HOT or Not? A Taxonomic Exploratory Case Study for ELE at Tertiary Level in Bangladesh

Rabeya Binte Habib [1]

Abstract: *It is generally perceived that learners being taught for years are found inefficient to formulate, develop and understand the practical problems at their workplace (BBS, 2018 cited in Tuhin, 2018; Fayaaz, Danish & Hassan, 2019; Neazy, 2019). Not surprisingly, much of these skills are already categorized as higher order thinking (after this HOT) skills in Bloom (1956)'s Original Taxonomy (hereafter OT) and the widely accepted Revised Taxonomy (henceforth RT) provided by Anderson (2001). Students and graduates interviewed for HEQEP (Higher Education Quality Enhancement Project) report 2018 identified their ability to communicate in English as the second most important skills to be acquired by a graduate (p.9). While the employers, interviewed at the same, shared that the two basic skills that they consider when hiring a graduate are academic qualification and cognitive skills (p. 12). The recent World Bank report (2019) also stated that only a handful of private universities are experimenting with courses to provide HOT and soft skills among students (p.40). The current paper, therefore, took on the task to investigate the taxonomic value of the existing course objectives and question papers, offered for the first semester students of Spring 2019 at an English department purposively, based on the framework provided by Krathwohl (2002) in order to identify the cognitive range. The findings suggest the scope of further insight required from the academia for enhanced cognitive ability at teaching, learning, and assessment which will amplify English literacy among our graduates.*

Keywords: *Bloom's Taxonomy; Higher order thinking (HOT); Lower order thinking (LOT); Graduate Employability; English Language Education (ELE)*

1. Introduction

Although there has been substantial research critically examining the result-oriented teaching learning situation evident in many contexts

---

[1] Assistant Professor, Department of English, Daffodil International University

(Narayanan & Adithan, 2015; Rind & Mari, 2019; Upahi & Oyelekan, 2015) including Bangladesh (Ashraf & Barua, 2018; Rahman et. al., 2019; Sultana 2018), the result of years long education has always been a cause of worry for the academia (Habib, 2017; Hasan, 2018; HEQEP, 2018; Hossain & Hossain, 2016; Sultana & Rahman, 2018). According to Gipps (1996:251 cited in Chandio and Pandhiani, 2016),
assessment oriented syllabi and teaching-leaning situation prevalent in many contexts "are likely to be more superficial and need to be more objective or reliable". Rehmani (2003) state that "real or deep learning only takes place when it enhances students understanding, enabling them to interpret and apply it in a totally different context than in which it was learnt" (p.7). Since, education is meant to upgrade knowledge through application of knowledge, skills, values, beliefs and practices, teaching should lead a student to make use of what they already know to obtain a different, newer, contextual or alternative value to it through assessment.

Moreover, the tendency to teach and learn what is going be assessed has long been an issue for the academic research community (Habib, 2012). However, many times what is taught, learnt and assessed lack what is going to be required of a person at one's workplace and life beyond classrooms. According to the former US Secretary for Education: Richard Miller, the top most jobs the world will require in 2020 did not have their existence in 2010 (Narayann & Adithan, 2015). The outset of such acclamations resulted due to the workforce failing to meet the need of job markets. Our graduates are very often found inefficient to formulate, progress and comprehend the actual problems.

This academia-industry disparity, in more specifically the case of English language education (henceforth ELE) in Bangladesh, has its association with multitiered issues ranging from socio-political and at policy ground in relation to the status, curriculum, pedagogy and assessment of English in the context (Amin & Greenwood, 2018; Rahman et. al., 2019). The university education in Bangladesh, although being the yardstick of determining students' fate: positively and negatively (Khan, 2010), and having extreme socio-economic impact, has largely been criticized in different reports and empirical studies (Ashraf & Barua, 2018; Kamlasi & Sahani, 2018; Rind & Mari, 2019) for they fail to instill necessary 21st century skills, deep learning, critical thinking, problem solving and evaluative skills and at large bringing

in the issues of employability. These skills are already recognised as higher order thinking skills in Bloom (1956)'s original taxonomy (OT) and the modification provided by Anderson and Krathwohl in 2001.

1.1 Significance of the Study

The HEQEP (Higher Education Quality Enhancement Project) 2018 (p.9) report explored the five most important skills, according to the the students and graduates, that included work ethics (3.66), their ability to communicate in English (3.64), time management (3.63), fundamental computer skill (3.60), and their ability to work under pressure (3.59). While the employers shared that the two basic skills that they consider when hiring a graduate are academic qualification and cognitive skills (p. 12). The recent World Bank report (2019) also stated that only a handful of private universities are experimenting with courses to provide HOT and soft skills among students (p.40).

In a 2013 article, Munzenmaier and Rubin expounded the familiarity, relevance and the heuristic nature of Bloom's taxonomy since 1950s even applicable at the tech-savvy world today after the introduction of Bloom's Digital Taxonomy by Andrew Churches (2012). The taxonomy has been time proven since 1950s resisting criticisms through its viability for designing taxonomic instructions, learning objectives and assessments for all levels of education in formal classroom or online. Although there is an increasing significance of requiring students to analyse, apply and create new information, habits, product or idea, Anderson (2001)'s modification of OT - despite being accepted by the wider research community, has faced inertia (Narayanan & Adithan, 2015). This has been much discernible at classroom practices and at disparate examinations in Bangladesh, too (Alderson, 2017 cited in Amin & Greenwood, 2018; Hossain & Hossain, 2016; Sultana & Rahman, 2018).

Moreover, there is still lack of systematic critique of the examination system and its impact within Bangladesh (Sultana, 2018). To what extent the question papers of high stakes test in Bangladesh follow a taxonomic order requiring learner to utilize their cognitive skills has only received recent attention (Hasan, Bilkis & Naomee, 2013) in the light of creative question generating system at secondary and higher secondary public examinations since 2013 for all subjects except English, Bangla and Religion.

However, there is hardly any research available that critically evaluated the

course objectives and question patterns of English department based on the educational taxonomy at tertiary level in the context. English department is probably one of the departments teaching all students of a university through their in-house BA (Hons) and MA in English or English Language Teaching (ELT) or TESOL (Teaching English to the Speakers of Other Languages) or via basic ESP courses at other departments of STEM (Science, Technology, Engineering, and Mathematics), Business and Humanities. The objective of the current study, therefore, was to assess the extent to which courses of BA (Hons) in English evaluate the in-house students of the department to elevate their thinking to bring forth what they learned in classroom through analysis, evaluation and creativity termed as higher order thinking (HOT) skills rather than rote-learning and memorisation or understanding labelled as lower order thinking (henceforth LOT) skills at OT and RT. The current research, hence, intends to determine the taxonomic value of course objectives and question papers instrumented at an English department of a private university purposively to serve the purpose of an exploratory case study.

Although the researcher proposed some universities to share their course objectives and question papers of the same level to conduct a comparative study and auguring that no name will be published at any circumstance, the request was denied for policy issues. Nevertheless, as tertiary education is considered to be a gateway for a graduate to be more employable than those who are less educated or those who enter jobs after secondary or higher secondary examination, this study, therefore, will primarily deal with the scope and implication of Bloom's Revised Taxonomy (RT) and will try to apply the cognitive domain of the taxonomy to the course objectives prepared by the instructors alongside the question papers of the same.

This paper further intends to explicate the repetitive feature and theme in the same. The study will be descriptive and interpretive in nature and be primarily based on document analysis of two courses offered in Spring 2019 at a private university in Dhaka. The department has implemented the new curriculum titled "Outcome-based curriculum" since Spring 2019. It generates a discourse to ascertain the proposed learning objectives with the help of existing assessment at tertiary level and finally provide with a reform to bridge the gap between the teaching-learning and assessment system and job market needs based on the existing literature.

1.2 Objectives of the Study

Since Bloom's taxonomy is a benchmark for developing assessment and objectives, the main purpose of this research will be to find out reflections of RT on course objectives and question papers of a couple of undergraduate courses at a private university in Bangladesh for the initial semester of 2019: Spring. The current research specifically sets some research questions. These are to determine the extent to which introductory English courses exhibit the array of cognitive dimension as per RT and to categorise the documents as per LOT and HOT.

1.3 Research Questions

With the help of the conceptual framework, this research will address the following issues:

1. Do the course objectives and the questions at tertiary level aim at students to make use of their cognitive abilities?
2. Also, do they challenge students to be cognitively, more or less, elevated requiring deep learning or higher order thinking skills?

2. Literature Review

2.1 Test

Test, as it is defined by Brown (2004:3), is a way of determining a person's potentiality, knowledge or performance in a given territory. Cambridge English Dictionary expounds test as "a way of discovering, by questions or practical activities, what someone knows, or what someone or something can do". As part of assessing teaching learning situations, the result obtained through summative assessment or public examination is often considered as the standard of measuring a person's ability, knowledge and performance. The high stakes tests or examinations or different kinds of assessments become the point of reference to measure the learner's current ability and that if successfully performed leads one to the next level of study or workplace. Since, test is at a decisive chair by not only affecting the test takers' lives positively or negatively but also by having profound socio-economic impact

(Amin & Greenwood, 2018; Khan, 2010; Rahman et. al., 2018) the construction of a valid and reliable test is of utter importance (Upahi, Issa & Oylekan, 2015). There are substantial research grounds claiming that the task provided through assessment should measure the approximate skills providing authentic and relevant tasks, problems or questions; aiming to or being successful at solving those are expected to help learners in their future workplace and life beyond classrooms. Although the significance of equipping learners with necessary 21st century skills for enhanced employability through instructions to demotivate rote-learning or regurgitation have received major research attention recently (Habib, 2017; Hossain & Hossain, 2016; Sultana, 2018; Sultana & Rahman, 2018), 64 years ago, Benjamin Bloom (1956) stated that assessment should occupy learners with more demanding cognitive tasks requiring them to apply, analyze, synthesize, and evaluate.

Besides, tests or test items in many contexts are found to have direct effect on what is going to be taught and learned, reproduced and repeated both in and outside the classroom. It is already fact that what is going to be taught in the classroom is seriously determined by the examination patterns in views (Sultana, 2018).

2.2 Bloom's Taxonomy

Notwithstanding, the taxonomy received little attention when it was first published, gradually it became the prominent reference of assessing teaching learning situations in many contexts. In a 2005 paper, Mary Forehand mentioned that Bloom's Taxonomy has been translated into 22 languages while in 2019, a popular search engine results in 4,010,000 for bloom's taxonomy within just 0.51 seconds. Intially, it was during the American Psychological Association's 1948 convention that led Benjamin Bloom with a group of educators to develop a method of classifying thinking behavior and they developed three domains under the framework. Years later, the cognitive domain was completed and shaped into a handbook that is today known as Original Taxonomy (OT) consisting of six levels in hierarchy in that each level is subsumed by the higher levels.
The taxonomy was naturally leading from lower to higher order thinking ranging from knowledge, comprehension, application, analysis, synthesis and evaluation. According to the original taxonomy (hereafter OT), knowledge,

understanding and application exhibit the lower order thinking (LOT) ability of learners while the other three: analysis, synthesis, and evaluation, are the higher order (HOT) cognitive ability. The cumulative hierarchy requires one to subsume the previous skills; i.e. the higher skill one needs to acquire, the more grasp they need to have on other lower skill(s) beneath it (Krietzer et al. 1994:66 cited in Amer, 2006).

Following the years of criticism and several attempts of reviewing Bloom's original taxonomy, the one provided by Bloom's former student, Lorin Anderson who with Krathwohl, updated the taxonomy relating learning and teaching objectives and assessments laying out two dimensions: knowledge and cognitive. This time there were presence of specialists from cognitive psychology, curriculum theory and instructional researcher along with the testing and assessment specialists in the team (Anderson & Krathwohl, 2001).

In the year, 2016, Soozandehfar and Adeli investigated the OT and RT scrutinizing the major criticisms on OT and RT providing them in a figure that include anachronism, lack of constructive integration, theoretical levels, inconsistent application and so on. However, OT was proposed much earlier to cognitive theories such as constructivism, metacognition and others that support autonomous learning and learner responsibility towards their learning. Considering the time and changes in general teaching learning theories and technological advancement, a revision to OT was inevitable that resulted in the much accepted Revised Taxonomy.

The new terms in the cognitive process dimension were defined as:
Remembering: retrieving, recognizing, and recalling relevant knowledge from long-term memory.
Understanding: constructing, meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
Applying: carrying out or using a procedure through executing, or implementing.
Analyzing: breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing and attributing.
Evaluating: making judgments based on criteria and standards through checking and critiquing.

Creating: putting element together to form a coherent or functional whole; recognizing elements into a new pattern or structure through generating, planning, or producing.
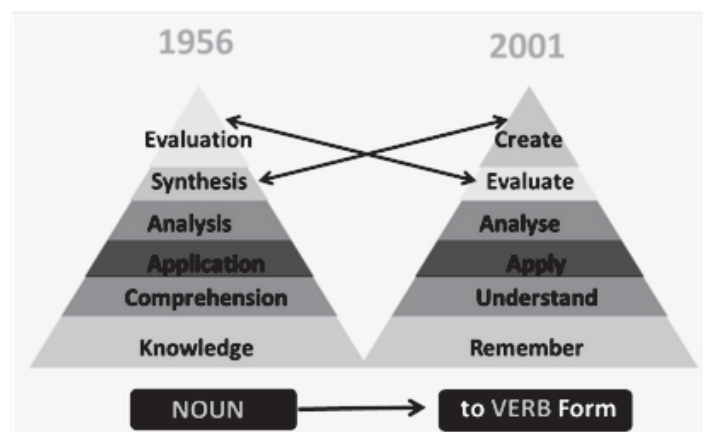
(Anderson & Krathwohl, 2001:67-68)

Diagram 1: Cognitive Dimension of OT and RT (Source: Wilson, Leslie O. 200)

Knowledge dimensions include terms that are:

The basic or **factual knowledge** of a specific discipline that refers to facts, terminology and details in order to facilitate understanding a discipline or to carry on a problem-solving task is known as factual knowledge.

Conceptual knowledge helps learners classify, generalize, theorize or to create a model or principle relevant to a particular disciplinary domain.

The third of its kind: **procedural knowledge** includes the information or knowledge of a specific area through inquiry, or applying very specific or finite skills, techniques, algorithms and exacting method ologies.

The newer inclusion: **metacognitive knowledge** includes the self-awareness of one's won cognition and cognitive processes. It equips a learner with the strategic managerial or reflective skills to be able to solve a problem, a cognitive task in a specific context. A learner with metacognitive awareness will have the knowledge of self.

(Anderson & Krathwohl, 2001:65-66)

2.3 LOT and HOT

Lower Order Thinking (LOT):
Lower level thinking is the lower level of Blooms Taxonomy. It embodies the level of skills necessary for advancing through the higher levels of Bloom's Taxonomy. The skills acquired at this level are the building blocks toward higher level thinking. LOT promotes:

    1. Remembering
    2. Understanding
    3. Applying (there is a fine line, or grey area, in this level where lower level cognitive thinking begins to transit to higher level cogni tive thinking.)

Higher Order Thinking (HOT):

Higher Order Thinking takes place in a hierarchy of cognitive process. It is a continuum of thinking skills starting with knowledge level thinking, and moving to evaluation thinking. HOT promotes:
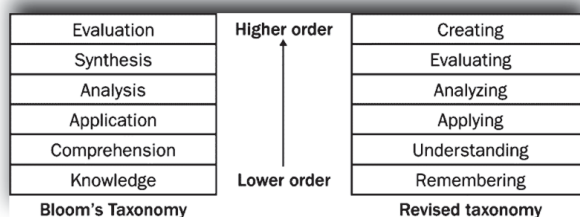   2. Analyzing
    3. Evaluating
    4. Creating

Evaluation	**Higher order**	Creating
Synthesis		Evaluating
Analysis		Analyzing
Application		Applying
Comprehension		Understanding
Knowledge	**Lower order**	Remembering
Bloom's Taxonomy		**Revised taxonomy**

Diagram 2: A comparison of Bloom's OT and the RT (Source: Krathwohl, 2002)

2.4 Analyzing Question Papers based on OT/RT

The 2013 paper titled "Reflection of Bloom's Revised Taxonomy in the Social Science Questions of Secondary School Certificate" by Hasan, Naomee, and Bilkis assessed the extent to which creativity is there in the social science question papers at SSC from 2009-2012. Government of

Bangladesh has introduced creative question system based on RT since 2011. The paper examined if the system is implemented properly through the question items. During the first two years: 2011-2012, the social science question papers ignored two higher order skills: evaluating and creating in both subjective and objective questions.

A descriptive qualitative research by Kamlasi and Sahan (2018) analyzed the English test items on the basis of Bloom's revised taxonomy where the final semester test in senior high school level was codified, classified, analyzed and finally discussed. The findings explored the greater range of items at question papers requiring students to answer from what they remembered (44%) and applied (42%) while there were no test items to ask students to evaluate and create. They suggested equipping teachers with the necessary knowledge of constructing test items targeting high order thinking skills of students.

Tangsakul et. al. (2017) was fronted to the similar situation while analyzing reading comprehension questions in Thailand through analyzing the textbooks: Team Up in English 1-3 and Grade 9 English O-NET Tests. Although, this study could find the presence of the final domain of 'creating' in the textbook of Team Up in English 3, the percentage was less than average at O-NET tests.

Upahi, Issa and Oylekan (2015) conducted an authentic research to identify the extent to which learning objectives are achieved at the senior school certificate chemistry questions conducted by National Examinations System (NECO). They analyzed chemistry question papers of senior school public examination from 2010-2014 in Nigeria and explored the presence of lower order cognitive skills (LOCS) generating questions at 80% questions. Moreover, 44% questions were constructed in a way that would get only factual knowledge from students. Their paper recommended teachers to format authentic and relevant tasks from real life to facilitate learning for life and work and, hence, advocated teachers to employ learners to make use of their higher order cognitive skills (HOCS) based on Bloom's RT.

2.5 English as a Subject at the Teaching Learning Situation in Bangladesh

As part of education, all children attending school learn English as a subject from primary to class 12 in Bangladesh. At the policy ground (National Curriculum, 2012), English is safeguarded as one of the means of reaching

the Bangladesh government's "Digital Bangladesh 2021" goal being the means of communication at global system of interconnected computer networks. Even at the tertiary, with the spectacular growth of private university, English has retained its importance in higher education as the means of instruction (Rahman et. al., 2019). Moreover, the education policy suggest English to lend a helping hand at various areas of STEM (Science, Technology, Engineering and Mathematics), business, higher education, and for achieving national growth. Besides, the literacy of English and ICT has long been considered as 'Global Literacy" including the proficiency in technology and English advocating to have profound political, socio-economic and cultural dimensions at societies (Harvey, 1990 cited in Chaudhury, 2009).

The education system has three levels: primary (class 1-5), secondary (class 6-12) and higher education where a student can be taught through two popular mediums: Bangla and English. Some may also choose to study in Madrasah where they are given all basic education alongside religious subjects through Arabic. Besides being taught for 12 years at primary, secondary and higher secondary levels, a student entering university will learn English as a course or two courses either during their study at subjects other than BA (Hons) in English or ELT or TESOL. However, with the spectrum growth of private universities in Bangladesh since 1990s, the medium of instruction in all private universities is English (Islam, 2011).

2.6 Tertiary Education at Private Sectors in Bangladesh

According to the annual report of UGC, 2016, around three million students study at 41 public and 103 private universities of Bangladesh (Hasan, 2018). Considered to be one of the most overcrowded tertiary education population being the size of population of some countries, tertiary education system in Bangladesh shoulders greater responsibility towards country's human resources and economy. Following the Private University Act 1992, at private universities, Bangladeshi students are usually taught through trimester system where they need to complete few courses at every four month span. In one year, they complete three semesters: Spring (January-April), Summer (May-August) and Fall (September- December). This goes for four years for a student regular completing one's courses as offered. The course instructors usually provide them with a course plan including summary, objectives, course content, session plan, resources, etc. Course objectives very often

link to what a student is going to gain through their four-month journey of the course and be assessed with and for.

2.7 The Assessment System of English as a Subject in Bangladesh

Students of Bangladesh learn English as a subject for 12 years and within these years sit for three public examinations namely: Junior School Certificate (JSC), Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC) examinations. The last two being the pivotal and life changing carry utmost importance for students and all related to him or her. The result obtained at SSC determine the entry to the desired or potentially successful college or to the workplace. Also, the same circle revolves around someone when they need to take admission at territory where the result of SSC and HSC become the deciders. A pitfall may lead to broken hearts or even suicidal attempts or suicide (Rahman et.al., 2019). Very often, a regarding result in English subject would cause a setback to the national result (Sultana, 2018). Most often, this examinations are held responsible, as already discussed above, for lacking a constructive value and producing students coming at tertiary level lacking their ability to use English communicatively (Habib, 2012).

As a regular practice, at a private university, a students is assessed on their attendance, class test(s), assignment, presentation and one or two terms evaluation. If a university has two term examinations, they are popularly known as Midterm and Final. Usually, the term paper decides much of the students performance at the course. Islam (2011) condemned assessment to force students to memorise from the given books. The article also found that students end up being less efficient in the medium of instruction: English.

2.8 Graduate job market in Asia and Bangladesh

The 2019 World Bank report states that the higher education institutes (HEIs) in Bangladesh are struggling with the market demands to produce employable graduates. It also brings forth the issue that Bangladesh is having a serious concern with: educated yet unemployed group. Graduate employability is today's catchword and has attracted many literatures within education contexts though much less in Asian contexts (Ahmed and Crossman, 2014). Socioeconomic development, industrialization, and technological development have led to a global demand in the educational sector to create

graduates with occupation readiness. Employability refers to a graduate's ability to demonstrate occupation readiness towards what the eyes of employers are looking for: skills, knowledge, attitudes, and international competitiveness, graduates who are willing to take initiative, are creative, flexible, and adaptable. Although graduate employability has received most research attention in western rather than Asian context, global economy, tertiary education keening towards outcome-based learning, industrial and social development are making it gradually an issue deserving examination in Asia (Ahmed and Crossman, 2014; Erling, 2014).

An employable graduate should have both hard and soft skills incorporating as many as 108 soft skills suggested by George Allen's research work, mentioned in Matin et al. in 2003, is known as Skill-based approach which is utilised to address problems of employment. Other two popular approaches to address employability issues are Graduate Identity Approach that claims a learner will create his/her identity in a given context. The third approach is the USEM (understanding, subjective specific and generic skills, efficacy beliefs and metacognition) Model. Graduate's sense of self is the focal point of this approach.

Why are university graduates failing to meet market needs?
(Hasan, 2019)

Tracer Study of Graduates of Universities in Bangladesh

(HEQEP Report, 2018)

Rise of the educated unemployed
(Neazy, 2019)

Educated, Unemployed and Frustrated
(Tuhin, 2018)

Unemployment reaching critical level in Bangladesh (2016)

Bangladesh Tertiary Education Sector Review: Skills and Innovation for Growth
World Bank Report (2019)

Graduate Employment in South Asia
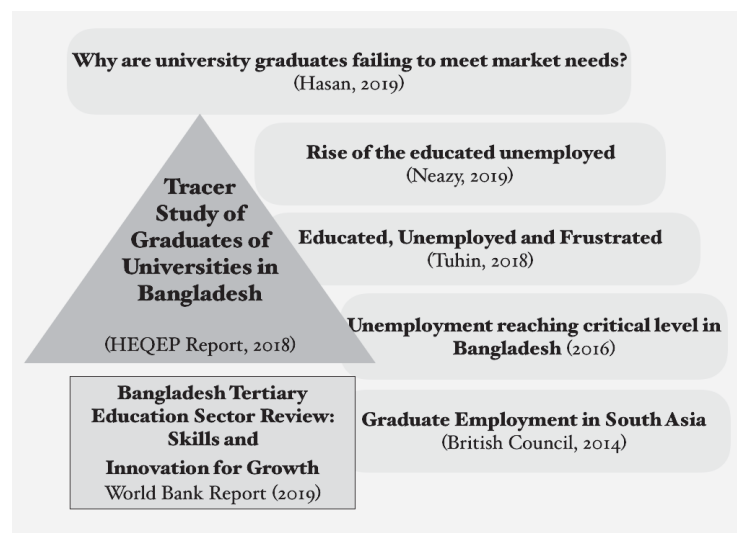(British Council, 2014)

Diagram 3: Reports on graduate (un)employability in Bangladesh

Employability factors in Bangladesh is well-reflected on a report published

in a popular online news portal titled as "Graduates mismatch with job market demand" in 2014 mentioned education system as incongruous in the job market setting. Years later, newspaper articles by Hasan (2018), Tuhin (2019), and Neazy (2019) share the same concern. It has been found that applicants have low skills in English literacy, computers, communications, problem solving and entrepreneurship. Bangladesh is already facing a serious setback especially in relation to the graduate performance at their workplace and/or graduates being underemployed or even with the rise of educated unemployed rate at 11.6% in 2016-2107 much higher than the national average 4.2%, according to Bangladesh Employment and Labor Market Watch report published in 2018.

3. Methodology

3.1 Rationale

In order to assure the objectives stated at the curriculum, the examination or assessment has its effect: both positively and negatively. The assessment system should be prepared based on the nature of the course: skills-based, theoretical or practice-oriented etc., objectives and the needs associated with teaching, learning, and assessment. Curriculum has its own limitations as it does not deal with what students will do and what and who they will learn with. However, considering the technological advancement and the implication of teaching learners with the necessary skills for lifelong learning that has shed light on the necessity of designing appropriate tasks for learning and assessments both, Bloom's revised taxonomy provided by Anderson and Krathwohl (2001) can work for the consortium.

3.2 Conceptual Framework

This research anchored on the conceptual framework of the taxonomy provided by Bloom (1956) and revised by Anderson and Krathwohl (2001). The taxonomy has been time proven and been extensively used by the research community (Forehand, 2005; Munzanmaier & Rubin, 2013) to provide a framework for teaching, learning and assessment. More recently, researchers are also utilizing the digital bloom's taxonomy in many contexts (Churches, 2012). Besides, the framework is all pervasive in the academic spectrum and hence can be utilized to assess the English as subject curricula and its instructional and assessment systems in Bangladesh.

Anderson and Krathwohl (2001) rationalized assessment in the modern era and redefined Bloom's original taxonomy considering learner's cognitive skills in the action verb and rectified the cumulative hierarchy to a hierarchy of lower to higher order in that learners do not need to subsume lower skills to attain a higher one. Hence, this research will make use of the conceptual framework of Bloom's revised taxonomy (RT) to classify and analyze course objectives and English questions of two different courses at BA (Hons) of a private university. The revised taxonomy is a bi-dimensional one that guides the processes of learning objectives and instruction and eventually lead to a more clearly defined assessments. The framework provided (Diagram 5) by Krathwohl (2002) was adapted to analyze the data.

In order to avoid the major criticism regarding the OT, the RT provided relaxed overlapping categories in the hierarchy. In OT, due to the 'cumulative hierarchy' a learner had to subsume all lower skills to gain grasp of a higher skill creating a misconception in the community that the lower the students' grade is the less they should be cognitively challenged at classroom and assessment. However, in RT this was clarified that the complexity level of each category may differ according to the learner and their level but more attempts to involve learner in higher order thinking (HOT) skills should invariably be the objective of teaching, learning and assessment (Soozandehfar and Adeli, 2016). Students should be able to analyze, evaluate and create something new from the existing information. Therefore, the RT allowed the categories to overlap one another and the present study will make an attempt to classify the course objectives and test items keeping the overlapping nature in mind.

		Cognitive Process dimension					
		Remember	Understand	Apply	Analyse	Evaluate	Create
Knowledge dimension	Factual Knowledge						
	Conceptual Knowledge						
	Procedural Knowledge						
	Meta-cognitive Knowledge						

Table 1: The Taxonomy Table (henceforth TT) adopted from "A Revision of Bloom's Taxonomy: An Overview" by D. R. Krathwohl, 2002:4

4. The Present Study

The study was primarily based on the descriptive analysis of course objectives and question papers of two courses in the department of English of a private university in Bangladesh. This particular department has recently implemented "Outcome-based curriculum" since Spring 2019. Documents were selected purposively based on the beginner semester course offerings for Spring 2019 by the department. The table (Table 2) below shows the course demographic.

Curriculum	Course	Level and Term
Outcome-based	Eng 111: Elementary English Grammar	L1, T1
	Eng 122: Literary Genres and Terms	L1, T1

Table 2: The course demographic (Spring, 2019)

The course objectives and question papers of individual course mentioned above (Table 2) were analyzed and categorised qualitatively for the thematic description of cognitive criteria. Besides, a comparative analysis of the courses were also made as the overall observation.

4.1 Analysis of the Course Objectives and the Question Papers of Eng 111

The first set of Midterm and Final examination question papers of Eng 111: Basic Grammar and Writing, is a reflection of course objectives that will enable students to:

- define and illustrate grammatical terms and terminologies (Objective 1: keyword 'define' and 'illustrate').
- construct different types of essays and paragraphs by implementing grammatical terms and terminologies (Objective 2: keyword 'construct').

Based on the Knowledge dimension and the Cognitive Process Taxonomy Table (TT) (Table 1) shared by Krathwohl (2002), the first objective **define** comes under the cognitive process of **remembering** and **illustrate** comes under analysis both of which should help a student to acquire **factual knowledge.**

While objective 2 comes under both **metacognitive knowledge** of constructing or generating and **implementing** the rules learned.

Both Midterm and Final examinations of Eng 111 had invariably similar test items: a reading passage (Question 1) asking to recognise the information given at the passages, grammar rules to be applied through fill in the blanks (Questions 2 and 4 in Midterm and Questions 2 and 4-6 in Final) following grammar items to be organised in correct order applying appropriate rules (Questions 3 and 5) and a paragraph writing task (Question 7). The reading passage required students to understand the instruction as the examiner set questions rephrasing words or phrases of those in the original passage while asking for short answers in the same manner. A clear instruction of not copying the extracts, a common issue to be dealt with in our context, was also given at the Final examination question paper unlike the midterm of the same.

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remember	2. Understand	3. Apply	4. Analyse	5. Evaluate	6. Create
	LOT			HOT		
A. Factual Knowledge	Objective 1 Q 1 (M & F)(define)		Qs. 2&4 (M) Qs 2 & 4-6 (F) Qs 3 & 5 (M) Q 3 (F)	Objective 1 (illustrate) Qs 3 & 5 (M) Q 3 (F)		
B. Conceptual Knowledge						
C. Procedural Knowledge						Q 7 (M & F)
D. Metacognitive Knowledge			Objective 2 (implement)			Objective 2 (construct)

Table 3: TT of The Course Objectives in relation to Assessment of Eng 111
[M= Midterm; F= Final; Qs= Questions]

For Questions 2 and 4 and 2 and 4-6 in Midterm and Final respectively, students were required to make use of the information already known to **apply** in a new situation given at the test items. For Questions 3 and 5 in midterm and Question 3 in Final, students had to **analyse** the instruction of sentence construction and changing voice as per the rules. For the last question, students were asked to generate a coherent whole product making use of the grammatical rules in order to **write** a paragraph.

Question Papers of Eng 111 were wisely designed depending on the level of students making use of full exam duration at both Midterm and Final as the quantity of questions increased at almost majority of question items during the Final examination. Also, the test assessed more difficult items like conditionals, voice, or reported speech at the later with the gradual movement towards complexity justifying the subject competency among students.
Based on the above description, the question had a fair share of it requiring both low and high order of thinking (LOT and HOT) leading to the most high order of cognition at Question 7: paragraph writing, in both exam-inations. The commendable part of this set of question papers was the construction of questions for reading passages at final examination where direct extracting was avoided and was also sternly instructed to be avoided by the students, as well.

However, the question papers could still be improved in a couple of instances. First of all, both these question papers had clues for fill in the blanks test items for providing right form of verbs during Midterm and Final which might have been avoided during Final examination. Also, the topic of paragraph writing could have been a bit more complex as in both examinations, students might be able to choose personal topic only *(How did you celebrate Pohela Falgun in Midterm and the Most interesting person in your life at Final)*. There might be a change in the course plan for this part keeping narrative or explanatory paragraph topics at Midterm and persuasive or argumentative at Final with the gradual complexity for students.

4.2 Analysis of the Course Objectives and the Question Papers of Eng 112

The course objectives of Eng 112: Introduction to Literary Genres and Terms, mentioned at the recently implemented Outcome-based curriculum aims at students to be able to:

Course objective 1: identify, explain and investigate different figures of speech and other basic terms needed for literary criticism and understanding literary texts.
Course objective 2: associate and classify different genres and sub-genres of literature.

This course had many action verbs in its two objectives ranging from low

order cognition **(remembering to applying)** to high order analysis through the **evaluation** of different figures of speech via **investigation.** Under the framework of TT (Table 1), the course objective would look like the given Table 4.

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remember	2. Understand	3. Apply	4. Analyse	5. Evaluate	6. Create
	LOT			HOT		
A. Factual Knowledge	Objective 1 (identify) Objective 2 (associate)					
B. Conceptual Knowledge		Objective 1 (explain) Objective 2 (classify)				
C. Procedural Knowledge			Objective 2 (associate)			
D. Metacognitive Knowledge					Objective 1 (investigate)	

Table 4: TT of Course Objectives of Eng 122

The course objectives as mentioned in the curriculum is leaning more towards LOT than that of high. However, the question papers of Eng 112 exhibited a fair distribution between HOT and LOT (Table 5) where Question 1 in both papers of Midterm and Final asked students to utilise their factual and metacognitive knowledge of creating an answer on given topics at short notes. Question 2 in Midterm had a choice for the freshers to choose between a story and extract to identify and explain literary devices (for example simile, metaphor, irony, symbol, personification) or fiction elements like plot, tone, setting, characterisation etc respectively. While answering this one, they were required to make use of their procedural knowledge of investigating, the fifth level of cognition process, or evaluating a piece of literary text(s).

In order to answer Question 3 at Midterm and Question C at Final exam-ination, they had to incorporate both lower and higher intellectual ability of

recalling (remembering), a bit of understanding through explanation for question 3 (b) and a larger amount of analysis while differentiating one literary genre or device from the other at Midterm. As they already had lesser choice or option at Final examination question paper and since they had to evaluate an English poem, Question C at Final asked for more recalling and understanding than applying. However, an underlined instruction was given with the question paper to be relevant adding necessary examples where the answer scripts involving high cognitive input from learners would facilitate them to score better.

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remember	2. Understand	3. Apply	4. Analyse	5. Evaluate	6. Create
	LOT			HOT		
A. Factual Knowledge	Q 2 & Q C (identify/find out) [M & F] Q 3 (all) define					
B. Conceptual Knowledge	Q 2 **Or:** describe	Q 2, Q 3 (b) & Q B: explain/discuss [M & F]				
C. Procedural Knowledge			Q 2 & Q B (M & F) executing a course specific procedure to evaluate a story and a poem respectively	Q 3 (all) differentiate	Q 2 & Q B (M & F) methods of inquiry based on knowledge of subject-specific techniques	
D. Metacognitive Knowledge						Q 1 & Q B: write (M & F in order)

Table 5: Taxonomical Analysis of Question Papers of Eng 112

4.3 Overall Observations

Both of these courses illustrated both lower and higher order thinking skills among students perhaps considering the level of students. However, this has already been pointed out by Soozandehfar and Adeli (2016) that the degree of complexity might be lesser but instructors and/or question setters must

require students to 'make use of students' (metacognitive knowledge) own understanding to apply, evaluate, and create based on the given knowledge in different context. An instructor should tailor a course in a way that students do not need to memorise or recall the information from a given source or resources rather they should be able to 'shape knowledge' contextually or use appropriately, as and when they need it.

The phrase "as and when" represent territorial necessities including workplace demands and life requirements. For example, a student learning literary genres and terms based on English literature should also be able to use the terms for world literature, such as Bangla literature. They might also be able to write their own poem and/or a story incorporating terms learned in the classroom and be assessed on their efficiency to do so. Student learning grammar should not be assessed for discrete sentences as the questions of Eng 111 contained. Nor should they ask students to write essays and paragraphs on abstract or personal topic. As a remedy, students might themselves correct a sample involving all kinds of grammatical errors altogether instead of attempting one grammatical item at a time. As an alternative of producing a one-off product at examinations, students may be asked to write a paragraph or essay over the term through producing drafts before they submit the final version. In both cases, peer and self corrections may be utilised to help students gain control over their learning.

4.4 A Recommendation to Introduce AQPGS System based on Taxonomy

The findings of this paper intend to improve both teaching-learning process and in turn assessment which would help transform the learner from sheer source of rote-learning, reproduction and description to analysis, evaluation and creativity. Testing for simple recall or remembering should be avoided as assessment is the key variable to measure the take-aways by the learners. The institute might include the Automated Examination Question Papers Generation System (AQPGS) based on Taxonomy prototype that allows a test taker to prepare a varied range and level of questions including MCQ, True/False, and open-ended questions to instances requiring a creative approach in applying multifarious techniques. The present paper, thus, echoes with Timakova and Bakon (2018) that,

> *"if a teacher specifically creates various understanding questions (short question with a 40% grade allocation), application questions (less straightforward questions with 40-50% of grading system) and a*

few analytical open-ended questions (another 10-20% marks)...then marking gets less complicated and less disputable". (p. 78)

5. Conclusion

This paper upholds the fact that through solving questions that require students to analyse, evaluate and create new information, understanding or concept from existing knowledge or incorporating self-monitoring, peer corrections, and collaborative learning will help the academia minimise the academy and industry disparity. In conclusion, it is worth sharing a quote written at the Biography of Bloom by one of his former students- Elliot W.Eisner:

"It was clear that he was in love with the process of finding out, and finding out is what I think he did best. One of the Bloom's great talents was having a nose for what is significant."

(2002 cited in Forehand, 2005)

References

Ahmed, R., & Crossman, J. (2014). Significance of Employability Factors: Bangladesh Perspectives (Doctoral dissertation). Bangladesh Development Initiative: Dhaka

Ahmed ,F. (2016). *Unemployment Reaching a Critical Level.* Retrieved from: http://bangladeshchronicle.net/unemployment-reaching-a-critical-level-in-bangladesh/

Amer, A. (2006). Reflections on Bloom's Revised Taxonomy. Electron *Journal of Research in Educational Psychology, 4*(1): 213-230.

Amin, A. M. & Greenwood, J. (2018). The examination system in Bangladesh and its impact: on curriculum, students, teachers and society. Language Testing in Asia, 8(4)

Anthony, L. (2018). AntConc (Version 3.5.8) [Computer Software]. Tokyo, Japan: Waseda University. Available from https://www.laurenceanthony.net/software

Anderson et. al. (2001). *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives.* New York: Longman.

Ashraf, M. A. & Barua, B. J. (2018). Assessing the effectiveness of question papers set by the department of Civil Engineering of a university in Chit

tagong following the principles of Bloom's taxonomy. First international conference on quality assurance in higher education 2018 (ICQAHE 2018). Retrieved from http://gg.gg/fdybq

Bangladesh Bureau of Educational Information and Statistics (BANBEIS). (2014). Secondary education. Retrieved from http://www.banbeis.gov.bd/

Bloom, B.S (1956). *Taxonomy of Educational Objectives; the Classification of Educational Goals. Handbook 1: Cognitive Domain.* David McKay Co: New York.

Bloom's Taxonomy (n.d.). Lincoln University. https://tlc.lincoln.ac.nz/blooms-taxonomy/

Brown, H.D. (2004). Language Assessment: Principles and Practice. Pear son Longman: New York.

Chandio, M.T. & Pandhiani, S.M. (2016). Improving Assessment and Teach ing-Learning Process. Journal of Education and Educational Develop ment, 3 (2), 203-221.

Chaudhury, T. A. (2009). Identifying The English Language Needs of Humanities Student. *The Dhaka University Journal of Linguistics, 2* (4) August 2009:: 59-91,ISSN-2075-3098

Churches, A. 2012. Bloom's Digital Taxonomy. Retrieved on August 2019 from: http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy

Erling, E.J. (2014). The Role of English in Skills Development in South Asia: Policies, Interventions and Existing Evidence. British Council: Manchester.

Fayyaz, A., Danish, M. H. & Hassan, H.H.U. (20190. Evaluation of MA English question papers at

cognitive level: Application of Bloom's Taxonomy. European Academic Research, VI (12): 7107-7120

Forehand, M. (2005). Bloom's Taxonomy: Original and Revised. In M.Orey (Ed.), Emerging perspectives on learning, teaching and technology. Retrieved from:https://textbookequity.org/Textbooks/Orey_Emergin_ Perspectives_Learning.pdf

Graduates Mismatch with Job Market Demand (2014). Dhaka Tribune. Retrieved from: http://archive.dhakatribune.com/

Habib, R. B. (2012). English pronunciation in policy and practice at college level in Bangladesh (MA Dissertation). East West University: Dhaka.

Habib R.B. (2017). Alternative Learning Experiences: An Innovative Project Stimulating Creative Faculty   of Humanities Students. In: Reyes-Munoz A., Zheng P., Crawford D., Callaghan V. (eds) EAI International Confer ence on Technology, Innovation, Entrepreneurship and Education. TIE 2017. Lecture Notes in Electrical Engineering, vol 532. Springer, Cham

Hasan, K. (2019, January 14). Why are university graduates failing to meet market needs? *The Daily Star,* Retrieved from http://thedailystar.com

Hasan, M, Naomee, I, & Bilkis, R. (2013). Reflections on Bloom's Revised Taxonomy in the Social Science Questions of Secondary School Certifi cate Examination. The International Journal of Social Sciences, 14(1), 47-56. ISSN 2305-4557.

HEQEP (2108, December 23). Tracer Study of Graduates of Universities in Bangladesh. Bangladesh Institute of Development Studies: Dhaka.

Hossain, M. K. & Hossain, M. F. (2016). Questions Analysis with Bloom's Taxonomy: A study on the department of Business Administration. *Daffodil International University Journal of Business and Economics,*10(1):152-159.

Islam, Y. (July 2011). Tertiary Education in Bangladesh- Brief History, prob lems, and prospects. *International Journal for the Scholarship of Teach ing and Learning, 5* (2). ISSN:1931-4744.

Kamlasi, I & Sahan (2018). Descriptive Analyses on English Test Items based on the Application of Revised Bloom's Taxonomy. Metathesis: *Journal of English Language, Literature, and Teaching 2* (2), 203-210

Khan, R. (2010). English Language Assessment in Bangladesh: Develop ments and Challenges. In Moon, Y-in and Spolsky, B. Language Assessment in Asia: Local, Regional or Global. Seoul, South Korea. Asia TEFL. Pp.121-157.

Krathwohl, D. R. (2002). *A revision of Bloom's taxonomy: An overview.* Theory into Practice, 41(4), 212 – 218.

Matin, I. Ali, T and Wiebe, P. (2003). Conversations with Employers: Exploring Graduate Employability in Bangladesh. Dhaka: Bangladesh.

Munzenmaier, C., & Rubin, N. (2013). Bloom's Taxonomy: What's Old Is New Again. The Learning Guild Research, Retrieved on 15 May 2019 from www.eLearningGuild.com

Pass rate of SSC, equivalent exams falls by 2.58%. (May 6, 2018).The Daily Star, Retrieved from https:// www.thedailystar.net/country/ssc-exam-re sult-2018-bd-bangladesh-77.77-percent-pass-1572253

Narayann, S. & Adithan M. (2015). Analysis of question papers In Engineering courses with respect to Hots (Higher Order Thinking Skills). *American Journal of Engineering Education,*6(1). https://files.eric.ed.gov/fulltext /EJ1064610.pdf

Neazy, S. N. (2019, June 28). *Rise of the educated unemployed. Dhaka Tribune.* Retrieved from http://dhakatribune.com

Rahman, M.M., Islam, M.S., Karim, A. et al (2019). English language teaching in Bangladesh today: Issues, outcomes and implications. *Language Testing in Asia, 9:* 9. https://doi.org/ 10.1186/s40468-019-0085-8

Rind, I. & Mari, M. A. (2019). Analysing the impact of external exam ination on teaching and learning of English at the secondary level education. *Cogent Education,* 6. https://doi.org/10.1080/2331186X.2019.1574947

Soozandehfar, M.A. S & Adeli, M.R. (2016). A Critical Appraisal of Bloom's Taxonomy. *American Research Journal of English and Literature(ARJEL), 2:* 9 pages. ISSN(online)- 2378-9026.

Sultana, N. (2018). Test review of the English public examination at the secondary level in Bangladesh. Language Testing in Asia, 8(16)

Sultana, P. & Rahman M.M. (2018). Exploring General Science questions of Secondary School Certificate (SSC) examination: Assessment effects on students learning. Journal of Education and Practice, 9 (26) :60-73

Tangsakul, P.W. Kijpoonphol, W, Linh, N.D. & Kimura, L.M. (2017). Using Bloom's Revised Taxonomy to Analyse Reading Comprehension Questions in Team Up in English 1-3 and Grade 9 English O-NE Tests. *International Journal of Research -Granthaalayah, 5*(7), 31-41. https://doi.org/10.5281/zenodo.826733.

Timakova, Y. & Bakon, K.A. (2018). Bloom's Taxonomy-based Examination System Question Paper Generation System. *International Journal of Information System and Engineering, 6*(2):76-92.

Tuhin, A.K. (2018, March 28). Educated, Unemployed and Frustrated. *The Daily Sun.* Retrieved from http://thedailysun.com

Upahi, J., E., Issa, G., B., & Oyelekan, O., S. (2015). Analysis of senior school certificate examination chemistry questions for higher-order cognitive skills. *Cypriot Journal of Educational Sciences. 10*(3), 218-227. doi: http://dx.doi.org/10.18844/cjes.v1i1.67

Wilson, L.O. (2001). Anderson and Krathwohl – Bloom's Taxonomy Revised. Retrieved on April, 2019 from http://thesecondprinciple.com/teaching -essentials/beyond-bloom-cognitive-taxonomy-revised/