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THE ROLE OF BLOOM'S TAXONOMY, SMART TECHNOLOGY, AND THE ABCD MODEL IN DESIGNING EDUCATIONAL OBJECTIVES

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Abstract

The clear formulation of educational objectives is a central condition for effective teaching and learning. This article examines three widely used instruments for designing such objectives: Bloom's Taxonomy, SMART technology, and the ABCD model. Bloom's Taxonomy provides a hierarchy of cognitive processes that helps teachers move learners from simple remembering to higher-order thinking. SMART technology offers a set of five criteria — Specific, Measurable, Achievable, Relevant, and Time-bound — that turn general intentions into concrete and verifiable goals. The ABCD model defines four components of a complete objective: Audience, Behavior, Condition, and Degree. Using a descriptive and comparative method based on the analysis of scholarly literature, the study explains the theoretical basis of each instrument and shows how they can be combined in practice. The results suggest that the three tools are complementary rather than competing: Bloom's Taxonomy guides the cognitive level, the ABCD model structures the wording, and SMART technology ensures measurability and feasibility. The article concludes that the integrated use of these instruments improves the quality of lesson planning, assessment, and learning outcomes, and it offers practical recommendations for teachers and curriculum designers.

Keywords: Bloom's Taxonomy, SMART technology, ABCD model, educational objectives, instructional design, learning outcomes, assessment, curriculum planning.

1. Introduction

Education systems around the world share one common task: helping learners reach clearly defined results. Before a teacher chooses a method, a textbook, or a form of assessment, a more basic question must be answered — what exactly should the learner be able to do at the end of the lesson? The answer to this question is the educational objective. A well-written objective is not a decoration of the lesson plan; it is the foundation on which content, activities, and tests are built. When objectives are vague, teaching becomes unfocused and assessment becomes unfair, because the teacher and the learner do not share the same picture of success.

In modern pedagogy, several instruments have been developed to help teachers write objectives in a precise and professional way. Three of them have become especially influential in teacher education and curriculum design: Bloom's Taxonomy, SMART technology, and the ABCD model. Each of these tools answers a different question. Bloom's Taxonomy answers the question "at what cognitive level should the learner operate?". The ABCD model answers the question "which elements must a complete objective contain?". SMART technology answers the question "how can we make sure the objective is realistic and measurable?".

Although these instruments are well known individually, teachers often use them in isolation and do not see how they support one another. This article argues that the three tools form a single coherent system for designing educational objectives. The aim of the study is therefore twofold: first, to describe the theoretical basis and structure of Bloom's Taxonomy, SMART technology, and the ABCD model; and second, to show how their integrated use improves the design of learning objectives. The article also offers practical recommendations for teachers and curriculum designers, with particular attention to the context of teacher professional development in the Republic of Uzbekistan.

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2. Materials and Methods

This study is theoretical and descriptive in nature. It does not involve an experiment with learners; instead, it is based on the analysis and comparison of scholarly literature, methodological guides, and official curriculum documents related to instructional design. Three research methods were applied.

The descriptive method was used to present the origin, structure, and main concepts of each of the three instruments. The **comparative method** was used to identify the similarities and differences between Bloom's Taxonomy, SMART technology, and the ABCD model, and to determine which aspect of objective design each instrument is responsible for. Finally, the **method of pedagogical synthesis** was applied to build an integrated framework that combines the strengths of all three tools into a single procedure for writing objectives.

The sources analysed include the original taxonomy proposed by Benjamin Bloom and his colleagues in 1956, its revised version published by Anderson and Krathwohl in 2001, foundational works on the ABCD model from the field of instructional design, and management and educational literature describing the SMART criteria. Methodological recommendations used in teacher training were also consulted in order to keep the discussion practical and relevant for classroom application.

3. Results and Discussion

3.1. Bloom's Taxonomy: Defining the Cognitive Level

Bloom's Taxonomy is a classification of learning objectives according to the level of thinking they require. It was first introduced in 1956 by a group of educational psychologists led by Benjamin Bloom and later revised in 2001 by Anderson and Krathwohl. The taxonomy divides the cognitive domain into six levels arranged from the simplest to the most complex. In the revised version these levels are: remembering, understanding, applying, analysing, evaluating, and creating.

The key idea of the taxonomy is that learning is hierarchical. Lower levels, such as remembering and understanding, deal with basic knowledge. Higher levels, such as evaluating and creating, require the learner to use that knowledge in independent and original ways. Each level is associated with specific action verbs that teachers can use when writing objectives. For example, the verbs "list" and "name" belong to the remembering level, "explain" and "summarise" belong to understanding, while "design" and "compose" belong to the creating level. By choosing the right verb, the teacher fixes the intended cognitive level of the objective.

The practical value of Bloom's Taxonomy in objective design is that it prevents an excessive focus on memorisation. Many traditional lessons stop at the level of remembering. The taxonomy reminds teachers to plan objectives across all six levels, so that learners also practise analysis, judgement, and creativity. In this sense, Bloom's Taxonomy answers the question of "how deep" the learning should be.

3.2. The ABCD Model: Structuring the Objective

While Bloom's Taxonomy describes the level of thinking, it does not by itself tell the teacher how to write the full sentence of an objective. This is the function of the ABCD model, a well-known tool from the field of instructional design. The model states that a complete and well-formed objective contains four components, represented by the letters A, B, C, and D.

A stands for Audience — the learner or group of learners for whom the objective is written, usually expressed as "the student" or "the learner". **B stands for Behavior** — the observable action the learner must perform, expressed with an action verb. **C stands for Condition** — the circumstances, materials, or limitations under which the behavior is performed, for example

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"using a dictionary" or "without notes". **D stands for Degree** — the standard of acceptable performance, such as "with at least 80% accuracy" or "within ten minutes".

The strength of the ABCD model is that it makes the objective complete and observable. An objective such as "the student will understand grammar" is too vague, because understanding cannot be seen directly. Rewritten with the ABCD model, it becomes: "Given a short text (Condition), the student (Audience) will identify the verb tenses (Behavior) with at least 80% accuracy (Degree)". The behavior component of the ABCD model is also the natural place where the verbs of Bloom's Taxonomy are inserted. This shows the first clear link between the two instruments.

3.3. SMART Technology: Ensuring Measurability and Feasibility

SMART technology originated in management science but has been widely adopted in education. The word SMART is an acronym describing five criteria that every good objective should satisfy. An objective is Specific when it is clearly and narrowly defined. It is Measurable when its achievement can be checked through observation or assessment. It is Achievable when it is realistic for the given learners and resources. It is Relevant when it is connected to the wider goals of the curriculum and the needs of the learners. It is Time-bound when it has a clear time frame within which it must be reached.

In the context of objective design, SMART technology works as a quality-control checklist. After a teacher has written an objective, the five criteria can be applied one by one to test whether the objective is well constructed. If any criterion is not met, the objective must be revised. For example, an objective that cannot be measured will fail the "Measurable" test and must be rewritten with a clearer action verb and a clearer standard of performance. SMART technology therefore answers the question of whether the objective is realistic and verifiable.

3.4. Comparative Analysis of the Three Instruments

The comparison of the three instruments shows that they do not compete with one another. Instead, each tool is responsible for a different aspect of objective design. The following table summarises their main functions.

Instrument	Main question it answers	Contribution to the objective
Bloom's Taxonomy	At what cognitive level should the learner operate?	Provides the hierarchy of thinking and the action verbs for the behavior.
ABCD Model	Which elements must a complete objective contain?	Structures the wording into Audience, Behavior, Condition, and Degree.
SMART Technology	Is the objective realistic and measurable?	Acts as a quality checklist for specificity, measurability, feasibility, relevance, and time.

Table 1. Comparative functions of the three instruments in objective design.

The table makes clear that the three instruments operate at different but connected stages. Bloom's Taxonomy works at the stage of deciding the depth of learning. The ABCD model works at the stage of writing the sentence. SMART technology works at the stage of checking

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and improving the result. Because they cover different stages, they can be used together without conflict.

3.5. An Integrated Framework for Designing Objectives

The main result of this study is an integrated, step-by-step procedure that combines all three instruments. The procedure can be described in four steps. In the first step, the teacher uses Bloom's Taxonomy to decide the cognitive level of the planned objective and to select a suitable action verb. In the second step, the teacher uses the ABCD model to write the full objective, placing the chosen verb in the behavior component and adding the audience, condition, and degree. In the third step, the teacher applies the five SMART criteria to evaluate the draft objective. In the fourth step, the teacher revises the objective until all SMART criteria are satisfied.

A short example illustrates the framework. Suppose a teacher wants learners to reach the "applying" level of Bloom's Taxonomy in a lesson on percentages. Step one gives the verb "solve". Step two produces an ABCD objective: "Given five word problems (Condition), the student (Audience) will solve percentage calculations (Behavior) with at least 80% accuracy (Degree)". Step three checks the objective against the SMART criteria: it is specific, measurable, achievable, relevant to the mathematics curriculum, and — once a time frame such as "by the end of the lesson" is added — time-bound. Step four confirms that the objective is complete. This example shows how the three instruments reinforce one another in a single, smooth process.

The integrated framework has several benefits for teaching practice. It reduces the vagueness that often weakens lesson planning, because every objective is both cognitively meaningful and measurable. It supports fair assessment, since the degree component and the SMART criteria define in advance what success looks like. It also helps curriculum designers align objectives, activities, and tests, a principle often called constructive alignment. For teacher professional development, and particularly for the training programmes of the National Institute of Pedagogical Mastery, the framework offers a clear and teachable model that novice teachers can apply immediately.

At the same time, the discussion should acknowledge certain limitations. The three instruments are tools, not guarantees of good teaching. A perfectly written objective still depends on competent instruction and motivated learners. Moreover, an excessive focus on measurability may discourage objectives in areas that are valuable but harder to measure, such as creativity, attitudes, and values. Teachers should therefore apply the framework with professional judgement, treating it as a structured support rather than a rigid rule.

4. Conclusion

This article examined the role of Bloom's Taxonomy, SMART technology, and the ABCD model in the design of educational objectives. The analysis showed that each instrument addresses a distinct aspect of the task. Bloom's Taxonomy defines the cognitive level of learning and supplies appropriate action verbs. The ABCD model structures the objective into four necessary components: audience, behavior, condition, and degree. SMART technology functions as a quality-control checklist that ensures the objective is specific, measurable, achievable, relevant, and time-bound.

The central conclusion of the study is that these three instruments are complementary and most effective when used together. The proposed four-step framework — selecting the cognitive level, structuring the objective, checking it against the SMART criteria, and revising it — provides teachers and curriculum designers with a practical and reliable procedure. Its consistent use can improve the clarity of lesson planning, the fairness of assessment, and ultimately the quality of learning outcomes. Future work could test the framework empirically in real

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classrooms and explore how it can be adapted for objectives that target attitudes, values, and creative skills.

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