

ChatGPT- Supported Teacher Training in Outcome-Based Learning with Bloom's Taxonomy: An Intervention Study

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ABSTRACT:

With the rapid advancement of Artificial Intelligence (AI), generative AI tools such as ChatGPT are increasingly being explored as supports for teacher training in various pedagogies. This study investigates the effectiveness of ChatGPT in training teachers in the pedagogy of Outcome-Based Learning (OBL) based on Bloom's Taxonomy in the cognitive domain.

An exploratory workshop was conducted with 19 primary and secondary school teachers from an SSC board school in Mumbai, India. The teacher trainer took the support of ChatGPT to help teacher-students understand the concepts of OBL and Bloom's Taxonomy and how to generate OBL lesson plans with outcomes based on Cognitive Domain of Bloom's Taxonomy. Teachers were also taught how to generate assessment tools such as quizzes and rubrics for the OBL lesson plans, with the help of ChatGPT.

Findings indicate that ChatGPT was highly effective in offering training support by generating examples, classroom activities, lesson plans, and assessment formats aligned with Bloom's taxonomy. However, teachers required trainer intervention to understand theoretical concepts such as OBL, Bloom's Taxonomy and rubrics. The study concludes that while ChatGPT can play a significant supporting role in training teachers in pedagogy, the basic teacher-training will have to be led by human trainers.

Keywords: ChatGPT, Teacher Training, OBL, Bloom's Taxonomy, AI for teacher training.

Introduction

Teaching is a highly dynamic activity. Teachers need to constantly upgrade and integrate subject, pedagogical and technological knowledge to

optimise learning of their students (Mishra & Koehler, 2006).

Among technological developments, Artificial Intelligence (AI) has become one of the most

transformative forces in education. Generative AI systems can produce text, generate instructional materials, analyze data and support decision-making processes (IBM, 2023). According to recent educational research, generative AI tools can also be used to assist teachers in designing learning activities, creating assessment tasks, and developing instructional resources (Kasneci et al., 2023).

A very important advancement is the use of AI tools in teacher training. Emerging research indicates that AI tools can function as a virtual instructional coach that supports teachers in developing teaching strategies aligned with outcome-based learning frameworks (Choi et al., 2024; Rahman et al., 2023; Li et al., 2024).

More recent studies further demonstrate the role of ChatGPT in supporting reflective teacher training. For instance, research on AI-supported lesson plan critique shows that ChatGPT can provide feedback on teaching plans and help teachers refine instructional strategies through iterative reflection (Zhou et al., 2025). Similarly, studies on online teacher education programs show that ChatGPT can act as a virtual tutor that supports pre-service teachers in understanding complex pedagogical concepts and engaging in reflective learning (Meng et al., 2025).

One of the most important pedagogies that teachers are being trained in today is Outcome based learning (OBL).

Outcome-Based Learning, also referred to as Outcome-Based Education (OBE), as its name indicates, is a pedagogical concept that expects students to demonstrate a clearly defined and measurable learning output at the end of their learning session, be it one class or a term. OBL improves educational effectiveness by aligning curriculum design, teaching strategies, and assessment methods with clearly defined learning outcomes (Ravi Kumar & Ramya, 2019). Unlike traditional input-based education systems that focus primarily on syllabus coverage, OBE emphasizes the attainment of specific knowledge, skills, and competencies by learners (Spady, 1994).

OBL's approach clearly aligns with the current emphasis in education on critical skills for survival in the 21st century. No wonder, outcome based learning is being adopted in educational institutions the world over, vis a vis the traditional syllabus focused approaches.

Despite the potential benefits of outcome-based learning, research indicates that the successful implementation of OBL has its own challenges, as the pedagogy approach is different from what teachers are used to. The required teacher competencies to implement OBL range from writing measurable outcomes, designing student-centered learning activities to implementing performance-based assessment strategies (Mohmad, 2025). Studies examining the role of teachers in outcome-based education emphasize that educators must shift from traditional lecture-based instruction to student-centered pedagogical approaches that facilitate active learning and competency development (NCERT, 2021). A systematic review of OBE implementation in higher education institutions identifies barriers such as limited teacher training, difficulty in designing outcome-aligned assessments, and lack of familiarity with competency-based teaching methods (Mistamiruddin & Nasri, 2024). These findings suggest that teacher training becomes an inevitable precursor to implementation of OBL in educational institutes, if any real progress is to be seen among learners.

Research Gap

However, despite the need for training teachers in outcome based learning, and the growing importance of use of ChatGPT to support teacher training, little research has been done on teachers in India on the advantages and challenges of using ChatGPT for teacher training in general and OBL pedagogy in particular.

Current Research Focus

This research focuses on how ChatGPT 3.5 can be used to train teachers in OBL based on Bloom's Taxonomy in the Cognitive Domain.

Why ChatGPT 3.5

ChatGPT is an LLM model that can be used by teacher trainers and teachers even if neither have any technological background, save a modicum knowledge of using computers.

ChatGPT 3.5 is freely available hence can be used for training teachers by schools who do not have access to enough resources.

Also, many teachers have already used ChatGPT for some tasks and are familiar with it.

Why Teacher Training in OBL based on Bloom's Taxonomy

A key framework that supports the implementation of OBL is Bloom's Taxonomy, which categorizes learning goals into three main domains: Cognitive, Affective and Psychomotor (Das Mandal, 2024). The cognitive processes are further broken down into skills such as remembering, understanding, applying, analyzing, evaluating and creating (Anderson & Krathwohl, 2001). Similarly, the Affective and Psychomotor domains have their own skills division. The expected outcomes from students can be mapped to any one or multiple levels of these three domains. Several studies on outcome based learning support the application of Bloom's taxonomy for OBL. For instance, research on outcome-based instructional design demonstrates that Bloom's Taxonomy provides a systematic structure for writing measurable learning outcomes and designing assessments aligned with cognitive learning objectives (Journal of Engineering Education Transformations, 2025). Similarly, recent research exploring the integration of AI tools with Bloom's Taxonomy highlights how AI-supported instructional design can help educators develop learning activities aligned with different cognitive levels, thereby strengthening outcome-based curricula (Social Sciences & Humanities Open, 2026).

Why Cognitive Domain of Bloom's Taxonomy

As compared to other domains, the cognitive domain of Bloom's Taxonomy is most

commonly used in OBL because cognitive outcomes are more easily observable and measurable and align well with OBL assessment (Rao, 2020).

Research Questions

1. What are the advantages of using chatGPT for teacher training in OBL?
2. What are the disadvantages of using chatGPT for teacher training in OBL?
3. To what extent is a human trainer's intervention required to make ChatGPT-supported OBL training successful?

Operational Definitions

1. Outcome based learning: A learning pedagogy where students demonstrate a clearly defined specific measurable outcome (either skill or knowledge) at end of learning session.
2. Bloom's Taxonomy: Cognitive domain of Bloom's Taxonomy with following levels - remember, understand, apply, analyse, evaluate and create
3. Teachers: Teachers teaching in primary, secondary and higher secondary standards of an SSC board school.
4. ChatGPT: Free version of ChatGPT. i.e. ChatGPT3.5 with features as of January 2026

Research Objectives

1. To train teachers with the help of ChatGPT in the pedagogy of OBL based on Bloom's Taxonomy in Cognitive Domain
2. To find out replies given by ChatGPT to various prompts by teachers for OBL.
3. To examine teachers' understanding of the responses given by ChatGPT to various prompts
4. To find out teachers' experiences and perception of use of ChatGPT for teacher training in OBL

Research Sample

The research included 19 teachers from an SSC school in Mumbai, Maharashtra as follows:

A. Ten Primary teachers teaching the subjects of Maths, EVS, English, Marathi, Hindi respectively.

B. Nine Secondary and Higher secondary teachers teaching the subjects of Maths, Science, Social Science, English, Marathi, Hindi respectively.

A workshop was held for the teachers in the school computer lab, which included 10 computers.

As teacher to computer ratio was high, a pair of teachers shared one computer each. The workshop was divided into 7 stages as follows:

Research Methodology

Stages During the Workshop

STAGE 1: Opening accounts in ChatGPT

1. All teachers open accounts in ChatGPT and sign in

STAGE 2: Understanding OBL Pedagogy

2. Teachers prompt ChatGPT to find out what is OBL
3. They provide a brief explanation of what is OBL to the trainer based on the response from ChatGPT

STAGE 3: Understanding Cognitive Domain of Bloom's Taxonomy

1. Teachers prompt ChatGPT to find out what is Bloom's Taxonomy in Cognitive Domain
2. On reading the reply given by ChatGPT they give a brief explanation to the teacher trainer of the same.

STAGE 4: Understanding how Bloom's Taxonomy Supports OBL

1. Teachers find out how Bloom's Taxonomy supports OBL by giving a relevant prompt provided by the teacher trainer to ChatGPT
2. On reading the reply given by ChatGPT they give a brief explanation to the teacher trainer of the same.

STAGE 5: OBL lesson plans based on Bloom's Taxonomy

Teachers prompt ChatGPT to generate various lesson plans as follows:

1. A lesson plan with one activity each for all levels of Bloom's Taxonomy.
2. A lesson plan with multiple activities on any one level of Bloom's Taxonomy.
3. Teachers search for action verbs for various levels of Bloom's Taxonomy and generate a lesson plan with outcomes based on any one of the action verbs.

STAGE 6: Finding out the meaning of Rubrics

1. Teachers prompt ChatGPT to find out meaning of Rubrics
2. They provide a brief explanation to the trainer based on ChatGPT's response.

STAGE 7: Creating tools for assessing OBL lesson plans

1. Teachers prompt ChatGPT to create a quiz and a rubric for assessment of the 2nd lesson plan they had created.

Post Workshop Stages:**Stage 8: Teachers fill out an open ended questionnaire**

The open ended questionnaire included the following questions:

1. What are the advantages of using ChatGPT to learn the pedagogy of OBL based on Bloom's Taxonomy?
2. What are the limitations of using ChatGPT to learn the pedagogy of OBL based on Bloom's Taxonomy?
3. To what extent is intervention of teacher-trainer required during ChatPT-supported teacher training in OBL pedagogy using Bloom's Taxonomy?

Stage 9: Data Analysis

Findings were analysed through triangulation from three data sources:

1. Replies given by ChatGPT to various prompts by teachers for OBL
2. Teachers' understanding of the ChatGPT replies as per their responses to teacher trainer during workshop
3. Perception of teachers gathered through open-ended questionnaire

Findings

STAGE 1: 12 teachers had already opened an account in ChatGPT. They helped the remaining seven teachers open an account after which, all of them signed in.

STAGE 2: Prompt by teachers to ChatGPT: "Explain OBL in simple English"

ChatGPT reply: check Fig. 1 in Appendix.

Teachers understanding of OBL based on GPT reply can be categorised as follows:

Table 1. What is OBL	
Response by teachers	No. of Teachers
1. Child-centric method	10
2. Students are able to show, solve, explain the topic	2

3. Students focus on what they learn	2
4. Students get concept clarity	1
5. Learning for real world	1
6. Focus is on a specific topic	1
7. Provides deeper knowledge	1
8. Teacher gets to understand students' capability	1

Trainer Observation: Though the precise definition was mentioned clearly in ChatGPT, along with extra explanation and examples, teachers were not able to pinpoint exact definition of OBL but gave a roundabout answer. Hence, teacher trainer had to give a clear explanation before proceeding to next step.

STAGE 3: Prompt by teachers to ChatGPT: Explain what is Cognitive domain in Bloom's taxonomy along with examples for each level of cognitive domain in simple English

For ChatGPT reply check Fig 2. in Appendix.

Teachers understanding of ChatGPT reply can be classified as follows:

Table 2. What is Cognitive Domain in Bloom's Taxonomy	
Response by Teachers	No of Teachers
Teacher's overall understanding of Bloom's Taxonomy in Cognitive Domain	
Teachers who fully understood the concept	1 (this teacher had already learnt about Bloom's Taxonomy and even drew the learning levels pyramid)
Not just rote learning but other learning too	8
The child has to understand concepts and apply knowledge	7
The child should have real world knowledge	2
Child has to show creativity	1
Teachers' understanding of various learning levels in Cognitive Domain	
Remember, Understand, Apply	All 19 understood
Analysis, Synthesis, Evaluation	All 19 unsure
Creativity	All teachers except 2 maths teachers could relate to concept of creativity for their subject
Teachers' understanding of the term "Taxonomy"	
Meaning of the term "taxonomy"	All teachers were confused, including the science teachers
Teachers' understanding of the term "Cognitive Domain"	
Something to do with knowledge	6
Related to learning	4
Pertains to the brain and thinking	9

Observation

1. ChatGPT's explanation of Bloom's Taxonomy did not automatically include the pyramid image depicting levels of learning. Hence, teachers were asked to give another prompt: Explain levels of learning with the help of a pyramid diagram. However, only four computers showed the diagram. On the remaining six computers the image could not get downloaded as there was bandwidth issue. Hence, the teachers were asked to access the image through google search.

2. While the lower order skills of remember, understand and apply were easily understood, those of analysis, synthesis and evaluation were not very clear to teachers from the ChatGPT explanation. Creativity - all teachers could relate to the concept except 2 maths teachers.

3. Surprisingly, the word "taxonomy" was not understood in the BT context even by science teachers, though the concept of taxonomy is so prevalent in science.

Once all the concepts related to Bloom's taxonomy were explained in detail, the trainer proceeded to the next step.

STAGE 4: Connection between Bloom's Taxonomy and OBL

Prompt by teachers to ChatGPT: Explain how Bloom's taxonomy provides outcomes for OBL in Simple English

ChatGPT reply: refer to Fig. 3 in appendix.

Table 3. Teachers' understanding of how Bloom's Taxonomy supports OBL	
Response by Teachers	No of Teachers
Helps determine learning goals or outcomes	All 19
Outcomes according to different levels of learning	9

Observation: Teachers understood that BT provided outcomes to OBL lesson plans. Nine teachers also emphasised that the outcomes

could be represented by various levels of learning.

Trainer explained the connection thoroughly and moved to next step

STAGE 5: OBL lesson plans using Bloom's Taxonomy

There were three types of OBL lesson plans made by teachers in a topic of their choice:

Lesson Plan 1: Teachers were asked to make lesson plans on any topic in their subject with activities that incorporated ALL levels of Bloom's taxonomy.

Prompt: Create an outcome based lesson plan on the topic_____in the subject_____for std_____in simple English/Marathi/Hindi in 5 E format. The outcomes should be based on all levels of Bloom's Taxonomy. (Each teacher had to fill in the blank as per her particular topic).

Lesson Plan 2: Teachers were asked to make lesson plan's by choosing any one level of learning from Bloom's Taxonomic as their outcome and making ChatGPT give three different activities to teach the output.

Prompt: Create an outcome based lesson plan on the topic_____in the subject_____for std._____in simple english/marathi/hindi in 5 E format. The outcomes should be based on____level of Bloom's taxonomy. Provide three different activities to learn the outcome.

Lesson Plan 3 (based on action verbs)

Action Verbs: Teachers were asked to search for action verbs that came under each learning level for their particular subject.

Prompt: Give action verb chart for all levels of cognitive domain of bloom's taxonomy in the _____subject.

ChatFPT reply: refer to Fig. 4 in appendix

Teachers' reply to what are action verbs based on their understanding of ChatGPT content:

Table 4. Teachers' understanding of what are action verbs	
Response by Teachers	No of teachers
Action verbs are activities	15
Confused as to what are action verbs	4

Observation: Exact meaning of action words was not understood by teachers though 14 somewhat understood hence, trainer explained the concept and how they could use any action verb to serve as an outcome for an OBL lesson plan.

Lesson Plan 3: Now they had to choose any one action verb to serve as the lesson plan outcome. (They were assisted in the prompting by the teacher trainer).

Prompt: Create an outcome based lesson plan on the topic_____in the subject_____for std._____in simple English/Marathi/Hindi in 5 E format. The outcomes should be based on the action verb _____.

Observation: ChatGPT created instant and comprehensive lesson plans for each stage with relevant introduction, activities and examples.

STAGE 6

Teachers were made to prompt: Explain what are Rubrics for assessment with examples in simple English.

ChatGPT reply: Please refer to Fig 5 in appendix

Teachers understanding of the ChatGPT reply are classified as follows:

Table 5. Teachers' Understanding of Rubrics	
Response by Teachers	No of Teachers
Rubrics help teachers evaluate students on different aspects of learning from lower level to higher level	8 (they already had some idea of what are rubrics)
Rubrics help u to assess students	7
Rubrics have different levels of assessment	4

Observation: Those who already had some idea of what are rubrics got their concept cleared through ChatGPT explanation. Others understood somewhat but had to be provided proper explanation by teacher trainer before moving to next step.

STAGE 7

Teachers were asked to make chatGPT create assessments in form of quizzes and rubrics for the last lesson plan on action verb that they had created.

Prompt: Please create a quizz and a rubric for the lesson plan on_____you created above (they were asked to name the lesson plan they had prepared on the action verb).

Teachers went through the ChatGPT reply.

Observation: ChatGPT generated instant and relevant quizzes and rubrics

Post Workshop

STAGE 8:

Teachers' replies to open ended questionnaire were as follows:

Q.1 What are the advantages of ChatGPT-supported teacher training in OBL pedagogy

Table 6. Advantages of Using ChatGPT for Teacher Training in OBL	
Response by Teachers	No of Teachers
Ease of Use	
Very easy to use as can give commands in regular language	All 19
Language	
ChatGPT can understand commands and can reply in all languages	19
English level was easy to understand	19
It is not a barrier even for vernacular medium teachers as translation ability into vernacular language is very good	4
Time Saved	
Instant Replies	19
Saves significant time for teachers	19
Image Generation	
Image generation was good	8
Image Generation was unsatisfactory	11
Innovation	
Innovative teaching ideas	13
Innovative examples and activities	15
Lesson Planning	
Good support for lesson planning	19
Very useful for designing learning outcomes and activities	19
Helpful for aligning outcomes, activities, and assessments	6
Good teaching methodologies	7
Improves clarity of objective	4
Offers more ways of teaching to make learning effective	1
Encourages goal oriented teaching	1
Good results when you need to align outcome, methodology, activities and assessment. But need to apply according to our requirement.	5
Liked the introduction	7
Action Verbs	
Action verbs made it easy to form outcomes for lesson plans	19

Assessment	
Good assessment formats	19
Impressed with instant generation of quiz and rubrics	19
Quality of rubrics was very good	19
Would not have been able to create rubric without ChatGPT help	6

Q.2. What are the disadvantages of ChatGPT-supported teacher training in OBL pedagogy?

Table 7. Disadvantages of Using ChatGPT for teacher training in OBL	
Response by Teachers	No of Teachers
Amount of Information	
Too many examples and activities	17
Information too vast / information overload	5
Not able to focus on specific information	6
Difficult to make a choice	19
Action verbs generated were too vast, difficult to choose	
Relevance of information generated	
Examples given may not match real life situations	4
Examples may not be relevant to my class	7
Need for customisation	
Difficulty in personalisation of lesson plans for my students' needs	2
Good results for lesson planning but teacher needs to apply according to requirement	9
Teacher needs to customise	7
Teacher needs to read carefully before applying in class	5
Decision making skill needed by teacher	2
Teacher thinking process should not stop	2
Understanding information given by ChatGPT	
New ideas for effective learning take time to understand	3
Even if results quick, understanding information takes time	4
Not easy to understand concepts	19
Difficult to track outcomes	1
Assessment	

Some assessment may not fairly measure every students achievement	3
Not enough time for assessment and feedback	3
Rubrics take up too much time	2
Prompt importance	
Very important to input right prompts to get relevant results.	19
Need very specific commands - 3	3
If prompts are not precise too much information can create confusion	2

Q.3 To what extent is trainer intervention required during ChatGPT-supported teacher training in OBL pedagogy?

Table 8. Intervention required from human trainer when using ChatGPT for teacher training in OBL pedagogy	
Response by Teachers	No of Teachers
Just ChatGPT not enough for teacher training. Human trainer support also required	All 19
Prompts had to be given by teacher trainer	19
Concepts needed to be explained by teacher trainer	19
Artificial intelligence needs to be combined with teachers' and trainers' natural intelligence	2

Discussion

The following analysis of usefulness of ChatGPT in teacher training in OBL has been carried out Based on triangulation of results from three sources:

1. Replies given by ChatGPT to various prompts.
2. Teachers' understanding of ChatGPT replies based on their responses given to trainer during workshop.
3. Perception of teachers on ChatGPT supported teachers training in OBL pedagogy, gathered through open-ended questionnaire.

ChatGPT 3.5 has both advantages as limitations for teacher training in OBL using Bloom's Taxonomy.

1. The main advantage is that it does take on a lot of load off the trainer when it comes to

generating explanations, examples, lessons, evaluation tools in each subjects. It is not possible to generate such variety in such a short time either by trainers themselves or collectively by teachers.

2. It should be noted however, that though the replies are instant, reading and understanding them does take time. So that time has to be budgeted in the teacher training.

3. When it came to explanation, teachers were unable to fully or exactly understand terms such as OBL, Cognitive Domain of Bloom's Taxonomy, Connection between OBL and Bloom's taxonomy, Action verbs under each level of learning and rubrics, only through replies by ChatGPT. Often the understanding was close but not exact.

4. The main reason for inability the exact definition was the generation of a lot of

information that was extremely useful and necessary, but it distracted the teachers from pinpointing the exact definition and core explanation of the concept. Too much information did overwhelm the teachers.

5. What is important is specific and relevant prompts as well as the right interpretation of the content provided by Ai. Both of these required intervention by human teacher trainer.

6. Teachers, who already knew the concepts to an extent however, greatly benefited from inputs from ChatGPT as their understanding was enhanced due to added explanation and examples.

7. ChatGPT 3.5 did not automatically generate images to explain concepts. It has to be given special commands to do so. Also, the free version can only provide a limited output which became a problem during image generation. So if it's a long training session it is advisable either to have a paid version or back up training with inputs from videos /visuals on the internet or charts etc.

8. Regarding language, though the command was to give explanation in simple English, some teachers found even that difficult. The teacher trainer needed to provide further explanation. The prompt could be further adjusted to "very simple English" or English of the level of a 4th std. Student etc.

9. However, when it came to interaction in other languages such as Marathi or Hindi, the teachers were very comfortable. So translation into other languages did not pose an issue.

10. Overall, Ai was very good at generating information very quickly, but unable to catch doubts and classroom dynamics and individual cognitive capacity of teachers. ChatGPT is extremely good at generating lesson plans, activities and examples.

11. Human trainers are required for at least basic explanations then further exploration can be done very well by teachers themselves with ChatGPT.

Conclusion

1. Training will be more useful if teachers are given prior conceptual understanding of whatever concepts are to be explained in training. Ai tools can be useful for further explanation and exploration, and generation of more subject wise examples.

2. To fully benefit from ChatGPT for teacher training teachers will need prior training in:

A. Prompt engineering to control the amount of information, the kind of output they get as well as the language level they are comfortable with.

B. How to interpret responses from ChatGPT or any other Ai tool, especially to differentiate between core explanation and additional explanation given by ChatGPT.

Teachers should be trained in not just prompting but how to read replies by ChatGPT too so as to distinguish between precise explanation and supporting text.

3. To ensure that while understanding a concept teachers are not distracted by all the 3. supporting text generated, concept explanation should follow two stages of prompting:

A. A prompt that asks for simple explanation in few lines with one or two examples. Mention that there should be no other supporting text or additional information.

B. Once teachers have grasped the main precise explanation, it should be followed by a general prompt that asks for a more elaborate explanation of the concept.

4. Explanation of concepts needs backup from other aids such as videos, charts, images through regular search engines as well as rounding off of training by teacher trainer.

To sum up, ChatGPT can serve as support for teacher training in pedagogy but not replace all other means. Best results in training are observed when inputs from teacher trainer, Ai, Search Engines, videos, visuals etc. are combined.

Scope for further Research

1. Use of ChatGPT for Teachers Training in pedagogies other than OBL
2. Teacher Training with help of paid version of ChatGPT as well as free and paid versions of other Ai tools.

3. Teacher Training with help of youtube videos and other links along with Ai Tools.
4. Research based on Larger sample size which includes teachers with varying degrees of Ai literacy, varying language proficiency.

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APPENDIX

Fig 1.

Explanation by ChatGPT on What is OBL

Outcome-Based Learning (OBL) is an educational approach where the focus is on what students are able to do or demonstrate at the end of learning, rather than just what the teacher has taught.

In simple terms:

Instead of asking "What content did I cover?", OBL asks

👉 "What can students actually understand, apply, or perform after the lesson?"

🔑 Key features of Outcome-Based Learning

- 1. Clear learning outcomes**
 - Specific, measurable goals are defined in advance
 - Example: Students will be able to solve linear equations independently
- 2. Student-centered approach**
 - Focus shifts from teaching → learning
 - Learners actively construct knowledge
- 3. Assessment aligned with outcomes**
 - Evaluation is based on whether outcomes are achieved
 - Includes tasks, projects, demonstrations→not just exams
- 4. Flexibility in teaching methods**
 - Teachers can use different strategies (activities, flipped learning, group work)
- 5. Continuous improvement**
 - Teaching is adjusted based on student performance

📊 Example (Classroom context)

Traditional Teaching	Outcome-Based Learning
Chapter on fractions is completed	Students can compare and simplify fractions
Teacher explains topic	Students solve real-life fraction problems
Test checks memory	Assessment checks application

🎯 Why it matters (especially for you as a teacher)

- Improves concept clarity
- Encourages higher-order thinking (link to Bloom's Taxonomy)
- Makes learning measurable and meaningful
- Supports inclusive classrooms (different learners can achieve outcomes in different ways)

Fig 2.***Explanation by ChatGPT of Bloom's Taxonomy in Cognitive Domain***

The cognitive domain in Bloom's Taxonomy refers to thinking skills—how students gain knowledge, understand it, and use it.

**In simple words:**

It is about how the brain learns, thinks, and solves problems.

**Levels of the Cognitive Domain (with simple examples)****1. Remembering (Recall facts)**

- **Meaning:** Remember information
- **Examples:**
 - List the days of the week
 - Define Photosynthesis

2. Understanding (Explain ideas)

- **Meaning:** Show you understand
- **Examples:**
 - Explain how photosynthesis works
 - Describe a story in your own words

3. Applying (Use knowledge)

- **Meaning:** Use what you learned
- **Examples:**
 - Solve a word problem in math
 - Use grammar rules to write sentences

4. Analyzing (Break and compare)

- **Meaning:** Look at parts and relationships
- **Examples:**
 - Compare two characters in a story
 - Find differences between plants and animals

5. Evaluating (Judge and justify)

- **Meaning:** Give opinion with reasons
- **Examples:**
 - Which solution is better? Why?
 - Judge if a story has a good ending

6. Creating (Make something new)

- **Meaning:** Create or design
- **Examples:**
 - Write your own story
 - Design a science experiment

**Simple flow**

Thinking moves from simple → complex

Remember → Understand → Apply → Analyze → Evaluate → Create

**One-line summary:**

The cognitive domain is about different levels of thinking skills that help students learn and use knowledge.

Fig 3.***How Bloom's Taxonomy supports OBL***

Bloom's Taxonomy provides outcomes for Outcome-Based Learning (OBL) by giving clear, action-based ways to describe what students should be able to do after learning.

 Core idea

OBL needs clear outcomes → Bloom's gives the language and levels to write those outcomes.

 How Bloom's helps generate outcomes for OBL**1. Gives action verbs to write outcomes**

Bloom's replaces vague words with measurable actions.

-  Students will understand fractions
-  Students will solve fraction problems
- 👉 Words like define, explain, apply, analyze, create make outcomes observable.

2. Specifies the level of thinking

Each outcome in OBL must show how deeply students learn.

Bloom's levels help:

- Basic outcomes → Remember, Understand
- Advanced outcomes → Apply, Analyze, Evaluate, Create
- 👉 This ensures outcomes are not limited to rote learning.

3. Makes outcomes measurable

OBL requires demonstration of learning.

Bloom's verbs describe actions that can be assessed:

- "Explain" → written/oral answer
- "Analyze" → comparison or breakdown
- "Create" → project or product

4. Helps align teaching and assessment

Once outcomes are written using Bloom's:

- Teaching activities match the level
- Assessments check the same level

Example:

- **Outcome:** Analyze a poem
- **Activity:** Compare themes
- **Assessment:** Justify interpretation

5. Supports progression of learning

Bloom's provides a sequence:

👉 Remember → Understand → Apply → Analyze → Evaluate → Create

Teachers can design outcomes that move from simple to complex learning.

 Example (OBL outcome using Bloom's)

Topic: Photosynthesis

- **Remember:** Define photosynthesis
- **Understand:** Explain the process
- **Apply:** Show how it affects plant growth
- **Analyze:** Compare plants in sunlight vs shade
- **Evaluate:** Judge best conditions for growth
- **Create:** Design an experiment

 Final takeaway

👉 Bloom's Taxonomy turns OBL outcomes into clear, measurable, and demonstrable student actions.

Fig. 4**Action Verb Chart for English Subject Generated by ChatGPT****Action Verb Chart for the Cognitive Domain of Bloom's Taxonomy****Subject: English**

Bloom's Level	Purpose	Common Action Verbs for English Subject	Example Learning Outcome
Remember	Recall facts and basic concepts	define, list, identify, name, recall, label, repeat, recognize, state, match	Students will be able to identify nouns in a sentence.
Understand	Explain ideas or concepts	explain, describe, summarize, discuss, interpret, classify, paraphrase, compare, illustrate, infer	Students will be able to summarize a story in their own words.
Apply	Use knowledge in new situations	use, demonstrate, apply, construct, complete, dramatize, solve, write, illustrate, show	Students will be able to use correct grammar while writing a paragraph.
Analyze	Break information into parts and examine relationships	analyze, compare, differentiate, categorize, examine, distinguish, investigate, organize, contrast, relate	Students will be able to compare two characters from a story.
Evaluate	Make judgments based on criteria	evaluate, justify, defend, critique, judge, argue, recommend, assess, support, verify	Students will be able to justify their opinion about the theme of a poem.
Create	Produce new or original work	create, compose, design, develop, write, invent, formulate, construct, produce, generate	Students will be able to write an original short story with dialogue.

Simple Progression of Thinking Skills

👉 Remember → Understand → Apply → Analyze → Evaluate → Create

Example Using One English Topic

Topic: Poetry

Level	Example Outcome
Remember	Define rhyme scheme
Understand	Explain the meaning of the poem
Apply	Use figurative language in writing
Analyze	Compare themes in two poems
Evaluate	Judge the effectiveness of imagery
Create	Write an original poem

Fig. 5

Explanation by ChatGPT of What are Rubrics

Rubrics are simple scoring guides that tell students how their work will be checked and marked.

👉 They clearly show:

- what to do
- what good work looks like
- how marks will be given

🎯 **In very simple words:**

A rubric is a checklist with levels that helps teachers give marks and helps students understand expectations.

🧩 **Parts of a rubric**

1. **Criteria** – What you are checking
(e.g., content, neatness, creativity)
2. **Levels** – How well the work is done
(e.g., Excellent, Good, Needs improvement)
3. **Description** – What each level means

📊 **Example 1: Drawing Rubric**

Criteria	Excellent 🌟	Good 👍	Needs Improvement 😞
Neatness	Very clean and neat	Mostly neat	Not neat
Idea	Very clear idea	Somewhat clear	Not clear
Effort	Full effort shown	Some effort	Very little effort

📊 **Example 2: Writing Rubric**

Criteria	Excellent	Good	Needs Improvement
Content	Clear and complete	Mostly clear	Incomplete
Grammar	No mistakes	Few mistakes	Many mistakes
Presentation	Well organized	Somewhat organized	Not organized

🔗 **Why rubrics are useful**

- Students know what is expected
- Teachers can give fair and clear marks
- Helps in Outcome-Based Learning (OBL) because students show what they can do

🧠 **One-line summary:**

A rubric is a simple guide that shows how student work will be judged and scored.