Language background

Table 71

Age at which Language Skills were Started to be Used by Participant 36

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 3	At age 3	At age 4	At age 4	15
English	At age 4	At age 5	At age 4	At age 4	14

Table 71 shows that the participant started to learn Urdu language at the age of 3 years while English language was started to be learned at the age of 4 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 72

Learning Style Preference of Participant 36

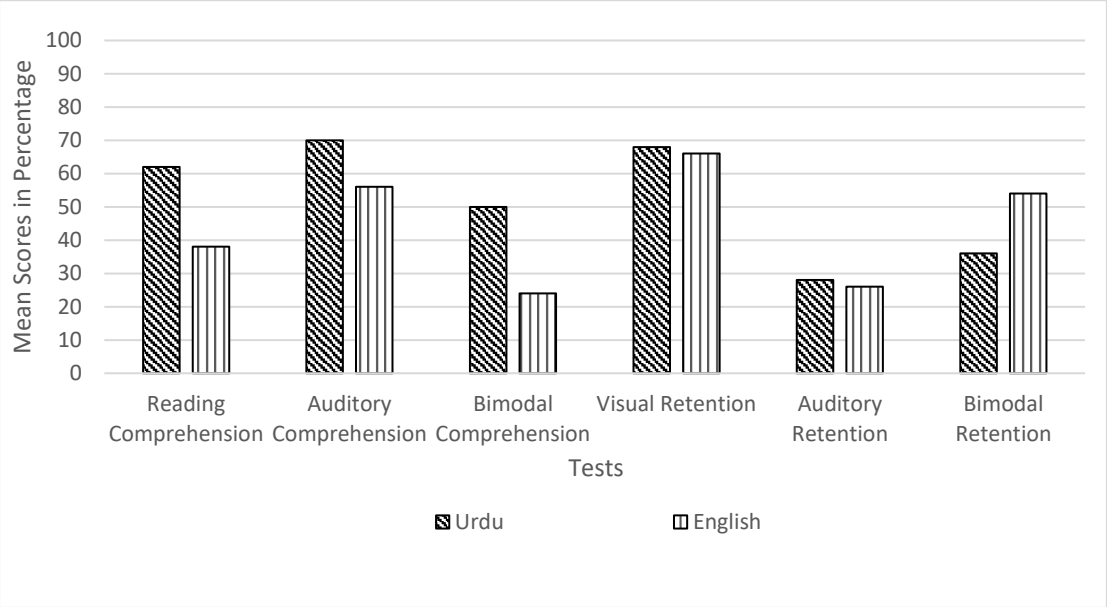
Learning style	Percentage
Auditory	63%
Read/write	37%

Table 72 shows that the participant's preference for auditory learning is 63% and for read/write learning it is 37%. A large difference between the two percentages makes the participant an auditory learner.

4.1.36.3 Urdu and English comprehension and retention:

Figure 36

Scores of Participant 36 on Comprehension and Retention Tests in Urdu and English



According to figure 36, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 70%), has scored the second highest on reading comprehension tests (with mean percentage score of 62%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 50%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 36%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 56%), has scored the second highest on reading comprehension tests (with mean percentage score of 38%) and has scored the lowest on bimodal comprehension tests (with mean percentage score of 24%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 66%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 26%).

4.1.37 Participant 37

4.1.37.2 Language background

Table 73

Age at which Language Skills were Started to be Used by Participant 37

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 4	At age 4	At age 4	At age 4	16
English	At age 5	At age 7	At age 5	At age 5	15

Table 73 shows that the participant started to learn Urdu language at the age of 4 years while English language was started to be learned at the age of 5 years. The difference between the number of years for which each of the two languages were used by the participant is 1 year.

Table 74

Learning Style Preference of Participant 37

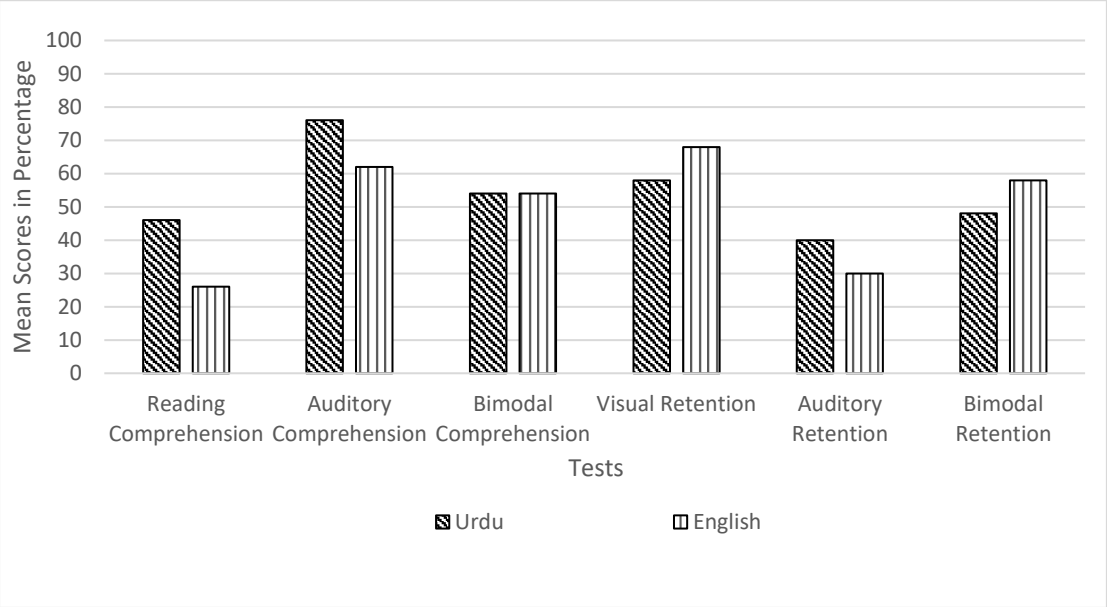
Learning style	Percentage
Auditory	70%
Read/write	30%

Table 74 shows that the participant's preference for auditory learning is 70% and for read/write learning it is 30%. A large difference between the two percentages makes the participant an auditory learner.

4.1.37.3 Urdu and English comprehension and retention:

Figure 37

Scores of Participant 37 on Comprehension and Retention Tests in Urdu and English



According to figure 37, in the case of Urdu language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 76%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 54%) and has scored the lowest on reading comprehension tests (with mean percentage score of 46%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 58%), has scored the second highest on bimodal retention tests (with mean percentage score of 48%) and has scored the lowest on auditory retention tests (with mean percentage score of 40%). In the case of English language, the participant has scored the highest on auditory comprehension tests (with mean percentage score of 62%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 54%) and has scored the lowest on reading comprehension tests (with mean percentage score of 26%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%).

4.1.38 Participant 38

4.1.38.2 Language background

Table 75

Age at which Language Skills were Started to be Used by Participant 38

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 7	At age 7	At age 9	At age 7	17
English	At age 9	At age 20	At age 9	At age 9	15

Table 75 shows that the participant started to learn Urdu language at the age of 7 years while English language was started to be learned at the age of 9 years. The difference between the number of years for which each of the two languages were used by the participant is 2 years.

Table 76

Learning Style Preference of Participant 38

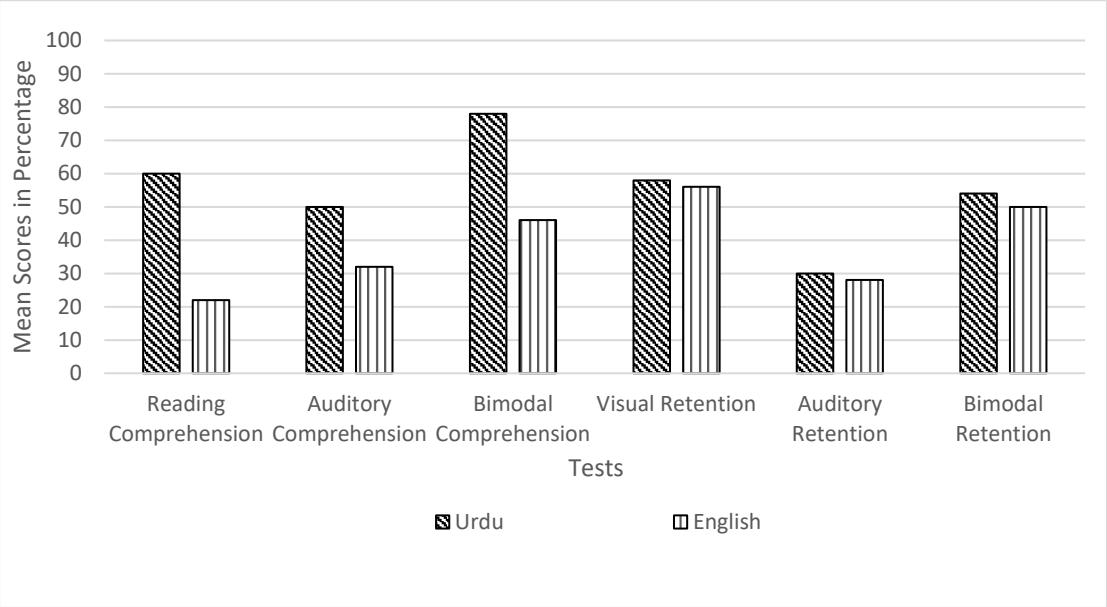
Learning style	Percentage
Auditory	48%
Read/write	52%

Table 76 shows that the participant's preference for auditory learning is 48% and for read/write learning it is 52%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.38.3 Urdu and English comprehension and retention:

Figure 38

Scores of Participant 38 on Comprehension and Retention Tests in Urdu and English



According to figure 38, in the case of Urdu language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 78%), has scored the second highest on reading comprehension tests (with mean percentage score of 60%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 50%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 58%), has scored the second highest on bimodal retention tests (with mean percentage score of 54%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%). In the case of English language, the participant has scored the highest on bimodal comprehension tests (with mean percentage score of 46%), has scored the second highest on auditory comprehension tests (with mean percentage score of 32%) and has scored the lowest on reading comprehension tests (with mean percentage score of 22%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 56%), has scored the second highest on bimodal retention tests (with mean percentage score of 50%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.1.39 Participant 39

4.1.39.2 Language background

Table 77

Age at which Language Skills were Started to be Used by Participant 39

Language	Listening	Speaking	Reading	Writing	Total number of years of language use
Urdu	At age 6	At age 8	At age 8	At age 8	36
English	At age 6	At age 9	At age 8	At age 8	36

Table 77 shows that the participant started to learn Urdu language at the age of 6 years while English language was started to be learned at the age of 6 years. The difference between the number of years for which each of the two languages were used by the participant is 0 years.

Table 78

Learning Style Preference of Participant 39

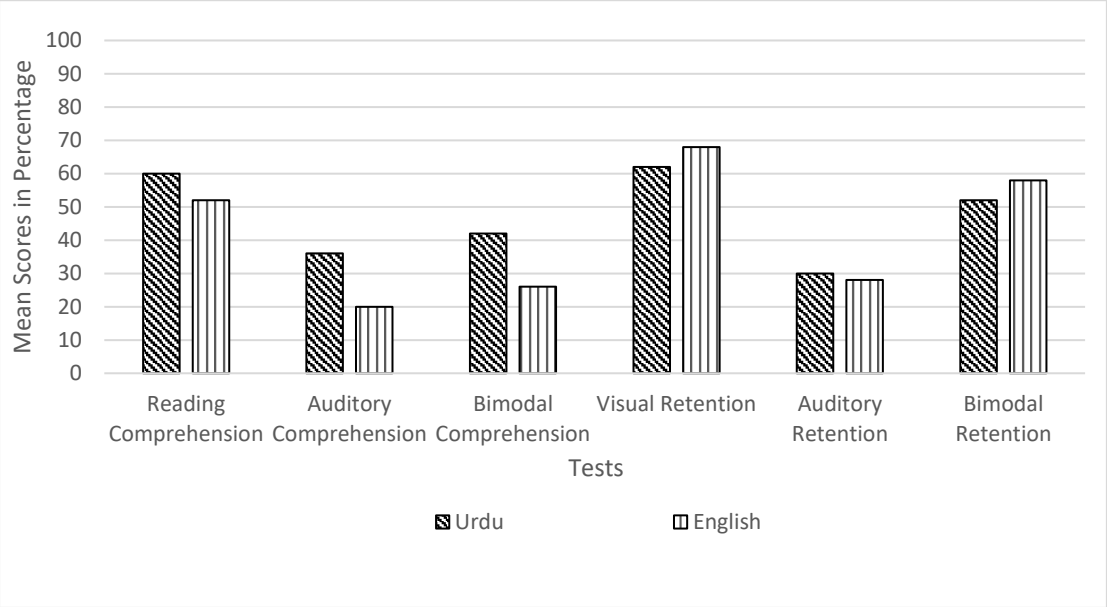
Learning style	Percentage
Auditory	59%
Read/write	41%

Table 78 shows that the participant's preference for auditory learning is 59% and for read/write learning it is 41%. A small difference between the two percentages makes the participant a bimodal learner.

4.1.39.3 Urdu and English comprehension and retention:

Figure 39

Scores of Participant 39 on Comprehension and Retention Tests in Urdu and English



According to figure 39, in the case of Urdu language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 60%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 42%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 36%). Moreover, the participant has scored the highest on visual retention tests (with mean percentage score of 62%), has scored the second highest on bimodal retention tests (with mean percentage score of 52%) and has scored the lowest on auditory retention tests (with mean percentage score of 30%). In the case of English language, the participant has scored the highest on reading comprehension tests (with mean percentage score of 52%), has scored the second highest on bimodal comprehension tests (with mean percentage score of 26%) and has scored the lowest on auditory comprehension tests (with mean percentage score of 20%). Furthermore, the participant has scored the highest on visual retention tests (with mean percentage score of 68%), has scored the second highest on bimodal retention tests (with mean percentage score of 58%) and has scored the lowest on auditory retention tests (with mean percentage score of 28%).

4.2 Results

Following are the overall results of the analyzed data:

Figure 40

Preferred learning styles of the participants

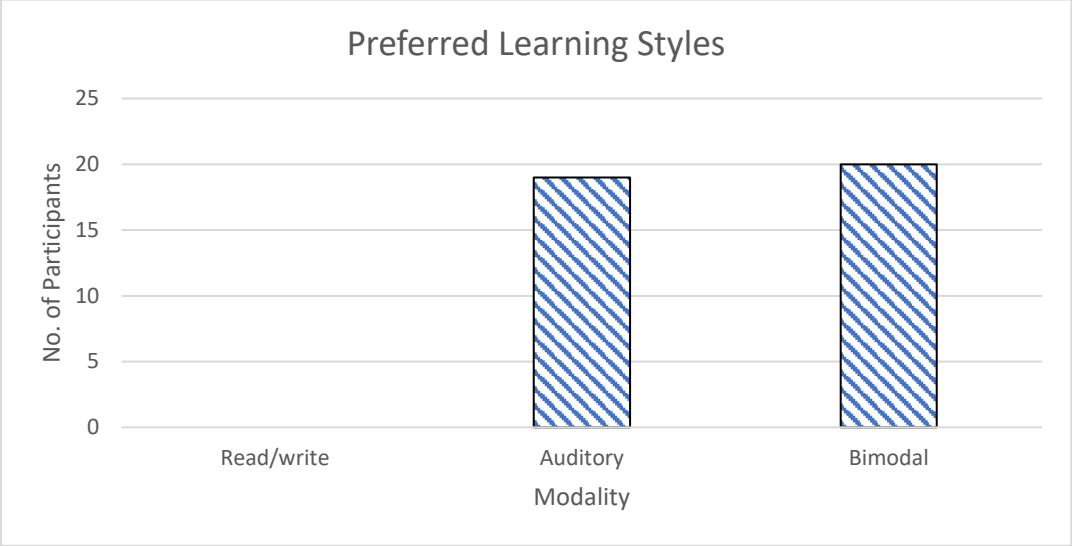


Figure 40 shows that out of a total of 39 participants, 20 participants preferred the bimodal learning style while 19 participants preferred the auditory learning style. The bimodal learners have been termed as bimodal since the difference between their preference for auditory and read/write learning style was not significant enough to consider either one of the two as dominant. The auditory learners were also not completely auditory, i.e., they also preferred read/write learning style, but the difference between their preference for auditory and read/write learning style was significant enough to consider auditory style of learning as dominant. Hence, they have been categorized as auditory learners. None of the participants had a high preference for read/write learning style the way auditory learners had for the auditory learning style.

Figure 41

Retention of Words by Participants in Different Modalities in Urdu and English Language

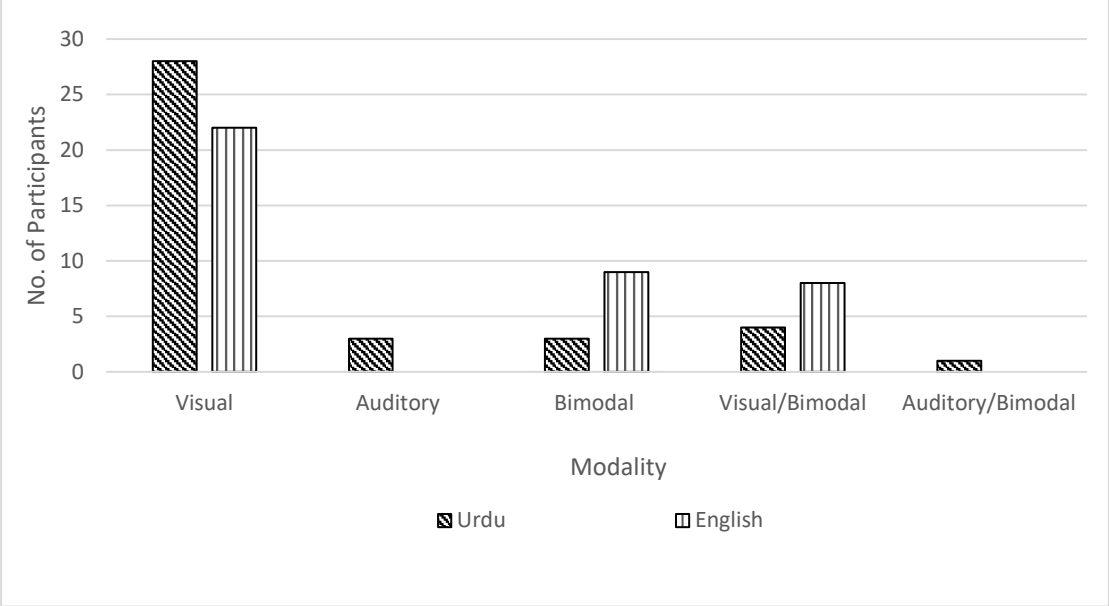


Figure 41 shows that, in the case of words in Urdu, 28 participants retained the words more in the visual form, 4 participants retained the words more in the visual and bimodal form equally, 3 participants retained the words more in the auditory form, 3 participants retained the words more in the bimodal form and 1 participant retained the words more in the auditory and bimodal form equally. In the case of words in English, 22 participants retained the words more in the visual, 9 participants retained the words more in the bimodal form, 8 participants retained the words more in the visual and bimodal form equally while none of the participants scored high in retaining the words in the auditory form. Bimodal here means the simultaneous presentation of words in two different modalities, i.e., presentation of words in the visual and auditory form at the same time.

Table 79

Participants with Highest Scores in the Same Modality on Both Urdu and English Retention Tests

Participant No.	Age of Urdu Acquisition in Years	Age of English Acquisition in Years	Modality in which the Learner Performs Better on Urdu Retention Tests	Modality in which the Learner Performs Better on English Retention Tests
1	3	6	Bimodal	Bimodal/Visual
2	10	12	Visual	Bimodal/ Visual
3	4	5	Visual	Visual
5	1	3	Visual	Visual
6	1	5	Bimodal/ Visual	Bimodal
7	1	2	Visual	Bimodal/ Visual
11	1	4	Visual	Visual
14	6	8	Visual	Visual
15	7	12	Visual	Bimodal/ Visual
16	2	3	Visual	Visual
17	2	5	Bimodal/ Visual	Visual
18	2	5	Bimodal/ Visual	Bimodal
19	2	5	Visual	Bimodal/ Visual
21	1	5	Bimodal	Bimodal
22	9	13	Visual	Visual
23	6	8	Visual	Visual
24	1	4	Visual	Visual
25	1	5	Bimodal/ Visual	Bimodal
27	1	4	Visual	Visual
28	1	4	Visual	Bimodal/ Visual
29	3	4	Visual	Visual
31	1	3	Visual	Visual
32	1	2	Visual	Visual
33	4	5	Visual	Bimodal/ Visual

34	1	3	Visual	Bimodal/ Visual
35	6	7	Visual	Visual
36	3	4	Visual	Visual
37	4	5	Visual	Visual
38	7	9	Visual	Visual
39	6	6	Visual	Visual

Table 79 shows the data of 30 out of a total of 39 participants. The table shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on retention tests in Urdu and English language. All 30 participants included in the table performed better in the same modality on retention tests in both Urdu and English language. Majority of the participants performed better on retention tests in which words were presented in the visual (written) form while the rest performed better on retention tests in which words were presented in the bimodal form. Majority of the participants had acquired both the languages either before or after the age of 5 except for 10 participants. Among these 10 participants, 9 had acquired English at the age of 5 and Urdu at an age of less than 5 years with a maximum difference of 4 years between the two ages. The remaining 1 participant acquired Urdu at age 3 and English at age 6 years.

Table 80

Participants with Highest Scores in Different Modalities on Urdu and English Retention Tests

Participant No.	Age of Urdu Acquisition in Years	Age of English Acquisition in Years	Modality in which the Learner Performs Better on Urdu Retention Tests	Modality in which the Learner Performs Better on English Retention Tests
4	6 Months	3	Visual	Bimodal
8	1	7	Auditory	Visual
9	3	7	Auditory	Bimodal

10	1	7	Auditory	Visual
12	1	6	Bimodal	Visual
13	6 Months	5	Visual	Bimodal
20	1	7	Visual	Bimodal
26	5	10	Visual	Bimodal
30	3	6	Auditory/Bimodal	Visual

Table 80 shows the data of 9 out of a total of 39 participants. The table shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on retention tests in Urdu and English language. The modalities in which these participants performed better on retention tests were different for Urdu and English language. Majority of the participants included in this table acquired Urdu at an age of less than 5 years and English at an age of more than 5 years except for 3 participants. Among these three participants, one acquired Urdu at the age of 6 months and English at age 3, another acquired Urdu at age 6 months and English at age 5 while the third one acquired Urdu at age 5 and English at age 10.

Table 81

Performance of Auditory Learners on Comprehension Tests in Urdu Language

Auditory Learning Style			
Participant No.	Age of Urdu Acquisition in Years	Age of English Acquisition in Years	Modality in which the Learner Performs Better on Urdu Comprehension Tests
1	3	6	Auditory
2	10	12	Auditory
3	4	5	Auditory
4	6 Months	3	Auditory
10	1	7	Auditory
13	6 Months	5	Auditory
16	2	3	Auditory
17	2	5	Auditory
18	2	5	Visual

19	2	5	Auditory
23	6	8	Auditory
25	1	5	Bimodal
26	5	10	Auditory
28	1	4	Auditory
29	3	4	Auditory
31	1	3	Auditory
34	1	3	Auditory
36	3	4	Auditory
37	4	5	Auditory

Table 81 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in Urdu language. All the participants included in this table are those who had chosen the auditory style as their preferred style of learning. The table shows that out of a total of 19 auditory learners, 17 performed better on auditory (listening) comprehension tests. The remaining 2 participants, however, performed better on modalites other than auditory, i.e., one performed better on reading (visual) comprehension test and the other performed better on bimodal comprehension test. Although the results obtained for these two participants do not match their preferred learning style, i.e., auditory, the number of these participants is insignificant in comparison to the 17 participants and hence they can be ignored.

Table 82

Performance of Auditory Learners on Comprehension Tests in English Language

Auditory Learning Style			
Participant No.	Age of Urdu Acquisition in Years	Age of English Acquisition in Years	Modality in which the Learner Performs Better on English Comprehension Tests
1	3	6	Bimodal
2	10	12	Auditory
3	4	5	Auditory

4	6 Months	3	Visual
10	1	7	Visual
13	6 Months	5	Visual
16	2	3	Auditory
17	2	5	Bimodal
18	2	5	Visual
19	2	5	Bimodal
23	6	8	Auditory
25	1	5	Visual
26	5	10	Bimodal
28	1	4	Auditory
29	3	4	Auditory
31	1	3	Auditory
34	1	3	Auditory
36	3	4	Auditory
37	4	5	Auditory

Table 82 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in English language. All the participants included in this table are those who had chosen the auditory style as their preferred style of learning. The table shows that out of a total of 19 auditory learners, 10 performed better on auditory comprehension tests. The remaining 9 participants, however, performed better on modalities other than auditory. Among these 9 participants, 5 performed better on reading (visual) comprehension tests while 4 performed better on bimodal comprehension tests. The results obtained for these 9 participants do not match their preferred learning style, i.e., auditory. The 10 participants who performed better on auditory comprehension tests had a difference of 3 years or less between the ages at which they started to learn Urdu and English language. Moreover, these particpants had started to learn both the languages either before the age of 5 or after the age of 5, except for 2 participants who had started to learn Urdu at the age of 4 and English at the age of 5. The 9 participants who performed better on modalities other than auditory had a difference of more than 3 years between the ages at which they started to learn Urdu

and English language or had started to learne Urdu at an age of less than 5 and English at an age of more than 5, except for 3 participants. These 3 participants had started to learn Urdu at the age of 2 and English at the age of 5. Despite having a difference of only 3 years between the ages at which they started to learn Urdu and English language, their learning style did not match the modality in which they performed better on English comprehension tests.

Table 83

Comparison of Performance of Auditory Learners on Comprehension Tests in Urdu and English Language

Auditory Learning Style				
Participant No.	Age of Urdu Acquisition in Years	Age of English Acquisition in Years	Modality in which the Learner Performs Better on Urdu Comprehension Tests	Modality in which the Learner Performs Better on English Comprehension Tests
1	3	6	Auditory	Bimodal
2	10	12	Auditory	Auditory
3	4	5	Auditory	Auditory
4	6 Months	3	Auditory	Visual
10	1	7	Auditory	Visual
13	6 Months	5	Auditory	Visual
16	2	3	Auditory	Auditory
17	2	5	Auditory	Bimodal
18	2	5	Visual	Visual
19	2	5	Auditory	Bimodal
23	6	8	Auditory	Auditory
25	1	5	Bimodal	Visual
26	5	10	Auditory	Bimodal
28	1	4	Auditory	Auditory
29	3	4	Auditory	Auditory
31	1	3	Auditory	Auditory

34	1	3	Auditory	Auditory
36	3	4	Auditory	Auditory
37	4	5	Auditory	Auditory

Table 83 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in Urdu and English language. All the participants included in this table are those who had chosen the auditory style as their preferred style of learning. The table shows that out of a total of 19 participants, 11 participants performed better in the same modality on both Urdu and English comprehension tests. Out of these 11 participants, 10 participants performed better on auditory comprehension tests, which matches their learning style, while the remaining 1 participant performed better on reading (visual) comprehension tests, which does not match their learning style. Out of the 19 participants, 8 participants were such that the modalities in which they performed better were different for Urdu and English comprehension tests. These 8 participants performed better on auditory comprehension tests in the case of Urdu language, which matches their learning style, while they performed better on either reading (visual) or bimodal comprehension tests in the case of English language, which does not match their learning style.

Table 84

Performance of Bimodal Learners on Comprehension Tests in Urdu Language

Bimodal Learning Style			
Participant No.	Age of Urdu Acquisition	Age of English Acquisition	Modality in which the Learner Performs Better on Urdu Comprehension Tests
5	1	3	Bimodal
6	1	5	Visual
7	1	2	Visual
8	1	7	Bimodal
9	3	7	Visual
11	1	4	Visual
12	1	6	Visual

14	6	8	Bimodal
15	7	12	Visual
20	1	7	Bimodal
21	1	5	Bimodal
22	9	13	Visual
24	1	4	Visual
27	1	4	Visual
30	3	6	Visual
32	1	2	Visual
33	4	5	Visual
35	6	7	Visual
38	7	9	Bimodal
39	6	6	Visual

Table 84 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in Urdu language. All the participants included in this table are those who had chosen the bimodal style as their preferred style of learning. The table shows that out of 20 bimodal participants 14 performed better on reading (visual) comprehension tests and 6 performed better on bimodal comprehension tests with none of the participants scoring higher on auditory comprehension tests.

Table 85

Performance of Bimodal Learners on Comprehension Tests in English Language

Bimodal Learning Style			
Participant No.	Age of Urdu Acquisition	Age of English Acquisition	Modality in which the Learner Performs Better on English Comprehension Tests
5	1	3	Bimodal
6	1	5	Auditory
7	1	2	Visual
8	1	7	Visual

9	3	7	Auditory
11	1	4	Visual
12	1	6	Auditory
14	6	8	Bimodal
15	7	12	Auditory
20	1	7	Visual
21	1	5	Visual
22	9	13	Visual
24	1	4	Visual
27	1	4	Bimodal
30	3	6	Auditory
32	1	2	Visual
33	4	5	Visual
35	6	7	Visual
38	7	9	Bimodal
39	6	6	Visual

Table 85 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in English language. All the participants included in this table are those who had chosen the bimodal style as their preferred style of learning. The table shows that out of a total of 20, 11 participants performed better on reading (visual) comprehension tests, 5 participants performed better on auditory comprehension tests and 4 participants performed better on bimodal comprehension tests.

Table 86

Comparison of Performance of Bimodal Learners on Comprehension Tests in Urdu and English Language

Bimodal Learning Style				
Participant No.	Age of Urdu Acquisition	Age of English Acquisition	Modality in which the Learner Performs Better on Urdu Comprehension Tests	Modality in which the Learner Performs Better on English Comprehension Tests
5	1	3	Bimodal	Bimodal
6	1	5	Visual	Auditory
7	1	2	Visual	Visual
8	1	7	Bimodal	Visual
9	3	7	Visual	Auditory
11	1	4	Visual	Visual
12	1	6	Visual	Auditory
14	6	8	Bimodal	Bimodal
15	7	12	Visual	Auditory
20	1	7	Bimodal	Visual
21	1	5	Bimodal	Visual
22	9	13	Visual	Visual
24	1	4	Visual	Visual
27	1	4	Visual	Bimodal
30	3	6	Visual	Auditory
32	1	2	Visual	Visual
33	4	5	Visual	Visual
35	6	7	Visual	Visual
38	7	9	Bimodal	Bimodal
39	6	6	Visual	Visual

Table 86 shows the numbers that the participants have been labelled with along with the ages at which they acquired Urdu and English language and the modalities in which they performed better on comprehension tests in Urdu and English language. All the participants included in this table are those who had chosen the bimodal style as their preferred style of learning. The table shows that out of all 20 participants, 11 participants performed better in the same modality on both Urdu and English comprehension tests. Among these 11 participants, 9 had a difference of 3 years or less between the ages at which they started to learn Urdu and English language and had started to learn both the languages either before or after the age of 5. Among the remaining 2 participants, one had started to learn both lanaguages after the age of 5 but had a difference of 4 years between the two and the other had started to learn Urdu at age 4 and English at age 5 but had a difference of only 1 year between the two. Out of all 20 participants, 9 participants were such that the modalities in which they performed better were different for Urdu and English comprehension tests. Among these 9 participants, 8 had a difference of more than 3 years between the ages at which they started to learn Urdu and English language or had started to learn Urdu at an age of less than 5 and English at an age of more than 5. The remaining 1 participant had started to learn Urdu at age 1 and English at age 4. Although, this participant started to learn both the languages before the age of 5 with a difference of only 3 years between the two, the modality in which the participant performed better was different for Urdu and English retention tests.

4.3 Discussion

The present study is based on the concept that visual and auditory input follow different pathways in working memory (Henry, 2012). Another concept that the present study revolves around is that of learning styles according to which learners learn better when they receive information in their preferred modality; while, using their weaker preferences can hamper learning and hence negatively influence their performance (Fleming & Baume, 2006). One of the aims of the present study was to find out the link between Urdu/English bilinguals' learning style preference and their actual performance in comprehension and retention tasks in Urdu and English language. For this reason, the modalities that the participants of the present study preferred for learning were identified using VARK questionnaire.

The results obtained through VARK questionnaire showed that out of a total of 39 participants, 20 participants preferred the bimodal learning style while 19 participants preferred the auditory learning style. The bimodal learners' preference for auditory and read/write learning style was not significant enough to consider either one of the two as dominant. On the other hand, the auditory learners' preference for auditory and read/write learning style was significant enough to consider auditory style of learning as dominant. Even though, on the whole, only two types of style preferences were found among the participants, the percentage of preference that the participants had for auditory and read/write learning style was different for different participants. This result is in correspondence with the findings of Tight (2010), Ababneh (2015), Sarabi-Asiabar, et al. (2015), Wright and Stokes (2015) and Sintia et al. (2019). According to these studies, different learners have different learning styles (Tight, 2010; Ababneh, 2015; Sarabi-Asiabar, et al., 2015; Wright & Stokes, 2015; Sintia et al., 2019).

In order to find out the link between Urdu/English bilinguals' learning style preference and their actual performance in comprehension and retention tasks in Urdu and English language, the participants were tested using comprehension and retention tests in two different modalities, i.e., auditory and visual, in both Urdu and English language. The study also aimed at finding out how bimodal input (input presented in auditory and visual form simultaneously) affects the performance of Urdu/English bilinguals on retention and comprehension tasks in their Urdu and English language. Hence, the participants were also tested using bimodal comprehension and retention tests.

The results obtained through the retention tests showed that majority of the participants retained more words when the words were provided in the visual (written) form in comparison to the words presented in the auditory or bimodal form. The second highest number of participants retained more words when the words were provided in the bimodal form in comparison to the words presented in the visual (written) or auditory form. These results were obtained for both Urdu and English retention tests. In the case of auditory words, the results obtained for Urdu and English retention tests were a bit different. Although a small number, but 4 participants were able to retain more words in the auditory form in comparison to the words presented in the visual (written) or bimodal form on Urdu retention tests. On the other hand, none of the

participants were able to retain more words in the auditory form in comparison to the words presented in the visual (written) or bimodal form on English retention tests.

The results obtained in the present study are different from those obtained in studies conducted by Goolkasian and Foos (2002), Goolkasian and Foos (2005a) and Delogu et al. (2009). According to these studies, words in the auditory form are easier to retain and recall when they are presented in the auditory form as compared to written form (Goolkasian & Foos, 2002; Goolkasian & Foos, 2005a; Delogu et al., 2009). Moreover, these studies found bimodal presentation of input to be easier to retain and recall than unimodal presentation of input (Goolkasian & Foos, 2005b; Delogu et al., 2009).

Results obtained in these previous studies are different from those of the present study since in the present study visual (written) words were retained better than auditory words and unimodal (written) presentation of words produced better retention in comparison to bimodal presentation of words. Results obtained in the present study are more in correspondence with the results obtained by Lindner et al. (2009). According to Lindner et al. (2009), retention and recall of information is better when presented in the written form than when it is presented in the auditory form.

Results obtained from retention tests in the present study further show that the modalities in which the participants performed better on both Urdu and English retention tests were not related to the learning styles of the participants. Majority of the participants retained more words when the words were presented in the visual (written) form while a few retained more words when they were presented bimodally even if they had an auditory style of learning. These results are different from the results obtained by Tight (2010). According to the study conducted by Tight (2010), participants learning words in their second language, retained words better when the modality in which they learned matched their learning style.

Moreover, it was found in the present study that for majority of the participants, the modality in which they performed better was the same for both Urdu and English retention tests. While for the remaining few participants, the modality in which they performed better was different for Urdu and English retention tests. Among those who performed better in the same modality on both Urdu and English retention tests, majority had acquired both the languages either before or after the age of 5 and a few

had acquired English at the age of 5 and Urdu at an age of less than 5 years. Among the participants who performed better on Urdu and English retention tests in different modalities, majority of the participants had acquired Urdu at an age of less than 5 years and English at an age of more than 5 years. Although exceptions were present in both kinds of participants, their numbers were insignificant.

The results obtained through comprehension tests showed that in the case of comprehension tests in Urdu language, majority of the auditory learners performed better on auditory comprehension tests while all the bimodal learners performed better on either bimodal or reading (visual) comprehension tests. Among the auditory learners, there were 2 participants who performed better in modalities other than auditory but due to their insignificant number, they can be ignored. In the case of comprehension tests in English, majority of the auditory learners performed better on auditory comprehension tests while the remaining performed better on modalities other than auditory. The difference between the numbers of the two types of participants, however, was not significant. On the other hand, majority of the bimodal learners performed better on reading (visual) comprehension tests. Among the remaining bimodal learners, an almost equal number of participants performed better on auditory and bimodal comprehension tests.

These results show that the modalities in which the participants performed better on comprehension tests matched their learning styles in the case of Urdu language. In the case of English language, however, the modalities in which the participants performed better on comprehension tests did not necessarily match their learning styles. The results obtained for Urdu language are similar to those obtained in studies conducted by Mulalic et al. (2009), Sarabi-Asiabar, et al. (2015) and Sintia et al. (2019). According to these studies, matching learning styles with the provided input improves learning and performance.

The results obtained for English language are different from those obtained for Urdu language and are more similar to the results obtained in studies conducted by Awang et al. (2017) and Aslaksen and Lorås (2019). According to these studies, learning style of a learner may not necessarily produce better learning since there are also some other factors that play a role in academic achievement. On the other hand, the results obtained from English comprehension tests in the present study are only

partially similar to those obtained in a study conducted by Moenikia and Zahed-Babelan (2010) and Zhang and Evans (2013). According to Moenikia and Zahed-Babelan (2010), learners performed better in those second language skills that matched their learning styles. According to Zhang and Evans (2013), matching learning styles with teaching methods improves learning in a second language. In the present study, learning style and performance in English language did not match for every participant.

The participants, both auditory and bimodal learners, who performed better in the same modality on both Urdu and English comprehension tests, with that modality also matching their preferred learning style, had started to learn both the languages either before or after the age of 5 and/or had a difference of 3 years or less between the ages at which they started to learn Urdu and English language. Although there were some exceptions among these participants but they were insignificant in number hence they can be ignored. On the other hand, participants who were such that the modalities in which they performed better were different for Urdu and English comprehension tests, with the modality of English comprehension tests not matching their preffered learning style, had started to learn Urdu at an age of less than 5 and English at an age of more than 5 and/or had a difference of more than 3 years between the ages at which they started to learn Urdu and English language. Although there were some exceptions among these participants but they were insignificant in number hence they can be ignored.

There were some participants whose learning styles matched the modalities in which they performed better on Urdu comprehension tests but did not match the modalities in which they performed better on English comprehension tests. According to Macedonia (2015), the different languages used by a bilingual may differ in terms of how the languages are learned, the amount of time they are used for and the functions they are used for. It is possible that the participants were thinking with regard to the language that they learned first or used more, which in this case was Urdu, while filling the VARK questionnaire. For the participants whose learning styles did not match the modalities in which they performed better on English comprehension tests, the reason behind the particular modality being performed better in could be the one provided by (Ibrahim, 2008). According to Ibrahim (2008), the performance of bilinguals in the two languages used by them when using auditory and visual modalities is a result of their exposure, experience and use of both their languages. This shows that learners' learning

style is based on their experience with the language they learnt first which may be similar to or different from the other language used by them.

Some previously conducted studies have failed to find a link between learning styles and academic performance of the students (Esfandabad & Emamipour, 2008; Leung et al., 2014; Ababneh, 2015; Awang et al., 2017; Espinoza-Poves et al., 2019; Aslaksen & Lorås, 2019). On the other hand, some studies have found learning styles and academic performance to be connected and that matching learning styles with the provided input improves learning (Mulalic et al., 2009; Moenikia & Zahed-Babelan, 2010; Robertson et al., 2011; Wright & Stokes, 2015; Sintia et al., 2019; Md Zain et al., 2019).

The overall results obtained in the present study show that the modalities in which the participants performed better on both Urdu and English retention tests were not related to the learning styles of the participants. Moreover, majority of the participants retained more words when the words were presented in the visual (written) form while some retained more words when they were presented bimodally. Very few retained more words when they were presented in the auditory form and that also only in the case of Urdu. Furthermore, the modalities in which the participants performed better on comprehension tests matched their learning styles in the case of Urdu language. In the case of English language, however, the modalities in which the participants performed better on comprehension tests did not necessarily match their learning styles. In addition to all these results, it was also found that bimodality did not necessarily enhance learning.

Keeping in view these results, the present study agrees with Sarabi-Asiabar, et al. (2015) and Ababneh (2015). According to Sarabi-Asiabar, et al. (2015), listening to lectures and reading are not equally beneficial for all the students. Moreover, some students might also perform better with bimodally presented information. Hence, one learning style cannot be suitable for every learner and these learning styles should be identified and taken into account from the very beginning (Ababneh, 2015; Sarabi-Asiabar, et al., 2015). Even if learning style of a learner is not found to be significantly related to their academic performance, learning styles should still be kept under consideration when teaching or learning since they help in increasing learners' attention and motivation which in turn will have a positive effect on learning (Awanget al., 2017).

Learning should not only be improved by using the learners' dominant style, but they should be made more flexible learners by helping them get better at using their less preferred styles of learning (Mulalic et al., 2009). Doing so will not only be beneficial for improving learning and helping learners practice in the modalities they are weaker in, but it will also help bilingual students identify the modalities in which they perform better in the two languages. Moreover, it is important that not only students but also their teachers should be aware of the students' styles of learning (Mulalic et al., 2009). The teachers, being aware of the students' learning styles, would be more careful to not impose their own learning style on the students and instead use a variety of modalities in their teaching methods. Since there are numerous students in one classroom, despite incorporating different modalities in their teaching methods, it can be difficult for a single teacher to satisfy the needs of all the students. Hence, students, being aware of their own learning styles, can incorporate their preferred modality in their learning. For instance, read/write learners may take notes while listening to lectures and read the notes later on in order to better understand the information provided in the lecture. Moreover, being aware of their learning styles, learners can practice in the modalities they are weaker in so that they have the ability to adapt and perform better in even those learning situations where they are unable to use their preferred modality.

4.4 Chapter Summary

This chapter provides the data analysis for the present study. First, the data received from each participant is analyzed and presented separately in the form of tables and graphs which have also been interpreted. This is followed by the results section in which the overall results of the study are presented in the form tables and graphs along with an interpretation of them. The chapter concludes with a detailed discussion of the results obtained from the study.

CHAPTER 5

CONCLUSION

Language, being a medium of communication, is a significant part of learning. In order to improve learning, it is important to improve the way information is received. Since language can be received in different modalities, it is important to be aware of the impact that these modalities may have on learning. Bilingualism, becoming increasingly more common, further requires awareness regarding the impact of these modalities in the different languages used by the same individual. This notion has also given rise to the concept of learning styles according to which an individual may prefer one modality over the others for learning.

Keeping in view these concepts, the present study has been conducted with the aim to find out the impact of auditory and visual input on the performance of Urdu-English bilinguals on comprehension and retention tasks in Urdu and English language. Moreover, the present study aimed to find out if bimodality would enhance learning since bimodal input includes both visual and auditory form. The study further identified the learning styles of the participants through VARK questionnaire to find out the connection between learning styles and the actual performance of the learners when learning through different modalities in two different languages.

The present study was based on the following research questions:

1. What is the effect of auditory and visual input, one modality at a time, on the comprehension and retention of Urdu-English bilinguals in Urdu and English language?
2. What is the link between Urdu-English bilinguals' learning style preference and their actual performance on comprehension and retention tasks in Urdu and English language?
3. How do Urdu-English bilinguals perform on retention and comprehension tasks when provided with bimodal input in Urdu and English language?

The first research question aimed at finding out the effect of auditory and visual input, one modality at a time, on the comprehension and retention of Urdu-English bilinguals in Urdu and English language. In order to answer this research question,

participants of the present study, who were Urdu-English bilinguals, were tested using comprehension and retention tests in two different modalities, i.e., auditory and visual, in both Urdu and English language. Along with these tests, the participants were also tested using bimodal comprehension and retention tests in which input was presented in auditory and visual form simultaneously. In order to draw a better comparison between the two languages of the bilingual participants, the participants were also made to fill a language history questionnaire to find out the age at which they started using each language, the amount of time they spend using each language and the functions for which each language is used. Moreover, the participants were also made to fill VARK questionnaire. This was done so as to be able to present the results obtained through Urdu and English comprehension and retention tests along with the participants' preferred styles of learning. Results obtained through VARK questionnaire showed that almost an equal number of participants had an auditory and bimodal learning style. None of the participants had a high preference for read/write learning style the way auditory learners had for the auditory learning style.

The present study obtained different results from comprehension and retention tests. In the case of retention tests, majority of the participants retained more words when the words were presented in the visual (written) form, including those who had an auditory style of learning. These results were obtained for both Urdu and English language. These findings show that, when it comes to retention, learners retain the provided input better when they are able to see what they need to retain. Hence, majority of the participants were able to retain more words when the words were presented in the visual (written) form. Moreover, the second highest number of participants were able to retain more words when the words were presented in the bimodal form since in this form the words can be seen as well.

In the case of comprehension tests, the results obtained were different for Urdu and English language. In the case of Urdu language, the modalities in which the participants performed better on comprehension tests matched their learning styles. Hence, majority of the auditory learners performed better when they were provided with auditory input. While some bimodal learners performed better when they were provided with visual (written) input and some performed better with bimodal input, none of the bimodal participants scored higher when provided with auditory input.

In the case of English language, the modalities in which the participants performed better on comprehension tests did not necessarily match their learning styles. According to the results, an almost equal number of auditory learners performed better on auditory input and modalities other than auditory. On the other hand, majority of the bimodal learners performed better on reading (visual) comprehension tests. Among the remaining bimodal learners, an almost equal number of participants performed better on auditory and bimodal comprehension tests.

Majority of participants, both auditory and bimodal learners, who performed better in the same modality on both Urdu and English comprehension tests, with that modality also matching their preferred learning style, had started to learn both the languages either before or after the age of 5 and/or had a difference of 3 years or less between the ages at which they started to learn Urdu and English language. On the other hand, majority of participants who were such that the modalities in which they performed better were different for Urdu and English comprehension tests, with the modality of English comprehension tests not matching their preferred learning style, had started to learn Urdu at an age of less than 5 and English at an age of more than 5 and/or had a difference of more than 3 years between the ages at which they started to learn Urdu and English language.

The second research question aimed at finding out the link between Urdu-English bilinguals' learning style preferences and their actual performance on comprehension and retention tasks in Urdu and English language. According to the findings of the present study, the modalities in which the participants performed better on retention tests were not related to their learning styles. On the other hand, the results obtained from comprehension tests were different for Urdu and English language. In the case of Urdu language, the modalities in which majority of the participants performed better on comprehension tests matched their learning styles. In the case of English language, however, the modalities in which the participants performed better on comprehension tests did not necessarily match their learning styles.

These results showed that the impact of modality was different for retention and comprehension tasks. In the case of retention, words were retained better when they were presented in the visual (written) form despite having different styles of learning. Moreover, similar results were obtained for words in both Urdu and English language.

In the case of comprehension tests, the modalities in which majority of the participants performed better on comprehension tests matched their learning styles in the case of Urdu language but not necessarily in the case of English language. While some participants performed better on English comprehension tests in the modality that matched their learning styles, others performed better on English comprehension tests in the modality that did not match their learning styles.

Based on the results obtained through language history questionnaire, it was found that majority of the participants who performed better on English comprehension tests in the modality that matched their learning styles had started to learn both the languages either before or after the age of 5 and/or had a difference of 3 years or less between the ages at which they started to learn Urdu and English language. Moreover, majority of the participants who performed better on English comprehension tests in the modality that did not match their learning styles had started to learn Urdu at an age of less than 5 and English at an age of more than 5 and/or had a difference of more than 3 years between the ages at which they started to learn Urdu and English language.

Moreover, participants who performed better on English comprehension tests in the modality that matched their learning styles performed better in the same modality on both Urdu and English comprehension tests. On the other hand, participants who performed better on English comprehension tests in the modality that did not match their learning styles were such that the modalities in which they performed better were different for Urdu and English comprehension tests. These findings show that the ages at which Urdu-English bilingulas start to learn their two languages play an important role in determining whether the modalities in which they perform better on comprehension tasks in the language they learnt later on (English) matches their learning styles or not and whether the modalities in which they perform better on comprehension tasks are the same or different for the language they learnt first (Urdu) and one they learnt later on (English).

The third research question aimed at finding out how Urdu-English bilinguals perform on retention and comprehension tasks when provided with bimodal input in Urdu and English language. In order to answer this research question, the participants, along with auditory and visual (written) comprehension and retention tests, were also tested using bimodal comprehension and retention tests in which input was presented

in auditory and visual (written) form simultaneously. According to the findings of the present study, bimodality did not necessarily enhance learning. Majority of the participants performed better when presented with unimodal input. In the case of retention, participants were able to retain more words when the words were presented in the visual (written) form. In the case of Urdu comprehension tests, majority of the auditory learners performed better when they were provided with auditory input while majority of the bimodal learners performed better when they were provided with visual input. In the case of English comprehension tests, majority of the auditory learners performed better on auditory comprehension tests while among the rest of the auditory learners, majority performed better on reading (visual) comprehension tests. Moreover, majority of the bimodal learners performed better on reading (visual) comprehension tests while the second highest number of bimodal participants performed better on auditory comprehension tests. These findings show that simply being provided with both the modalities, i.e, auditory and visual, simultaneously does not necessarily produce better learning.

Overall, the findings of the present study showed the importance of the modalities of language and their impact on learning. Firstly, these findings showed that the impact of modalities was different for retention and comprehension tasks. Results obtained through retention tests were similar for both the languages of the participants. According to these results, majority of the participants retained visual (written) words better than auditory words in both Urdu and English language despite having different styles of learning. Moreover, while learning styles of the participants and the modalities in which they performed better on retention tests did not match, majority of the participants performed better in the same modality in both Urdu and English language.

Results obtained through comprehension tests, on the other hand, were different for the two languages. According to these results, the modalities in which majority of the participants performed better on comprehension tests matched their learning styles in the case of Urdu language but not necessarily in the case of English language. Moreover, only those participants who performed better on English comprehension tests in the modality that matched their learning styles performed better in the same modality on both Urdu and English comprehension tests.

Furthermore, findings revealed that the ages at which Urdu-English bilinguals start to learn the two languages play an important role in determining whether or not the modalities in which they perform better on comprehension tasks in the language they learnt later on matches their learning styles and whether or not the modalities in which they perform better on comprehension tasks are the same or different for the two languages. However, the ages at which Urdu-English bilinguals start to learn their two languages do not play any such role in the case of retention tasks.

Secondly, findings of the present study showed that bimodality did not necessarily enhance learning. Majority of the participants of the present study performed better when presented with unimodal input. These findings showed that simply providing learners with both the modalities, i.e, auditory and visual, simultaneously does not necessarily produce better learning. According to the results obtained in the present study, learners with a bimodal learning style, who have a difference between their preference for auditory and read/write learning style that is not significant enough to consider either one of the two as dominant, do not necessarily perform better with both modalities being provided simultaneously. Instead, majority of the bimodal learners performed better on comprehension tests when they were provided with visual (written) input. This also showed that in bimodal learners, read/write learning style was more dominant than the auditory learning style.

Lastly, findings of the present study showed that even though the relationship between learning style preferences and the modalities in which the participants performed better was found to be different in the case of retention and Urdu and English comprehension tests, VARK questionnaire can still act as an important tool when it comes to learning. Since the learning styles and performance of the participants matched in the case of Urdu comprehension, VARK questionnaire can act as a helpful tool in identifying the modalities in which a learner does or does not learn better in the language they learnt first. On the other hand, even though the learning styles and performance of the participants did not necessarily match in the case of English comprehension, VARK questionnaire can act as a good starting point in identifying which modality a learner learns better in and in which they are weak learners in the language they learnt later on.

Findings of the study ascertain that even though the modalities preferred by the learners may or may not be the same as the modalities in which they perform better on retention and comprehension tasks in the two languages, it is important to have awareness regarding learning styles of the learners by both the learners and the teachers. The teachers, being aware of the learners' learning styles, would be more careful to not impose their own learning style on the learners and instead use those modalities that are better suited to the learners. Having awareness regarding their learning styles will help bilingual students identify the modalities in which they perform better in the two languages. This will not only help them improve their learning by using the modality that they perform better in but it will also help them identify the modalities in which their performance is weak. Learners may practice in the modalities in which their performance is weak in order to develop the ability to adapt and perform better in even those learning situations where they are unable to use their preferred modality.

5.1 Recommendations for Further Research

The present study only included the auditory and read/write learning style and was delimited to the investigation of the impact of only these two modalities on the participants' learning. Future researchers may conduct the same study with the other two learning styles i.e., visual and kinesthetic, instead of auditory and read/write and investigate the impact of visual and kinesthetic input on learning. Furthermore, future researchers may also investigate the impact of bimodal input on learning and compare the effects of pairing visual and kinesthetic input with auditory and written information.

Moreover, the present study found that the participants' age of acquisition of Urdu and English language might have an impact on whether the participants' learning styles and their performance on comprehension tests in the two languages using different modalities matched or not. Future researchers may investigate this further by using a larger number of participants that can be divided into different groups. These different groups may be compared with one group containing participants who had learnt both the languages before the age of 5, another containing participants who had learnt both the languages after the age of 5, and a third group containing participants who had learnt one language before the age of 5 and the other language after the age of 5.

On the whole, the present study showed the importance of modality in learning and its connection to learning style. Furthermore, the study revealed the difference in the effect of modalities on the learning of a bilingual in their two different languages. Moreover, age of acquisition of the two languages was also found to play an important role in the different effects of modalities on the learning of a bilingual.

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APPENDIX A

VARK Questionnaire

Name: _____

For each question, circle the option which best explains your preference.

1. I need to find the way to a shop that a friend has recommended. I would:

a. ask my friend to tell me the directions.
b. write down the street directions I need to remember.
c. both

2. A website has a video showing how to make a special graph or chart. There is a person speaking, some lists and words describing what to do and some diagrams. I would learn most from:

a. listening.
b. reading the words.
c. both

3. I want to find out more about a tour that I am going on. I would:

a. read about the tour on the itinerary.
b. talk with the person who planned the tour or others who are going on the tour.
c. both

4. When choosing a career or area of study, these are important for me:

a. Communicating with others through discussion.
b. Using words well in written communications.
c. both

5. When I am learning I:

a. like to talk things through.

b. read books, articles and handouts.

c. both

6. I want to save more money and to decide between a range of options. I would:

a. read a print brochure that describes the options in detail.

b. talk with an expert about the options.

c. both

7. I want to learn how to play a new board game or card game. I would:

a. listen to somebody explaining it and ask questions.

b. read the instructions.

c. both

8. I have a problem with my heart. I would prefer that the doctor:

a. gave me something to read to explain what was wrong.

b. described what was wrong.

c. both

9. I want to learn to do something new on a computer. I would:

a. read the written instructions that came with the program.

b. talk with people who know about the program.

c. both

10. When learning from the Internet I like:

a. interesting written descriptions, lists and explanations.

b. audio channels where I can listen to podcasts or interviews.

c. both

11. I want to learn about a new project. I would ask for:

a. a written report describing the main features of the project.

b. an opportunity to discuss the project.

c. both

12. I want to learn how to take better photos. I would:

a. ask questions and talk about the camera and its features.

b. use the written instructions about what to do.

c. both

13. I prefer a presenter or a teacher who uses:

a. question and answer, talk, group discussion, or guest speakers.

b. handouts, books, or readings.

c. both

14. I have finished a competition or test and I would like some feedback. I would like to have feedback:

a. using a written description of my results.

b. from somebody who talks it through with me.

c. both

15. I want to find out about a house or an apartment. Before visiting it I would want:

a. a discussion with the owner.

b. a printed description of the rooms and features.

c. both

16. I want to assemble a wooden table that came in parts (kitset). I would learn best from:

a. advice from someone who has done it before.

b. written instructions that came with the parts for the table.

c. both

Adapted from https://vark-learn.com/the-vark-questionnaire/

APPENDIX B

Language History Questionnaire

Name: _____

1. Age (in years): _____
2. Sex (Circle one): Male / Female
3. Education:

   Graduate School (PhD/MD/JD)

   Graduate School (Masters)

   College (BA/BS)

   High School

   Middle School

   Other: _____

4. Indicate your native language(s) and any other languages you have studied or learned, the age at which you started using each language in terms of listening, speaking, reading, and writing, and the total number of years you have spent using each language.

Language	Listening	Speaking	Reading	Writing	Years of use

5. Indicate the age at which you started using each of the languages you have studied or

learned in the following environments.

Language	At home	With friends	At school	Language software	Online games

6. Rate your current ability in terms of listening, speaking, reading, and writing in each of the languages you have studied or learned. Please rate according to the following scale (circle the number in the table):

Very poor Poor Limited Functional Good Very good Native-like
1 2 3 4 5 6 7

Language	Listening	Speaking	Reading	Writing
	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7

7. Estimate how many hours per day you spend speaking with the following groups of people in each of the languages you have studied or learned.

	Language: _____	Language: _____	Language: _____
Family members:	_____(hrs)	_____(hrs)	_____(hrs)
Friends:	_____ (hrs)	_____(hrs)	_____(hrs)
Classmates:	_____(hrs)	_____(hrs)	_____(hrs)

8. In which language do you communicate best or feel most comfortable in terms of
listening, speaking, reading, and writing in each of the following environments?

	Listening	Speaking	Reading	Writing
At home				
With friends				
At school				

Adapted from https://blclab.org/wp-content/uploads/2020/07/LHQ3_English_Q27_02072020.pdf

APPENDIX C

English Placement Test

Name: _____

Circle the correct letter.

1 I'm 18 and my brother is 20, so he's ..... me.
a the oldest of
b older than
c as old as

2 Carl's very ..... . He's never late, and he never forgets to do things.
a reliable
b patient
c strict

3 We stayed in a lovely villa ..... the sea.
a it overlooks
b overlooked
c overlooking

4 Not until the 1980s ..... for the average person to own a computer.
a it was possible
b was it possible
c was possible

5 Jan ..... her arm on a hot iron.
a broke
b burned
c sprained

6 Tomorrow's a holiday, so we ..... go to
work.
a have to
b mustn't
c don't have to

7 I usually ..... swimming at least once a week.
a go
b do
c play

8 My friend Siena ..... to Russia last year.
a went
b has gone
c has been

9 This is ..... area, with a lot of factories and warehouses.
a an agricultural
b an industrial
c a residential

10 If I ..... well in my exams, I ..... to university.
a will do; will go
b will do; go
c do; will go

11 She was so upset that she burst .....
tears.
a into
b out
c with

12 Where did you go ..... holiday last year?
a for
b on
c to

13 Ocean currents ..... play an important part in regulating global climate.
a are known to
b thought to
c are believed that they

14 My cousin ..... getting a job in Bahrain.
a would like
b is planning
c is thinking of

15 I can't ..... your hair, because I haven't got any scissors.
a brush
b cut
c wash

16 I wish I ..... have an exam tomorrow!
a don't
b didn't
c won't

17 The government plans to ..... taxes on sales of luxury items.
a increase
b expand
c go up

18 When I first moved to Hong Kong, life in a different country was very strange, but now I'm used ..... here.
a living
b to live
c to living

19 There ..... milk in the fridge.
a is some
b are some
c is a

20 Criminals are people who are guilty of ..... the law.
a breaking
b cheating
c committing

21 Why on earth isn't Josh here yet? ..... for him for over an hour!
a I'm waiting
b I've been waiting
c I've waited

22 "It's pouring down, and it's freezing."
What are the weather conditions?
a high winds and snow
b heavy rain and cold temperatures
c thick cloud but quite warm

23 ..... feeling OK? You don't look very well.
a Do you
b You are
c Are you

24 Daniel's hair is getting far too long; he should ..... soon.
a cut it
b have cut it
c have it cut

25 Mandy works for a computer software company. She got ..... recently, and so now she's an area manager.
a made redundant
b promoted
c a raise

26 I can't hear you – it's ..... noisy in here.
a too
b too much
c too many

27 Jamal has just sent me ..... to arrange plans for this weekend.
a a blog
b an email
c a website

28 I promise I'll call you as soon as I ..... .
a I arrive
b I arrived
c I'll arrive

29 Photographers and designers need to be very ..... .
a creative
b fit
c annoying

30 The global financial crisis, ... is forcing lots of small businesses to close, does not look set to end soon.
a it
b that
c which

31 There ..... a terrible accident if the pilot hadn't reacted so quickly.
a had been
b was
c would have been

32 "Are you ready to order?"
"Not yet – I'm still looking at the ..... ."
a bill
b menu
c service

33 "My job is never boring."
The speaker's job is always ..... .
a interesting
b popular
c difficult

34 I've been working here ..... about the last two years.
a during
b for
c since

35 "It leaves from Platform 2 at 4.15."
The speaker is talking about ..... .
a an airline flight
b a train
c a taxi

36 I went to a lovely ..... last Saturday. The bride was my best friend when we were at school.
a anniversary
b marriage
c wedding

37 "I've got a headache."
"Maybe you ..... to take an aspirin."
a should
b ought
c don't

38 The patient had an ..... to insert metal pins in his broken leg.
a injection
b operation
c X-ray

39 She won a seat in parliament at the last ..... .
a general election
b opinion poll
c referendum

40 I'm surprised you didn't get upset. If someone said that to me, ... really angry.
a I'm
b I was
c I'd be

41 This used to be ..... part of the city, but since the old buildings were renovated it's become a very fashionable area.
a an affluent
b a run-down
c a trendy

42 Cassie went to bed early because she was ..... .
a tired
b stressed
c relaxed

43 In the 1960s, computers were ..... expensive that ordinary people couldn't afford them.
a so
b such
c too

44 Do you want ..... the match tonight?
a watching
b watch
c to watch

45 Researchers claim the new discovery is a major ..... in the fight against malaria.
a breakthrough
b investigation
c progress

46 The Maths problem was really difficult and I just couldn't ..... the answer.
a check in
b set off
c work out

47 When I was a child, I never ..... about the future.
a have worried
b used to worry
c was worrying

48 A local politician has ..... charges of corruption made by the opposition party.
a accused
b blamed
c denied

49 ..... worries me about society today is how completely we have come to depend on technology.
a That
b What
c Which

50 Cats and dogs are usually kept as ..... .
a farm animals
b wild animals
c pets

Adapted from https://ngl.cengage.com/assets/downloads_b/marketing_downloads/1111031096/Outcomes%20Placement%20Test.pdf

APPENDIX D

Urdu Placement Test

NAME:_____

علامہ شبلی نعمانی

درج ذیل سوالوں کے جوابات لکھیں :

۱) علامہ شبلی نعمانی اعلیٰ تعلیم کے لیے پہلی بار کہاں گئے تھے؟

ا) رام پور

ب) غازی پور

ج) سہارنپور

۲) 'ڈول ڈالنا 'کے معنی ہیں

ا) اِبتدا کرنا

ب) اعلان کرنا

ج) پیش کرنا

۳) شبلی کے والد _____میں وکالت کے پیشے سے وابستہ تھے۔

ا) علی گڑھ

ب) غازی پور

ج) اعظم گڑھ

۴) 'متنفر 'کے معنی ہیں

ا) مختلف

ب) بددل

ج) منتظر

۵) شبلی نعمانی غازی پور میں کس کے شاگرد تھے؟

ا) مولوی محمد فاروق

ب) مولانا ارشاد حسین

ج) پروفیسر فیض الحسن

۶) 'مُتَموّل 'کے معنی ہیں

ا) مکمل

ب) دولت مند

ج) مطمئن

۷) اورینٹل کالج کس شہر میں تھا؟

ا) غازی پور

ب) علی گڑھ

ج) سہارنپور

۸) 'جستہ جستہ 'کے معنی ہیں

ا) آہستہ آہستہ کرکے

ب) یہاں اور وہاں سے

ج) دیکھتے ہی دیکھتے

۹) وکالت کے پیشے سے شبلی کی بیزاری کی وجہ کیا تھی؟

ا) امتحان میں ناکامی

ب) طبیعت خراب ہونا

ج) ادیبانہ مزاج

۱۰) 'شغف 'کے معنی ہیں

ا) پیشہ

ب) دل چسپی

ج) شعبہ

۱۱) شبلی نعمانی کے چھوٹے بھائ کا کیا نام تھا؟

ا) مہدی

ب) ہادی

ج) معمر

۱۲) ’گراں قدر ‘کے معنی ہیں

ا) کامیاب

ب) قدر کرنے والا

ج) باوقار

۱۳) سرسید نے شبلی کو کس شعبے میں لیکچرر مقرّ کیا؟

ا) عربی

ب) فارسی

ج) اردو

۱۴) ’ادراک ‘کے معنی ہیں

ا) معلوم ہونا

ب) ابتدا ہونا

ج) مشہور ہونا

۱۵) شبلی کی تحریر میں نمایاں تبدیلی کی وجہ کیا تھی؟

ا) وکالت چھورنا

ب) سرسید کا ذاتی کتب خانہ

ج) لیکچڑ مقرر ہونا

۱۶) ’متعین ‘کے معنی ہیں

ا) مطمئن

ب) برقرار

ج) مقرر کیا گیا

۱۷) شبلی نعمانی کی وفات کب ہوئ؟

ا) نومبر۱۹۱۴

ب) دسمبر۱۹۱۴

ج) اکتوبر۱۹۱۴

۱۸) ’گاہے گاہے ‘کے معنی ہیں

ا) تھوڑا تھوڑا

ب) آھستہ آھستہ

ج) کبھی کبھی

۱۹) شبلی نعمانی علی گڑھ کالج چھوڑنے کے بعد پہلے کس ادارے سے وابستہ ہوئے؟

ا) ندوہ العلماء

ب) شبلی منزل

ج) دارالمصنّفین

۲۰) ’دلجمعی ‘کے معنی ہیں

ا) بیزاری

ب) اطمینان

ج) دلچسپی

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX E

English Auditory Comprehension Test 1

Black Friday

The day after Thanksgiving is the start of the holiday shopping season. Thanksgiving is always on a Thursday, so the day after is a Friday. This day has come to be known as Black Friday. It has been the busiest shopping day of the year since 2005.

Most stores offer great deals on Black Friday. They open their doors in the wee hours of the morning. They try to attract shoppers with big discounts. Some items like TVs are much cheaper than usual. Stores may even lose money on these items. They hope that shoppers will buy gifts for other people while they are in the store.

Black Friday is a great time to get good deals. The problem is that there are not enough low-priced items to go around. Each store may only have a few. These items are in high demand. People stand in long lines to get such great deals. They may line up hours before a store opens. They may be hoping to get a low price on a TV or laptop, but not everyone who wants one will get one. Some people leave disappointed.

The situation can be tense. Some Black Friday events have been violent. Large, eager crowds have trampled workers. Fights have broken out over toys or people cutting in line. People have shot one another over parking spots. But most Black Friday events are safe and fun. Still, if you plan on going, expect large crowds and a bit of shoving.

So where does the name "Black Friday" come from? It was first used in Philadelphia in the 1950s. The police called this day Black Friday because of the heavy traffic it drew. In the 1960s, stores tried to rename the day "Big Friday." It did not stick. The name "Black Friday" continued to spread across the country. It seems that it is here to stay.

Now people all over the country take part in the event known as Black Friday. It is even spreading to other parts of the world. Stores have held Black Friday events in the U.K., Australia, and Brazil since 2012. In Costa Rica Black Friday is known as "Viernes Negro." And in Mexico, stores offer an annual weekend of discounts. They call it "El Buen Fin," which means "the good weekend" in Spanish. I guess the language of savings is universal.

Name: _____

1. According to the text, why do stores set prices so low on some items that they lose money?

a. They want people to enjoy the holidays.

b. They hope people will buy other gifts while they are in the store.

c. They are in a giving mood because the holiday season is just beginning.

d. They are trying to get rid of old items from last year to make room for new items.

2. Which is **not** true about Black Friday?

a. Black Friday is always the day after Thanksgiving.

b. Black Friday is the busiest shopping day of the year.

c. Black Friday is a national holiday.

d. Black Friday is the start of the holiday shopping season.

3. Where does the name Black Friday come from?

a. The police called this day Black Friday because there is a lot of traffic.

b. The stores called this day Black Friday because it is a serious shopping day.

c. The police called this day Black Friday to remember the victims of violence.

d. The stores called this day Black Friday because they make a lot of money.

4. Which best explains the main idea of the third paragraph?

a. People stand in long lines on Black Friday.

b. Black Friday is the best time of the year to get good deals.

c. Black Friday is a really disappointing time of the year.

d. Black Friday deals are limited and not everyone will get one.

5. Which country does **not** participate in Black Friday?

a. France

b. Costa Rica

c. Brazil

d. United Kingdom

6. Which happened first?

a. Stores tried to rename the day after Thanksgiving "Big Friday."

b. Black Friday events began happening in Australia.

c. Police began calling the day after Thanksgiving "Black Friday."

d. Black Friday became the busiest shopping day of the year.

7. Which title best expresses the author's purpose in writing this text?

a. *Black Friday: Stories from the Parking Lot*

b. *Black Friday: Why You Should Go This Year*

c. *Black Friday: The Stuff That You Should Know*

d. *Black Friday: How to Save Money on the Big Day*

8. Which best describes the overall structure of the fifth paragraph?

a. chronological order b. problem and solution

c. compare and contrast d. order of importance

9. Which was **not** cited as one of the downsides of Black Friday?

a. Stores run out of high demand items quickly.

b. Nobody really saves any money on Black Friday.

c. There are large crowds and lots of shoving.

d. Sometimes violence occurs at Black Friday events.

10. Which best explains why Costa Ricans call Black Friday "Viernes Negro"?

a. Costa Rican stores don't want the shopping day associated with American violence.

b. *Viernes Negro* sounds more exotic and exciting than *Black Friday*.

c. Costa Ricans want to establish their own shopping tradition.

d. This is how you say "Black Friday" in Spanish, the language of Costa Rica.

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX F

English Auditory Comprehension Test 2

Metal Detectors

Have you ever been to the beach? Did you see a man with a headset pointing a long pole at the ground? If so you might have seen a person using a metal detector. People use these devices to find metal.

Metal detectors make magnetic waves. These waves go through the ground. The waves change when they hit metal which causes the device to beep. This lets the person with the device know that metal is close.

The first metal detectors were meant to help miners. They were big in size and they cost a lot of money. In addition to that, they used a lot of power. And worst of all, they didn't work well. People kept trying to make them better.

Metal detectors got smaller. Now they are light and cheap and easy to carry. They also work better. That is why people bring them to the beach. They can look for rings that get lost in the water. They can look for phones in the sand. Metal detectors help them find these things. They usually just find junk though.

Metal detectors also protect people. They help to keep guns out of some places. They are used in airports. They are used in courthouses. Even some schools use them. They help guards look for weapons that those entering the school might be carrying. Guards use special wands to find metal on a person.

These devices save lives in other ways too. During wars, people plant bombs in the ground. When the war ends, they don't clean up their messes. This is unsafe for the people who live in those places. Others use metal detectors to find bombs. They remove them and help the people.

These devices also make clothes safer. It may sound funny, but it's true. Most clothes are made in big factories. There are lots of needles in these places. Needles break from time to time and they get stuck in the clothes. They would poke people trying them on. But that does not happen because our clothes are scanned for metal. Isn't that nice? Let's hear it for metal detectors. They make the world a safer place.

Name: _____

1. Which was **not** one of the problems with the first metal detectors?

a. They were too big.
b. They were too expensive.
c. They didn't work well.
d. They were unsafe.

2. Which best describes the main idea of the second paragraph?

a. It describes the sounds of a metal detector.
b. It explains how metal detectors work.
c. It warns about the effects of metal detectors.
d. It explains how magnetic waves move.

3. How do metal detectors make clothing safer?

a. Metal detectors make sure factory machines are working the right way.
b. Metal detectors make sure workers don't bring weapons into factories.
c. Metal detectors make sure that broken needles don't get into clothing.
d. Metal detectors help people recover lost clothing at the beach.

4. Why were metal detectors first used?

a. To help miners
b. To help security guards
c. To help doctors
d. To help soldiers

5. According to the text, metal detectors have been used in all of the following **except** which?

a. schools
b. churches
c. courthouses
d. airports

6. How do metal detectors help soldiers?

a. They warn soldiers when bullets are coming.
b. They help soldiers find hidden bombs.
c. They find weaknesses in their armor.
d. They create a relaxing beeping noise.

7. Why do people bring metal detectors to the beach?

a. Metal detectors help people keep the sand clean and safe.

b. Metal detectors look cool.

c. Metal detectors help people find valuable items.

d. Metal detectors help guards keep weapons away from the beach.

8. Which happens first?

a. The metal detector beeps alarmingly.

b. The magnetic waves hit metal and change.

c. The magnetic waves go through the ground.

d. The metal detector creates magnetic waves.

9. How did metal detectors get better over time?

a. They became cheaper.

b. They became lighter.

c. They began working better

d. All of these

10. Which title would best describe the purpose of this text?

a. *A Day at the Beach: Using Your Metal Detector to Find Things*

b. *Metal Detectors: a Complete the Story of Their Invention*

c. *Magnetism and More: How a Metal Detector Works*

d. *Metal Detectors: What They Do and How We Use Them*

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX G

English Auditory Comprehension Test 3

TV

Televisions show sounds and pictures. They get data from cables, discs, or over-the-air signals. They turn this data into sounds and images. People watch news and shows on them. You probably call them TVs.

John Baird made the first TV in 1925. It had one color. It could only show 30 lines. This was just enough room for a face. It didn't work well, but it was a start.

The first TV station was set up in 1928. It was in New York. Few people had TVs. The broadcasts were not meant to be watched. They showed a Felix the Cat doll for two hours a day. The doll spun around on a record player. They were experimenting. It took many years to get it right.

By the end of the 1930s, TVs were working well. America got its first taste at the 1939 World's Fair. This was one of the biggest events ever. There were 200 small, black and white TVs set up around the fair. The U.S. President gave a speech over the TVs. The TVs were only five inches big but the people loved it.

They wanted TVs. But World War II was going on during this time. Factories were busy making guns and bombs. When the war was over, TV spread across the country.

By 1948 there were 4 big TV networks in America. They aired their shows from 8 to 11 each night. Local shows were aired at other times. Most of the time, nothing was shown at all. TV was not "always on" like it is now.

Color TVs came out in 1953. They cost too much money for most. Also, shows were aired in black and white. By 1965, color TVs were cheaper. TV stations started airing shows in color. People had to switch if they wanted to see the shows.

Now most TVs are high-def. This means that they have many lines on them. This makes the image clear. TVs have come a long way since Baird's 30 line set. High-def TVs have 1080 lines. There are state of the art sets called 4K TVs. These TVs have 3,840 lines. Some people watch TV in 3D. I wonder what they will come up with next. Smell-o-vision anyone?

Name: _____

1. When did color TVs come out?

a. 1925 b. 1953

c. 1939 d. 1965

2. Which was **not** true about the first TV?

a. It could only show one color. b. It only had 30 lines.

c. It did not have sound. d. It did not work well.

3. When did networks start showing programs in color?

a. 1948 b. 1953

c. 1965 d. 1939

4. Why did the first TV station only show Felix the Cat for two hours a day?

a. They were running tests.

b. Felix the Cat was really popular.

c. Felix the Cat had been a big radio star.

d. Felix the Cat was the only show that they had.

5. Which of these events slowed the spread of TVs?

a. The World's Fair of 1939 b. The Civil War

c. The election of the U.S. President. d. World War II

6. What is the author's main purpose in writing this?

a. He is trying to explain how a TV works.

b. He is telling readers how TVs became popular.

c. He is describing the history of the TV.

d. He is trying to get people to watch more TV.

7. Why did many families switch to color TVs in 1965?

a. Color TVs cost a lot of money.

b. Many shows were only shown in color.

c. Color TVs came out in 1965.

d. World War II ended and troops returned home.

8. Why was 1939 an important year for TV?

a. Many Americans were introduced to TV.

b. The first color TV was released.

c. The first TV station began broadcasting.

d. John Baird created the first TV.

9. How many lines does a 4K TV have?

a. 30

b. 1,080

c. 4,000

d. 3,840

10. Which happened first?

a. The 1939 World's Fair

b. The release of high-def TVs

c. The end of World War II

d. The release of color TVs

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX H

English Auditory Comprehension Test 4

Chess

Chess is called the game of kings. It has been around for a very long time. People have been playing it for more than 500 years. Chess is based on an even older game from India. The chess we play today is from Europe.

Chess is a two-player game. One player uses the white pieces while the other one uses the black pieces. Each piece moves in a special way. One of the pieces is called the king. Each player has one king. The players take turns moving their pieces. If a player lands on a piece, he or she takes it. The game ends when a player loses his or her king. There are a few more rules, but those are the basics.

Some people think that chess is more than a game. They believe that it makes the mind stronger since it requires its players to think a lot. Good chess players use their brains. They take their time before making their next move. They think about what will happen next. These skills are useful not only in chess but also in life. Chess is kind of like a work out for the mind.

You do not always have a lot of time to think when playing chess. There is a type of chess with short time limits. It's called blitz chess. In blitz chess, each player gets ten minutes to use for the whole game. Your clock runs during your turn. You hit the time clock after your move. This stops your clock. It also starts the other player's clock. If you run out of time, you lose. Games of blitz chess are fast-paced.

Chess is not just for people. Computers have been playing chess since the 1970s. At first they did not play well. They made mistakes. As time went on they grew stronger. In 1997, a computer beat the best player in the world for the first time. It was a computer called Deep Blue. Deep Blue was big. It was big enough to take up a whole room. By 2006 a cell phone could beat the best players in the world. Chess sure has come a long way. Don't you think so?

Name: _____

1. What is the author's purpose in writing the second paragraph?

a. To explain the rules of chess
b. To compare different types of games
c. To talk about game pieces
d. To persuade people to play chess

2. Which is **not** a reason that chess is a good workout for the mind according to the text?

a. Good chess players think about what will happen next.
b. Good chess players take a lot of risks.
c. Good chess players take their time.
d. Good chess players use their brains.

3. How long have people been playing chess?

a. Over 100 years
b. Over 500 years
c. Over 1000 years
d. Over 5000 years

4. Where did the game that chess is based on come from?

a. Europe
b. America
c. India
d. All of these

5. Which best describes the main idea in the fourth paragraph?

a. This paragraph argues that players should think less.
b. This paragraph explains how blitz chess is played.
c. This paragraph explains time clocks work.
d. This paragraph describes many different ways to play chess.

6. How does a game of chess end according to the text?

a. One player takes all of the other player's pieces.
b. One player makes it to the end of the board.
c. One player becomes king.
d. One player loses his or her king.

7. Which happened first?

a. Computers did not play chess well.
b. Deep Blue won an important game.
c. Cell phones got good at playing chess.
d. Deep Blue took up a whole room.

8. How is blitz chess different from regular chess?

a. Each player has two kings.
b. Players are blindfolded.
c. Players only have ten minutes to play.
d. Players start from a random position.

9. If it's your turn in blitz chess, what happens when you hit the clock?

a. Both your clock and the other person's clock keep running.
b. The other person's clock stops running and yours starts.
c. Both clocks stop running.
d. Your clock stops running and the other person's clock begins.

10. When did a computer first beat a strong human player in chess?

a. 2006
b. 1997
c. 1970
d. 1976

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APPENDIX I

English Auditory Comprehension Test 5

Tetris

Do you enjoy playing video games? Lots of people do. There are many types of video games and different people like different types of games. Some people like action games while other people like driving games. But the most popular game of all time is a puzzle game called Tetris.

Tetris is a game about making lines. Blocks fall from the top of the screen. They fall one at a time. The player moves the blocks. Once the blocks hit the bottom, they are locked in place and connot be moved anymore. Players try to make lines go across the screen with no gaps. Complete lines disappear. This gives players more space for the new blocks coming from the top of the screen. The blocks pile up during the game. The game ends when the blocks get to the top of the screen.

Tetris was made by a man named Alexey in 1984. All the pieces in Tetris have four blocks. The meaning of the word "tetra" is four. Alexey named his game after tetra and tennis. He made Tetris while working at a science academy in Moscow which is the capital city of Russia.

Alexey made his game on a screen that only showed letters. He could not use blocks. For that reason, the blocks were made out of letters in the first game of Tetris. But even then, all of Alexey's friends loved and enjoyed his game. This was because the game was easy to learn and fun to play.

Soon the game spread across the world. It become very popular. It was on every computer. It was also in arcades. It came with every one of Nintendo's Game Boy. More than 100 million Game Boys were sold. Tetris was all over the place. Even today Tetris comes with many phones.

Dr. Richard Haier has studied Tetris players. He ran many tests. Through the results of these tests he found that playing Tetris boosts mental activity. Dr. Haier thinks Tetris is good for the brain. I agree with this finding. Now go and play some Tetris. It's just what the doctor ordered.

Name: _____

1. What is this article about?

a. Video games
b. Tetris
c. Alexey
d. Blocks

2. What is the goal of Tetris?

a. To make tall piles of blocks
b. To match the colors of blocks
c. To make complete lines
d. To get blocks to the top of the screen

3. After which is Tetris named?

a. Fish
b. The number ten
c. Paris
d. Tennis

4. Where was Alexey when he created Tetris?

a. Paris
b. Russia
c. The United States of America
d. Germany

5. What is the highest selling game of all time?

a. A driving game
b. Call of Duty
c. Tetris
d. An action game

6. Which event happened first?

a. Tetris was played with letters instead of blocks
b. Tetris was released on the phone
c. Tetris was released in the arcade
d. Tetris was brought to the Game Boy

7. What is the main idea of the second paragraph?

a. To persuade readers to play Tetris
b. To explain how Tetris is played
c. To describe different types of games
d. To compare Tetris to other puzzle games

8. According to Dr. Richard Haier, which is true about Tetris?

a. Tetris lowers blood pressure

b. Tetris increases physical strength

c. Tetris boosts mental activity

d. Tetris has no positive side effects

9. What happens to a block that hits the bottom and does not form a complete line in Tetris?

a. It disappears and reappears at the top.

b. It is locked in place.

c. The player moves the block.

d. It gives the player more room.

10. Why did the first game of Tetris use letters instead of blocks?

a. Alexey did not think to use blocks

b. Alexey thought letters were more fun

c. Alexey's screen could only show letters

d. Alexey wanted to teach people to read

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APPENDIX J

English Reading Comprehension Test 1

Mongooses

The black rat was introduced to Hawaii in the 1780s. These ugly suckers *originated* in Asia, but they migrated to Europe in the 1st century. Since then they've snuck on European ships and voyaged the world with them. These rats carry many diseases including the plague. They are also good at surviving and tend to displace native species. That means that after they infest an area, there will be fewer birds and more black rats.

Since their arrival in Hawaii, black rats have been pests. They've feasted on sea turtle eggs. They've eaten tree saplings, preventing trees from being reforested. And they've been a leading cause in the extinction of more than 70 species of Hawaiian birds. They love to climb trees to eat bird eggs. They also compete with forest birds for food, such as snails, insects, and seeds.

Perhaps more troubling, black rats threaten humans. They are a vector for more than 40 deadly illnesses. Some think that rat-borne diseases have killed more people than war in the last 1,000 years. Rats also eat more than 20% of the world's farmed food. And that's why the mongoose was brought to Hawaii.

During the mid 1800s, the Hawaiian sugar industry was thriving. Americans were just realizing that they loved sugar. Hawaii was pretty much the only place in America where one could grow sugarcane. But black rats were destroying entire crops. Hence, plantation owners imported an animal known to kill rats. In 1883 plantation owners imported 72 mongooses and began breeding them.

People *revere* the mongoose in its homeland of India. They are often kept tame in Indian households. Mongooses feed on snakes, rats, and lizards. They are also cute and furry. And they kill deadly cobras. Sadly, India is a much different place than Hawaii.

When the mongooses got to Hawaii, they did not wipe out the rats as plantation owners hoped. Instead, they joined them. Mongooses are not too different from most other animals: they go for the easy meal. In Hawaii they had a choice. Run after black rats that were difficult to catch or simply eat turtle eggs. Most took the easy route. Now Hawaii has two unwanted guests defacing the natural beauty.

Name: _____

1. Based on the text, which best explains how black rats were introduced to Hawaii?

a. The native Hawaiians imported them to solve a problem with their crops.

b. The Asians brought them to Hawaii when they first arrived.

c. The Europeans brought them on their ships.

d. The rats were able to swim to Hawaii from Asia.

2. Which best defines the word *originate* as it was used in the **first** paragraph?

a. To come from a place

b. To go to a place

c. To become independent

d. To wander the world

3. Which event happened **first**?

a. The mongoose was introduced to Hawaii

b. The black rat was introduced to Hawaii

c. The black rat migrated to Europe

d. Plantation owners bred mongooses

4. Which statement would the author most likely **disagree** with?

a. Black rats threaten many creatures native to Hawaii.

b. Mongooses threaten many creatures native to Hawaii.

c. Mongooses were brought to Hawaii intentionally.

d. The only reason people dislike rats is because they are ugly.

5. Which best express the author's main purpose in writing this text?

a. To persuade readers to protect the endangered mongoose

b. To describe the habits and hazards of the black rat

c. To inform readers about species that have invaded Hawaii

d. To entertain readers with tales of a mongoose's adventures

6. Which best expresses the main idea of the **fifth** paragraph?

a. This paragraph is about Indian culture and wildlife.

b. This paragraph is about the mongoose's role in Indian society.

c. This paragraph is about the lifecycle of the mongoose.

d. This paragraph is about how mongooses migrated to India.

7. Which statement is **false** according to information in the text?

a. Rats eat lots of vegetation and crops.

b. Mongooses eat sea turtle eggs.

c. Rats climb trees and eat bird eggs.

d. Mongooses have spread more than 40 diseases.

8. Which best explains why plantation owners imported mongooses to Hawaii?

a. Mongooses eat rats.

b. Mongooses are fuzzy and adorable.

c. Mongooses make great household pets.

d. Mongooses kill deadly cobras.

9. Which best defines the word *revere* as it is used in the fifth paragraph?

a. To dislike someone or something

b. To respect someone or something

c. To hunt someone or something

d. To get rid of someone or something

10. Which title best expresses the main idea of this text?

a. *Travel Procedures: Getting in and out of Hawaii with Pets*

b. *Unwanted: The Journey of the Black Rat to Hawaii*

c. *Uncovered: What the Real Rikki-Tikki-Tavi is Like*

d. *Backfired: Solving Problems with Problems in Hawaii*

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APPENDIX K

English Reading Comprehension Test 2

Carnivorous Plants

There are over a quarter of a millions plant species. Only 600 or so are carnivorous. Carnivorous plants attract, trap, and eat bugs. Like other plants, they get energy from the sun. But, unlike other plants, they get their nutrients from their prey. Carnivorous plants live in places where the soil lacks nutrients. Most plants get nutrients from the soil. Carnivorous plants have turned to other sources.

The snap of the Venus flytrap is not the only way that plants eat bugs. Pitcher plants trick their prey into landing on them. They offer nectar bribes to the foolish insects. Pitcher plants have deep chambers. Their landing surface is slippery with inward pointing hairs, making it hard to escape. The fly lands on the pitcher plant to eat, but slips into a pit filled with digestive fluids and is eaten.

Then there're sundews. We call them sundews because they sparkle in the sun. But that sparkle is from something much more *treacherous*. It is a sweet goo called mucilage that Sundews create to attract bugs. As they fly in to eat, bugs become trapped in the very object of their desire. They soon exhaust themselves by trying to escape the mucilage. Or the sundew's tentacles, which respond to prey by curling around them. Then the plant dissolves its prey in enzymes and absorbs the nutrients.

Corkscrew plants have inviting stems with curved hairs. These hairs allow insects to go up the stems, but not back. Going forward leads a chamber filled with digestive fluid. Bugs who wander into the corkscrew plant find that they are unable to escape.

And then there are the bladderworts. They live in water and float near the surface. Their traps are like small bladders hidden beneath the water. When bugs swim into the trigger hairs, the plant reacts. A trapdoor in the bladder opens up which sucks up the prey and the water surrounding it. It then releases digestive fluids which digests the prey within hours.

Carnivorous plants are difficult to keep at home. They are built to survive in places that other plants cannot. They have a hard time adapting to other environments. Their strengths become weaknesses in rich soil. They depend on the harsh yet delicate environments in which they thrive. Still, there's something to be said about the power of life when one finds a plant that can survive in barren soil.

Name: _____

1. Which statement would the author most likely **agree** with?

a. There are too many species of carnivorous plants.

b. There are too few plant species in the world.

c. Only a small number of plants are carnivorous.

d. A majority of plants are carnivorous.

2. Which plant traps bugs in its stem and forces them to walk forward?

a. Corkscrew plants

b. Sundews

c. Bladderworts

d. Pitcher plants

3. Which of the following statements is **false**?

a. Carnivorous plants get their energy from eating bugs.

b. Carnivorous plants do not get nutrients from the soil.

c. Carnivorous plants get their energy from the sun.

d. Carnivorous plants get their nutrients from eating bugs.

4. Which event happens **last** when a sundew eats a meal?

a. The sundew creates mucilage.

b. The sundew's tentacles curl in response to the prey.

c. The bug is attracted to the mucilage.

d. The sundew releases enzymes.

5. Which best expresses the main idea of the **second** paragraph?

a. There are more types of carnivorous plants than the Venus fly trap.

b. The pitcher plant tricks bugs into falling into its stomach.

c. The Venus flytrap kills its prey in a various ways.

d. Some plants attract bugs by offering them nectar.

6. Which best defines the word *treacherous* as it is used in the **third** paragraph?

a. Something that provides nutrients.

b. Something that is very bright.

c. Something that tastes delicious.

d. Something that has a hidden danger.

7. Which best describes the overall text structure of the first paragraph?

a. Chronological order
b. Compare and contrast
c. Sequential order
d. Spatial

8. Which statement would the author most likely **disagree** with?

a. Carnivorous plants cannot thrive in rich soil.
b. Bladderworts react quickly when their trigger hairs are bumped.
c. Carnivorous plants are tough and can live in any environment.
d. Bladderworts hide their traps just below the surface of the water.

9. Which best expresses the main idea of the **last** paragraph?

a. Carnivorous plants are not hard to take care of because they feed themselves.
b. Carnivorous plants are delicate because they need certain conditions to survive.
c. Carnivorous plants are difficult to keep at home, but you should keep trying.
d. Carnivorous plants are inspirational and they are interesting to watch and own.

10. Which title best expresses the author's main purpose in writing this text?

a. *Watch Out! How To Avoid Being Eaten by Carnivorous Plants*
b. *At Risk: How You Can Help to Preserve Carnivorous Plants*
c. *Venus Flytrap: Nature's Most Beautiful and Dangerous Plant*
d. *Fatal Flowers: Plants That Kill Insects*

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APPENDIX L

English Reading Comprehension Test 3

Koko

Humans aren't the only species that use language. Bees communicate by dancing. Whales talk to each other by singing. And some apes talk to humans by using American Sign Language.

Meet Koko: a female gorilla born at the San Francisco Zoo in 1971. Koko learned sign language from her trainer, Dr. Penny Patterson. Patterson began teaching sign language to Koko in 1972. Two years later Koko moved onto the Stanford University campus with Patterson. Koko continued to learn on the campus until 1976. That's when she began living full-time with Patterson's group, the Gorilla Foundation. Patterson and Koko's relationship has blossomed ever since.

Dr. Patterson says that Koko has mastered sign language. She says that Koko knows over 1,000 words and makes up new words too. But not everyone agrees with Patterson. Some argue that apes like Koko do not understand the meaning of what they are doing. For example, if Koko points to an apple and signs *red* or *apple*, Patterson will give her an apple. They argue that Koko does not really know *what* the sign apple means. She only knows that that if she makes the right motion then she gets an apple.

Koko has also been a pet-owner. At the age of 12, Koko asked for a cat for Christmas. Researchers gave Koko a stuffed cat. Koko was not happy. She continued to sign *sad*. So for her birthday, they let her pick a cat out of an abandoned liter. Koko loved him and named him "All Ball". Sadly, All Ball got out of Koko's cage and was hit by a car. Koko signed "Frown, cry, sad" when Patterson broke the news to her.

Patterson and Koko seem to have a good relationship, but not everyone agrees with it. Some critics believe that Patterson is *humanizing* the ape and that apes should be left in the most natural state possible. Even Patterson struggles with these feelings. When asked if her findings could be *duplicated* by another group of scientists, she said that it won’t be ethical to do again.

Patterson and the Gorilla Foundation would love to get Koko to an ape preserve in Maui, but they are having trouble securing the land. Till then, Koko's going to be spending her time in Woodland, California with Patterson. If she moved to Hawaii, she'd have to give up her Facebook page. She's got 50 thousand "likes." Some may deny that she knows sign language, but nobody says that she doesn't know social networking.

Name:_____

1. Which best expresses the main idea of this article?

a. Bees, whales, and apes like Koko all use language to communicate.

b. Koko uses sign language but some think it's just a trick.

c. It is natural for gorillas and house cats to live together.

d. If you want a lot of "likes" on Facebook, get a talking gorilla.

2. Which best describes how the second paragraph is organized?

a. Chronological order

b. Cause and effect

c. Compare and contrast

d. Problem and solution

3. Which best expresses the author's purpose in writing the second paragraph?

a. The author is describing the environment in which Koko lives.

b. The author is informing readers how Dr. Patterson developed her skills.

c. The author is persuading readers that Koko should be freed.

d. The author is telling readers about Koko and Dr. Patterson's background.

4. Which happened **last**?

a. Koko got a stuffed cat for Christmas.

b. Koko lost All Ball.

c. Koko began living with the Gorilla Foundation.

d. Dr. Patterson began teaching Koko to sign.

5. Which statement would the author most likely **agree** with?

a. Koko has mastered sign language without a doubt.

b. Everybody likes how Dr. Patterson has raised Koko.

c. Koko doesn't really know sign language.

d. Some people are troubled by how Koko was raised.

6. Which best defines the word *duplicated* as it is used in the fifth paragraph?

a. To dispute a fact or disagree with someone

b. To lie to someone or to fool them

c. To copy or recreate something

d. To be disproven through debate

7. Which event happened **first**?

a. Koko moved onto the Stanford University campus.

b. Koko picked All Ball out for her birthday.

c. Koko began living with the Gorilla Foundation.

d. Koko got a stuffed cat for Christmas.

8. Which best describes the main idea of the **fifth** paragraph?

a. Dr. Patterson has treated Koko very cruelly.

b. Dr. Patterson and Koko have a beautiful, pure, and unconflicted relationship.

c. Some people think that Koko should not have been treated like a human.

d. Some people are working very hard to prove that Dr. Patterson is wrong.

9. Which statement would the author most likely **disagree** with?

a. Dr. Patterson has worked hard to teach Koko sign language.

b. Some people think that Koko only signs to get food.

c. The Gorilla Foundation would like to move Koko to an ape preserve.

d. Dr. Patterson has no regrets about working with Koko.

10. If a book were being written about Koko and All Ball, which title would best summarize their story?

a. *Long Wanted, Short Lived: A Tale of Strong Loves Lost*

b. *Happy Ending: The Gorilla Who Got What She Wanted*

c. *A Tale of Two Kitties: A Stuffed Cat Versus a Real One*

d. *Plushy Love: How A Gorilla Fell in Love with a Stuffed Cat*

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APPENDIX M

English Reading Comprehension Test 4

Honey Badgers

Honey badgers stand less than a foot high. They are only a couple feet long. They weigh just over 20 pounds. Yet they have a reputation for toughness that is far greater than their size. Some honey badgers will chase away lions and take their kills. That goes to show you that size isn't the only thing that matters in a fight.

Honey badgers have speed, stamina, and agility, but so do many animals. The thing that sets the honey badger apart is their skin. Their skin is thick and tough. Arrows, spears, and bites from other animals can rarely pierce it. Small bullets can't even penetrate it. Their skin is also loose. This allows them to twist and turn to attack while another animal is gripping them. The only safe grip one can get on a honey badger is on the back of their necks.

Honey badgers have long, sharp claws. These claws are good for attacking and even better for digging. Honey badgers are some of nature's most skilled diggers. They can dig a nine-foot tunnel into hard ground in about 10 minutes. They love to catch a meal by digging up the **burrows** of frogs, rodents, and cobras. They also use their digging skills to create their homes. They live in small chambers in the ground and defend them fiercely. They will attack horses, cows, and even water buffalo if they poke around a honey badger's den.

The honey badger is fearless and a tireless fighter. They will attack any creature that threatens them, man included. Because of the honey badger's reputation, most predators avoid them. Some animals use the honey badger's rep to their advantage. Cheetahs kittens have silver manes and look like honey badgers which tricks predators into avoiding them.

If honey badgers are so tough, how did they get a name that makes them sound like a piece of candy? The answer is simple. Since honey badgers have such thick skin, bee stings rarely harm them. So honey badgers love to raid beehives. They chase after honey aggressively. Beekeepers in Africa have to use electric fencing to hold them back.

Honey badgers are nasty neighbors. They attack chickens, livestock, and some say children, though they usually leave people alone. But if a honey badger moves in your backyard, there's not a whole lot that you can do about it. I mean, are you going to go and tangle with an animal that has teeth strong enough to crunch through turtle shells?

Name: _____

1. Which best expresses the main idea of the third paragraph?

a. Honey badgers have sharp claws that they use for fighting.

b. Honey badgers digging skills assist them in many ways.

c. Honey badgers use their claws to defend their homes.

d. Honey badgers will defend their homes to the death against any animal.

2. Which statement would the author most likely **agree** with?

a. What makes the honey badger so tough is their speed and strength.

b. Honey badgers are large in size and tireless in fighting spirit.

c. What makes honey badgers so tough is their thick, loose skin.

d. Honey badgers got their name from the sweet taste of their meat.

3. Which best defines the meaning of the word *burrows* as it is used in the third paragraph?

a. Lily pads or other seaweeds in which animals hide

b. Holes or tunnels in which animals live

c. A nest or animal dwelling in a tree or bush

d. A water supply where small animals come to drink

4. Which best expresses the main idea of the last paragraph?

a. Honey badgers are a nuisance to the neighborhood.

b. Beekeepers and honey badgers do not get along well.

c. Honey badgers have very strong jaws and teeth.

d. Honey badgers eat chicken and livestock.

5. Which best describes one of the author's main purposes in writing this text?

a. To persuade readers to join the efforts to protect honey badgers

b. To compare and contrast honey badgers with beagles and lions

c. To describe how honey badgers select their partners

d. To explain why honey badgers are so tough

6. Which statement would the author most likely **disagree** with?

a. Honey badgers like to raid beehives to eat honey.

b. Honey badgers are not the biggest animals, but they may be the toughest.

c. Honey badgers disguise their young to look like cheetah kittens.

d. Honey badgers are not afraid to fight with humans.

7. Which person is **most likely** to be disturbed by a honey badger moving in next door?

a. A beekeeper

b. A biologist

c. A bus driver

d. A salesman

8. Which animal is the honey badger afraid to attack?

a. Lion

b. Water buffalo

c. Poisonous snake

d. None of these

9. Which is **not** one of the honey badger's strengths?

a. Thick skin

b. Powerful jaws and strong teeth

c. Poisonous claws

d. Tireless fighting spirit

10. Which title best expresses the main idea of this text?

a. *Battle on the Savannah: Honey Badgers Vs. Lions*

b. *Little Badger, Big Fight: One of Nature's Toughest Scrappers*

c. *Ace in the Hole: How Honey Badgers Build and Protect Their Homes*

d. *Little Game: Interesting Animals That Live in Africa*

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APPENDIX N

English Reading Comprehension Test 5

Hyperinflation

During World War I, the French and the Germans fought one another fiercely. Millions died. Billions of dollars were spent. The French paid for their efforts by taxing their citizens. But the Germans borrowed money to pay for the war. As the war raged on and the Germans borrowed more and more money, the value of their currency dropped.

In those days, the Germans called their money *Marks*. When World War I started in 1914, a US Dollar was worth around four German Marks. In 1919, after the war ended, a US Dollar was worth nine German Marks. That means that Germans needed to spend twice as much money to buy the same items after the war. This is called *inflation*.

Things got much worse after the war. The French were upset with the Germans. Much of the fighting took place in France, and the country was *ravaged*. France and her allies won the war. France wanted billions of dollars each year from the Germans. They demanded payments in foreign money, like the US Dollar, not in German Marks. It was early 1921 by the time these agreements were made. One US Dollar could buy 60 German Marks. Then the Germans started making payments.

The Germans made these payments by printing money. They would trade the money that they printed for foreign currency. But as they printed more and more, the money was worth less and less.

The German government grew desperate. They began to trade Marks for foreign money at any rate. By November of 1923, one US Dollar could buy 4,210,500,000,000 Marks. Their money was devalued so fast that German workers had to go to the store right after getting paid. Waiting until the day's end made their money worthless. Basic items like stamps and bread cost billions of Marks. Some burned the old bills to provide heat.

The German economy did recover. They created a new currency called the *Retenmark*. Unlike the old Marks, Retenmark was backed by land and gold. This means the currency could be traded for gold or land at a fixed rate and the government could only print as much money as they had land and gold to back it. By December of 1923, the Retenmark was the official currency. The Germans cut 12 zeros from the prices of their products and the money became more stable. That made life a lot more livable.

Name: _____

1. Which is **not** a reason why the German Mark lost value?

a. The Germans borrowed money to pay for World War I.
b. The Germans had to make payments with foreign money.
c. The French demanded large payments.
d. The French lost the war.

2. Which best defines the word ***inflation*** as it is used in the second paragraph?

a. When the value of a currency drops
b. To increase the size of a balloon by blowing air into it
c. When the same amount of money purchases more than in the past
d. When the pictures on the money change

3. Which best expresses the main idea of the first paragraph?

a. Germany and France fought against one another in World War I.
b. Many people died in World War I on all sides.
c. The German Mark lost value because of borrowing.
d. The French were wrong to increase taxes during war time.

4. Which happened first?

a. The German Mark was replaced with the Retenmark.
b. The US Dollar was worth nine German Marks.
c. The Germans began making war payments to France.
d. German Marks were burned to provide heat.

5. Which statement would the author most likely **agree** with?

a. Inflation affects governments, not people.
b. The best way to pay for a long war is to borrow money.

c. Living in Germany during 1923 would be fun and exciting.
d. It is important for a nation to have a stable currency.

6. According to the text, how did the German government respond to France's demands for war payments?

a. The Germans made cuts and managed their resources wisely to meet payments.
b. The Germans printed a bunch of money and traded it for foreign currency.
c. The Germans raised taxes on their citizens and used the tax money to make payments.
d. The Germans began selling luxury cars to foreign nations to raise the money.

7. How was the Retenmark different from the paper Mark?

a. It was printed under the close supervision of the US Government.
b. It came before the paper Mark and was printed on silver plates.
c. It was backed by land and gold and could not be endlessly printed.
d. It was used to purchase land and gold and could not buy consumer goods.

8. Which happened **last**?

a. The Germans cut 12 zeroes from the prices of their products.
b. The Germans lost World War I.
c. The prices of goods skyrocketed into the billions.
d. The French demanded large payments from the Germans.

9. Which best defines the meaning of the word ***ravaged*** as used in the third paragraph?

a. Severely damaged
b. Overflowing with joy
c. Very angry
d. Beautifully colored with vegetation

10. Which title would best express the main idea of this text?

a. *World War I: A Costly Fight for All of Those Involved*

b. *Inflation: How It Works and How to Prevent It*

c. *Can I Borrow a Trillion? Inflation in Germany After World War I*

d. *Money Around the World: A Comparison of the Value of Money*

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX O

English Bimodal Comprehension Test 1

Hummingbirds

Have you ever heard the sound of a hummingbird? They make a buzzing noise when they fly. They make this noise because they beat their wings so fast. They beat their wings up to 80 times a second. All that flapping makes a lot of noise. That's why we call them hummingbirds.

Hummingbirds fly in a unique way. They move their wings so fast that they can hover. This means that they can stay in one spot in the middle of the air, like a helicopter. Sometimes they fly or hover upside down. They are the only bird that flies backward.

Hummingbirds are small. One type called the bee hummingbird is the smallest bird in the world. Bee hummingbirds weigh less than a penny. They are just a little bit bigger than bees. I guess that's where they get their name.

Bee hummingbirds build tiny nests. They use cobwebs and bits of bark to make their homes. Their homes are only an inch around. This is big enough for their eggs though. Their eggs are smaller than peas. People have found these tiny nests on a clothespin.

Hummingbirds move fast. It takes lots of energy to move as fast as they do. This means that they need to eat a lot of food. Their favorite food is nectar, a sweet liquid inside of some flowers. They drink more than their own weight in nectar daily. They have to visit hundreds of flowers to get enough nectar to live. They can only store enough energy to survive through the night. They live on the edge.

Hummingbirds don't use their long beaks like straws. They have a tongue just like you. They use their tongues for eating. They flick their tongues in and out of their mouths while inside of flowers. They lap up nectar. Flowers give them the energy that they need.

Hummingbirds help flowers too. They get pollen on their heads and bills when they feed. Flowers use pollen to make seeds. Hummingbirds help pollen get from one flower to the next. This helps flowers make more seeds. More seeds means more flowers. More flowers means more food for hummingbirds. Isn't it nice how that works out?

Name: _____

1. Why are they called hummingbirds?

a. They are very light

b. They sing when they fly

c. Their wings make a humming sound

d. Their song sounds like humming

2. How do hummingbirds eat?

a. They drink nectar through their beaks like a straw.

b. They chew up flower petals with their beaks.

c. They use their heads and bills to eat pollen.

d. They lap up nectar with their tongues.

3. How do hummingbirds help flowers?

a. They drink nectar.

b. They eat pollen.

c. They bring pollen from one flower to the next.

d. They plant seeds.

4. According to the text, which does the bee hummingbird use to make nests?

a. straw

b. concrete

c. bark

d. sticks

5. Which best describes the main idea of the fifth paragraph?

a. Hummingbirds move fast.

b. Hummingbirds like to eat nectar.

c. Hummingbirds use lots of energy and eat often.

d. Hummingbirds drink their own weight in nectar every day.

6. Which statement about bee hummingbirds is **not** true?

a. Bee hummingbird eggs are smaller than peas.

b. Bee hummingbirds weigh less than a penny.

c. Bee hummingbirds have built nests on clothespins.

d. Bee hummingbirds do not grow larger than bees.

7. What is unique about the way that hummingbirds fly?

a. They can fly faster than any other bird.

b. They can fly longer than any other bird.

c. They can fly forward and backward.

d. They can only fly for a few seconds at a time.

8. Which best defines the word ***hover*** as used in paragraph two?

a. To stay in one spot in the air

b. To clean an area thoroughly

c. An animal that has hooves

d. To move your wings very fast

9. Why do flowers need pollen?

a. Flowers eat pollen.

b. Pollen attracts hummingbirds.

c. Hummingbirds eat pollen.

d. Flowers use pollen to make seeds.

10. Which title best describes the main idea of this text?

a. *Bee Hummingbirds: The World's Smallest Bird*

b. *Pollination: How Birds and Flowers Work Together*

c. *Hummingbirds: Unique and Uniquely Helpful*

d. *Interesting Facts About Birds*

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX P

English Bimodal Comprehension Test 2

The Coliseum

The Coliseum is an ancient stadium in the center of Rome. It is the largest of its kind and it is very old. They started building it in the year 70. It took ten years to build. It is still around today.

The Coliseum has been used in many ways. In ancient Rome, men fought each other in it. They fought against lions, tigers, and bears. Oh my! It was dreadful. But most of the people loved it. As many as 80,000 Romans would pack inside to watch those fights. These gruesome events went on until 523.

The Coliseum has been damaged many times over the years. It was struck by lightning in the year 217. This started a fire that caused a lot of damage. Much of the Coliseum is made of stone. But since the upper levels of the Coliseum were made of wood, they were damaged by the fire. This damage took many years to repair. It was not finished until the year 240.

The worst damage happened in 1349. A mighty earthquake shook Rome and the Coliseum. The south side of the building collapsed. This caused pieces of the arena to fall all over the ground. Some people took the fallen stones while others took stones from the seating areas. These stones were used to repair houses and churches.

The Romans of those days were not connected to the Coliseum. It had last been used as a castle. Before that it was a graveyard. It has been hundreds of years since the games. The damage to the Coliseum was never repaired. It's a good thing the outer wall of it still stands strong.

Today the Coliseum is one of Rome's most popular attractions. People from all over the world come to Italy to see it. The Pope leads a big march around it every Good Friday. It is a symbol that is known by many. It has even appeared on the back of a coin. I guess that makes it a symbol that many people want too.

Name: _____

1. Which happened first?

a. An earthquake damaged the Coliseum.

b. The Coliseum was struck by lightning.

c. The Coliseum appeared on the back of a coin.

d. The Coliseum was used as a castle.

2. When did the Romans finish building the Coliseum?

a. The year 70

b. The year 523

c. The year 80

d. The year 240

3. What caused the fire that damaged the upper levels of the Coliseum?

a. A bolt of lightning

b. Rowdy people who came to watch the events

c. An attacking army

d. An angry mob

4. For which purpose was the Coliseum **not** used?

a. People fought other people in it.

b. It was a private castle.

c. People fought animals in it.

d. It was a meeting place for the government.

5. Which caused the most damage to the Coliseum?

a. Fires

b. Earthquakes

c. Wars

d. Hurricanes

6. What did the people do with the stones that they took from the Coliseum?

a. They repaired buildings.

b. They sold them.

c. They used them as weapons.

d. They used them as tombstones.

7. Which best defines the word *gruesome* as it is used in the second paragraph?

a. Exciting
b. Funny
c. Horrifying
d. Boring

8. Which best describes the main idea in the last paragraph?

a. This is about all the things the Coliseum has been used for throughout history.
b. This is about how the Coliseum is a popular place to visit today.
c. This is about how the Coliseum is a symbol that many people know.
d. This is about how the Coliseum is used today.

9. Which was **not** a way in which the Coliseum was damaged over the years?

a. Earthquake
b. Tornado
c. Lightning
d. Fire

10. Which statement would the author most likely **agree** with?

a. The Coliseum should be replaced with a building that is not damaged.
b. The Coliseum has its place in history but it is not useful today.
c. The Coliseum should be used for fighting once again.
d. The Coliseum is very old and has been used for many purposes.

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX Q

English Bimodal Comprehension Test 3

Seat Belts

"Click!" That's the sound of safety. That's the sound of survival. That's the sound of a seat belt locking in place. Seat belts save lives and that's a fact.

Think about it. When you're driving in a car, you may be going 60 MPH or faster. That car is zipping down the road. Then somebody ahead of you locks up his or her brakes. Your driver doesn't have time to stop. The car that you are in crashes. Your car was going 60 miles per hour. Now it has suddenly stopped. What's going to stop your body? Will it be the windshield or your seat belt?

Some people think that seat belts are uncool or that seat belts are uncomfortable. To them I say, what's more uncomfortable? Wearing a seat belt or flying through a car windshield? What's more uncool? Being safely anchored to a car, or skidding across the road? Wearing a seat belt is both cooler and more comfortable than the **alternatives**.

Let's just take a closer look at your choices. If you are not wearing your seat belt, you can hop around the car and slide in and out of your seat easily. That sounds like a lot of fun. But, you are also more likely to die or suffer serious injuries. If you are wearing a seat belt, you have to stay in your seat. That's no fun. But, you are much more likely to walk away unharmed from a car accident.

Do you like to give your money away? Probably not. And when you don't wear your seat belt, you are begging to give your money away. That's because kids are required to wear seat belts in every state in America. If you're riding in a car, and you don't have a seat belt on, the police can give you or your driver a ticket. Then you will have to give money to the city.

Wearing a seat belt does not make you **invincible**. You can still get hurt or killed while wearing your seat belt. But wearing them has proven to be safer than driving without them. You are much less likely to be killed in a car wreck or get seriously injured if you are wearing a seat belt. So why not take the safer way?

Name: _____

1. Which title best expresses the main idea of this text?

a. *Car Accidents: Ways That We Can Prevent Them*

b. *Slow Down: Save Lives By Driving Slower*

c. *Seat Belts: Wear Them to Survive Any Wreck*

d. *Why Not? Improve Your Odds with Seat Belts*

2. Which best expresses the author's main purpose in writing this text?

a. To inform readers about seat belt laws

b. To persuade readers to wear seat belts

c. To entertain readers with stories and jokes about seat belts

d. To describe what car accidents are like without seat belts

3. Which best describes the text structure in the fourth paragraph?

a. Compare and contrast

b. Chronological order

c. Sequential order

d. Problem and solution

4. Which best defines the word *alternatives* as it is used in the third paragraph?

a. Being safe

b. Being unsafe

c. Other choices

d. Driving fast

5. Which best expresses the main idea of the fifth paragraph?

a. Seat belts are a waste of money.

b. People don't like to give money away.

c. Not wearing a seat belt may cost you.

d. Seat belt laws save lives.

6. Which best defines the word *invincible* as it is used in the last paragraph?

a. Uncool

b. Difficult or impossible to see

c. Glow-in-the-dark

d. Unable to be harmed

7. Which statement would the author most likely **agree** with?

a. Being safe is more important than being cool.

b. Moving freely around a car is worth the risks.

c. Seat belts will keep you safe in any car accident.

d. You should be most concerned with your comfort.

8. Which argument is **not** made by the author?

a. Not wearing a seat belt can be expensive.

b. Penalties for not wearing a seat belt should increase.

c. Seat belts keep you from flying through the windshield.

d. Wearing a seat belt is cooler than suffering an injury.

9. Which statement would the author most likely **disagree** with?

a. Seat belts save lives.

b. Every state in America has seat belt laws.

c. You shouldn't drive anywhere until you are wearing your seat belt.

d. Seat belts increase your chances of being injured in a car wreck.

10. Which best explains why the author starts his essay with the word *click*?

a. He is trying to scare readers.

b. He is trying to get the reader's attention.

c. He is trying to remind readers how seat belts sound when clasped.

d. He is trying to describe what it's like to ride in a car.

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX R

English Bimodal Comprehension Test 4

Reading

Did you know that some people don't do their reading assignments? It's shocking, but it's true. Some students don't even read short texts that they are assigned in class. There are many reasons for this. They may be distracted or bored. They may be unwilling to focus. They may be unconfident readers. Whatever the reason, it has to stop today. Here's why.

Reading stimulates your mind. It is like a workout for your brain. When people get old, their muscles begin to deteriorate. They get weaker and their strength leaves them. Exercise can prevent this loss. The same thing happens to people's brains when they get older. Brain power and speed decline with age. Reading strengthens your brain and prevents these declines.

You can benefit from reading in the near-term too. Reading provides knowledge. Knowledge is power. Therefore, reading can make you a more powerful person. You can learn to do new things by reading. Do you want to make video games? Do you want to design clothing? Reading can teach you all this and more. But you have to get good at reading, and the only way to get good at something is to practice.

Read everything that you can at school, regardless of whether you find it interesting. Reading expands your vocabulary. Even a "boring" text can teach you new words. Having a larger vocabulary will help you better express yourself. You will be able to speak, write, and think more intelligently. What's boring about that?

Do not just discount a text because it is unfamiliar to you. Each time you read, you are exposed to new ideas and perspectives. Reading can change the way that you understand the world. It can give you a broader perspective on things. It can make you worldlier. You can learn how people live in far away places. You can learn about cultures different from your own.

Reading is good for your state of mind. It has a calming effect. It can lower your stress levels and help you relax. You can escape from your troubles for a moment when you read, and it's a positive escape. So do yourself a favor: the next time you get a reading assignment, take as much as you can from it. Squeeze it for every drop of knowledge that it contains. Then move on to the next one.

Name: _____

1. Which best expresses the main idea of the second paragraph?

a. Reading is exciting.
b. Reading strengthens your mind.
c. Age affects the body in many ways.
d. Working out keeps your body in shape.

2. Why does the author think that you should read books that are boring?

a. You will eventually grow to love them if you read them enough.
b. You will get better grades in reading class.
c. You will make your teacher very happy.
d. You will learn new words.

3. Which best expresses the main idea of the third paragraph?

a. Reading can benefit you.
b. You can learn to program video games or design clothing by reading.
c. You can learn amazing things and become a better person by reading.
d. Knowledge is power.

4. Which is **not** a reason given by the author why students fail to complete reading assignments?

a. Students may be bored.
b. Students may be distracted.
c. Students may be unwilling to focus.
d. Students may be tired.

5. Which best expresses the author's main purpose in writing this text?

a. He is trying to persuade students to do their reading work.
b. He is teaching people how to become better readers.
c. He is explaining why people don't do their reading work.
d. He is entertaining readers with facts about the mind and body.

6. Which best describes the author's tone in the first three sentences?

a. Surprised
b. Sarcastic
c. Informative
d. Irate

7. Which of the following is **not** one of the author's main points?

a. Reading broadens your perspective and makes you a better person.

b. Reading is a relaxing activity with positive mental side effects.

c. Reading helps you perform on tests and get into selective schools.

d. Reading keeps your mind in shape and prevents losses due to age.

8. Which is **not** one of the author's arguments in the fifth paragraph?

a. Reading gives you a broader perspective on the world.

b. Reading changes the way that you understand the world.

c. Reading helps prepare you for your job in the real world.

d. Reading teaches you about distant lands and cultures.

9. Why does the author believe that reading is good for your mind state?

a. It has a calming effect.

b. It can lower your stress levels.

c. It can help you relax.

d. All of these

10. Which title best expresses the main idea of this text?

a. *Reading: Good for the Mind in Many Ways*

b. *Reading: The Key to a Successful Academic Future*

c. *Reading: Improve Your Vocabulary While Being Entertained*

d. *Reading: The Best Way to Improve Your Writing Skills*

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX S

English Bimodal Comprehension Test 5

The Pony Express

In this age of texts and tweets, it is easy to send messages. The person to whom you sent it will get it in just a few seconds. Distance is no longer an issue. But things weren't always so easy.

In 1848 gold was found in California. Thousands of people rushed there to get some. Many people liked living there and decided to stay. But there wasn't a whole lot between California and Missouri, where the nearest trains ran. The train line to California wasn't finished until 1869. It took a long time to ride a horse to Missouri.

In 1860 and 1861, the Pony Express was the fastest way to get news to and from the West. The trail that they rode was around 2000 miles long. It took most people weeks or months to ride that far. The Pony Express could make the trip in just ten days. Those speeds were unheard of at the time. So how did they do it? Well, they had a good system.

The Pony Express had 184 stations along the trail. The stations were around ten miles apart. This is about how far a horse could run at a gallop before tiring. The rider would switch to a new horse at each station. He would only take his mail pouch with him. At each home station, riders would rest. Before resting, he would give his mail pouch to a new rider. The mail never stopped moving.

It was tough to ride for the Pony Express. Each rider had to weigh less than 125 pounds. Speed was the key. Most of the riders were teenage boys. They rode at a fast pace for up to 100 miles a day. If there were an emergency, one might have to ride 200 miles in a day. The ride could be rough and dangerous. Attacks by Native Americans were common. But in its time running, the Pony Express only lost one mail pouch.

The Pony Express filled an important role for a time, but it did not last. The Civil War started in April of 1861. On October 24th, 1861, the first telegraph line to California was finished. This linked them to the rest of the country. People could send messages in an instant. Two days later the Pony Express closed. But the lore of the brave riders lives on even today.

Name: _____

1. Which happened first?

a. Settlers rushed to California to find gold.

b. The Pony Express was started.

c. The train line to California was finished.

d. The first telegraph line to California was finished.

2. Which best explains why Pony Express riders had to weigh less than 125 pounds?

a. Heavier men were more expensive.

b. Horses were scared of heavier men.

c. Heavier men scared customers.

d. Horses could move quicker with lighter men.

3. How fast could the Pony Express take a letter from California to Missouri?

a. 24 hours

b. ten days

c. twenty days

d. one month

4. Why were the Pony Express stations about ten miles apart?

a. This was about as far as a man could walk in a single day.

b. This was as far as a man could ride on a horse in a day.

c. This was so the riders wouldn't get so lonely at night.

d. This was as far as a horse could run without getting tired.

5. Which was probably **not** a requirement to be a rider for the Pony Express?

a. You had to be light.

b. You had to be an expert horse rider.

c. You had to be able to read and write.

d. You had to be brave in the face of danger.

6. Which best describes that main idea of the fourth paragraph?

a. It is about how many Pony Express stations there were.

b. It is about how the Pony Express carried mail so quickly.

c. It is about how the Pony Express riders slept in the stations.

d. It is about how far the Pony Express riders would go in a day.

7. Which of these ended the Pony Express?

a. The telegraph

b. The Civil War

c. Wars with Native Americans

d. The train line

8. About how far did Pony Express riders travel on a usual day?

a. 10 miles

b. 200 miles

c. 100 miles

d. 2000 miles

9. How many mail pouches did the Pony Express lose?

a. The Pony Express never lost a mail pouch.

b. One

c. Two

d. Too many to keep track

10. Which title best describes the author's purpose in writing this?

a. *Out of Touch: Why Phones are Faster Than Horses*

b. *The Pony Express: Stories of Their Bravery in Battle*

c. *Back in Touch: Why We Should Use Horses to Deliver the Mail*

d. *The Pony Express: About the 1860's Fastest Mail Service*

Adapted from https://www.ereadingworksheets.com/free-reading-worksheets/reading-comprehension-worksheets/#nonfiction-passages

APPENDIX T

English Retention Tests

Table T1

Sr#	Words				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	holiday	beach	sound	pieces	popular
2	season	waves	player	rules	puzzle
3	attract	device	events	basic	blocks
4	usual	work	speech	skill	gaps
5	demand	junk	factories	useful	disappear
6	violent	protect	local	limit	space
7	crowd	guards	cheaper	pace	pile
8	traffic	weapons	switch	mistake	academy
9	discount	needle	image	beat	capital
10	universal	stuck	wonder	deep	arcade

Table T1. Words used in English auditory retention tests

Table T2

Sr#	Words				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	ships	nutrient	dancing	chase	citizen
2	leading	source	language	arrows	borrow
3	insects	sparkle	blossom	twist	rage
4	sugar	trap	argue	attack	upset
5	crops	escape	motion	sharp	allies
6	lizards	respond	stuffed	digger	payment
7	furry	curl	frown	creature	currency
8	meal	wander	believe	avoid	worth
9	catch	curve	trouble	raid	bills
10	natural	surface	deny	electric	stable

Table T2. Words used in English reading retention tests

Table T3

Sr#	Scores				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	noise	stadium	safety	shocking	trip
2	spot	ancient	locks	focus	system
3	tiny	dreadful	driver	prevent	station
4	energy	event	skidding	decline	pouch
5	liquid	damage	slide	design	tough
6	visit	repair	suffer	practice	teenage
7	straws	collapse	injuries	expand	dangerous
8	flick	castle	accident	teach	telegraph
9	feed	strong	money	expose	instant
10	pollen	symbol	wreck	broad	brave

Table T3. Words used in English Bimodal retention tests

APPENDIX U

Urdu Auditory Comprehension Test 1

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) مولوی اسمعیل کب پیدا ہوئے ؟

ا) ۱۲ نومبر ۱۷۴۴

ب) ۱۲ نومبر ۱۸۴۴

ج) ۱۴ نومبر ۱۷۲۲

۲) 'رغبت 'کے معنی ہیں

ا) سہولت

ب) فراغت

ج) توجہ

۳) مولوی اسمعیل نے انجنیرنگ کہاں سے کی ؟

ا) میرٹھ

ب) رڑکی

ج) سہارن پور

۴) 'مترنم 'کے معنی ہیں

ا) نغمہ ریز

ب) ماہر

ج) محترم

۵) مولوی اسمعیل بہ حیثیت کلرک کہاں بھرتی ہوئے ؟

ا) ضلع سکول

ب) محکمہ تعلیم

ج) سنٹرل نارمل سکول

۶) 'تخلص 'کے معنی ہیں

ا) تحفظ

ب) داخلہ

ج) قلمی نام

۷) سنٹرل نارمل سکول کہاں واقع ہے ؟

ا) آگرہ

ب) میرٹھ

ج) سہارن پور

۸) 'تالیف 'کے معنی ہیں

ا) ترقی

ب) ترتیب

ج) اہتمام

۹) مولوی اسمعیل نے ضلع سکول میں کتنا عرصہ کام کیا ؟

ا) گیارہ سال

ب) سولہ سال

ج) سترہ سال

۱۰) 'جگت 'کے معنی ہیں

ا) جدوجہد

ب) تمام زمانے کا

ج) دردمندی

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX V

Urdu Auditory Comprehension Test 2

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) شہزادہ فندوق کا کس ملک سے تعلق تھا ؟

ا) یمن

ب) یونان

ج) ایران

۲) شہزادہ فندوق کس چیز کا شوقین تھا ؟

ا) شکار

ب) جنگل

ج) ہرن

۳) شہزادہ فندوق کے دوست کا کیا نام تھا ؟

ا) فرانسیس ہنٹر

ب) فلپ ہنٹر

ج) فلن ہنٹر

۴) 'کلیلیں 'کے معنی ہیں

ا) کودنا

ب) گھورنا

ج) دوڑنا

۵) شہزادہ فندوق کا خاص مشغلہ کیا تھا ؟

ا) ہرن کو مارنا

ب) ہرن کا پیچھا کرنا

ج) ہرن کو دیکھنا

۶) ’خوانچہ ‘کے معنی ہیں

ا) خنجر

ب) تھال

ج) بچھوا

۷) پھل فروش کی عمر کیا تھی ؟

ا) ساٹھ سال

ب) ساٹھ سال سے زیادہ

ج) ساٹھ سال سے کم

۸) ’کشادہ ‘کے معنی ہیں

ا) وسیع

ب) دلکش

ج) سیراب

۹) سکندر اعظم کس ملک کا بادشاہ تھا ؟

ا) مہران

ب) یونان

ج) ایران

۱۰) ’اندوز ‘کے معنی ہیں

ا) اندر کرنا

ب) اندازہ لگانا

ج) پایا ہوا

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX W

Urdu Auditory Comprehension Test 3

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) شیخ عبدالمجید سندھی کی گمشدگی کی خبر اخبارات میں کب شائع ہوئی ؟

ا) ۱۹۷۰

ب) ۱۹۸۰

ج) ۱۹۲۰

۲) شیخ عبدالمجید سندھی کس عمر میں گمشدہ ہوئے ؟

ا) ۷۰

ب) ۸۰

ج) ۶۰

۳) ریشمی رومال کے ذریعے سے کس کے درمیان ضروری پیغامات پہنچائے جاتے تھے ؟

ا) انگریز

ب) حکومت

ج) مجاہدین

۴) 'معمر 'کے معنی ہیں

ا) سنجیدہ

ب) بزرگ

ج) ذہین

۵) شیخ عبدالمجید سندھی نے سندھ کو کس سے علیدہ کرنے کی کوشش کی تھی ؟

ا) دہلی پریزیڈنسی

ب) بمبئی پریزیڈنسی

ج) سندھ پریزیڈنسی

۶) ’ممتاز ‘کے معنی ہیں

ا) معزز

ب) پارسا

ج) معقول

۷) شیخ عبدالمجید سندھی کہاں پیدا ہوئے ؟

ا) حیدرآباد

ب) سکھر

ج) ٹھٹھہ

۸) شیخ عبدالمجید سندھی کا پرانا نام کیا تھا ؟

ا) گجآنند

ب) جیٹھانند

ج) ستیانند

۹) شیخ عبدالمجید سندھی نے اپنا نام کس عمر میں تبدیل کیا ؟

ا) بیس

ب) بائیس

ج) پچیس

۱۰) شیخ عبدالمجید سندھی نے کس شہر میں اسلام قبول کیا ؟

ا) حیدرآباد

ب) سکھر

ج) ٹھٹھہ

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX X

Urdu Auditory Comprehension Test 4

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) عمر خیام کس شہر میں رہتا تھا ؟

ا) ناگپور

ب) نیشا پور

ج) شِکارپُور

۲) 'مشغول' کے معنی ہیں

ا) مصروف

ب) محدود

ج) حسب معمول

۳) عمر خیام کے استاد کا نام کیا تھا ؟

ا) امام مشفق

ب) امام موفق

ج) امام موافق

۴) 'مراعات' کے معنی ہیں

ا) سہولت

ب) سمجھوتا

ج) منظور شدہ

۵) عمر خیام کا استاد کس عہدے پر تھا ؟

ا) ہیڈ چانسلر

ب) چانسلر

ج) وائس چانسلر

۶) ’عقیدت ‘کے معنی ہیں

ا) تکبر

ب) عقل مندی

ج) بھروسہ

۷) عمر خیام کو کہاں روکا گیا ؟

ا) گلی

ب) باغ

ج) چوک

۸) ’مسلح ‘کے معنی ہیں

ا) ہم سفر

ب) ہتھیار بند

ج) دولت مند

۹) گھوڑے پر سوار امیر کا کیا نام تھا ؟

ا) حسین

ب) حُنین

ج) حسن

۱۰) ’اسپ تازی ‘کے معنی ہیں

ا) عربی گھوڑا

ب) شاہی سپاہی

ج) امیر امراء

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX Y

Urdu Auditory Comprehension Test 5

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) استانی کو رضی کی کس بات پر غصہ آتا تھا ؟

ا) اس کی لکھائی کی رفتار

ب) اس کی ذہانت

ج) اس کی آنکھیں

۲) 'ادراک 'کے معنی ہیں

ا) معلوم ہونا

ب) ہونا ابتدا

ج) مشہور ہونا

۳) استانی بچوں کو کونسا سبق پڑھا رہی تھیں ؟

ا) تاریخ

ب) ریاضی

ج) حیاتیات

۴) 'بافت 'کے معنی ہیں

ا) کیفیت

ب) بناوٹ

ج) بنیاد

۵) رضی کی چھٹی کی رسم کیسے منائی گئی تھی ؟

ا) حلوائی گھر بٹھایا

ب) گھر میں چراغاں کیا گیا

ج) عزیزواقارب جمع ہوئے

۶) ’شبیہ ‘کے معنی ہیں

ا) شعور

ب) شکل

ج) شاگرد

۷) رضی کا جسم کس عمر میں بے جان ہونا شروع ہوا ؟

ا) دو سال

ب) تین سال

ج) چار سال

۸) ’تامل ‘کے معنی ہیں

ا) غور و فکر

ب) تکلیف

ج) افسوس

۹) رضی کے جسم کا کونسا حصہ پہلے بے جان ہوا ؟

ا) بازو

ب) پاؤں

ج) ٹانگیں

۱۰) ’جنبش ‘کے معنی ہیں

ا) حرکت

ب) بیماری

ج) نقصان

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX Z

Urdu Reading Comprehension Test 1

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) علامہ اقبال کی شاعری نے عالم اسلام اور برصغیر کے مسلمانوں کو _____کرنے میں اہم کردار ادا کیا ہے -

ا) آگاہ

ب) بیدار

ج) متاثر

۲) علامہ اقبال نے عالم اسلام اور اقوام کو _____کے ذریعے سے متاثر کیا ؟

ا) شاعری

ب) خطاب

ج) ترجمے

۳) علامہ اقبال کے متحدہ ہندی قومیت کے حامی ہونے کی یا وجہ تھی ؟

ا) تعلیم و تربیت

ب) ہندوستان سے محبت

ج) انگریزوں کا اثر

۴) 'مشترک 'کے معنی ہیں

ا) متاثر

ب) یکجا

ج) مشکل

۵) ' نیا شوالہ 'اور' ہمالہ 'جیسی نظموں میں کیا نمایاں تھا ؟

ا) انگیزوں کا تعلیمی نظام

ب) وطن پرستی کے جزبات

ج) مسلمانوں کی علمی ترقی

۶) ’مستحکم ‘کے معنی ہیں

ا) مضبوط

ب) مسلط

ج) مستوی

۷) انگستان کے مسلم طلباء کی تنظیم کے نگراں کون تھے ؟

ا) سید عامر علی

ب) سید امیر علی

ج) سید عمر علی

۸) ’راسخ ‘کے معنی ہیں

ا) پختہ

ب) راہ راست

ج) سختی

۹) ۱۹۳۰ ء میں مسلم لیگ کا سالانہ اجلاس کہاں ہوا تھا ؟

ا) علی آباد

ب) احمد آباد

ج) الہ آباد

۱۰) ’منظم ‘کے معنی ہیں

ا) منظورشدہ

ب) جڑا ہوا

ج) مختلف

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX AA

Urdu Reading Comprehension Test 2

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) پاکستانیوں کے علاوہ چین کے کون سے ہمسایہ ملک کے لوگ کاشغر گھومتے دکھائی دیے ؟

ا) کازخستان

ب) تاجکستان

ج) افغانستان

۲) 'نفوس 'کے معنی ہیں

ا) نفسیات

ب) نفیس

ج) افراد

۳) 'چینی باغ ہوٹل 'کتنی منزلہ عمارت ہے ؟

ا) چار

ب) پانچ

ج) چھ

۴) کاشغر کا شمار چین کے کس علاقے کے اہم ترین شہروں میں ہوتا ہے ؟

ا) شیڈونگ

ب) ہیلونگجیانگ

ج) سنکیانگ

۵) 'کاش 'کس زبان کا لفظ ہے ؟

ا) ترکی

ب) فارسی

ج) چینی

۶) کاشغر میں پچھتر فی صد آبادی کا تعلق کس قبیلے سے ہے ؟

ا) ویغور

ب) کرغیز

ج) ہان

۷) حجاج بن یوسف کہاں کا حکمران تھا ؟

ا) کاشغر

ب) ترکی

ج) بصرہ

۸) ’احاطہ ‘کے معنی ہیں

ا) صحن

ب) لحاظ

ج) حساب

۹) کاشغر پر کتنے حکمرانوں نے قبضہ کیا ؟

ا) دو

ب) تین

ج) چار

۱۰) ’مختص ‘کے معنی ہیں

ا) مختلف

ب) مخصوص

ج) محتاط

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX BB

Urdu Reading Comprehension Test 3

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) سید سلیمان ندوی کے والد کا نام کیا تھا ؟

ا) ابوحبیب

ب) ابوالحسن

ج) ابو الحسین

۲) 'والہانہ 'کے معنی ہیں

ا) محدود

ب) بے انتہا

ج) وہم

۳) سید سلیمان ندوی نے درسی کتابیں کس سے پڑھیں ؟

ا) مولانا شاہ محی الدین

ب) مولوی ابو حبیب

ج) سید اابو الحسین

۴) 'فصیح ' کے معنی ہیں

ا) فاصلہ

ب) واضح

ج) خالص

۵) علامہ اقبال دینی مسائل میں کس سے صلاح مشورہ کرتے تھے ؟

ا) مولانا شاہ محی الدین

ب) مولانا شاہ سلیمان

ج) مولوی ابو حبیب

۶) ’توقف ‘کے معنی ہیں

ا) وقفہ

ب) توفیق

ج) ہمت

۷) دارالعلوم ندوہ کہاں ہے؟

ا) پھلواری شریف

ب) لکھنی

ج) لکھنئو

۸) ’جریدہ ‘کے معنی ہیں

ا) لاجواب

ب) تنہا

ج) رسالہ

۹) سید سلیمان ندوی نے اپنی دینی تعلیم کب مکمل کی ؟

ا) ۱۹۰۷

ب) ۱۹۰۸

ج) ۱۹۰۹

۱۰) ’استوار ‘کے معنی ہیں

ا) دستور

ب) احساس

ج) قائم

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX CC

Urdu Reading Comprehension Test 4

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) علامہ اقبال یورپ سے وطن واپس کب پہنچے ؟

ا) ۱۹۰۶

ب) ۱۹۰۷

ج) ۱۹۰۸

۲) 'شمولیت' کے معنی ہیں

ا) شمار

ب) مشہوری

ج) شرکت

۳) سر سلیم اللہ کہاں کے نواب تھے ؟

ا) ڈھولکا

ب) ڈھاکہ

ج) دہلی

۴) 'بساط' کے معنی ہیں

ا) بسنا

ب) پھیلاوٹ

ج) ابتداء

۵) مسلم لیگ کب قائم ہوئی ؟

ا) ۱۹۰۶

ب) ۱۹۰۷

ج) ۱۹۰۸

۶) ’تسلط ‘کے معنی ہیں

ا) ریاست

ب) تسلی

ج) قبضہ

۷) علامہ اقبال اس نتیجے پر کب پہنچے کے مسلمانوں کی ایک علیحدہ حکومت ہی مسلمانوں کو تحفظ دے سکتی ہے ؟

ا) ۱۹۱۱

ب) ۱۹۱۵

ج) ۱۹۱۹

۸) ’محکوم ‘کے معنی ہیں

ا) خادم

ب) محکمہ

ج) حکومت

۹) شمال مغربی ہند میں اکثریت کس کی تھی ؟

ا) ہندو

ب) مسلمان

ج) انگریز

۱۰) ’کار بند ‘کے معنی ہیں

ا) حکم کا پابند

ب) وقت کا پابند

ج) کام کا پابند

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX DD

Urdu Reading Comprehension Test 5

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) مسلم لیگ نے کانگریس سے علیدہ ہو کر کس علاقے میں انتخابات میں حصہ لیا ؟

ا) جے پور

ب) جھانسی

ج) جھاکری

۲) 'مدلل 'کے معنی ہیں

ا) مطمئن

ب) بددل

ج) ثابت شدہ

۳) کانگریس کو ووٹ نہ دینے کا فتویٰ کس نے دیا ؟

ا) مولانا اشرف علی تھانوی

ب) مولانا ثناء اللہ امتسری

ج) مولانا شبیر احمد عثمانی

۴) 'طفیل 'کے معنی ہیں

ا) ذریعہ

ب) طویل

ج) مخالف

۵) سیاست میں حصہ لینے کا فیصلہ کس نے کیا تھا ؟

ا) مولانا شبیر احمد عثمانی

ب) مولانا ظفر احمد عثمانی

ج) مولانا ثناء اللہ امتسری

۶) 'جانفشانی 'کے معنی ہیں

ا) دل جوئی

ب) مشقت

ج) حسرت

۷) قائداعظم نے صوبہ سرحد کا دورہ کرنے کی درخواست کس سے کی ؟

ا) مولانا اشرف علی تھانوی

ب) مولانا ظفر احمد عثمانی

ج) مولانا شبیر احمد عثمانی

۸) 'تائید 'کے معنی ہیں

ا) خیریت

ب) قائم

ج) طرفداری

۹) سلہٹ کے علاقے کو اپنی تبلیغی جدوجہد کے لیے کس نے منتخب کیا ؟

ا) مولانا شبیر احمد عثمانی

ب) مولانا ظفر احمد عثمانی

ج) مولانا ثناء اللہ امتسری

۱۰) 'خدوخال 'کے معنی ہیں

ا) خصوصیات

ب) خدمات

ج) خطرات

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX EE

Urdu Bimodal Comprehension Test 1

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) کمپیوٹر کے کتنے حصے ہوتے ہیں ؟

ا) دو

ب) تین

ج) چار

۲) 'ازل 'کے معنی ہیں

ا) بے ابتدا

ب) اندازہ

ج) مقدار

۳) کمپیوٹر کی ایجاد کس کے باعث ہوئی ؟

ا) عقل

ب) خوب تر کی تلاش

ج) سائنسی علوم

۴) 'مروج 'کے معنی ہیں

ا) نازک

ب) عمدہ

ج) معمولی

۵) پہلی دفعہ برقی کمپیوٹر کس لیے استعمال کیا گیا ؟

ا) مردم شماری

ب) رائے شماری

ج) خانہ شماری

۶) ’اعداد ‘کے معنی ہیں

ا) قیمت

ب) ہندسے

ج) اندازہ

۷) پہلا ڈیجیٹل کمپیوٹر کب وجود میں آیا ؟

ا) ۱۹۴۴

ب) ۱۹۴۶

ج) ۱۹۶۴

۸) ’کلیدی ‘کے معنی ہیں

ا) عادت

ب) یاد گار

ج) بآختیار

۹) پہلے ڈیجیٹل کمپیوٹر کا وزن کتنا تھا ؟

ا) دس ٹن

ب) بیس ٹن

ج) تیس ٹن

۱۰) ’برقی ‘کے معنی ہیں

ا) الیکٹرک

ب) برقرار

ج) پائیدار

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX FF

Urdu Bimodal Comprehension Test 2

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) سب سے پہلے کس ملک نے فنی تعلیم کا اہتمام کیا ؟

ا) جرمنی

ب) فرانس

ج) جاپان

۲) 'مجوزہ' کے معنی ہیں

ا) جسے تجویز کیا گیا ہو

ب) جس کا جائزہ لیا گیا ہو

ج) جس کو توجہ دی گئی ہو

۳) _____ ضروریات میں اضافے نے تعلیم کا انداز مکمل طور پر تبدیل کر دیا -

ا) معاشرتی

ب) تعلیمی

ج) مادی

۴) 'تدریس' کے معنی ہیں

ا) ترتیب دینا

ب) تعلیم دینا

ج) درست کرنا

۵) جاپان میں طالب علم کتنے گھنٹے کارخانے میں کام کرتے ہیں ؟

ا) تین

ب) چار

ج) پانچ

۶) ’پس پشت ڈالنا ‘کے معنی ہیں

ا) چھپانا

ب) اپنانا

ج) چھوڑنا

۷) عمرانی علوم کی جگہ کن علوم کو ذیدہ توجہ دینی شروع کی گئی ؟

ا) سائنسی

ب) لسانی

ج) فلسفیانہ

۸) ’ضمن ‘کے معنی ہیں

ا) مضبوط

ب) مضمون

ج) ضمانت

۹) چین کے عوام انقلاب نو سے قبل کیا کہلاتے تھے ؟

ا) فنون

ب) افسردہ

ج) افیونی

۱۰) ’اجرا ‘کے معنی ہیں

ا) شروع کرنا

ب) روکنا

ج) جرت کرنا

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX GG

Urdu Bimodal Comprehension Test 3

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) ابن الہیثم کو اہل مغرب کس نام سے یاد کرتے ہیں ؟

ا) المذیب

ب) الہیزن

ج) الحذر

۲) 'فیضیاب 'کے معنی ہیں

ا) فرض ادا کرنا

ب) تجربہ حاصل کرنا

ج) فائدہ حاصل کرنا

۳) ابن الہیثم کب پیدا ہوئے ؟

ا) ۹۶۵ عیسوی

ب) ۹۲۵ عیسوی

ج) ۹۴۵ عیسوی

۴) 'ریاضی 'کے معنی ہیں

ا) حساب

ب) رضا مندی

ج) لگاؤ

۵) ابن الہیثم نے ابتدائی تعلیم کہاں سے حاصل کی ؟

ا) مصر

ب) بصرہ

ج) بغداد

۶) 'بہرہ ور 'کے معنی ہیں

ا) فایدہ اٹھانے والا

ب) بے خوف

ج) خود پسند

۷) _____ ان دنوں علم و ادب کا گہوارہ تھا -

ا) مصر

ب) بصرہ

ج) بغداد

۸) 'سوہان روح 'کے معنی ہیں

ا) آرام پسندی

ب) ناگوار

ج) خوش مزاجی

۹) ابن الہیثم کہاں پر وزیر کے عہدے پر فائز ہوئے تھے ؟

ا) بغداد

ب) بصرہ

ج) مصر

۱۰) 'اعتدال 'کے معنی ہیں

ا) قابلیت

ب) توازن

ج) ذریعہ

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX HH

Urdu Bimodal Comprehension Test 4

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) دادا بھائی نوروجی کی قائم کردہ سوسائٹی کا نام کیا تھا ؟

ا) انگلش سوسائٹی

ب) انڈین سوسائٹی

ج) مسلم سوسائٹی

۲) 'زوال' کے معنی ہیں

ا) ترقی کا کم ہونا

ب) کم ذات ہونا

ج) زاویہ تبدیل ہونا

۳) مسلم لیگ کی بنیاد کب پڑی ؟

ا) ۱۹۰۲

ب) ۱۹۰۴

ج) ۱۹۰۶

۴) 'قیادت' کے معنی ہیں

ا) قانون

ب) حکومت

ج) راہ نمائی

۵) قائداعظم نے مسلم لیگ کی رکنیت کب حاصل کی ؟

ا) ۱۹۱۲

ب) ۱۹۱۴

ج) ۱۹۱۹

۶) ’متزلزل ‘کے معنی ہیں

ا) مایوس ہونے والا

ب) ڈگمگانے والا

ج) خودبخود ہونے والا

۷) انتخابات میں مسلم لیگ نے کہاں کہاں کامیابی حاصل کی ؟

ا) پنجاب، سندھ اور بلوچستان

ب) پنجاب، بلوچستان اور بنگال

ج) پنجاب، سندھ اور بنگال

۸) ’محکم ‘کے معنی ہیں

ا) مضبوط

ب) مددگار

ج) منتظر

۹) اقبال پارک کو پہلے کیا کہتے تھے ؟

ا) مہاتما پارک

ب) منٹو پارک

ج) انڈین پارک

۱۰) مسلم لیگ کا سالانہ جلسہ کہاں منعقد ہوا ؟

ا) حیدرآباد

ب) لکھنؤ

ج) لاہور

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX II

Urdu Bimodal Comprehension Test 5

NAME:_____

درج ذیل سوالوں کے جوابات لکھیں :

۱) سوات جانے والا قافلہ راولپنڈی سے کس تاریخ کو روانہ ہوا؟

ا) ۲۵ جولائی

ب) ۲۵جنوری

ج) ۲۵ جون

۲) راولپنڈی سے مردان کتنے کلومیٹر کے فاصلے پر ہے؟

ا) ۱۶۵

ب) ۱۲۵

ج) ۱۳۵

۳) قافلے نے کس ہوٹل میں قیام کیا؟

ا) پام ہوٹل

ب) پامیر ہوٹل

ج) پیم ہوٹل

۴) 'منتظم 'کے معنی ہیں

ا) انتظام کرنے والا

ب) مطمئن کرنے والا

ج) انتظار کرنے والا

۵) مینگورہ سے مردان کتنے کلومیٹر کے فاصلے پر ہے؟

ا) ۶۰

ب) ۹۰

ج) ۸۰

۶) ’سکونت ‘کے معنی ہیں

ا) قیام گاہ

ب) اطمینان ملنا

ج) آرام کرنا

۷) سیدوشریف کا پرانا نام کیا ہے؟

ا) سیدو بابا

ب) حضرت عبدالغفور

ج) رائے کیاس

۸) ’تقدیس ‘کے معنی ہیں

ا) احترام

ب) تصدیق

ج) تنقید

۹) کس چینی سیاح نے اپنے سفر نامے میں مینگورہ کا ذکر کیا ہے؟

ا) فاین

ب) فاہیان

ج) چن

۱۰) مینگورو کی وجہ تسمیہ کیا ہے؟

ا) وہ شہر جہاں تہزیب وثقافت کا ذکر ہو

ب) وہ شہر جہاں ترقی ہو

ج) وہ شہر جہاں بدھ بھکشو رہتے ہوں

Adapted from Abdul Qayyum, R., Rehman, M. U., & Khan, A. (2012). Safina Urdu. Islamabad: National Book Foundation.

APPENDIX JJ

Urdu Retention Tests

Table JJ1

Sr#	Words				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	مدت	شکار	خبر	مشہور	جسم
2	دلچسپی	رفتار	اطلاع	مثال	جنگ
3	تعلیم	موقع	رومال	قافلہ	ملازم
4	دلکش	قریب	تاریخ	بلند	ذہانت
5	محکمہ	دریا	جلسہ	حفاظت	احساس
6	حیثیت	بچپن	وقت	باغ	قدرت
7	کالج	کھیت	حکومت	شفقت	علم
8	شریف	حیران	آزادی	شاعر	ہمدردی
9	معمولی	لطف	تحریک	پنجرے	نظر
10	مزہبی	جنگل	بہادر	تجارت	گوشت

Table JJ1. Words used in Urdu auditory retention tests

Table JJ2

Sr#	Words				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	فکر	مسافر	خاندانی	اختیار	نازک
2	متاثر	سامان	زبان	حیات	خواہش
3	نظام	قطار	مسائل	شہرت	شرکت
4	وطن	سوار	مشورہ	سیاست	خدمت
5	خطوط	ہوٹل	مزاج	حیثیت	کامیابی
6	تربیت	ترجیح	شاگرد	محفوظ	دشوار
7	سرکاری	آغاز	سالانہ	تحفظ	مرحلہ
8	درس	تعلق	مہمان	علیحدہ	نتیجہ
9	جزبات	آبادی	شامل	غلام	منتخب
10	تبدیلی	قدیم	نوجوان	ریاست	مخالفت

Table JJ2. Words used in Urdu reading retention tests

Table JJ3

Sr#	Scores				
	Test 1	Test 2	Test 3	Test 4	Test 5
1	انسان	طویل	حاصل	اختیار	ہدایت
2	تلاش	مہارت	قدر	مقصد	مقام
3	استعمال	پیشہ	مغرب	بنیاد	مشتمل
4	مختلف	کامیابی	قیمتی	محسوس	روانہ
5	گنتی	قابل	مصروف	نقصان	جماعت
6	فراہمی	انداز	خوف	پہنچ	بلندی
7	ایجاد	انقلاب	دربار	قائم	چہرہ
8	ترقی	حالات	وابستہ	تسلیم	سمندر
9	آسانی	حقیقت	شہرت	زندگی	مرکز
10	وزن	اضافہ	قابل	روشن	روانگی

Table JJ3. Words used in Urdu Bimodal retention tests