



- Performance Analysts use them as part of assessing on-the-job performance, and evaluating the progress and/or success of learning interventions, and preparing competence or performance development plans. In this case, the Learning Objectives/Performance Objectives relationship is clear.
- For Training or Learning organizations, some of your competitors may even use them to evaluate your learning offerings against their own, to help them decide how to successfully compete with you.

**When:** Use good Learning Objectives during learning design; content prioritization; estimating development and delivery time; evaluating alternatives; market positioning and sales; workshop startup (to manage expectations); topic evaluation; post-learning evaluation of the learning experience; post-learning evaluation of the learner's application of the workshop, and finally, when fine-tuning the post workshop Competence Development Plan to continue improvements.

**Where:** Learning Objectives are location-neutral; the same measures are useful in online vs. facilitator-led, co-located versus virtual, one culture, versus multi-cultural or multi-national. Of course, the methods of instruction will vary in each of these cases; the Learning Objectives stay the same.

**How:** Given the above information, *How* to write, evaluate, and/or improve a Learning Objective is the purpose of the rest of this article. To write a useful Learning Objective, write a sentence that identifies what the participants will be able to do after the learning experience. Begin with the right verb, followed by a noun phrase, with adjectives and other words added to give clarity. Follow with the words needed to provide context, amplitude, measurement and/or performance. Often that can include an additional noun/verb phrase.

**Example:**

Write a meaningful Learning Objective that identifies what the Learner will be able to do, after the class.

Verb	Noun phrase	Measure or performance	Context
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**Writing or Evaluating Learning Objectives: Categorizing the Verb**

**The ASK Model:** Classic learning design uses the ASK model (also known as the KSA model) to evaluate learning, and identify interventions. The letters stand for Attitudes, Skill, and Knowledge. Each part (or objective) of a learning experience can affect one or more of these measurable ASK attributes. Let's take a simple example: We begin with an *implied* statement, "Upon completion of this session, the participant will be able to:" *Identify the five Units of the aPRO Assessment model.* Does that statement reflect knowledge, skill, or attitude? You probably responded, *knowledge*. (Note: *aPRO* is asapm's Performance Rated Organization standard, a PM organizational assessment process for the USA. You can learn about *aPRO* at: [www.asapm.org](http://www.asapm.org).)

**Good!** Then, how about this Learning Objective: *Complete an assessment interview, recording the results on the aPRO information collection form.* Which ASK attribute is this? Here you probably said *skill*. It is a skill because the verb suggests **you can do something**, not just repeat memorized facts. That is a key difference between knowledge and skill. But, we cheated: In addition to the leading verb *Complete*, we added the gerund *recording*. That may mean there are two parts to learn, making this a more-complex Learning Objective.

What would an *attitude* statement look like? Attitudes are useful indicators of whether the learner is likely to apply the learning in their job. Attitudes can be more difficult to evaluate because they often pair a skill or knowledge statement with an attitude statement. *Example: Reflect why the aPRO model offers an advantage for both professional assessors and their client organizations, compared to other options.* Other attitude verbs, in addition to *reflect*, might include *acquire*, *exemplify* or *realize*.

We use this ASK model in Learning analysis, design and development, and also in our PM Competence Model, establishing Knowledge, Skill, and Attitudes (including appropriate Behavioral Skills) as the first three

levels of the ladder moving up to PM Performance Competence. The result: There exist clear continuity and connectivity between classroom learning and on-the-job experience, resulting in measurably improved individual *and organizational* PM Performance. Is that not what you seek in the first place?



### Benefitting from Bloom's Taxonomy:

Bloom's landmark work was published in the 1950s, and for over 50 years was the foundation for effective child-learning. The 2001<sup>2</sup> update made it **excellent** for adult learners. Bloom identifies the relationship between the choice of verb and one of six increasingly abstract levels of knowledge. The six levels: Remember, Understand, Apply, Analyze, Evaluate, and Create (see our modified five-level table below).

While these are considered to be levels of knowledge, at the last three (highest) levels they begin to "feel" more like skills, and beyond. Bloom's original work identified three different types of learning: Cognitive, Affective (interpersonal skills), and Psychomotor. We focus on the Cognitive learning types (we have found them to work very well for most Affective learning, too). And how does Bloom 2001 relate to our Learning and Performance Objectives model? ***It is a key part:*** The higher the verb on the scale, the more intense the learning, and the more time and variety of learning interventions needed to deliver it. Thus, detecting is harder than identifying; integrating harder than clarifying. Which is harder: Contrasting or discriminating?

***Why the Verb is Important.*** The verb identifies the action. What the learner *should be able to do*. The verb drives the learning design, and even helps identify the extent that exercises, discussions, role plays or simulations are needed. Classic *talking head* (pedagogical) training, where the facilitator talks, learners take notes, and comprehension is demonstrated in tests, is at the low, basic knowledge end of the ASK model. It also sits at the low end of Bloom's six levels. Perhaps it is good enough for an orientation training, but no contribution whatsoever to improved PM performance. Especially because of that afore-mentioned half-life of knowledge not applied: ***Two-to-six weeks*** (depending on the source cited).

### Cognitive Learning Levels, Their Verbs, and Actions Demonstrated at Each Level

Use the table below to evaluate the verbs in Learning Objectives. Note the escalation in the power of the verbs groups.

Cognitive Dimension	Nature of the Learning Objective Verb
<b>1. Remember</b> recognize, identify, describe, recall, retrieve, list, repeat, name	<ul style="list-style-type: none"> <li>• observation and recall of information</li> <li>• knowledge of dates, events, places</li> <li>• knowledge of major ideas</li> </ul>
<b>2. Understand</b> interpret, classify, categorize, summarize, discuss, compare, contrast, explain	<ul style="list-style-type: none"> <li>• demonstrate an understanding of the information</li> <li>• grasp meaning; translate knowledge into new context</li> <li>• interpret facts, compare, contrast</li> <li>• order, group, infer causes; predict consequences</li> </ul>
<b>3. Apply</b> execute, implement, use, illustrate, demonstrate	<ul style="list-style-type: none"> <li>• use information, or organize parts</li> <li>• use methods, concepts, theories in new situations</li> <li>• solve work problems using the new skills or knowledge</li> </ul>
<b>4. Analyze and Evaluate</b> differentiate, organize, integrate, deconstruct, monitor, check, prepare	<ul style="list-style-type: none"> <li>• seeing patterns, recognition of hidden meanings</li> <li>• identification of components</li> <li>• generalize from given facts; predict, draw conclusions</li> <li>• relate knowledge from several areas</li> </ul>
<b>5. Create</b> generate, hypothesize, plan, design, produce, construct, estimate, complete	<ul style="list-style-type: none"> <li>• compare and discriminate between ideas</li> <li>• assess value of theories, presentations</li> <li>• make choices based on reasoned argument</li> <li>• verify value of evidence; recognize subjectivity</li> </ul>

The table above is our adaptation of the 2001 update of Bloom's 1950s Taxonomy. In classroom training, it may be difficult to assess or validate grasp beyond level 2 or 3. Delivering Levels 2 and 3 usually requires a topical exercise, role play, simulation, or case study application of each Learning Objective's content. This is why our measurement model includes use of Exercises. We have combined levels 4 and 5 from the Bloom 2 (our shorthand for the 2001 version) analysis, because our experience in using them shows they are similar.

**Noun Phrases Are Scope Measures:** The role of the noun phrase, or *objects to learn* (as we also call them) is to help identify the Scope of each learning experience. Given our insistence on clear verbs, if you also have clear nouns in your Learning Objectives, you have an excellent measure of the scope of the effort needed to create the learning experience, **and** of the effort needed to actually experience it.

So, as alluded to above, that scope measure is useful for estimating the time to develop the learning, and the time to deliver it. Some Learning Objectives have multiple nouns. Part of understanding the Scope of learning is the number and level of abstraction of the nouns or learning objects to cover. Of course, those nouns must be similar or related in some way, or they should be part of a different Learning Objective.

**Level of Abstraction:** Learning Objective abstraction reflects whether the noun is a simple, concrete fact, or reflects high concept (or is somewhere between). A single Learning Objective could either relate to one fact, to one formula, to a multi-step process, or to a manifesto for improved PM performance.

**Examples:**

- Cite the ratification date of the US Constitution (low abstractness, or *Concrete*).
- Explain the major tenets of the US Constitution (high abstractness, or *Conceptual*).

The reader will note that we cheated again; the second example has a higher-scoring verb than the first. Regardless, the second example, involving a higher level of abstraction, is a more-difficult Learning Objective for which to develop content; to deliver, **and** to measure or assess. A simple workshop may be filled with concrete nouns or subjects; however, some learning requirements are very conceptual or abstract.

**Bringing together Scope and Level of Abstraction:** Use the table below as a guide to determine the Complexity Rating of any Learning Objective, based on the number of noun phrases or objects to learn (Scope), and their level of Abstraction. We call the outcome a Complexity rating. This may look familiar to those who have seen similar tables in software estimating. In fact, we have used this approach to estimate the development of software, orbiting satellites, and course development and delivery for contract proposals for over 30 years.

Complexity Rating Guide			
Number of Nouns or Learning Objects (at right), vs. their Level of Abstraction (below)	Number of Nouns or Objects to Learn		
	Total < 3	Total < 7	Total 7+
Low (Concrete)	Simple	Average	Complex
High (Conceptual)	Average	Complex	<b>High risk!</b>

**Complexity Cautions:** If a Learning Objective exceeds the guideline counts above, or falls into the high risk area, you should reduce the learning session complexity by breaking it into multiple Learning Objectives. The Noun or noun phrase is a measure of complexity, but, just as with project risk management, it is usually better to identify complexity **and eliminate it**, rather than just measure it, then ignore it. And a key point: In evaluating the *Objects to Learn*, beware of phrases like "for each", as in, "*Identify the key deliverables for each phase of the life cycle*", as these are compounding statements.

Or, one true example that appeared on a Request for Proposal for training development that we bid on, "*Identify the key deliverables for each project role, for each phase of the life cycle.*" In preparing our bid, we pointed out the multiplier problems with this objective, clarified the intent, then broke it into multiple learning objectives. We won the contract, but in cases like this we'd rather **no-bid** than deliver an immeasurable result.

## A Bit of Practice

When we originally wrote this article, a global IPMA (International Project Management Association) team was working to adapt an existing five-week Project Management curriculum for web-based use by IPMA members, member associations, and infrastructure project managers from emerging nations. Part of this project included evaluating the existing curriculum's Learning Objectives. We reviewed their accuracy, compared to what the curriculum delivers, and evaluated the difficulty of adapting the Learning Objectives (and the resulting curriculum) to the special strengths of the IPMA approach. This approach has long-included, hard to measure strengths, such as the impact of Behavioral or Interpersonal Skills upon project success. The IPMA approach also includes the project's strategic alignment with the needs of the organization that it serves.

This PM curriculum was a massive project when it was first developed, and it has already benefited tens of thousands. Yet, some aspects still have room for improvement. We'd bet you can apply what we discussed above, to improve the following sample Learning Objectives, selected from a range of curriculum modules. Note that we begin with easy ones, and then get more complex. And, it is fine to state that an objective is fine as-is:

- A. Describe what is meant by a project, project management, the project life cycle, and a systematic process of project management.
- B. Given a project analysis report, analyze its content and, using a worksheet, summarize the key parameters of a project, including objectives, deliverables, budget, schedule, and organizational relationships.
- C. Formulate, in writing, guidelines for deciding under what conditions the project manager should bring to management's attention significant changes in assumptions about the project or its environment that might adversely affect project implementation or project outcomes.  
(*Note: The above three Learning Objectives were just from the first module of the five week curriculum.*)
- D. Name the six "feasibilities" and describe each one.
- E. Recommend a revised project charter, if appropriate, that describes the project's organizational structure and the roles and responsibilities of the project manager, project staff, project management core team, and functional departments.
- F. Define teambuilding and describe four basic elements of teambuilding.

## A Bit of Common Sense

How did you do? What levels were the verbs? How was the scope (noun) complexity? Which Learning Objectives need work? How would you improve them? In this curriculum, we noted that some modules (most are 3.5-4 hours) had a dozen or more Learning Objectives. Might there be a risk of Learner overload? Probably!

**Extending the theme of "common sense."** In case you missed a key implication from our discussion above: *Learning Objectives are the measurable Requirements for any learning experience.* You wouldn't plan and execute a project without good Requirements, would you? You wouldn't consider the Requirements to be unnecessary, bureaucratic overhead, would you? You wouldn't try to measure the scope of a project without Requirements, would you? This insight may help those who, to this point in this article, object to the fuss we make over useful, measurable, accurate Learning Objectives: We can use good Learning Objectives as the scope measure to estimate (and bid, and manage) workshop development.

Shown below is an analysis of our objectives, using our Learning Points workshop development and delivery estimating model. We have used this tool<sup>3</sup> (originally developed in VisiCalc) for over 32 years.

Learning-Objectives-Based Estimating of Workshop Development				9 Learning		
Project:	Sample PM Class Learning Objectives	Cost/hour	Quest for Better Estimates®			
Date:		\$100	©1997,2002,2006 ProjectExperts			
Version: Record this estimate's version #, timing in the project, and major changes since the last estimate.						
<input type="text"/> <a href="http://www.projectexperts.com">www.projectexperts.com</a>						
A. Identify the Scope Components		Complexity of Object to Learn			Class	Hours
Module or Section, and the Learning Objectives		Simple	Average	Complex	Hours	of Effort
<b>Learning Objective 1</b>					0.40	5
A. Describe what is meant by a project, project management, the project life cycle, and a systematic process of project management.		Level 1	1			
		Level 2				
Exercises						
<b>Learning Objective 2</b>					1.90	38
B. Given a project analysis report, analyze its content and, using a worksheet, summarize the key parameters of a project, including objectives, deliverables, budget, schedule, and		Level 1				
		Level 2		1		
Exercises			1			
<b>Learning Objective 3</b>					1.90	38
C. Formulate, in writing, guidelines for deciding under what conditions the project manager should bring to management's attention significant changes in assumptions about the		Level 1				
		Level 2		1		
Exercises			1			
<b>Learning Objective 4</b>					0.40	5
D. Name the six "feasibilities" and describe each one.		Level 1	1			
		Level 2				
Exercises						
<b>Learning Objective 5</b>					0.70	8
F. Define teambuilding and describe four basic elements of teambuilding.		Level 1				
		Level 2	1			
Exercises						
<b>Learning Objective 6</b>					2.50	54
G. Match these terms with their definitions: • control period • compon-ent • decision gate • deliverable ...		Level 1				
		Level 2		1		
Exercises				1		

Interestingly, as we moved from Instructor-led training in the early 1980s, to adding Video-based training in the late 1980s, to adding Web-based training in the mid-1990s, the only changes we needed to make has been to update our development-hours-per-Learning-Point metrics for different delivery media.

### Analysis

Clearly, rather than estimating how much time it will take to deliver some of these Learning Objectives, we should improve them before beginning workshop development or modification. Those objectives with red numbers on the model above (in the Complex column) need special attention.

**A Side Note:** In the tuning panel and summary results below, the model shows the estimated class duration, the classroom hours, and the hours of effort and estimated costs needed to develop this content. Pretty cool, huh? Those who are interested in this Learning Points model can contact us to find out more about it.

B. Tune the Model		Simple	Average	Complex			
Hours of training time per Learning Obj. Level 1		0.20	0.40	0.90			
Hours of training time per Learning Obj. Level 2		0.35	0.70	1.50			
Hours of training time per Exercise or Case		0.25	0.40	1.00			
Hours of <b>development time</b> per Lrng. Obj. hour		8	12	20			
Hours of <b>development time</b> per Exercise hour		12	20	24			
<b>D. Totals</b>	Class Duration (hours, days)	<b>8.0</b>	<b>1.1</b>	Cost	<b>\$23,088.00</b>	Effort	<b>230.9</b>

Of course, there is far more to developing effective PM Learning than developing, then estimating, good Learning Objectives. But we find too many cases where the offerings look more like *leaning objectives*—the classes apparently depend on more than good design and clear measurements for their success. One additional topic, for more discussion at some later date, is the shocking difference between Pedagogical training and Andragogical training—and the fact that too much PM Training today mistakenly uses the former approach.

The distinction: Pedagogical training is the way you train children, and is practiced all the way through Doctoral programs in most colleges and universities. Andragogical training, which is more appropriate for adults and those with life experience, is all too rare in the PM Training world. But, that is a topic for another day.

## Bloom Sidelight

Since we wrote the original version of this article, others have discovered the power of the 2001 update of Bloom's Taxonomy of Learning. Rex Heer, of Iowa State University's Center for Excellence in Learning and Teaching, has built a very interesting active model, that shows the Bloom Cognitive Dimensions, compared to the level of Knowledge (the Knowledge Dimension). See his useful model at his school's website.<sup>4</sup>

## Summary

The purpose of this article is to help you improve your use of Learning or Performance Objectives, especially in Project and Program Management learning. Better Learning Objectives can result in improved learning experiences. Improved learning experiences can result in improved PM Performance. To complete this "critical chain:" Improved PM Performance results in increased organizational success—which is the purpose of our discipline.

And, we have shared our Learning Points estimating model to illustrate how good Learning Objectives also help to estimate learning development time and costs, and actual classroom time needed to convey the knowledge. This can be a key beginning-point to improved performance. Unfortunately, there are too many variables (the unknown-unknowns) to estimate the resulting Time To Performance, every knowledgeable Manager's goal.

For Managers, and Project and Program Managers: If you intend to improve your organization's PM Performance, classroom training *can* be a key part of the process. But it is just the beginning of the Learning process. The real learning occurs on the job, in the real world. Poor Learning Objectives help no one; lists of topics instead of clear learning objectives are even worse, no matter how catchy the keywords. ***Demand better Learning Objectives***, as the best way to evaluate your options for improving PM Performance, and then measure your results.

## About the Author



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A Project Management practitioner since 1970 and PM consultant since 1982, he focuses upon improving Enterprise, departmental, or project team PM competence, efficiency, and Performance. Mr. Goff speaks at industry events, offers coaching and consulting services, and presents workshops of great interest to Executives, Managers, Project Managers and Team Leaders, technical staff, and individual contributors.

His Project Management tools and methods are used by Government Agencies, Enterprises and other Consultancies on six continents. His workshops have been licensed by other consultancies to enhance their own offerings, by large businesses for their internal use across multiple nations, and by government agencies. He combines his PM Process insights with wide-ranging experience in projects and programs, and with sensitivity for the human aspects of projects. The result: Measurably increased **PM Per4mance™**: Personal, Project, Program, and Portfolio Performance.

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## References

- <sup>1</sup> PM Per4mance: The number 4 relates to personal, project, program and portfolio performance, our four areas of focus.
- <sup>2</sup> Anderson, Lorin W.; Krathwohl, David R. et. al. *A Taxonomy for Learning, Teaching, and Assessing. A Revision of Bloom's Taxonomy of Educational Objectives*. Addison Wesley Longman, 2001; ISBN 0-8013-1903-X (soft cover).
- <sup>3</sup> Quest For Better Estimates is a simple Excel tool for performing very early estimates (from Portfolio through Requirements) for Information Technology projects. While the tool is relatively simple, the concepts behind it are complex. The Learning Points estimating model is just one of ten parts, or approaches, used in the tool.
- <sup>4</sup> See Rex Heer's useful model at [www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/](http://www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/). Or, search on his name, and Iowa State.

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