

Analysis Based On Bloom's Taxonomy: Pakistan's Federal English Curriculum And Examination Content For Matric

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Abstract

This paper investigates the alignment of Matric English curriculum objectives and the Annual test content i.e. the high stakes public examinations, Matric in Pakistan. The objective of this research paper is to address an important issue of English language assessment in Matric System i.e. discrepancy between curriculum objectives and test content with the aim to contribute towards a better, more reliable and valid language assessment and testing system for the related stake holders i.e. test developers, users and researchers especially in Pakistan.

The Cognitive domain of Bloom's Taxonomy (1956) was used to develop a codifying system for the investigation. All the Curriculum objectives and test tasks of papers (2009-2013) were coded and the frequency and percentages of occurrence of Bloom's different cognitive levels were evaluated. In the light of the presented evidence, it was concluded that there was a discrepancy between the higher order and lower order cognitive skills in the curriculum and test content i.e. the frequency and percentage of higher order cognitive skills was higher in the curriculum objectives contrary to the results from the data of the test content. Results from this study have implications for all the stakeholders of Matric test/exam¹.

Key words: curriculum objectives, Bloom's Cognitive Domain, curricular alignment.

1. Introduction

Test developers as the content validity measure try to align the curriculum objectives with the subsequent test items. Harrison (1983) considers content validity measure crucial to a successful test providing meaningful score by evaluating to what extent the test is measuring what it is meant to. The goal is not just to have surface learning and the ability to retain material but true meaningful learning where the retained material is transferred to solve new problems in real life situations. Curricular alignment, the need of improved educational system is being evaluated in this research study.

Alignment is generally understood as an agreement between a set of standards and the assessment procedures used to measure the attainment of those standards. Generally, students learn and prepare for the test on the basis of expected test questions. A poor curricular alignment where the test content does not represent the curricular goals will yield wrong measurement and in Biggs (2003) words will result in "inappropriate surface learning". For meaningful learning, test and curriculum designers in general design tests and develop course objectives within some framework of learning, teaching and assessment. Many frameworks were

developed over time to achieve curricular alignment. Among the popular ones are Bloom's (1956) "Taxonomy of Learning Domains" or "Taxonomy of Educational Objectives" (see Appendix A for the graphic version) and the SOLO (Structure of Observed Learning Outcomes) Taxonomy of Biggs and Collis (1982). Bloom's Taxonomy could be claimed to be the most popular one which is translated in about 22 languages according to Anderson & Sosniak, 1994. It claims to encourage true, meaningful and significant intellectual development encouraging skill development in a learning environment. Bloom's Taxonomy delivers an outstanding framework for planning, designing, evaluating and assessing learning and teaching effectiveness even though it is a very challenging task. It provides a framework that can be used for all subjects and for all levels (Airasian & Miranda, 2002). The framework provides a checklist, by which assessor and the teacher can ensure the achievement of the curriculum/course objectives confirming the essential skill development of learners. The framework also serves as a template for the assessment of validity of any assessment or test.

There has been a large body of literature analyzing the alignment of curriculum and the test content (see Anderson, 2000 for detail on studies related to curricular alignment). To Biggs (1999), an aligned curriculum needs carefully thought out assessment tasks in order to capture the students learning outcomes' achievement outlined at the beginning of the course objectives which are connected in terms of expectations, teaching and assessment. However, in reality, most of the times the classroom pedagogy is based on the strategies to pass the test/exam, for instance Eisemon's (1990) reports basing on

his research study in Kenya (1988) that "bad cramming" was being promoted by the teachers i.e. class drills were encouraged with very little focus on independent study, repeated exposure to exercises using possible exam questions and providing possible correct answers left little room for the development of critical thinking thus denying students to improve their intellectual skills. The test impact on the test users' attitudes can be seen how they respond to the learning and teaching of the content and method etc. Kirkland (1971) explored the issue and concluded that sometimes the emphasis is more on the examination objectives for teachers than the curriculum objectives. Some teachers even replace text books with the past papers and examination preparation material. Hughes (1989) believes that tests based on the curriculum objectives should be preferred than the ones based on the detailed course content because such tests depict the extent of the objectives achieved which are set at the beginning of the course. This, however, puts all those responsible for the course material selection and curriculum design under pressure to ensure aligned course and test objectives. Kellaghan and Greaney (1992) also asserted for examination to be a reflection of the entire curriculum, hence propagating for a need of an aligned course and test objectives.

For language testing Davies (1977) believes that curriculum and teaching are influenced by language tests thus emphasizing the importance of well-designed test. Thus, it is of crucial importance for a reliable and valid test to have aligned test and curriculum objectives.

Considering all the research studies related to the impact of test and its washback, the importance of testing and assessment are crucial to the whole of educational process.

Test can have positive impact (Popham, 1987; Frederiksen & Collins, 1989; Wheeler & Roediger, 1992; Biggs, 1995; Wolf, 1997; James, 2000 and Stiggins, 2001) while some can have negative impact (Madaus, 1988; Crooks, 1988; Mehrens & Kaminsky, 1989; Smith, 1991; Haladyna, Nolen & Haas, 1991; Herman & Golen, 1993; Newstead & Findlay, 1997; Shohamy, 1997; Zeidner, 1998; Beikmahdavi, 2016; Syafrizal & Pahamzah, 2020). Hughes (1989) considers the entire educational process to be circular. To Alderson and Wall (1993) washback study the impact of testing and assessment on learning teaching process is undeniable. Their hypotheses state how tests influence the learners and teachers and their attitudes towards teaching and learning. They assert that tests impact the sequence, rate, depth and degree of learning and teaching. This influence, according to Bailey (1996) determines the way learners prepare for important tests. She exemplifies her claim by giving examples that included practicing test items from the previous papers, practicing test taking strategies, taking test preparatory courses and sometimes even avoiding classes altogether to prepare for the test.

Testing and assessment play a vital role in educational processes and influence classroom pedagogy (Taylor, 2005). Moreover, many research studies also report that testing and assessments have been used to improve instruction and bring educational reform (e.g. Linn, 1983, 1992; Popham, 1983, 1987; Noble & Smith, 1994). Therefore, the relationship of teaching, learning and testing is very crucial and as Hughes (1989) puts it; the entire educational process is circular affecting each other gravely.

It has been established that for an aligned curriculum, Bloom's Taxonomy (1956) of

classification of the processes of thinking and learning is used widely by the curriculum and test developers. The Cognitive domain, in particular is the most popular (out of the 3 domainsⁱⁱ), with the educationist all over the world and not only with the university professors as initially anticipated. It is widely used by administrators, curriculum planners, researchers, educators at all the levels of learning and teaching (Anderson & Sosniak, 1994). For example, O Level examination uses Bloom's Taxonomy to specify its test content especially in terms of its Cognitive Domain (Pollitt, Ahmed and Crisp, 2007). Bloom's taxonomy requires the learner to develop his intellect and knowledge (Cognitive Domain); the ability to put physical and bodily skills into effect (Psychomotor Domain); and beliefs and attitude (Affective Domain); Even after half a century of the publication of the Bloom's Taxonomy its success and popularity of the can be assessed through different references in different noteworthy works e.g. in the 93rd yearbook of the National Society for the Study of Education (NSSE) titles Bloom's Taxonomy: A Forty-Year Retrospective the impact of the work is documented as "one of the most influential educational monographs of the past half century is the taxonomy of Educational Objectives." (Anderson & Sosniak, 1994).

Thus, Bloom's schemata are thought to be a influential means for objective based assessment (Marzano & Kendall, 2007). The hierarchy of critical thinking in Cognitive Domain provided by Bloom consists of six components each requiring achievement of the prior skill or ability before the next more complex one. The students are expected to master this paradigm in order to develop

complex levels of thinking and thus, be fully equipped with the skill to be acquired.

Bloom's multi-tiered hierarchical model includes the lowest three levels: as remembering, understanding and applying traditionally known as knowledge, comprehension and application. More complex skills are found at the highest three levels e.g. analyzing, evaluating and creating traditionally known as analysis, synthesis and evaluation (Forehand, 2008). Bloom's Taxonomy have been revised by Anderson and Krathwohl in 2001 and they provide some useful verbs for writing learning outcome used by the teachers, course and test designers etc. The intellectual skills at each level include different set of skills e.g. retrieving, recognizing, and recalling relevant knowledge from long-term memory at the lowest level of remembering while creating at the highest means putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. (Anderson and Krathwohl, 2001:67-68)

The curriculum designers ideally design a syllabus/course including Bloom's taxonomy's six components making the learner gradually move from the lowermost level to the highest level to master the desired skill. While, the testing specialists, need to measure the students' skill and to identify their level of competence for which they need to evaluate the alignment of the test items and the course objectives. For a valid and reliable measurement, the alignment of the course and assessment objectives is of utmost significance. Excluding more high levels of Bloom's paradigm and focusing more on the lower ones would result in imperfect measurement making the reliability and validity of the test scores and content in

question. Hence, a reliable and valid test should incorporate test items covering different levels of difficulty using Bloom's taxonomy to measure varying levels of learner's intellectual abilities.

Other taxonomies like Taxonomy of Biggs and Collis (1982) and SOLO (Structure of Observed Learning Outcomes) has also been used in higher education. It is also hierarchical in nature while Finks Taxonomy on the other hand is not hierarchical and focuses more on the metacognition (learning to learn) like Anderson's Taxonomy (2001).

2. Language Testing at Secondary Schools in Pakistan

Since, this study only focuses on English testing at secondary level in Pakistan, so below is a brief introduction of English testing at secondary. In Pakistan, there are 2 different assessment systems for secondary school level. Matricⁱⁱⁱ system is generally used by the public sector whereas the private prefers Ordinary Level (O Level)/IGCSE/GCSE. Matric, administered by Federal and Provincial Boards under Ministry of Education, and O Level, administered by Cambridge International Examination (CIE) and Edexcel International, are two standardized testing and assessment systems, used presently for the measurement of the learners performance at secondary school level in Pakistan. They are both primarily (summative/ end of year) exam-based. Their English language tests evaluate many of the same language skills; reading and writing. The focus of this study is limited to Matric only, therefore the other secondary school examinations i.e O Level will not be considered any further.

2.1. Matric English Curriculum

Around the globe, the language curriculums in the modern era are preferred to be based on more Communicative and Eclectic Approach to promote pupil's communicative competence. According to Communicative Approach to Language Teaching (CALT), the pedagogic tasks in a language classroom should include authentic tasks which are important for promoting relevant and challenging exchanges encouraging meaningful communication. This meaningful learning stimulates critical thinking of the learners leading to tangible outcomes. The Matric National English curriculum (2006) by Ministry of Education, Pakistan (See Appendix B) is based on Communicative Approach. Matric, like any other effective scheme of studies proposes clear learning outcomes in its 2006 English curriculum clearly based on the Communicative Approach specifying its objectives in terms of Bloom's Taxonomy's (1956) cognitive skills. The curriculum (2006) claims that the emphasis of the curriculum should be to prepare students for a more skill based learning, assessing their acquisition and use of language skills rather than text book content's memorization. Furthermore, their recommendations included using unseen texts and materials promoting skill-based assessment for testing students' communicative ability to use language more efficiently. (Ministry of Education, Pakistan, 2006)

The curriculum (2006) certainly seems very promising with the aim to direct the educational boards towards a better standard of English teaching and testing procedures. It claims to place great emphasis on enhancing the communicative ability of learners to deal with real life situations, thus making a learner more competent and fluent user of English.

2.2. English Exam Papers of Matric.

In Matric system, the candidate has to take English as a compulsory subject exam in two years to be awarded Secondary School Certificate for SSC-I and SSC-II (class 9 and 10). The candidates get an aggregate of SSC-I and SSC-II after taking English exams in two parts in two years of the secondary school. The papers consist of three sections with the major emphasis on reading and writing skills. The aggregate marks from SSS-I and II are combined for the final award of grade/marks. Papers have both objective and subjective sections containing language sub-skills e.g. spelling, grammar, reported speech, synonyms, gap-filling, voice transformation, using phrasal verbs in sentences etc. (see Appendix C for sample paper).

Section A makes 20%^{iv} of the paper which contains Multiple Choice Questions (MCQ). The MCQs are generally based on the curriculum text book.

Section B making 50% of the total marks. Candidates, in this section, are required to provide short answers that are again extracted from the text book. For reading comprehension, an extract of either prose or poetry or sometimes both is used that are also taken from the course content e.g. text book. Since, the exam tasks are based on the text book and that can be reproduced from the memory without even reading the text. By completing such like question types requiring textual references, it is more of a memory test rather than any other intellectual skill.

Section C amounting to 30% requires writing a long essay type questions e.g. essays, letters, dialogues, and applications. In SSC-I, candidates are sometimes required to translate

a few sentences from English to Urdu or vice versa.

2.3. Test Items and Course Objectives

Keeping in view that Matric English test content is mostly based on memory, it can be concluded that although the course syllabus for Matric very clearly includes higher and lower order of Bloom's cognitive skills in a balanced proportion. However, Matric's test items are not aligned in the same way to Bloom's Taxonomy (see Appendix B & C).

3. Rationale of the Study

This paper attempts to address an essential issue of Matric's English language testing i.e. discrepancy between curriculum objectives and test content with the aim to contribute towards a better, more reliable and valid language assessment and testing system for the related stake holders i.e. test developers, users and researchers especially in Pakistan. Findings from this study may be beneficial for the examination bodies, curriculum designers, policy makers, teacher trainers, textbook authors, teachers and testers to review the existing English course content / syllabus of Matric the end of year examination content and modify the teaching/assessment methodology, content and bring it at par to any internationally recognised and standardized testing system. All the major stake holders need to share the same objectives, aims and assessment criteria.

4. Objectives of the Study

The objectives of the study was:

1. To analyse the Matric English curriculum objectives and the test content and determine their level of difficulty in terms of Cognitive Domain of Bloom's Taxonomy.

2. To evaluate the validity of Matric English test content through evaluating the alignment of curriculum and test objectives.

5. Research Questions

This study attempted to answer the following questions:

Research Question One: To what extent the English curriculum objectives and test content of Matric include the cognitive levels of Bloom's Taxonomy, especially the higher ones?

As is evident from the previous research (Kellaghan & Greaney, 1992) teachers/ assessors tend to base their tests on the text books rather on the curriculum objectives. It is essential to include higher order thinking skills in the tests to ensure they are taught in the class. For effective teaching and intellectual development of the pupil, it is vital for higher order thinking skills to be included in combination with the lower ones of Bloom's Taxonomy.

Research Question Two: Are the Matric test items in line with the set curriculum objectives?

Considering, Biggs (1999) definition of an aligned curriculum and Hughes (1989) preference for achievement tests to be focused on the course objectives rather than the course content, it is necessary to include all the levels of Cognitive Domain of Bloom's Taxonomy included in the curriculum objectives which should be reflected in the subsequent test content in a considerable proportion.

6. Research Methodology

In order to be focused and lead to tangible outcomes, this study is confined to Cognitive Domain of Bloom's Taxonomy to investigate

the validity of the test content. The Examination papers were used from Federal Board of Intermediate Secondary Education (FBISE), Islamabad, Pakistan. In the following research study, Quantitative methods were used.

6.1. Sample of the Study

The sample of the study included Matric annual exam question papers of English from the years 2009-2013, SSC-I and SSC-II. So, in total 10 papers were used; 5 papers of SSC-I and 5 of SSC-II.

6.2. Materials and Procedures

The materials used in this study were the Matric English curriculum objectives (See Appendix B) and the Annual examination papers. (See Appendix C)

For the validity measure, the English curriculum objectives and exam papers of Matric were analysed and were classified according to Bloom's taxonomy. Whether all the levels of Bloom's Taxonomy are included and if included in what proportion? In this regard, past five years (i.e. 2009-2013) final examination papers of Matric were analysed to evaluate the assessment objectives. All the curriculum objectives and the exam test tasks were coded in terms of Bloom's Taxonomy of learning objectives and the occurrence and percentage of each objective was determined for each level. Bloom's definition for each level was closely and carefully studied and Bloom's key words given for each level were extracted and analysed carefully. The coding labels included all the five levels of Cognitive Domain i.e. Remembering, Understanding, Applying, Analyzing, Evaluating and Creating.

In order to determine if there was a significant pattern in the occurrence of different levels of Cognitive skills in the English curriculum objectives and question papers, percentages for each level were calculated. Each question type used in the paper was analysed using the key words provided by Bloom that represent the mental activity involved at each level.

7. Data Analysis

7.1. Matric Curriculum Objectives according to Bloom's Taxonomy

The occurrence and percentage of different levels of Cognitive skills in the English curriculum objectives according to Bloom's Taxonomy is given in Figure 1 below the results represent the analysis of all the curriculum objectives for both SSC-I and SSC-II as the objectives are the same for both. The coded data provided evidence of the presence of all the high and low order thinking skills, ranging from understanding to evaluation. It is worth mentioning here that the lowest order of cognitive domain i.e. remembering was not included in the curriculum objectives. This is pertaining to the fact of hierarchical nature of the Bloom's Taxonomy; each level requires achievement of the prior skill or ability before moving on to the next more complex one. So, it can be inferred that because remembering is the basis of all the subsequent cognitive levels, it is therefore not mentioned. The most used objective was understanding (37.7%) and the least was creating (4.44%). However evaluating (24.4) is the second most used, followed by applying (20%) and analyzing (13.3%).

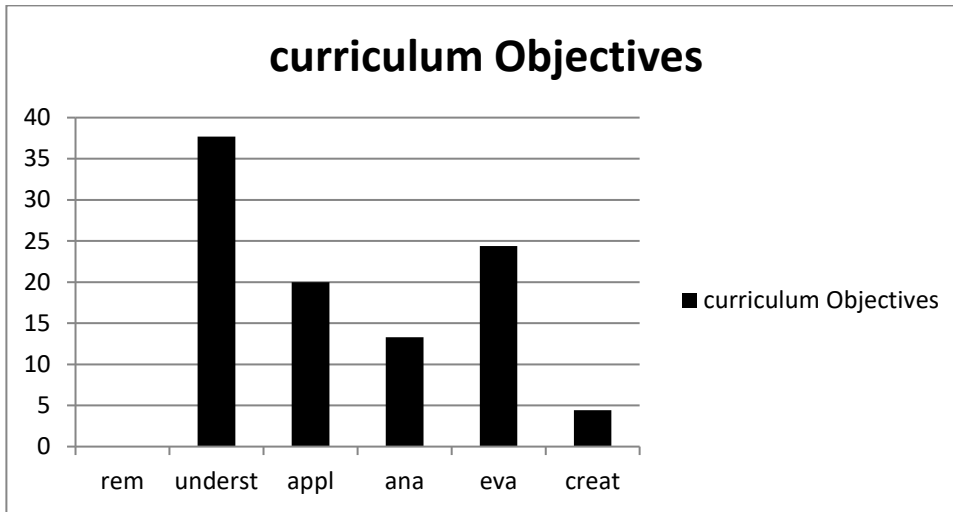


Figure 1: Curriculum Objectives according to Bloom's Taxonomy. Key: rem=remembering, underst=understanding, appl=applying, ana=analyzing, eva=evaluating, creat=creating

Matric curriculum certainly aims for higher order thinking skills like any other internationally recognized secondary school English curriculum e.g. CIE's O Level, IGCSE, GCSE. As for effective learning and teaching process many educators e.g. Carroll's Model (1963) of school learning proposes to raise the learning targets in terms of cognitive complexity (Rath, 2002) and Matric English curriculum seems promising in this regard.

7.2. Matric English Test Content according to Bloom's Taxonomy

The occurrence and percentages of different levels of Cognitive skills in the English question types according to Bloom's Taxonomy are given in Figure 2 and 3 below. The results represent the analysis of all the question types for both SSC-I and SSC-II. The most frequent thinking skill used was remembering (the lowest order thinking skill) while the least frequent one was creating (the highest order thinking skill) with 0%. For other levels, the proportions used are consistent for both SSC-I and SSC-II over the time period observed.

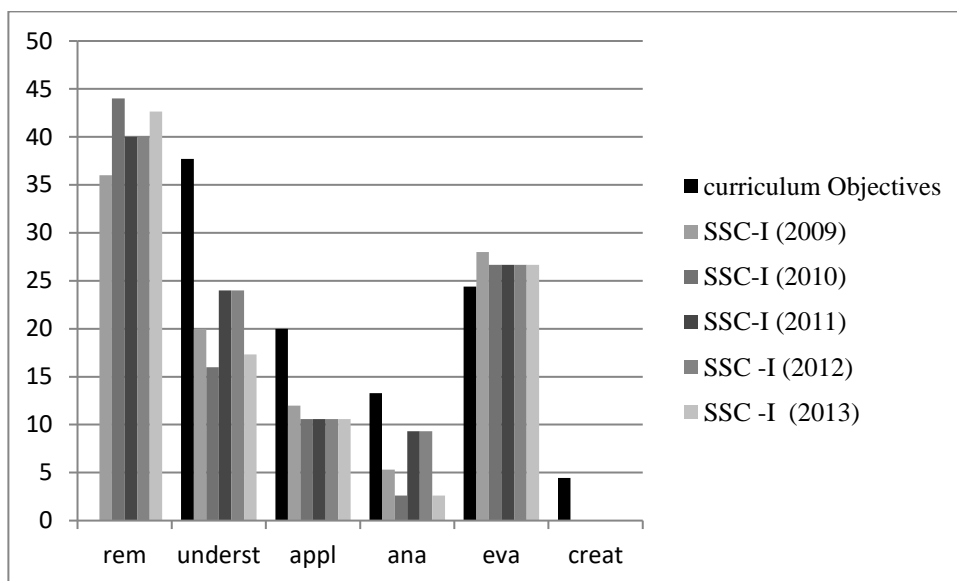


Figure 2: Matric (SSC-I) English Test content according to Bloom's Taxonomy. Key: rem=remembering, underst=understanding, appl=applying, ana=analyzing, eva=evaluating, creat=creating

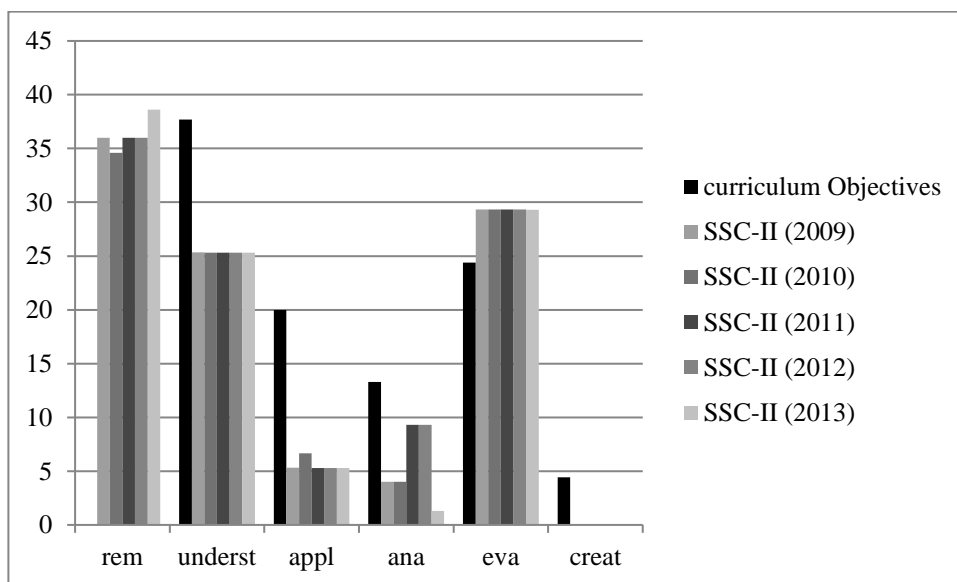


Figure 3: Matric (SSC-II) English Test content according to Bloom's Taxonomy. Key: rem=remembering, underst=understanding, appl=applying, ana=analyzing, eva=evaluating, creat=creating

7.3. Matric English Curriculum Objectives Test Content according to Bloom's Taxonomy

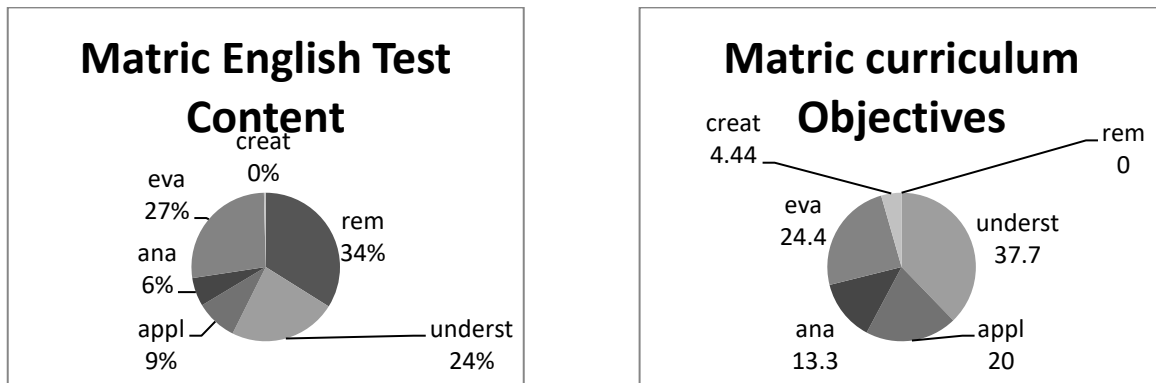


Figure 4: Matric English Test content (SSC-I & SSC-II) according to Bloom's Taxonomy. Key: rem=remembering, underst=understanding, appl=applying, ana=analyzing, eva=evaluating, creat=creating

In Figure 3, comparing the frequency and percentage of cognitive skills in the Matric English curriculum objectives and the test content, the starkest difference that can be deduced is that the lowest order thinking skill i.e. remembering was the most frequent skill used in the test content with 34% while it was totally absent in the curriculum objectives. Creating (the highest order thinking skill), on the other hand was present with 4.44% in the curriculum objectives but totally absent in the test content. There is also a difference in understanding with their presence of 37.7% in the curriculum objectives and 24% in the test content. There was, however, no significant difference in evaluating (24.4% vs 27%).

If all the coded data be classified into higher order and lower order thinking skills, it can be claimed with high confidence according to the present data that the usage of lower order thinking skills in the Matric English test content is far more i.e. 67% than the higher order skills i.e. 33%. While the data from the evaluation of the curriculum objectives provides much different result with 57.7% of higher order cognitive skills and 42.3% of lower order cognitive skills. All the levels of

Bloom's cognitive levels are used in a considerable amount as seen in Figure 4 above.

8. Findings:

To review, the first research question, "To what extent the English curriculum objectives and test content of Matric include the cognitive levels of Bloom's Taxonomy, especially the higher ones?", it is concluded that the Matric National English curriculum (2006) as mentioned above and its objectives (see Appendix B) clearly classifies it to be based on the Communicative Approach but the findings from this research shows that test content of Matric English paper is not aligned to its curriculum objectives. The test items testing the learner's memory skills are devoid of any communicative goal. For instance, Section A of Matric English paper weighing 20% of the marks consists of Multiple Choice Questions (MCQ) which are mostly taken from the syllabus text book, hence testing the memory of the learner. In the same way, Section B weighing 50% consist of of short answers to questions mostly taken from the prescribed text book; at least 25% out of the 50% weighting. Therefore, a test where the

pass mark is 33%, if $20\% + 25\% = 45\%$ can be acquired by simply memorizing answers to predictable questions, the validity of such a test is seriously doubtful as unpredictability of test items/tasks is one of the crucial components of a valid and good quality test (Morrow, 1977). Moreover, in terms of Bloom's Taxonomy, 30% of English question papers of Matric is based on lower order skills i.e. remembering/knowledge which is the basis of learning but the learning should not stop here but move on to more complex intellectual skills and a good valid test at Secondary School level should be able to encapsulate the linguistic competence of the candidate to give true picture.

In answer to the second question, "Are the Matric test items in line with the set curriculum objectives?", it was found that there is a significant difference between the pattern of occurrence of the higher and lower order thinking skills in the curriculum objectives and test content. There is inconsistency with the implementation of this curriculum and does not adhere to the standards of Communicative Approach to Language Testing (CALTe).

The test writers generally contemplate between the course objectives, the detailed course syllabus and the prescribed books and other materials used in the classroom to base their test items on, making it a controversial topic amongst them. It is preferred by many (see above) to base tests on course objectives rather than the course content. The findings clearly shows that Matric system bases its tests on the course content rather than the objectives but they do not admit it explicitly as interviewed by the researcher^v.

9. Conclusions and Recommendations:

This study attempted to develop a methodology and address a practical and long felt need for the alignment of curriculum objectives and test content in Pakistan high stakes Secondary school examination. As a starting point to address the issue, only one of the largest educational board of Pakistan (i.e. Federal Board of Intermediate and Secondary Education, FBISE) out of many have been focused.

In a Pakistani Matric language classroom, the pedagogical practices employed still resonate of the Grammar Translation Method (GTM) probably the most ancient teaching methodology which has fallen out of favour in recent times amongst educators. On the other hand, the English curriculum (Ministry of Education, 2006) claims to be based on the Communicative Language Teaching Approach and is quite comprehensive. In a typical Pakistani Matric language classroom, most of the teaching is generally focuses on information recall and fact transfer which according to Bloom's Taxonomy is the lowest order of Cognitive skill, thus promoting rote learning rather than skill learning. Cramming and rote memorization according to Vernon (1956) generally stuns the critical thinking of the pupil. Kellaghan and Greaney (1992) also emphasized the importance of including the higher order cognitive skills in pedagogical practices while outlining recommendations for improving the educational assessment system. Moreover, Wiseman (1961) proposed that in order to avoid the negative washback of tests, the examination papers should be designed according to the aims of the curriculum and that the entire curriculum should be reflected in the examination.

As concluded from the research, Matric English paper includes more basic low levels of Bloom's paradigm i.e.

remembering/knowledge the higher order thinking levels are ignored, therefore, resulting in an imperfect measurement.

The objective of the language teaching should be to facilitate and enable the learner to communicate effectively in all the concerned domains including occupational, educational, public, and personal and develop the learner's linguistic competences.

Matric English question papers tend to encourage rote learning or as Eisemon (1990) puts it "bad cramming" by basing their papers on memory which can easily be passed by memorizing answers to a possible set of questions. The English curriculum of Matric does not seem to bear any pressure that Hughes (1989) talk about (see above) on the text book writers and the books used fail to adhere to the standards claimed in the curriculum. Consequently, the teachers in Pakistan generally tend to focus more on the examination objectives of this high stakes test rather than on the syllabus objectives and tailor their teaching methodologies with an aim to help the student pass the examinations.

Matric English course objectives set at the beginning of the course should be aligned with the test items of the final examinations to avoid the negative impact of examinations (Wiseman, 1961). Hence, following Kellaghan and Greaney (1992) guidelines for an improved public examination system the educational authorities, policy makers, curriculum designers, examination bodies and test writers should all collaborate and work as a team to have a harmonized educational system.

In the light of the above observations and results it is highly recommended that the Matric English test developers to focus on the curriculum objectives and include higher

order thinking skills in order to have beneficial washback in the whole educational system.

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End Notes

ⁱ Test and exams/examinations are used synonymously in this study.

ⁱⁱ **The cognitive** – (knowing) knowledge based domain, consisting of six levels

The affective – (feeling) attitudinal based domain, consisting of five levels

The psychomotor – (doing) skills based domain, consisting of six levels.

ⁱⁱⁱ Matric is a term that refers to the final examinations of 9th and 10th grades in Pakistan which results in the issuance SSC (Secondary School Certificate)

^{iv} See the English syllabus and sample papers on www.fbise.edu.pk

^v In the meeting with directors of the curriculum and examination wing of Federal Board of Intermediate and Secondary Education (FBISE), they claimed their tests were based on the course objectives rather than on the detailed course content.