**The Revised Bloom’s Taxonomy**

In 2001, a former student of Bloom’s, Lorin Anderson, and a group of cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment specialists published a revision of Bloom’s Taxonomy entitled A Taxonomy for Teaching, Learning, and Assessment. The revision updates the taxonomy for the 21st century, and includes significant changes in terminology and structure. In the revised framework, ‘action words’ or verbs, instead of nouns, are used to label the six cognitive levels, three of the cognitive levels are renamed, and the top two higher-order cognitive levels are interchanged. The result is a more dynamic model for classifying the intellectual processes used by learners in acquiring and using knowledge.

The revised taxonomy identifies the following new levels of cognitive learning (arranged from lower-order to higher-order levels of learning):

* **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** – Using information in new ways; carrying out or using a procedure or process 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; defending concepts and ideas
* **Creating** – Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing

The graphic below illustrates the differences between Bloom’s original taxonomy and the 2011 revised taxonomy:

|  |
| --- |
| **Changes in Bloom’s Taxonomy of Educational Objectives** |
| **Original Taxonomy (1956)** |  | **Revised Taxonomy (2001)** |
| Evaluation |  | Creating |
| Synthesis |  | Evaluating |
| Analysis |  | Analyzing |
| Application |  | Applying |
| Comprehension |  | Understanding |
| Knowledge |  | Remembering |
| **Noun Form** |  | **Verb Form** |

As was the case in the original taxonomy, we can identify a list of suitable verbs for describing the new cognitive levels in written objectives. For each new cognitive level in the revised taxonomy, the following table provides a list of sample verbs to use in writing intended student learning outcomes that are appropriate for that cognitive level of learning. In the table, the learning levels are arranged from lower-order learning to higher-order learning.

| **Revised Bloom’s Taxonomy of the Cognitive Domain (2001)** |
| --- |
| **Cognitive Level** | **Sample Verbs to Use in Writing Intended Student Learning Outcomes** |
| **Remembering** | ArticulateDefine | DuplicateIdentify | ListName | RecallRecognize | ReproduceTell |
| **Understanding** | CalculateCategorizeClarifyClassifyCompare | ConcludeContrastDescribeDiscussDistinguish | ExemplifyExpandExplainIllustrateInfer | InterpretLocateMatchOutlineParaphrase | PredictReportRestateSummarizeTranslate |
| **Applying** | Carry outClassify | DemonstrateExecute | IllustrateImplement | PracticeSolve | UseUtilize |
| **Analyzing** | AppraiseAttributeCompareContrast | DeconstructDetectDifferentiateDiscriminate | DistinguishExamineFormulateInfer | IntegrateOrganizeParseRelate | SelectSequenceStructureTest |
| **Evaluating** | AppraiseCheckCoordinate | CritiqueDefendDetect | DisputeJudgeMonitor | PrioritizeRateReconstruct | SelectSupportVerify |
| **Creating** | ChangeCombineCompile | ComposeConstructCreate | DesignFormulateGenerate | HypothesizeImproveInvent | PlanPredictProduce |

**Writing Intended STUDENT Learning Outcomes Statements**

Intended student learning outcomes are statements that describe the desired learning that students should have acquired and should be able to demonstrate at the end of a program of study. They identify what students should know and be able to do as a result of completing their particular degree programs. Consequently, statements of intended learning outcomes should clearly articulate the intended knowledge, skills, abilities, and competencies that characterize the essential learning required of a graduate of a program of study.

**How to Write Intended Student Learning Outcomes**

Statements of intended student learning outcomes specify both an observable action on the part of the student and the object of that action. In addition, they also may include criteria for acceptable performance and/or other modifiers of the action or object of the action.

Consequently, in writing intended student learning outcomes, it may be useful to begin each learning outcome statement with “***Students will be able to***...,” followed by an **appropriate verb** relating to the desired action or performance associated with the intended cognitive level (e.g., using Bloom’s Taxonomy and the sample verbs above), and ending with the **object of the statement** describing the business or business-related learning that students are expected to demonstrate through the action or performance. In addition, learning outcomes statements may also include modifiers that specify standards, conditions, or criteria for acceptable performance or that further clarify or elaborate on the targeted business or business-related learning.

**Note**: The verb that is chosen for intended learning outcomes statements will help to focus on exactly what is to be assessed and to identify the appropriate tools, instruments, and metrics that can be used to assess the extent of the intended learning.

*General Structure of Intended Student Learning Outcomes*

Alternative formats for intended learning outcomes statements:

1. **Students will be able to** + **verb** (desired action or performance) + **object** (business or business-related learning) + **optional modifiers** (performance criteria/conditions or targeted learning descriptors).
2. **Students will be able to** + **verb** (desired action or performance) + **optional modifiers** (performance criteria/conditions or targeted learning descriptors) + **object** (business or business-related learning).

*Examples of Intended Student Learning Outcomes*

1. **Students will be able to identify the principal concepts and theories in the functional areas of business**.

In this example:

* We begin with the suggested phrase “**Students will be able to**...”
* **Verb** = identify
* **Bloom Level** = remembering
* **Object** = the principal concepts and theories in the functional areas of business
* **Modifiers** = none

**2. Students will be able to integrate legal and ethical principles in business into responsible leadership decisions.**

In this example:

* We begin with the suggested phrase “**Students will be able to**...”
* **Verb** = integrate
* **Bloom Level** = analyzing
* **Object** = legal and ethical principles in business
* **Modifier** = into responsible leadership decisions

**3. Students will be able to formulate innovative management strategies using a triple-bottom-line approach.**

In this example:

* We begin with the suggested phrase “**Students will be able to**...”
* **Verb** = formulate
* **Bloom Level** = creating
* **Object** = innovative management strategies
* **Modifier** = using a triple-bottom-line approach

**4. Students will be able to explain in the context of strategic planning and decision making the intercultural dimensions of management.**

In this example:

* We begin with the suggested phrase “**Students will be able to**...”
* **Verb** = explain
* **Bloom Level** = understanding
* **Modifier** = in the context of strategic planning and decision making
* **Object** = the intercultural dimensions of management

*Verbs to* ***Avoid*** *in Writing Intended Student Learning Outcomes Statements*

In order for intended learning outcomes to provide a useful basis for developing appropriate measures and instruments for assessing student learning, they must contain verbs that describe observable, measurable, and achievable actions and performance levels. Consequently, verbs that represent actions or concepts that are difficult or impossible to measure should be avoided. For example, the following verbs should not be used in writing intended student learning outcomes:

|  |  |
| --- | --- |
| * Appreciate
 | * Comprehend
 |
| * Be aware of
 | * Know
 |
| * Be familiar with
 | * Learn
 |
| * Believe
 | * Understand
 |