RESEARCH ARTICLE

"ANALYSIS OF HSSLC (CLASS XII) ARTS EXAMINATION QUESTION PAPERSIN MIZORAM (INDIA) USING THE COGNITIVE LEVELS OF BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES"

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Manuscript Info	Abstract
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	In education, evaluation means a study designed to determine the effectiveness of instruction. It provides empirical evidences about the effectiveness of teaching strategies, tactics and aids and suggests modifications and improvements for remediation. The primary concern of evaluation is to bring about improvements in the teaching-learning process so that the learner develops his potential to the optimum level. The modern concept of evaluation is put forward by Bloom and is based upon a triangular model showing relationship between educational objectives, learning experiences and evaluation procedures. Using Bloom's Taxonomy to help design examinations and analyze the results could greatly improve the quality of assessment in education.

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Introduction:-
Higherorder thinking is an instructional strategy often referred to as critical thinking skills. It involvesthe learning of complex judgmental skills such as critical and analytical thinking and problem solving.Higherorder thinking is based on the concepts in the cognitive domain of Bloom's Taxonomy. Bloom has given highest amount of priority to the cognitive domain as it deals with recall and recognition of knowledge and the development of intellectual abilities and critical skills (Anderson et al, 2001).

One of the most important aimof education is to produce useful graduates who are productive, useful, highly intelligent, intuitive and creative, and who are able to use their cognitive skills when faced with critical problem-solving tasks. The ability to reason effectively and to solve problems creatively are higher order cognitive skills which must be acquired through appropriate instruction and training. Teachers can provide this type of instruction and training to students by using a blend of higher, middle and lower order cognitive questions given in Bloom's Taxonomy (Cepni, 2003).

Rationale of the Study
The assumption exists that questions relating to application skills and above should start to dominate the higher academic levels in education, with a corresponding reduction in questions requiring retention skills. One must set good/proper questions where appropriate attention is given to maintaining the correct balance between lower, middle and higher order cognitive questions as given by Bloom's Taxonomy (Azar, 2005). The different cognitive abilities possessed by students should be tested and given equal coverage in the examination questions. All these have made the investigator curious to know the level of teaching-learning and evaluation existing in the higher educational institutions of Mizoram, India, particularly at the higher secondary level.

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Bloom's Taxonomy is a valuable tool in the construction and assessment of question papers. By undertaking this study, the investigator hopes that the findings will lead us to know at what level we are examining our students. It will help us to understand where we are functioning at present and where we have yet to go. Knowledge of this result will, hopefully, pave the way to work out good training programmes for teachers with new and improved teaching and assessment techniques.

Statement of the Problem
The problemreads as "Analysis of HSSLC (Class XII) Arts Examination Question Papers in Mizoram (India) using the Cognitive Levels of Bloom's Taxonomy of Educational Objectives".

Objectives of the Study:-
1. To analyze selected question papers in HSSLC (Class XII) ArtsBoard examination of three consecutive years, i.e. 2020, 2021 and 2022 under Mizoram Board of School Education, in terms of the Cognitive domain of Bloom's Taxonomy of Educational Objectives.
2. To study the progression of question paper setting from the lower to higher level cognitive objectives in Higher Secondary School level in Mizoram.

Operational Definition of Key Terms:
1. **Analysis**: Analysis means the act of assessing, appraisal or evaluation of an object, person or things. Here, analysis refers to the assessment or evaluation of a student's achievement or performance on a selected course.
2.**Cognitive**: Cognitive refers to the ability (or lack of) to think, learn and memorize; it is an expression of intellectual capacity pertaining to the mental processes of comprehension, judgement, memory, and reasoning.
3.**Examination Question Papers**: Question papers in this study will refer to Class XII Arts Board Examination question papers of three consecutive years, 2020 – 2022.
4.**Taxonomy of Educational Objectives**: Taxonomy of Educational Objective refers to Bloom's Educational Objectives in the Cognitive Domain namely Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation.
5.**Lower Order, Middle Order and Higher Order Cognitive Objectives/Skills**: The six levels in the cognitive domain of Bloom's Taxonomy have been divided into three groups:
i) Knowledge and Comprehension (Lower Order Cognitive Objectives)
ii) Application and Analysis (Middle Order Cognitive Objectives)
iii) Synthesis and Evaluation (Higher Order Cognitive Objectives)

Method of Study:-
The present study employed Qualitative Research in the form of Content Analysis Method to analyze selected question papers at Higher Secondarylevels in terms of the Cognitive domain of Bloom's Taxonomy.

Population –
All HSSLC Arts Board Examination question papers of Mizoram Board of School Education for three consecutive years, 2020 – 2022constitute the population for this study. The population constitutes 14 subjects offered by MBSE.

Sample – Out of 14 HSSLC Arts subjects offered by Mizoram Board of School Education, 10 subjects were selected as sample for this study. The selected subjects are mentioned below:

1).English	2). Mizo	3). Political Science	4). History
5). Education	6). Economics	7). Geography	8). Sociology
9). Psychology	10). Public Administration		

Tools of Data Collection:
Bloom's Taxonomy Coding Scheme was used to analyze question papers of Class XII Board Examination. The Coding Scheme basically comprises of the six cognitive levels given by Bloom, viz., Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. Key words or verbs for each level with model questions was compiled to be used as a guide for structuring or framing questions and tasks:

Delimitations of the study:
The present study has been delimited toanalysis of question papers of HSSLC (Class XII) Arts Board Examination question papers of three consecutive years, i.e. 2020, 2021 and 2022, under Mizoram Board of School Education (MBSE), India. Out of 14 subjects offered in Arts stream by MBSE, 10 subjects wereused as sample.

Major Findings of the study
1.Findings relating to analysis of HSSLC (Class XII) Arts question papers 2020 – 2022 (Objective 1): The major findings of the study are presented in the following tables:

Table 1:- Analysis Result of HSSLC Arts Question papers of 2020 – 2022.

Subject	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
English	**50.77%**	**31.27%**	**14.06%**	**2.34%**	**0.77%**	**0.79%**
Mizo	**52.41%**	**35.27%**	**7.59%**	**3.75%**	**0.98%**	**-**
Pol.Science	**53.33%**	**19.05%**	**6.76%**	**6.67%**	**1.81%**	**12.38%**
History	**45.53%**	**34.48%**	**6.21%**	**11.05%**	**-**	**2.73%**
Education	**58.58%**	**31.32%**	**3.03%**	**7.07%**	**-**	**-**
Economics	**52.63%**	**35.96%**	**7.90%**	**2.63%**	**-**	**0.88%**
Geography	**56.56%**	**28.28%**	**12.12%**	**3.04%**	**-**	**-**
Pub.Adm	**64.86%**	**25.22%**	**-**	**9.92%**	**-**	**-**
Sociology	**55.19%**	**30.16%**	**4.30%**	**10.35%**	**-**	**-**
Psychology	**59.14%**	**33.35%**	**4.30%**	**3.22%**	**-**	**-**

In all the 10 subjects, majority of the questions are asked from Knowledge and Comprehension domains, which are the Lower Order Cognitive Levels. Only a small percentage of questions come from the other higher domains. Various subjects like Education, Geography, Public Administration, Sociology and Psychology do not have any questions from Synthesis and Evaluation in all the three consecutive years. Political Science has the highest percentage of questions from the Higher Order Cognitive Objectives like Analysis, Synthesis and Evaluation.

Table 2:- Consolidated Result of HSSLC Arts Question papers 2020 – 2022.

Classification of Objectives	2020	2021	2022	2020 -2022
Lower Level Objectives (Knowledge & Comprehension)	85.28%	85.19%	86.45%	**85.64%**
Middle Level Objectives (Application & Analysis)	11.35%	13.46%	12.19%	**12.33%**
Higher Level Objectives (Synthesis & Evaluation)	3.37%	1.35%	1.36%	**2.03%**

Consolidated analysis of the results of question papers of three consecutive years, .i.e. 2020 to 2022 revealed that all the 10 subjects concentrated heavily on questions from the Lower Level Objectives (85.64%)with only a small percentage of questions from the Middle Cognitive Level (12.33%) and Higher Cognitive Level (2.03%).Thus, it is evident that the questions in the Higher Secondary School do not focus on enhancing the critical thinking ability and creativity of the students.

Findings relating to Progression of question paper setting from the Lower to Higher level cognitive objectives (Objective 2):
The findings relating to progression of question paper settingfrom the lower to higher level cognitive objectives from 2020 – 2022 is presented in the table below:

Table 3:- Progression of Questions from Lower to Higher Cognitive Levels 2020 – 2022.

Classification of Objectives	Level of Objectives	2020		2021		2022	
Lower Level Objectives	Knowledge	53.19%	85.28%	58.77%	85.19%	52.73%	86.45%
	Comprehension	32.09%		26.42%		33.72%	
Middle Level Objectives	Application	5.86%	11.35%	6.84%	13.46%	6.83%	12.19%
	Analysis	5.49%		6.62%		5.36%	
Higher Level Objectives	Synthesis	0.55%	3.37%	0%	1.35%	0.51%	1.36%
	Evaluation	2.82%		1.35%		0.85%	

In regards to the progression of the HSSLC (Arts) Board Examination question papers of three consecutive years i.e. 2020 – 2022, it was revealed that there was no considerable progression in the quality and objectives of the questions. The Lower Level Objectives i.e. Knowledge and Comprehension dominates the question papers in all the three years. Therefore, we can conclude that there was no improvement in the qualities and objectives of the questions. Instead of progressing, it remained stagnant and the teachers along with the students functioned mainly at the lowest level of the cognitive objectives.

Suggestions for Improvement:-
1. The findings of the study clearly indicates the low quality of question paper setting at the Higher Secondary School level in Mizoram. More questions testing the higher cognitive abilities of students should be included in the future.
2. Teachers need to be made aware of Bloom's Taxonomy and its relevance in the field of education, particularly in question paper setting. It may be made an integral part of the curriculum in teacher training programmes.
3. Teachers need to be informed of the importance of maintaining the correct balance between lower and higher order cognitive questions. Teachers cannot set an examination paper comprising of numerous Lower Order Cognitive Questions. Effective questions that include problem solving and complex thinking skills should be adequately included to stimulate students' mental activities.
4. Teacher Training Programmes/Workshops/Seminars on Question Paper Setting should be periodically conducted by the concerned authorities.
5. The trend in question paper setting revealed by this study points to an inferior educational system. Remedial steps have to be taken in the areas of curriculum design, classroom teaching-learning methods, evaluation procedures and many others to redress this problem and improve the present system. If this trend continues, then the quality of education will deteriorate further and more unemployable graduates may be produced in future.

Conclusion:-
The present investigation clearly reveals thatboth the teachers and students of higher secondary level are functioning at the lower cognitive levels of Bloom's Taxonomy. Teachers and students alike need to be given more awareness regarding the cognitive levels and how to develop these higher cognitive abilities. Teachers need to design their instructional objectives and teaching-learning activities in such a way as to promote and develop the reasoning, constructive and problem-solving skills of students. Therefore, teaching - learning methods and activities that will develop and promote the higher cognitive abilities of students need to be applied in the classroom.

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