



Evaluating the Multiple Choice Questions of Higher Secondary School English through Item Analysis

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Abstract- Testing and evaluation are important part of education system. The educators are exploring various methods to elevate the validity and reliability of the syllabus and materials that can make authentic materials for the learners. Considering these aspects the researchers intended to evaluate the difficulty index of the multiple choice questions of intermediate English part 1 compulsory. The core ideology behind this research is to provide authentic and valid learning materials than is evaluated through an authentic process. For the said purpose the whole Punjab public sector colleges were taken as a population where 2511 learners from 9 different cities of Punjab were chosen through convenient sampling methods. Each learner was provided with a book of MCQs containing 3087 MCQs for attempting it. After completion the books were collected and the results were obtained. The outcomes of this study clearly suggested that all these MCQs are varied in terms of their difficulty level. The item analysis process segregated the difficult average and easy MCQs and evaluated the intermediate MCQs for the Pakistani learners. This research can be helpful for the local learners for better comprehension of MCQ based questions of intermediate English part 1

Keywords: Multiple Choice Questions, Intermediate English Compulsory, Validity, reliability, Item Analysis, Pakistan.

I. INTRODUCTION

The necessity of English in various domains has significantly increased its importance and has made English the most demanded language in educational context (Pandey & Pandey, 2014). Fareed, Jawed and Awan (2018) explained that in Pakistan English is being taught as a compulsion to the learners till graduation and this has increased the value of English in various learning and teaching situations in Pakistan. Looking at foreign English language classrooms, earlier they were teacher centered in which the only knowledge source was the teachers and the learners were dependent and passive (Boumova, 2008). This practice has gradually changed in developed countries since the invasion of modern methods and techniques in learning and teaching contexts. The current era opens up latest and innovative learning and teaching methods.

Awan and Hiraj (2016) stated that though on one side there is a rapid increase in ESL learners in Pakistan yet majority of the institutions and classrooms are unable to provide latest, innovative and authentic learning materials. This has resulted in a situation where the learners are unable to learn English language effectively and are losing interest and thus becoming anxious and jittery regarding ESL learning. That is why the drop out of students in matric, intermediate and graduation can also increase because of failure in English. Especially at intermediate level the learners face lots of difficulties to pass out English compulsory paper of their respective board examination. One of the major reasons for the failure might be inefficient preparation particularly of MCQ based questions as they are the compulsory question in the syllabus of intermediate English part 1 and carry twenty marks out of hundred. The lack of proper input regarding MCQ learning by the teachers make the situation worst. Importantly MCQs are hardly given due attention. Furthermore there is no particular material that focuses only on developing MCQ learning effectively. Moreover, the teachers direct the learners to memorize the MCQs themselves through various guide books without understanding them. Keeping in view the importance let me share what an MCQ is?

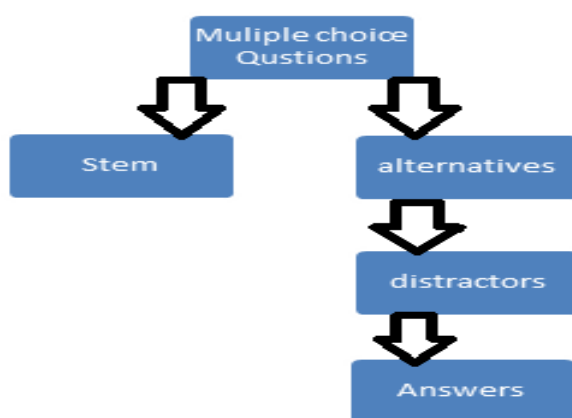
Multiple Choice Questions (MCQs)

MCQ or MCQs actually consists of a number of questions and each has a number of option out of which one is exactly correct (Frandsen & Schwartzbach, 2006) also stated that there are a number of items and questions in MCQs and for every question the student or a candidate has to pick his best choice from the given options which can be four or five. Similarly Brame (2013) is of the view that MCQs which are also considered as items is an important and efficient method for the assessment of learners' learning outcomes.

MCQ items Anatomy

The structure of multiple choice questions is a bit different from other questions. A typical MCQ based item is divided into two parts

- 1) A stem which is known as problem statement.
- 2) The alternatives, which consist of Choice that are the optional solutions



In the alternative parts there are distractors and usually only one option is the correct option. Looking at stem of MCQ it can sometimes be a question or it can be a statement which needs completion (Burton, Sudweeks, Merrill & Wood, 1990). Jerad (1995) explains that MCQ items are structured and labeled as stem, alternatives, distractors and the correct answer. Stem means that section of the statement which presents the problem needed to be resolved; alternatives are the possible option given for the particular problem. The distractors are the incorrect answers. The correct answer however is called a key.

Advantages of MCQ based test

Let me share the advantages of MCQ based test in the examination system. Though there are many methods used for testing the students but MCQs is one of the best methods to check the learning ability. Few more benefits are like;

- 1) if the students are guided in such a way that they know about the format of MCQ items and their structure they can perform much better than any other test (Beckert, Wilkinson & Sainsbury, 2003),
- 2) the reliability of multiple choice items may be more than other tests if the items are structured by trained people (Downing, 2004),
- 3) they usually need lesser amount of time to manage rather than other tests,
- 4) it can help in doing comprehensive and effective evaluation of the learners' knowledge,
- 5) the self-interpretation of the replies given by the students and biasness of instructor is not possible as the students are graded according to their own selection made from the questions (Downing, 2004),

Item analysis

The high ratio of MCQs usage is because of the fact that they can assess students in an objective manner within a less frame of time. MCQs are good for assessing conceptual knowledge of the students but an important aspect is that the construction of MCQs is also very important. Farthing, Jones and McPhee (1998) as in Singh and de Villiers (2017) also supported the value of MCQs that they are usually utilized by evaluators to check students' knowledge and learning. But important thing for effective results is the construction of MCQs. And if the construction of MCQs is not up to the mark they will fail to provide results. Secondly for evaluating learners the MCQ data must be homogenous to maintain validity and reliability. Manually it is difficult to segregate which item is easy for the student and which is difficult. So there are chances that someone may get easy MCQ based questions while the other learner can have a set of MCQs which are quite difficult to attempt (Arora, 2018). In order to make valid and reliable dataset for all the learners for attempting the test the usual method in practice is to perform an item analysis which provides with the difficulty level, distractor efficiency and also discrimination index of each item. Here are some definitions of item analysis.

The quality of the MCQ is dependent upon three factors

- 1) Difficulty index of the item (DIF I)
- 2) Discrimination index (DI)
- 3) Distracter efficiency (DE)(Gajjar, Sharma, Kumar & Rana, 2014).

As my focus is only to explore the difficulty index of MCQs so I will explain item difficulty only leaving all the other areas aside.

Item Difficulty

According to Boopathira and Chellamani (2013) the difficulty of the item may be explained as the correct options attempted by the test takers. In other words students' percentage regarding correct answered items. It is denoted by P- value. The range varies from 0 to 100%; i.e. the lower the value the difficult is the item, whereas if the value gets higher the item becomes difficult. The P-value over 0.90 means that the item is extremely easy and if the P-value is under 0.20 it clearly indicates that the item is extremely difficult. If the optimal level of difficulty is 0.50 that shows extreme discrimination among low and high achievers; if the item is correctly answered by 80% learners and only 10% get through it means the items are hard enough or too much difficult. Consequently the value will be lower

Quaigrain and Arhin (2017) explained item analysis as a process to improve of the MCQ items' quality. It is also utilized to find the difficulty level of the MCQs and thus having a reliable and valid data for testing students.

Validity is an important aspect in social science research as it helps in the qualification of human behavior by using measuring instruments. Brains, Willnat, Manheim, Rich (2011) also stated that the degree to which the interpretations of the assessments from results taken

In addition, for a valid data the feature of reliability is also mandatory. Gay (1987) as in Abdullah and Raman (2001) defines reliability as a level of consistency of a test whenever and whatever it evaluates. Any test can be viewed as reliable if different people can use it under steady conditions with the consistency in result rather than variation. So reliability shows replication and consistency. Further it can also be taken as a degree of error free measurement.

Item analysis actually evaluates the multiple choice questions and can provide homogenous dataset of the MCQs

Statement of the problem

Some important pillars in the showground of education are learners, teachers and classrooms. In classroom ambiance the most pivotal thing is the methods and techniques used for learning as they are the benchmark of success for the learners in examination. Learning actually connects learners with teachers. So, English

learning and teaching is no longer related to the structure only but it is now the development of new concepts and adapting different context and learning styles to make new realities of teaching and learning. Furthermore the validity and reliability of any learning material is also very important for the learners. There is a staunch need to have authentic, valid and reliable data which is tested and evaluated through a reliable process. This data can be best for the learners and can also help them to learn effectively.

Though some studies are there which evaluated the quality of the MCQs through item analysis like (Quaigrain & Arhin, 2017; Toksöz, & Ertunç, 2017; Ani 2011; Mahjabeen, Alam, Hassan, Zafar, Butt, Konain & Rizvi, 2018) yet all of these studies confined to explore item difficulty, item discrimination and item distractors.

Purpose of the Study

Viewing all of these issues discussed above my purpose of this study is to perform an item analysis as already mentioned in the above section which will provide a databank of valid and reliable MCQs in terms of their difficulty level to both the groups. This will eliminate the factor of unequal distribution of data to any of the group. This will also make the databank reliable and valid and can help learners learn efficiently and also can elevate their performance in final board examination.

Objectives of the Study

- ❖ To perform an item analysis to find out difficulty index of the MCQ items from the attempted material of learners.
- ❖ To create a data bank of reliable and valid MCQs.

Significance of the Study

This study has practical significance in multiple ways. In Pakistan the conventional mode of study is taken up by thousand and millions of learners per year. For achieving dreams these conventional examination system is the benchmark to move ahead. So, it is expected that the entire syllabus and the tests should be valid and reliable focusing on the students learning rather than cramming and rote learning only. Surprisingly the evaluation of the test items for improvement has not been done effectively. Though there are some instances of it yet regularity is lacking especially when it comes to the multiple choice questions' evaluation. MCQs are an important area because they form 20% of the total marks in the intermediate part 1 board examinations. Out of hundred marks there are 20 marks given to MCQ and they are the compulsory question in the final board examination. This study is substantial in the way that it provides an authentic databank of MCQ items which are collected and evaluated through the process of an item analysis and are now valid and reliable.

Limitations of the study

There are following limitations of this study

- ❖ This study focuses upon MCQ based questions only.
- ❖ Only nine major cities of Punjab were chosen for collecting dataset of MCQs for item analysis.
- ❖ All these cities were chosen through convenient sampling method.

All these limitation actually helped me to maintain the eminence of the research. It also helped me to make it authentic valid and reliable. These limitations were also observed owing to lack of time and resources available with me. Without carrying these limitations it was not possible to maintain quality and authenticity of the current research.

II. REVIEW OF LITERATURE

As a member of society an individual needs a tool for sharing ideas, expressions, emotions and information where language serves as a platform to perform all these functions. Language is also a reflection of country's

tradition and value and provides identification to a society. It also reflects the unity and identity of any culture (Sirbu, 2015). Today, there are a few cultures which rely on a single language as with fast increase of communication and interaction the world has squeezed to global village and it has aroused the importance of a common language for communication amongst nations. Under these circumstances the need for second language has been developed intensely.

Importance of Second Language

Second language learning has become a requirement because of international communication amongst nations. It is due to the reason that people are now closely connected through different gadgets and tools of technology.

The era of global autonomy and the rise of multiethnic and multicultural society are paving way for second language learning as it provides individuals with a chance to study foreign language as their second language and it provides insight awareness into cultures of other nations and develops awareness amongst individuals. This view is also supported by Curtain and Dahlberg (2004) who explained that presently the need of second language is gaining popularity because of hybrid cultures and social needs of people. There are several studies which indicated that second language learners have several benefits like better attitude towards learning as they are creative and more culturally aware (Bamford & Mizokawa, 1991; Baker 2006). They also have flexibility as part of their cognition and they are divergent and creative thinkers (Hakuta, 1986; Bialystok 2001; Bialystok, Craik, Grady, Chau, Ishii, Gunji & Pantev, 2005), they can communicate better across national and cultural boundaries (Liddicoat, 2002a). It also increases the individual career development prospects as they reflect better comprehensive skills (Cummins, 1981). The past researchers also stated that it develops creativity and divergence in thinking (Fernandez, 2008).

English as Second Language

The evolving market for English as a second language is because of the rapid growth, appreciation and popularity of English as preferred language in various countries, cultures and societies. In educational contexts, the ESL courses help the learners to improve the understanding various aspects of English language. The ESL learners have a strong desire to learn English for developing their social awareness needs and communication to be the part of globalization. Keeping in view all these aspects the curricula of English is designed and structured to overcome issues of ESL learners. The curriculum demands latest methods that make more profitable learning and teaching ambiance. Now syllabus and context both are intensively important (Balla, 2018).

ESL learning has different dimensions in ESL countries. Sometimes ESL learning is performed by infusing certificate level, special language learning courses, ESP, TEFL, TESL and other academic purposes in different learning centers to equip learners with the latest ESL methods. The aim is to provide awareness to learners regarding latest English language propensities. On the other hand sometimes English is learnt for other competitive examinations to seek lucrative positions and to uplift social status. This notion is also supported by Cogo (2012) who was of the view that English is learnt for uplifting the social class and status. Furthermore it is also taught as a compulsory subject in the curriculum from initial level to highest level of learning (Peng, 2019).

So, in Pakistani ESL learning ambiance English is a compulsion in curriculum and is being taught at different levels up till graduation. After graduation it is an optional subject. Similarly in higher secondary schools English is a compulsory subject where the assessment is made at the end of the year in which different formats of questions are included. Among these different formats the most important one are the MCQs which are at the top in the hierarchy of the final board examination paper of English (Part 1) compulsory and they are an obligatory question in the final paper of Board of Intermediate and secondary examinations.

Multiple Choice Questions in ESL Learning

Palmer and Devitt (2007) define MCQs as a type of questions that asks learners to choose one option from a set of alternatives. Usually MCQs are used for the purpose of assessing learners in different areas of academics. Whereas in eastern countries specially subcontinent they are used in different entrance examinations, higher secondary as well as graduate and post graduate examinations (Shizuka, Takeuchi,

Yashima, Yoshizawa, 2006). Usually MCQs are the most important component of the course content. There are some researchers who are of the view that in their presentation and construction they are totally different from other types of questions and they have three parts like distractor, correct answer and importantly stem (Oermann & Gaberson, 2006). There are several benefits of MCQs and that is why they are the part of the examination system (Torres, Lopes, Babo, & Azevedo, 2011). Numerous researches like (Burton, Sudweeks, Merrill & Wood, 1990; Oermann & Gaberson, 2006) presented the viewpoint that MCQs are type of items that can be used in any of the subject and can measure the course objectives accurately. They are also accurate; avoid teacher's biasness, objective in nature and efficient as well. MCQ tests also possess the feature of validity and reliability in scoring. In the present educational context the value of MCQs is higher as compared to the previous examinations.

There are several researchers which were of the view that MCQs enrich the performance of the learners and make them motivated (Bjork, 1975; Carrier & Pashler, 1992; Glover, 1989; Izawa, 1970; Kuo & Hirshman, 1996; McDaniel & Masson, 1985; Runquist, 1986; Spitzer, 1939; Thompson, Wenger, & Bartling, 1978). Importantly it also helps to find out how difficult each item and this method is called item analysis (Hameed, Al-Faris, Alorainy & Al-Rukban 2005).

Though there are some limitations of MCQs they cannot focus on writing ability and creative ability of the learner and promote guess work (Luo, & Zhang 2011; Abramovitz & Berezina, 2004).

Secondly the learner can spend less time while preparing MCQs and thus become habitual which can ultimately affect their performance on other type of questions in the examination (Couch, Hubbard & Brassil 2018; Kulhavy, Dyer, & Silver, 1975; Abramovitz & Berezina, 2004). MCQs also squeeze the narrative ability, essay writing skills and descriptive analysis of the learners (Azevedo, Lopes, Babo & Torres, 2010). Besides all the limitations MCQ tests have more benefits and advantages than limitations and that is why there is a trend of using MCQs for different types of examination all around the world and in Pakistan also. Some past researches on MCQs in connection with English language also support that MCQs are most favored questions to be included in the test by examiner. A study conducted by Cheng (2004) compared MCQ items of listening better as compared to other types of questions in relation with listening performance. The outcomes revealed that MCQs enhanced the listening performance of the learners especially when selected response section or category is used. Another identical study was performed by Ajideh and Esfandiari (2009) in which close testing and MCQs were compared in relation with vocabulary improvement and proficiency. The findings of the test suggested that MCQs test were at parallel with other type of test in vocabulary testing and hence can easily be replaced with orthodox method to test the English language learners in their vocabulary assessment. Walstad and Becker (1994) compared MCQs with essay type questions and it was revealed in the research that the performance of the learners was much better in MCQs as compared to essay type of questions, it was explored that MCQs were preferred by the learners as test questions in examination. Fathabadi and Seif (2002) as in Epstein and Hundert (2002) evaluated the efficiency of MCQs and explored that MCQs are chosen by most of the examiners and they support students to learn easily and they are also valid and reliable. Whereas Oppong (2013) also explored the female and male performance in view of essay and MCQ questions and found out that MCQs were easier faster and more effective for the learners as compared to essay type of examinations.

Item Analysis of MCQs

A brief introduction of item analysis has already been mentioned earlier, that it is an analysis of each MCQ item to find out the quality of MCQs. Item analysis provides a methodology for the assessment of accurate measurement. This measurement can be segregated into two parts i.e. validity and reliability; both contributes to the quality of measurement. So performing an item analysis is quite important as it makes the test item valid and reliable. It also provides responses of the learners against each item of test and this involves a statistical presentation of various items in terms of difficulty, easiness and item discrimination index. This explains the difference between learners who knew answer and who did not.

Viewing the past literature gives a clear idea that there are many studies conducted on this area and item analysis has been used to find out validity and reliability of the data. Quagrain and Arhin (2017) conducted a study to find out the quality of the items and test and it evaluated the relationship among item difficulty and

item discrimination. The results showed that only those items which justify the level of difficulty and discrimination should be the part of future assessment in order to achieve objectives of the test. Likewise in EFL context a study performed by Toksöz and Ertunç (2017) focused upon analyzing the MCQs in context with vocabulary, grammar, and reading. The study actually tends to focus upon two aspects of item analysis i.e. item difficulty index as well as discriminatory index. The outcomes revealed that mostly the item were effective and 25% items had low value of discrimination thus the difficulty level provided the researchers with an authentic view of learners' performance. Ani (2015) performed an item analysis research for second grade learners to understand the difficulty level of English test. The population of the study comprised of 169 students of SMP Muhammadiyah 29 Cinangka Sawangan Depok. It was found that difficulty index of the learners was 23% whereas the easy items were 8%. Also 69% items were moderate. This provided the facility to segregate each item in terms of their difficulty level for future use. Furthermore Salwa (2012) investigated the English tests quality through exploring the Difficulty level, validity and reliability and also the pertinence of curriculum of English. The population was final semester of grade five learners at Semarang. The sample test chosen were two i.e. the first semester grade five learners test made by ministry of education as well as ministry of religion. The outcomes revealed that in terms of difficulty level, validity and reliability both the test packs were identical and balanced. And the researchers were satisfied to use these item packs for any further assessment as they were analyzed significantly.

Furthermore Boopathiraj and Chellamani (2013) performed identical study in the discipline of education where 200 students were chosen to find out item difficulty as well as item discrimination. The outcomes reflected that the majority of the items had acceptable difficulty range and also acceptable level of discrimination however, some were rejected due to their poor level of discrimination and the rest were organized accordingly for further and future usage of the learners. Karkal and Kundapur (2016) studied only fifty MCQ items to find out the difficult index as well as distraction index. They analyzed that out of 50 items 20% item were difficult and 9% were very easy whereas distraction index percentage was 62%. Lastly Mehta and Mokhasi (2014) conducted a study where the objective was to assess MCQs difficulty index for making a valid and reliable item bank. However the difference was that study was also conducted with an aim to find out low achievers also through item discrimination to make them high achievers in future. 50 MCQs were analyzed here and it was found that 34 were difficult and 16 items of the MCQs were easy. The outcomes helped the researchers to use this databank for any future assessment whenever required.

III. RESEARCH METHODOLOGY

Population for the Data Collection

For the data collection the population comes from the province of Punjab Pakistan. Here the population was chosen to collect data for item analysis. Precisely the population from all over Punjab was the learners of intermediate part 1 college students. These college students were the part of Public sector colleges from entire Punjab province.

Sampling for the Data Collection

Sampling procedure was divided into two steps. To start with 9 cities from Punjab were chosen as sample for this investigation by using purposive sampling method. Purposive sampling is an important sampling method that helps to facilitate the real purpose of the investigator. It also helps to get data which can actually represents the population and can help in saving money and time (Black, 2009). All these 9 cities (Lahore, Multan, Rawalpindi, Gujranwala, Faisalabad, Sargodha, Dera gazi khan, Sahiwal, Bahawalpur) have their own Board of Intermediate and Secondary Education. The major reason for choosing cities through purposive sampling was that I only wanted to make sure that learners should be chosen from different areas to have proper representation of the whole population. After choosing the cities, the next step was to choose the participants. For this purpose from already chosen 9 cities, 2511 learners studying in Intermediate part 1 were selected. These 2511 were chosen equally from all these cities i.e. 279 students from different male colleges in each city. Simple random sampling method was used in which pick and choose technique was applied in choosing learners. Further, the public sector colleges in the respective cities were also chosen by simple random sampling (pick and choose) method. Simple random sampling method is more convenient as

it provides fair chance for every individual to be the part of the study. This clearly reflects that simple random sampling is an unbiased method (Sharma, 2017).

Location for the Data Collection

The primary location of this research was Punjab Pakistan. In Punjab the first phase of data were collected from 9 different cities of Punjab i.e. Lahore, Multan, Rawalpindi, Gujranwala, Faisalabad, Sargodha, Dera gazi khan, Sahiwal, Bahawalpur. In the cities all public sector colleges were the location of collecting data from 2511 learners.

Instrument for the Data Collection

The instrument used for first phase of data collection was a purposefully printed book in which test was my major tool. The book contained 3087 MCQs based test from all the 15 lessons, 3 plays, 20 poems and grammatical portion from intermediate English part 1 compulsory syllabus. Importantly all the MCQs were organized separately i.e. chapter wise according to the textbook pattern of Intermediate English compulsory part 1. These books were given individually to each learner and a continuous process of two and half months was carried out in which all the participants of the research attempted and completed each book which was given to them. These books were only comprised of MCQ based questions leaving all the other questions of the syllabus of intermediate English part 1.

Process of the Data Collection

The process of initial phase of data collection took two and a half month where 2511 books having MCQs of intermediate Part 1 English compulsory were sent to 9 different cities in Punjab. I initially made a pool of 36 teachers (four from each city) and gave them proper training, understanding and comprehension about the aims of this data collection and my research at their respective cities. Furthermore 2511 learners who were the part of the classes in these cities were prepared by the teachers to take test of MCQ based questions. They were motivated by highlighting the importance of MCQ based questions in their final board examination of intermediate part one. The teachers made sure that each and every learner was ready to get involved in the activity. These teachers performed as invigilator and facilitator. They also monitored the sessions in their respective cities. For effective monitoring of the learners 2 personally paid teacher assistants were also given to each teacher so that they made sure that no additional or helping material is present near the students to assist them during the whole process. These paid assistants were the college teachers' internees (CTIs) who were already hired by the college on the direction of Higher Education Department, Punjab Pakistan. These sessions were conducted at the same time span in the selected cities. These sessions were conducted when the whole course of English compulsory was completed and taught to the students. Each single day session was of 45 minutes. These sessions were carried out on all days of the week except Sundays.

In the process of these sessions each learner was given a book of MCQs comprising 3087 MCQs. These MCQs were divided chapter wise according to the pattern of the English compulsory book. Then the learners were asked to attempt the MCQs in the given 45 minutes each day. The daily attempted MCQs by the learners were ranged from 40 to 50. After 45 minutes the books were collected back from the learners and the next day same practice was repeated. As explained above this whole procedure of learners attempting complete books of MCQs was of two and half month span. These books were kept under the custody of the said teachers who were the part of this data collection. Each book contained identification mark of each learner so that the books cannot be interchanged amongst learners. The data were collected only from male colleges as it was convenient for the researcher to reach out, manage, monitor and discuss with the teachers and administrators who were involved in this procedure. After the successful completion of the MCQs books by each learner, the teachers observed each book minutely so that they it was confirmed that no MCQ was left un-attempted by the learner. Finally all the books after checking were sent back to me.

IV. RESULTS AND DATA ANALYSIS

Item analysis Process

The next step was to enter the attempted data of each learner in SPSS for doing an item analysis that can be used for further processes. For the said purpose all the recorded attempts of MCQs from the students were entered into SPSS. Each student attempted 3087 MCQs. So, total number of recorded attempts from 2511 students was 7751,457. This whole process of entering data took 4 months where the paid services of four experts were utilized and I made sure that each book was checked many a times in order to avoid errors in entering the data. After completion of attempted data the answers were also checked in order to find out

the difficulty index of each MCQ item. This item analysis process actually developed the validity of all these MCQs as their difficulty index was decided from the results drawn of the attempted MCQs by 2511 learners. This item analysis also provided a dataset of MCQs where each MCQ was placed according to their difficulty level i.e. easy, average and difficult.

To find out the difficulty index quantitative analysis is applied as it measure the number of correct answers given against each items. The lesser the correct replies the more difficult an item is and vice versa. The formulation for calculating item analysis is quite simple as the main objective is to find the percentage of correct replied against each items. The difficult index is denoted by (P) and the difference however is that P-value is remained as a decimal point i.e. it is not changed to any percentage.

The No. of students who answer a question correctly

Total No. of students who replied to the question

In other words it can be stated that this formula means that: $c/s = p$ Where c is the correct replies s means the no of students and P is the difficulty index. The replies will be provide a value ranging from 0.0 to 0.1; where the harder questions' results will be closer to 0/0 and easier will be near to 1.0.

Results of Item Analysis

Here three tables are presented which have already been segregated according to their level of difficulty. The first table contains the Numbers of the MCQs which are easy MCQ items. The second table presents average MCQ items whereas the third table represents difficult MCQ items. All these items are segregated and divided after being attempted by the students. As already mentioned above the formula of calculating the difficulty index is to evaluate the MCQ between the ranges of 0.0 to 1.00, where the higher value presents that MCQ is easy and the lower value presents that the MCQ is difficult. As supported by Linn and Gronlund (1995), "It is quite normal to assume and many test constructors do assume that a good test intended to discriminate well over a fairly wide range of levels of achievement must include some easy items to test the poorer students and some difficult items to test the better students." (p. 231)

Table-1

Easy MCQs
1-5, 7, 9, 15, 16, 18-24, 26, 37, 39, 41, 43, 45, 46, 48, 49, 50, 54, 55, 56, 57,58, 59, 60, 61, 63, 64, 65, 66, 67, 69, 70, 73, 76, 78, 80, 81, 82, 84, 85, 86, 88, 89, 91, 92, 95, 96, 98, 99, 100, 101, 102, 103, 104, 107, 110, 112, 113,114, 116, 117,118,119, 120,121, 123,125,127,128,129,131,133,134,135, 137, 138,139, 141, 144, 147,148, 151,152,155, 157,157,158,160,161,162, 163, 166, 167,172, 174,175,178,181,189,190,195,197, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 211, 212, 213, 214, 217, 218, 221, 222, 223, 225, 226, 228, 231, 232, 233, 236, 240, 242, 251, 254, 255, 256, 260, 261, 263, 265, 267,2 68, 269, 271, 273, 274, 277, 281, 282, 284, 285, 287, 289, 291, 292, 294, 296, 297, 298, 299, 300, 301, 306, 312, 313, 315, 316, 391, 320, 321, 322, 323, 325, 327, 330, 331, 333, 334, 338, 342, 344, 345, 346, 349, 351, 353, 355, 357, 364, 367, 370, 374, 375, 376, 377, 378, 379, 380, 382, 389, 391, 392, 393, 398, 399, 400, 410, 402, 403, 404, 405, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 421, 423, 428, 430, 431, 433, 437, 441, 446, 447, 457, 459, 462, 468, 469, 471, 472, 481, 486, 487, 491, 496, 497, 503, 506, 508, 509, 510, 514, 517, 522, 523, 524, 525, 526, 527, 528, 530, 535, 538, 540, 541, 543, 544, 546, 548, 551, 553, 556, 558, 560, 561, 562, 563, 565, 566, 568, 569, 570, 572, 574, 576, 577, 578, 580, 583, 584, 585, 590, 591, 596, 598, 599, 602, 603, 605, 606, 608, 610, 614, 617, 620, 622, 623, 626, 627, 628, 630, 631, 632, 636, 640, 646, 650, 651, 653, 654, 655, 658, 660, 661 ,666, 667, 668, 671, 672, 675, 678, 680, 687, 690, 691, 695, 696, 701, 702, 706, 707, 709, 712, 722, 725, 726, 727, 740, 745, 752, 754, 755, 759, 760, 763, 764, 766, 768, 773, 776, 778, 780, 781, 787, 788, 789, 793, 794, 797, 801, 806, 808, 809, 814, 816, 821, 827, 828, 830, 832, 834, 835, 837, 838, 841, 842, 844, 845, 849, 850, 853, 855, 856, 859, 860, 864, 866, 867, 870, 871, 877, 882, 883, 886, 887, 888, 891, 892, 893, 897, 899, 901, 905, 907, 908, 911, 913, 916, 917, 918, 921, 922, 924, 925, 926, 928, 929, 931 , 935, 936, 937, 938, 939, 940, 942, 945, 951, 953, 957, 960, 962, 963, 966, 968, 971, 973, 975, 976, 980, 981, 982, 983, 985, 986, 988, 991, 994, 995, 999, 1000, 1007, 1008, 1013, 1017-1020, 1024, 1029, 1030, 1032, 1033, 1036, 1038, 1040-1043, 1048, 1049, 1051, 1054, 1055, 1057, 1061, 1063, 1064, 1065, 1067-1069, 1071, 1073, 1079-1082, 1086, 1088, 1090, 1091, 1093, 1097, 1098, 1101, 1102, 1104, 1106, 1107, 1110, 1111, 1113, 1115, 1117,1119,1121,1123,1126-1128, 1130-1132, 1138,1139,1142, 1143, 1147, 1148, 1150, 1151, 1154, 1155, 1158, 1159, 1161, 1163, 1164, 1167,1170,1175,1176,1179,1184,1185,1188-1192,1200-1203,1205-1207,1210-

1213,1216,1218-1220, 1222, 1223, 1226, 1229, 1230, 1233,1234,1239,1240,1248,1251,1253,1255,1257-1265,
1267, 1268, 1271, 1273, 1274, 1277, 1282, 1283,1287-
1289,1292,1294,1296,1301,1302,1306,1307,1310,1312,1314,1318-1320,1323,1324,1326,1328-1330,1332-
1334,1336,1338,1343,1344,1348-1354,1357,1360,1361,1363,1366,1368,1371-1374,1376-1378, 1380, 1381, 1384,
1391, 1395, 1397, 1398, 1400, 1402, 1403, 1405, 1406, 1408, 1410, 1411, 1414, 1416, 1417, 1420, 1421, 1424-1428,
1434-1438, 1444, 1448, 1451, 1452, 1454, 1456, 1458, 1468, 1471, 1473, 1477, 1480,1488-1490, 1493, 1495, 1496,
1498, 1501, 1503, 1504, 1506-1509, 1517, 1521, 1526, 1528, 1530, 1531, 1534, 1535, 1543, 1547, 1551, 1553, 1556,
1559-1563, 1565, 1568, 1569, 1571, 1572, 1574, 1577-1580, 1582, 1584-1587, 1591, 1593, 1595, 1599, 1600, 1611,
1612, 1618-1620, 1623, 1625, 1627, 1628, 1631, 1633, 1634, 1636-1638, 1642-1644, 1646-1648, 1650, 1651, 1653,
1656, 1658,1661-1663, 1670, 1671, 1674, 1677, 1678, 1681, 1684, 1685, 1690, 1694, 1697, 1698, 1700, 1702-1704,
1708, 1709, 1712,1714-1716, 1720, 1721, 1724, 1725, 1728, 1730, 1731, 1734-1737, 1739, 1743, 1747, 1748, 1751,
1753, 1756-1758,1761-1764, 1767, 1770, 1774-1776, 1778-1781, 1785, 1787-1789, 1792-1797, 1799, 1800, 1802,
1805-1808, 1813,1816-1818, 1823, 1824, 1829, 1832, 1834, 1835, 1837, 1840, 1841, 1843, 1846-1849, 1852-
1854,1859, 1861, 1863, 1864, 1866,1868-1871, 1873,1875,1877,1778,1882,1884,1885,1887,1889,1892,1895-
1898,1900,1903-1906,1912,1914-1918,1920,1922-1925, 1927-1930, 1938, 1941, 1942, 1944, 1946-1950, 1952,
1956, 1958-1960, 1964-1966, 1968, 1970, 1973, 1974, 976, 1979, 1980, 1983, 1985, 1986,1988-1992, 1995, 1996,
1999, 2002, 2002, 2010, 2011, 2013, 2014, 2018, 2020, 2021, 2024, 2025,
2028,2029,2034,2045,2048,2049,2054,2056,2057,2059,2063,2066,2067,2070-
2072,2074,2079,2082,2085,2087,2089-
2091,2095,2097,2099,2101,2102,204,2106,2108,2112,2113,2117,2122,2129,2130,2134,2135,2138,2140,2142,214
4,2146,2149,2151,2155,2157,2159,2161,2162,2165,2170,2173,2176,2178-2180,2182-
2184,2190,2192,2193,2196,2200,2201,2204,2205,2207,2208,2214,2217,2219,2220,2222,2223,2226-
2229,2232,2235,2238,2242,2244,2250,2252,2254,2257-
2259,2261,2264,2269,2271,2274,2276,2278,2281,2282,2284,2286,2290,2296,2297,2302,2303,2314-2317,2223-
2325,2328,2333,2334,2339,2341,2245,2246,2351,2356,2357,2359-2363,2365-2370,2372,2374,2376-
2381,2383,2390,2393-2395,2397,2404,2405,2408-2410,2415,2416,2419,2420,2026,2431-
2435,2438,2439,2442,2445,2450,2455,2456,2458,2459,2462,2469,2470,2474-2476,2482-2484,2486-
2488,2490,2495,2498,2501,2504,2505,2516-
2519,2521,2524,2530,2531,2534,2536,2537,2539,2541,2555,2558,2562,2568,2569,2572,2575,2577-2579,2581-
2583,2590-2598,2600,2602-2604,2607,2608,2610,2612,2621,2623,2625,2630-
2636,2638,2639,2641,2644,2646,2647,2651,2653,2655,2659,2660,2663,2664,2668,2671-
2673,2675,2677,2678,2683,2684,2687-2689,2691,2694-2696,2700,2701,2705,2707-2709,2712,2713,2716-
2718,2720,2722,2723,2725-2727,2729,2731-
2733,2742,2743,2745,2751,2752,2754,2757,2758,2761,2765,2766,2768,2772,2775-
2779,275,2788,2791,2792,2794,2795,2797,2798,2800,2802,2804,2805,2813,2814,2816,2820,2824,2826-
2828,2832,2835,2836,2839,2840,2842,2845-2847,2849-
2852,2855,2859,2860,2865,2866,2876,2879,2882,2884,286,2887,2889,2892,2894,2895,2900,2902,2911,2912,291
7,2923,2927,2928,2930,2932,2934,2936,2937,2940,2942,2943,2948,2953,2955-2957, 2960,
2962,2963,2965,2968,2969,2973,2976,2979,2983,2985,2987,2989-2991,2993-2996,2998, 3001, 3006, 3012,3014-
3016,3024,3026,3028,3030,3031, 3037,3038,3040,3041, 3043,3047, 3048,3050-3053,3055-
3057,3059,3063,3065,3069-3074,3076,3077,3079,3081,

The tables below represent various MCQ items randomly chosen from SPSS analysis to present the description of analysis of Difficulty index of MCQ items ranging from 1 to 3087. The idea is just to give reflection on how the data is being analyzed and processed.

Table-2

1. A glass dome covered the button.

	Frequency	Percent	Valid Percent	Cumulative Percent
A	676	27	27	27
B	483	19.3	19.3	46.4
C	735	29.4	29.4	75.8
D	606	24.2	24.2	100
Valid Total	2500	100	100	

C

Randomly picking up some of the questions' tables from the item analysis process conducted through SPSS, it can be seen that this MCQ question 1 represents the description of MCQ item in terms of its difficult level. The right option for this question is C (see appendix) and the frequency of right option (C) is 735. Now according to the pattern of the formula to explore the difficulty index of the item the practice is to place a zero along with decimal before the frequency i.e. (0.735). Viewing this value it can be vividly seen that 0.735 is near 1.00 this means that the item is easy in terms of the difficulty index.

Table-3

4. He removed his hat as Norma opened the door.

	Frequency	Percent	Valid Percent	Cumulative Percent
A	782	31.3	31.3	31.3
B	396	15.8	15.8	47.1
C	708	28.3	28.3	75.4
D	614	24.6	24.6	100
Valid Total	2500	100	100	

A

Similarly this MCQ question 4 tells about the difficult level of a MCQ item. The right option for this question is A (see appendix) and the frequency of right option (A) is 708. The formula designed to calculate the difficulty index of the item instructs to place a zero along with decimal before the frequency i.e. (0.708). The value 0.708 is close to 1.00 that clearly suggests that the item is easy in terms of the difficulty index.

Table -4

3079. Through love stake becomes a throne

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	421	16.8	16.8	16.8
	B	703	28.1	28.1	45.0
	C	715	28.6	28.6	73.6
	D	661	26.4	26.4	100.0
	Total	2500	100.0	100.0	

B

Randomly presenting MCQ through the table above regarding its difficult level, Here the right option for this question is B (see appendix) and the frequency of right option (B) is 715. The formula to investigate the difficulty index of the item is to place a zero along with decimal before the frequency i.e. (0.715). Viewing this value it can be vividly seen that 0.715 is near 1.00 this means that the item is easy in terms of the difficulty index.

Table- 5

3081. And when the door begins to crack

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	646	25.8	25.8	25.8
	B	581	23.2	23.2	49.1
	C	692	27.7	27.7	76.8
	D	581	23.2	23.2	100.0
	Total	2500	100.0	100.0	

C

Likewise MCQ 3081also provides description about difficult index of MCQ item, here the right option for this question is C (see appendix) and the frequency of right option (C) is 692. Now according to the pattern of the formula to explore the difficulty index of the item the practice is to place a zero along with decimal before the frequency i.e. (0.692). Viewing this value it can be vividly seen that 0.692 is closest to 1.00 this means that the item is easy in terms of the difficulty index.

Table-6

Average MCQs
6,8,10-12, 14, 27,28, 30-35, 38,40,47, 51-53, 74,75,79, 94,97,105,106,109, 115,122,124,126,130,132,136, 140,142,145,146,150,153,154,156,159,168-170,173,177,179,185-188, 198,199,210,215,216, 220,224,229,234,237,238,243,246,248,253,257,259,264,270,272,275,276,288,295,303,304,307,308,310,326, 329,332,335-337,343,350,358,366,368,369,390,395,397,407,420,422,427,434, 435,438,439,442,443,445,448-450, 453,456,460,465,466,470,477,480,488, 493,494,499-502, 505,507,511,512,518,531,532,534,536,539,542,545, 547,550, 554, 559,564,573,575,579,581,582,588,592,593,595,597,600,601,604,609,616,624,625,629,633,634,638,639,641, 642,644,645,648,649,659,664,665,669,674,676,681,683,684,686,694,699,705,710,713- 715,719,723,724,732,733,735,736,739,742,743, 746- 748,750,751,753,756,769,774,784,785,790,791,795,802-805,807,810,818,823-

825,829,839,843,847,852,854,857,858,861,863,865,872,874-
876,878,885,885,889,895,896,898,902,920,932-
934,941,944,946,950,954,964,965,967,972,984,992,993,996,998,1002,1006,1009,1011,1014,1015,1021,102
3,1025,1027,1031,1039,1044,1045,1050,1052,1053,1058,1062,1072,1074,1075,1077,1085,1092,1094,1096,
1108,1109,1114,1122,1137,1146,1149,1152,1153,1157,1160,1162,1171-1173,1181-
1183,1186,1187,1195,1199,1204,1215,1221,1224,1225,1228,1231,1232,1236,1243,1244,1250,1252,1269,1
275,1276,1281,1284,1286,1291,1295,1308,1311,1316,1321,1337,1340,1341,1345-
1347,1369,1370,1375,1383,1388-
1390,1392,1393,1413,1419,1422,1428,1432,1433,1439,1440,1442,1443,1447,1449,1455,1459,1462,1466,1
474,1475,1482,1492,1499,1510,1512-1514,1518,1519,1522,1523,1537,1539,1540,1544-
1546,1550,1570,1575,1581,1583,1590,1594,1596-1598,1602-1604,1606-1610,1613-
1617,1635,1640,1641,1645,1654,1657,1664,1668,1675,1676,1679,1680,1683,1686,1687,1693,1695,1705,1
713,1718,1722,1723,1727,1729,1733,1738,1742,1744,1745,1750,1752,1754,1760,1765,1766,1769,1773,17
84,1790,1803,1804,1810-1812,1821,1822,1828,1830,1833,1836,1838,1839,1851,1855-
1857,1862,1876,1879,1880,1881,1888,1894,1901,1909,1913,1926,1932,1933,1936,1940,1951,1957,1972,1
977,1978,1984,1997,1998,2016,2017,2019,2023,2026,2030,2031,2036,2040-2043,2047,2050-
2053,2055,2060-
2062,2073,2075,2080,2093,2096,2100,2103,2107,2109,2110,2114,2115,2118,2121,2123,2124,2127,2133,2
136,2143,2147,2148,2154,2158,2160,2164,2168,2171,2174,2177,2181,2185,2187,2188,2195,2197,2202,22
03,2211,2213,2224,2225,2231,2233,2237,2239-2241,2246,2248,2251,2256,2262,2263,2266-
2268,2272,2273,2275,2279,2285,2288,2289,2293,2298,2304,2305,2307,2309,2312,2329-
2332,2335,2348,2350,2352,2358,2382,2384,2385,2388,2389,2400,2401,2403,2406,2411,2413,2418,2421,2
423,2424,2427,2428,2437,2440,2441,2443,2446,2448,2452,2457,2463-
2467,2471,2473,2477,2479,2494,2499,2506,2511,2512,2514,2520,2523,2526,2528,2538,2540,2543-
2545,2548,2551-2554,2556,2559-2561,2565,2566,2570,2574,2576,2584,2586-2589,2599,2601,2606,2613-
2615,2617,2622,2624,2627,2629,2640,2642,2643,2649,2650,2657,2661,2662,2665-
2667,2669,2670,2674,2681,2682,2685,2699,2702,2703,2706,2710,2719,2724,2728,2730,2735,2737,2740,2
741,2746,2747,2750,2756,2759,2761,2767,2771,2774,2780-2782,2786,2789,2793,2796,2803,2808,2810-
2812,2815,2822,2823,2829-2831,2834,2838,2841,2844,2848,2853,2857,2858,2861,2864,2867,2870-
2875,2877,2881,2883,2890,2896,2898,2899,2901,2903,2904,2906-2909,2913-2915,2919,2924-
2926,2929,2931,2933,2938,2944-
2946,2950,2951,2959,2964,2966,2967,2970,2971,2972,2975,2978,2980,2982,2983,2988,2997,2799,3002-
3005,3007,3009,3020-3023,3025,3027,3029,3032-
3035,3042,3045,3049,3054,3058,3060,3061,3067,3068,3080,3087

The tables below are randomly selected to represent the data in terms of their difficulty index which was analyzed through SPSS. Here in these tables only average MCQs items are presented.

Table -7

6. I'm rather busy.

	Frequency	Percent	Valid Percent	Cumulative Percent
a	810	32.4	32.4	32.4
b	710	28.4	28.4	60.8
c	509	20.4	20.4	81.2
d	471	18.8	18.8	100
Valid Total	2500	100	100	

D

The table here presents the difficulty index of MCQ 6, the right option for this question is B (see appendix) and the frequency of right option (B) is 471. The difficulty index of the item is usually found out while placing a zero along with decimal before the frequency i.e. (0.471). Viewing this value it can be vividly seen that 0.471 is almost in between 0.00 and 1.00 this means that the item is average (neither much difficult nor too easy) in terms of the difficulty level.

Table -8

8. It could prove very valuable

	Frequency	Percent	Valid Percent	Cumulative Percent
a	753	30.1	30.1	30.1
b	441	17.6	17.6	47.8
c	663	26.5	26.5	74.3
d	643	25.7	25.7	100
Valid Total	2500	100	100	

B

The above table here reflects the difficulty index of MCQ 8, the right option for this question is B (see appendix) and the frequency of right option (B) is 441. Here it can be seen that the formula to calculate difficulty index is to place a zero along with decimal before the frequency i.e. (0.441). Viewing this value it can be vividly seen that 0.441 is almost in between 0.00 and 1.00 this means that the item is average (neither much difficult nor too easy) in terms of the difficulty level.

Table -9

3080. A man of words and not of deeds

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid A	801	32.0	32.0	32.0
B	572	22.9	22.9	54.9
C	445	17.8	17.8	72.7
D	682	27.3	27.3	100.0
Total	2500	100.0	100.0	

C

The description of MCQ 3001 explains the difficult index in the table above. The right option for this question is C (see appendix) and the frequency of right option (C) is 445. In order to find out the difficulty index of the item a zero along with decimal is placed before the frequency i.e. (0.445). The value 0.445 clearly reflects that it is almost in between 0.00 and 1.00 this means that the item is average (neither much difficult nor too easy) in terms of the difficulty level.

Table -10

3087. When the fact fails me, I approve my sense

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid a	540	21.6	21.6	21.6
b	660	26.4	26.4	48.0
c	673	26.9	26.9	74.9
d	627	25.1	25.1	100.0
Total	2500	100.0	100.0	

A
I

The above table presents the MCQ item in terms of its difficult level, the right option for this question is A (see appendix) and the frequency of right option (A) is 540. To investigate the difficulty index of the item usually a zero is being placed along with decimal before the frequency i.e. (0.540). Viewing this value it can be said that 0.540 is item is average (neither much difficult nor too easy) in terms of the difficulty level.

Table -11

Difficult MCQs
13, 25,29,36, 42,44, 62,68,71,72, 77,83, 87,90,93, 108,111, 143,149, 164,165,176,180,182-184, 191,193,194,196.219,227,230,235,239,241,244,245,247,249,250,252,258,258,262,266,278-280,283,286,290,293,302,305,309,314,317,318,324,328,339,340,343,347,348,352,354,356,359-363,365, 372,373,381,383-388, 394,396,406,408,424-426, 429,432,436,440,444,451,452,454, 461,463,464,467,473-476, 478,479,482-485,489,490,492,495, 498, 504,513,515,516,519,520,521,529,533, 537, 549,552,555, 557, 567.571,586,587,589,607,611-613,615,618,619,621,635,637,643,647,652,656,657,662,663, 670,673,678,679, 682, 688,689,692,693,697,698,700,703,704,708,711,716-718,720,721,728-731, 734,737,738,741,744,749,757,758,761,762,765,767,770-772, 775,779,782,783,786,792,796,798-800,811-813,815,817,819,820,822,826,831,833,836,840,846,848,851,862,868,869,873,879-881,884,890,894,900,903,903,904,906,909,910,912,914,915,919,923,927,930,943,947-949,952,955,956,958,959,961,969,970,974,977-979,987,989,990,997,1001,1003,1004,1005,1010,1012,1016,1022,1026,1028,1034,1035,1037,1046,1047,1056,1059,1060,1066,1070,1076,1078,1083,1084,1087,1089,1095,1099,1100,1103,1105,1112,1116,1118,1120,1125,1129,1133-1136, 1140, 1141, 1144, 1145, 1156, 1166, 1169, 1174, 1177, 1178, 1180, 1193, 1194,1197,1198,1208,1209,1214,1217,1227,1235,1237,1238,1241,1242,1245-1247, 1249, 1254, 1256,1266,1270,1272,1278,1280,1279,1281,1285,1290,1293,1297-1300,1303-1305, 1309, 313,1315,1317,1322,1325,1327,1331,1335,1339,1342,1355,1358,1362,1367,1379,1382,1385-1387,1394,1396,1399,1401,1404,1407,1409,1412,1415,1418,1423,1429,1441,1445,1446,1450,1453,1457,1460,1461,1463-1465,1467,1469,1470,1472,1476,1478,1481,1483-1487,1491,1494,1497,1497,1500,1502,1505,1515,1516,1520,1524,1525,1527,1529,1532,1533,1536,1538,1542,1548,1549,1552,1554,1555,1557,1558,1564,1566,1567,1573,1576,1588,1589,1592,1601,1621,1622,1624,1626,1629,1630,1632,1639,1649,1652,1655,1659,1660,1665-1667,1669,1672,1673,1682,1688,1689,1691,1692,1696,1699,1701,1706,1707,1710,1711,1717,1719,1726,1732,1740,1741,1746,1749,1755,1759,1768,1771,1772,1777,1782,1783,1786,1791,1798,1801,1809,1814,1815,1819,1820,1825-1827,1831,1842,1844,1845,1850,1858,1860,1865,1867,1872,1874,1883,1886,1890,1891,1893,1899,1902,1907,1908,1911,1912,1919,1921,1931,1934,1935,1937,1939,1943,1945,1953-1955,1961-1963,1967,1969,1970,1975,1981,1982,1987,1993,1994,2000,2003-2009,2012,2015,2022,2027,2032,2033,2035,2037-2039,2044,2046,2058,2064,2065,2068,2069,2076-2078,2081,2083,2084,2086,2088,2092,2094,2098,2105,2111,2116,2119,2120,2125,2126,2128,2131,2132,2137,2139,2141,2145,2150,2152,2153,2156,2163,2166,2167,2169,2172,2175,2186,2189,2191,2194,2198,2199,2206,2209,2210,2212,2215,2216,2218,2221,2230,2234,2236,2243,2245,2247,2249,2253,2255,2260,226

5,2270,2277,2280,2283,2287,2291,2292,2294,2295,2299-2301,2306,2308,2310,2311,2313,2318-
 2322,2326,2327,2336-2338,2340,2342-2344,2347,2349,2353-
 2355,2364,2371,2375,2386,2387,2391,2392,2396,2398,2399,2402,2407,2412,2414,2417,2422,2425,2429,2
 430,2436,2444,2447,2449,2451,2453,2454,2460,2461,2468,2472,2478,2480,2481,2485,2489,2491-
 2493,2496,2497,2500,2502,2503,2507-
 2510,2513,2522,2525,2527,2532,2533,2529,2542,2546,2547,2549,2550,2557,2563,2564,2566,2571,2573,2
 580,2585,2605,2609,2611,2616,2618-
 2620,2626,2628,2637,2645,2648,2652,2654,2656,2658,2676,2679,2680,2686,2690,2693,2697,2698,2704,2
 711,2714,2715,2721,2734,2736,2738,2739,2744,2748,2749,2753,2755,2762-
 2764,2769,2770,2773,2783,2784,2787,2790,2799,2801,2806,2807,2809,2817-
 2819,2821,2825,2833,2837,2843,2854,2856,2862,2863,2868,2869,2878,2880,2885,2888,2891,2893,2897,2
 905,2910,2916,2918,2920-
 2923,2935,2939,2941,2947,2949,2952,2954,2958,2961,2974,2977,2981,2986,2992,3000,3008,3010,3011,3
 013,3017,3018,3019,3036,3039,3044,3046,3050,3062,3064,3066,3075,3078,3082-3086,

Table -11

13. The offer is completely genuine.

	Frequency	Percent	Valid Percent	Cumulative Percent
A	498	19.9	19.9	19.9
B	637	25.5	25.5	45.4
C	762	30.5	30.5	75.9
D	603	24.1	24.1	100
Valid Total	2500	100	100	

A

The table here presents the difficulty index of the MCQs, the right option for this question is A (see appendix) and the frequency of right option (A) is 498. To investigate the difficulty index of the item usually a zero is being placed along with decimal before the frequency i.e. (0.498). Viewing this value it can be said that 0.498 is item is more towards 0.00 which means the item is much difficult in terms of its level of difficulty.

Table -12

25. Arthur looked Incredulous.

	Frequency	Percent	Valid Percent	Cumulative Percent
A	780	31.2	31.2	31.2
B	319	12.8	12.8	44
C	635	25.4	25.4	69.4
D	766	30.6	30.6	100
Valid Total	2500	100	100	

B

The MCQ item presented in the table above reflects their difficulty level, the right option for this question is B (see appendix) and the frequency of right option (B) is 319. To investigate the difficulty index of the item

usually a zero is being placed along with decimal before the frequency i.e. (0.319). Viewing this value it can be said that 0.319 is more towards 0.00 which means the item is much difficult in terms of its level of difficulty.

Table -13

3082. And when the sky begins to roar

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	797	31.9	31.9	31.9
	B	586	23.4	23.4	55.3
	C	625	25.0	25.0	80.3
	D	492	19.7	19.7	100.0
	Total	2500	100.0	100.0	

D

MCQ item here represents the difficult level, the right option for this question is D (see appendix) and the frequency of right option (D) is 492. To investigate the difficulty index of the item usually a zero is being placed along with decimal before the frequency i.e. (0.492). Viewing this value it can be said that 0.492 is more towards 0.00 which means the item is much difficult in terms of its level of difficulty.

Table -14

3086. Assuming the fact, he agrees to accept

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	474	23.0	23.0	23.0
	B	633	25.3	25.3	48.3
	C	605	24.2	24.2	72.5
	D	688	27.5	27.5	100.0
	Total	2500	100.0	100.0	

A

The above table presents the MCQ item in terms of its difficult level, the right option for this question is A (see appendix) and the frequency of right option (A) is 474. To investigate the difficulty index of the item usually a zero is being placed along with decimal before the frequency i.e. (0.474). Viewing this value it can be said that 0.474 is more towards 0.00 which means the item is much difficult in terms of its level of difficulty.

V. DISCUSSION

Viewing the above data it can be said that the MCQs attempted by the students provide a clear picture of various types of MCQs collected to make a dataset that is to be used in the next phase of study. Applying item analysis on the attempted MCQs of the students in this case actually provided with a dataset of MCQs that are segregated in terms of their difficulty level. The difficulty index level depends upon the high or low frequency level. The purpose of conducting item analysis is to explore about the comprehension of the content by the learners. By calculating item difficulty index it is conclusive that which items were extremely difficult and which were mediocre or extremely difficult. Item analysis is of great importance and its value cannot be denied. It actually provides statistical data for each item and gives teachers an option to refine the test items. It also allows the learners to understand their weaknesses regarding various questions. Importantly item

analysis do help the teachers to construct balance test for the students which contains all types i.e. easy, average and difficult MCQs. so it nullifies unreliability and increases the reliability and validity of the tests. It also helps in providing homogeneous data for the assessment of learners.

The outcomes of this study are identical with the investigation conducted by Quaigrain and Arhin (2017) that showed that only those items which justify the level of difficulty and discrimination should be the part of future assessment in order to achieve objectives of the test. Likewise the outcomes of this study are also in connection with a study conducted in EFL context by Toksöz, and Ertunç (2017) that focused upon analyzing the MCQs in context with vocabulary, grammar, and reading and revealed that mostly the item were effective and 25% items had low value of discrimination thus the difficulty level provided the researchers with an authentic view of learners' performance.

Item analysis actually directs the material to the vicinity of validity and reliability. A similar study like this one is performed by Ani (2011) where it was found that difficulty index of the learners was 23% whereas the easy items were 8%. Also 69% items were moderate. This provided the facility to segregate each item in terms of their difficulty level for future use. Finally this particular investigation also relates to the study performed by Salwa (2012) that investigated the English tests quality through exploring the Difficulty level, validity and reliability and also the pertinence of curriculum of English. The population was final semester of grade five learners at Semarang.

VI. CONCLUSION

The results in this research presents that item analysis is an effective method in evaluating MCQs. Item analysis is a method that assesses MCQs in terms of their difficulty level, discrimination level and distraction level. So there are some pedagogical implications of applying item analysis to data that can be drawn from this study. The outcomes of this study provides implications that item analysis provides a comprehensive detail about the MCQs and can be helpful in the construction of MCQs. Keeping in view the latest trends of utilizing MCQs regularly in tests the findings of this research explores that exploiting item analysis can be helpful to segregate the MCQs in terms of their difficulty level which can have equal playing field for all the test takers as the data used for construction of the test will be identical for all the candidates of the tests. Item analysis also helps in determining every item's role in connection with the whole test (Bootathiraj & Chellamani, 2013). The results also presents the fact that item analysis nullifies the possibility of giving difficult items to one group and easy to other as each item is analyzed. Therefore it maintains the homogeneity of the data and uplifts the quality of the test item. Item analysis also makes a test reliability and validity of the test.

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