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To Imagine a Verb:

The Language and Syntax of Learning Outcomes Statements

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Table of Contents

About the Author . . . 2

Abstract . . . 3

To Imagine a Verb: The Language and Syntax of Learning Outcome Statements. . . 4

- What Does This Essay Do? . . . 4
- Part I: Departures . . . 5
- Part II: Principles and Rules Governing Learning Outcomes Statements . . . 7
- Part III: Preclusions . . . 13
- Part IV: Productive Active, Operational Verb Groups . . . 17
- Part V: Syntax, Samples, Proddings, and Public Pressure . . . 20

References . . . 23

NILOA

- National Advisory Panel . . . 25
- About NILOA . . . 26
- NILOA Staff . . . 26
- NILOA Sponsors . . . 26

Abstract

To Imagine a Verb: The Language and Syntax of Learning Outcome Statements

This essay provides language-centered principles, guidelines and tools for writing student learning outcome statements. It is focused on syntax and semantics, and takes considerable issue with both the lack of such guidance in earlier literature and specific words, phrases, tenses, voices, and abstraction in diction levels, along with ellipses and tautologies, that one reads in extant attempts to set forth such learning outcomes. While placing the verb at the center of all student learning outcomes, it distinguishes between active and operational verbs, voting for the latter on the grounds that they are more likely to lead, naturally and logically, to assignments that allow genuine judgment of student performance. It offers, as more constructive cores of student learning outcomes, 20 sets of operational verbs corresponding to cognitive activities in which students engage and faculty seek to elicit. Lastly, it advocates strategies for involving umbrella national academic organizations and accrediting organizations in realizing its vision.

To Imagine a Verb: The Language and Syntax of Learning Outcome Statements

Clifford Adelman

Guides, analyses, and templates for writing outcome statements in higher education have been around for a long time, though not all of them focus specifically on *student learning*. The Web site assessmentcommons.org at North Carolina State University lists hundreds of sources and documents on the territory, emanating from individual institutions, programs, academic units, discussion lists, threads, journals, resource centers, testing companies, accrediting agencies, and consultants who will tell you everything (just ask!). This extensive resource covers both traditional and fugitive literature. An account of commonalities and divergences across this substantial universe would be a major research undertaking, requiring considerable discipline.

We, in the US, are not the only folks in the world who try to write learning outcomes statements, and examples of both success and failure can easily be found in other nations.

The author of this piece speaks from some experience in this regard. "Tuning," for those unfamiliar with the undertaking, is an effort by faculty in specific disciplines to craft a template of subject-matter reference points and student learning outcomes in their fields. It started in Europe in 2000, came to Latin America in 2005, to the US in 2009, and has since been seen in China, Africa, Central Asia, and Russia. Dozens of disciplines and thousands of faculty speaking two dozen languages have been involved. The author's experience is reflected in a published analysis of student learning outcome statements confined to 40 English language Tuning and allied documents from the European Tuning operation, the UK's Quality Assurance Agency, Tuning USA, and the former Australian Learning and Teaching Council (Adelman, 2014a). Only 40, read line-by-line for content and language analysis, consumed a year, but the effort served to motivate the production of this particular document for NILOA. I will be drawing from notes accumulated over the course of this project, in the process reminding readers that we, in the US, are not the only folks in the world who try to write learning outcome statements, and that examples of both success and failure can easily be found in other nations (for a classic and brutal assessment of early Tuning learning outcome statements in Europe, see de Bruin, *et al* 2007).

The effort also revealed the folly of trying to cite scores of model attempts along parallel lines, since the authors and/or sources for particular variations who are not mentioned will be insulted—and they number in the hundreds. Thus, while this venture will mark a few references, it is not my intention to cover the universe, and not my intention to aggrieve anyone, though there is much with which to quarrel in these undertakings. Many of the brief paragraphs below cite observations, rules, and honorific examples made previously by a variety of authors; many of these points contradict other observations and rules and cite frankly horrific uses of language in learning outcome statements.

What Does This Essay Do?

First, sets forth the ways in which its approach to writing learning outcome statements departs from traditional paths in the literature.

Second, sets forth some principles underlying the nature and language dynamics of learning outcome statements. One might also label these "rules for writing outcomes." Some of these principles are double-edged, i.e. they also serve as exclusionary, thus over-lapping the next section.

Third, indicates and justifies the exclusion of specific words, phrases, and syntax in learning outcome statements.

Fourth, offers 20 sets of operational verbs to be used as governing engines of learning outcome statements, and notes how these fit what faculty expect students to do.

Lastly, calls for more constructive contributions from both disciplinary associations and accrediting bodies than we presently see, and suggests concrete ways for eliciting those contributions.

Throughout, the author invites readers to add to and/or modify both exclusions and inclusions. In other words, this essay seeks to prod participation in an iterative undertaking. It is not intended as a final pronouncement, even on its defined territory.

The principal—and not secondary—subject of this essay is language, and its primary purpose is to guide writers into thinking very carefully about the semantics and syntax of their learning outcome statements.

Part I: Departures

The sections below indicate the following departures from traditional paths in the extant learning outcomes literature:

> The principal—and not secondary—subject of this essay is language, and its primary purpose is to guide writers into thinking very carefully about the semantics and syntax of their learning outcome statements. Typical of many similar voyages into the world of learning outcomes, Stephen Adam's excellent introduction to the topic (Adam, 2006), tells us a great deal about the purposes, nature, and contexts for learning outcome statements, particularly in the environment of Bologna Process reforms in Europe, but balks at the door of the words and syntax we use in attempting to write them. Like many others, Adam confesses to the difficulty of writing these statements, but does not offer semantic or syntactic advice. This essay is both prescriptive and proscriptive in language matters. It is not written to defend learning outcome statements: they are a given.
>
> I focus statements of student learning almost wholly on the cognitive domain. Key aspects of the psychomotor enter, but the affective domain is out of bounds on the grounds that we do not award degrees based on what is usually covered in affective growth and behavior, and that students enter higher education at different points in life, with corresponding variants in the status of their personal development trajectories. Institutions, higher education systems, and organizations

are free to write such affective-oriented statements, of course, but technically they are not "learning outcomes" as much as they are personal and spiritual growth observations that may or may not have anything to do with a student's experience in a higher education setting. Unlike cognitive development, the affective is more likely to be shaped by experience and human interactions outside educational settings, e.g. by family, peers, work, romance, play, religion, community life, indeed, "life" itself. On-line students, after all, will also change in affective domains without any contact with what we would call a "higher education setting."

When it comes to arranging illustrative sets of operational verbs to use in student learning outcome statements, unlike most extant guides and maps, I do not use Benjamin Bloom's six meta-categories (Bloom, 1956, 1982). While Bloom's work is a grounding for all of us, in the matter of language I am far more governed by the methodologies and categories of Natural Language Processing (Levin, 1993) and its analogues. So if other analysts (e.g. Fry et al, 2000; Kennedy, Huland, and Ryan, 2005) wind up with six groupings of operational verbs in English, paralleling Bloom, I posit 20. We'll see what that means, how one gets to that point, and what one does with it.

While there is an internationalist dimension to this project, including (purposefully) citing documents from non-U.S. sources, I do not include consideration of languages other than English. In synthetic languages (which English is not), e.g. German, the syntax of learning outcome statements will change; in a language with more than one verb conjugation system, e.g. Russian, operational verbs may cluster differently; in languages with a limited number of inflections and no prepositions, e.g. Mandarin, the very notion of voice becomes ambiguous. This is an important issue for the one out of eight U.S. higher education students who comes from a non-English-speaking background, and for whom our traditional ways of expressing learning outcomes are sometimes more difficult to grasp than we intend them to be. One could continue, in fact, at length, but that would take us far afield.

I exclude the verb "able" and the noun "ability" from all learning outcome statements, thus running against the grain of the bulk of such statements as one finds through the links provided by assessmentcommons.org, let alone those found in analogous English language documents originating in the UK, Ireland, Canada, and Australia, for example. I do so based not only on Bloom's own work, but also the core analyses of OECD's DeSeCo (Design and Selection of Competencies) project (e.g. Carson, 2001; Rychen, 2002; Weinert, 2001), a very rich literature that is too often overlooked by higher education analysts. See Part II, Exclusions, below, for a full explanation. Expunging the default "ability" syndrome changes the way many

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student learning outcome statements are written. "Able to" and "ability" cannot be written off as white noise: there are some serious issues here, and we will return to them.

While virtually all excursions onto the field of writing student learning outcomes regard "active verbs" as the required fulcrums of such statements, I hold to a difference between "active" and "operational" that is rarely noted. In this context, an operational verb references student actions that are directly observed in external contexts and subject to judgment. For example, the stand-alone "recall" references an *internal* cognitive dynamic. It is *not operational*. One does not know that a student has "recalled" anything until the act of memory is externalized in another action. The same can be said for "recognize," "develop," "value," and "relate," for example. While some might well disagree with my illustrative selections, the approach to writing learning outcome statements set forth here is confined to operational verbs. Yes, some merely "active" verbs somehow sneak in, but "operational" rules the roost.

The verb is the center, fulcrum, engine of a learning outcome statement...It helps to remember that verbs refer to events, not to states, and events are specific actions.

With these lens-settings and qualifications in mind, let us proceed to some principles for the construction of student learning outcome statements.

Part II: Principles and Rules Governing Learning Outcomes Statements

When you add their emphases on complete sentences and sentence order, operational verbs, voice, semantic status, and diction level you have constructions that students, our principal subjects, instantly grasp. The configurations that result are transparent.

1. A learning outcome statement is a complete, Kantian sentence: it has forms (operational verbs) and intuitions (concrete nouns). It is declarative, not imperative (unless you want the outcome to be a criterion of a degree), and never subjunctive (learning outcomes are not potential—they are actual). Forms without intuitions, Kant wrote, are empty; intuitions without forms are blind.

2. Nonetheless, the verb is the center, fulcrum, engine of a learning outcome statement. It helps to remember that verbs refer to events, not to states, and events are specific actions---in this case, by the student. As the American Society for Civil Engineering emphasizes, and with reference to Bloom's *Taxonomy of Educational Objectives*,

   > The fundamental premise of Bloom's taxonomy is that an educational objective can be referenced to a specific level of cognitive development through the verb used in the objective

> statement. The use of measurable, action-oriented verbs linked to levels of achievement is beneficial in that the resulting outcome statements can be assessed more effectively and consistently. (ASCE on-line flyer, received Jan. 8, 2013)

The relationship is more than "beneficial": it is mandatory. Thus, for every verb-driven learning outcome statement you write, offer three different examples of assignments that *flow logically* from the governing verbs of the statement, each assignment from a different area of the delivered curriculum. You will find such a command in the best of extant writings on our topic, e.g. Ewell, 2013. As Ewell would agree, the minute one offers a concrete assignment that flows from a learning outcome statement faculty have an "Ah, hah! So that's what they mean!" moment. I would add a tougher line: if you cannot offer such illustrations, you don't have a learning outcome statement. While they may not cover everything an instructor wants students to know and do, the "Sample Tasks for Demonstrative Competencies" of the American Historical Association's Tuning Project provides an illuminating set of reference points in assessment prompts governed by verbs such as "describe...generate...explain...demonstrate...find...narrate...present and analyze...select...identify." (AHA, 2015, p. 23). As the reader will observe, that's pretty close to what I have in mind for the writing of outcome statements themselves.

> 2a. It follows that, seen from the engine of the verb, a statement of learning outcome is incomplete without examples of assessments/assignments designed to elicit student behaviors that allow the degree of learning to be judged. The 2014 *Degree Qualifications Profile* (Adelman, Ewell, Gaston, and Schneider, 2014, and occasionally abbreviated here as DQP) includes illustrative cases of this key relationship. The DQP is very explicit as to the verbs it rejects "because these do not describe discrete activities that lead directly to assessments" (p. 5). The prime rejected verbs are marked in Part III below. Some rejections are repeated in different contexts. Given the seriousness of language matters, this repetition does not hurt.

> 2b. The verbal engine of a learning outcomes statement can also be expressed in gerunds, e.g. from the American Historical Association's Tuning Project statement on student mastery of methodology through "gathering, sifting, analyzing, ordering, synthesizing, and interpreting evidence" (AHA, 2015, p. 22) or from The *Degree Qualifications Profile*, "Addresses a familiar but complex problem in the field of study by *assembling, arranging* and *reformulating* ideas, concepts, designs and techniques" [italics mine] from which the following illustrative assignment springs:

Seen from the engine of the verb, a statement of learning outcome is incomplete without examples of assessments/assignments designed to elicit student behaviors that allow the degree of learning to be judged.

> Prepare an exhibit of not more than five discrete 2-dimensional pieces illustrating the range of chaos in color, drawing on at least two of the major color theory sources, e.g. Goethe, Kandinsky, Chevruel, in a 3-5 page catalogue of your exhibit, and include in the catalogue a section discussing the ways chemical and digital technologies have changed both the palette and range of color chaos. You are not required to present in the same 2-dimensional medium across all five pieces. The class exhibits will be displayed from April 1 - 30. It is now January 15. (*Degree Qualifications Profile 2014,* p.34).

To the core verbs, "assemble," "arrange," and "reformulate"—and their gerundive forms—one could add "creating," "analyzing," and "illustrating," and would have virtually all of the operational verbs that drive that assignment and others like it *in fields other than studio art*.

3. A learning outcome statement can be applied to a formative task (competence) or a Summative judgment (proficiency). From a holistic perspective, a set of the former without a parallel set of the latter is incomplete, though the literature usually treats them separately. For a prime example, *The Degree Qualifications Profile* posits a set of summative proficiencies and is explicit in by-passing formative competencies. I should note that this presentation will not wander onto the foggy field of "competence," as I have found myself in that fog more than once, e.g. Adelman, 2014b.

4. An outcomes statement indicates the status of learning: is it something the student already possesses? something the student develops? a mastery criterion? As noted above, the parallel forms of the verbs employed are declarative, subjunctive (though we don't use this voice in learning outcome statements, as stressed in #1 above), and imperative. Basic English grammar. But think of the following ontological dilemma: if the student already "possesses" a characteristic, is that characteristic an "outcome" of learning in a higher education program? The Germans run into this problem by using their verb, *besitzen* (have, possess), in too many of the outcome statements of their higher education Qualifications Framework (BMBK 2005), providing indirect justification for avoiding comparative linguistics in this outing. A true learning outcomes statement, while declarative and in the present tense, does not indicate a nominal quality the student holds *prior to* learning.

5. A learning outcome for students in institutions of higher education is demonstrated and is assessed only during the period when the student is a candidate for a credential awarded by that institution. The outcome is not something demonstrated after the student leaves the authority of the credentialing institution, and for obvious reasons: institutions of

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higher education do not follow students around in life, with cameras and recorders, to document subsequent behaviors that embody learning outcomes. This is a practical and temporal criterion. Unfortunately, many Tuning-type disciplinary learning outcome statements in professional fields, e.g. nursing, social work, and education, reference the behavior of individuals in professional settings long after they leave the institution(s) responsible for their learning. This is a difficult challenge because educators would like to say that their students are "prepared" to behave and demonstrate knowledge and skills in the manner indicated at later points in time.

6. A learning outcome statement written in English places its verb in the 2nd position of the sentence (no, not in the same way that German does), and the verb describes, discretely, what the student *does*. As noted again and again, the verb is what the student understands and what the instructor seeks. This is hardly a new guideline. But the principle is semantic as well, the diction level of the verb cannot be drawn from a dictionary of abstraction. Abstract verbs such as "appreciate" or "aware" do not describe anything that a student would understand as learning. "Awareness," for example, is basic consciousness, a term that marks a vague sense that something or somebody is present or moving or smiling or threatening, etc. We do not teach college students how to be conscious, and we do not award degrees on the basis of peripheral sensations or repetition of overheard fragments of information. We award degrees based on the basis of observable active engagements of the cognitive and/or psychomotor facilities. I challenge anyone to observe "awareness." And to say that a student is "aware of" developments in his/her field, for example, can be nothing more than "Oh, I heard somewhere that they are developing parallel programming, and somebody said it was to match parallel processors." Do we award degrees based on that kind of incidental, casual, and shallow "awareness"? I don't think so.

   Then, a verb such as "understand," also drawn from the dictionary of abstraction, doesn't tell you anything. It certainly doesn't tell students what they actually do to operationalize "understanding." Properly speaking, "understanding" is *not* a synonym for "knowledge," however much the two are related, and Bloom excluded it as "a single (unanalyzed) term" (Bloom et al, 1982, p. 15). "Understanding" is a cognitive process, one that brings into play enough operations such as description, inference, translation, testing, and visualization so as to add depth to the individual's "knowledge" of facts, relationships, formulas, etc. Why not describe to students what they are doing in their heads instead of pushing it under the rug with "understand"? Do students have any idea what "the student will understand" means? I doubt it.

7. The verbs in a learning outcome statement are written in the present tense, not in the future. A learning outcome is something the student

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demonstrates now, not next week. The past tense is admissible if the student is referred to as "the graduate" or its equivalent. In this principle, I depart from Adam's endorsement of traditional phrasing that puts learning in the past and its demonstration in the future: "on completion of the learning...the successful student will be able to..." (Adam, 2006, 2.2; please note that this document is not paginated). Setting the distorting "ability" aside, one is also lead to ask how such phrasing presents a learning outcome to all students, including those who may not be "successful."

8. Verbs describing a cognitive or psycho-motor operation act on something, i.e. they have a specific nominal context. The nominal context can be discipline/field-specific, e.g. error analysis in chemistry; an art exhibit in 2-D with 3 media. Field-specific statements are endemic to learning outcome statements in Tuning projects, but can also be used with reference to more generic degree-qualifying statements (though that is a more delicate task). After all, a nominal context can also be generic, e.g. a product such as a paper, a performance, a field-report, a laboratory report. Without these nominal contexts the student has no idea of what he/she is expected to produce. Without a nominal context you do not have a learning outcome statement.

9. In statements of learning outcomes under Tuning, discipline often drives the verbs invoked. For example, experimental science students *observe, measure, classify, test hypotheses, revise, modify, gather, synthesize, design, select, evaluate, record*, and *interpret*—a very impressive range of verbs that, in fact, describe what chemistry or biopsychology or physics or geology students do. On the other hand, students of formal science *prove, model, formulate, extract, translate* (from non-mathematical language to mathematical representations), *reason through algorithms, infer,* and *calculate* (well, these operations are common to experimental science, too, but in a supportive role). And in the world of the hackneyed term "teamwork" (to which we will return) students of music, dance, and drama, who work in ensembles of all sub-genres, *coordinate, consult, interact, adjust relationships/tone/modulation, rotate roles* (while not all these verbs are operational, if one wants to represent "teamwork" in student learning outcome statements it would be beneficial for writers to start with ensembles in the performing arts). One expects instructor prompts to a jazz quintet or dance troupe to include such verbs.

10. As a background tapestry to learning outcome statements, every discipline offers—or should offer—a "profile," i.e. a declaration of "this is who we are, this is what we study, this is what we do." Those profiles are loaded with the nouns (the intuitions) of learning outcome statements with field-specific reference. When a learning outcome statement reads, "the degree candidate will demonstrate a knowledge of X," or "the student will create and display X," or "the student will identify and

In statements of learning outcomes under Tuning, discipline often drives the verbs invoked.

analyze X" it is the X that is drawn from the profile. The more specific the X, the greater the likelihood that students will know precisely what they are expected to do with respect to *what*.

For example, to write in a Tuning-type statement that "the student demonstrates knowledge of European history" does not have the same directive force as "the student demonstrates knowledge of major political turning points in European history since the Renaissance." Or would one rather write "the student describes the distinctive features of organic chemistry" or "the student identifies and visually displays the functional groups of organic molecules"? The second option is far more defensible.

Some fields offer very complex profiles, jammed with nouns from the variety of territories addressed. Consider a Renaissance discipline such as architecture, in which the student is required to assemble knowledge and skills in the physics of materials, hydrology and soil science, the mathematics of stress, the economics of construction and impact, the anthropology of setting, the sociology of communities, the nature and psychological effects of color, sound, spatial relations, etc. on human movement and interaction (sometimes including labanotation), legal, zoning, and regulatory conditions, design history and theory, computer modeling, visual media, oral media, and on and on—and wrap these things together in design presentations that go before design studio juries. How extensive and detailed a set of Tuning-type learning outcomes an architecture school writes is bounded by the nouns of coverage. And what is true for architecture holds for other fields. In the course of research on Tuning statements, I found a range of 8 outcomes from the former Australian Learning and Teaching Council's profile of Geography (ALTC, 2010) to 167 for the Marketing statement of the Midwest Higher Education Compact's Tuning USA project (Midwest Higher Education Compact, 2013). Somewhere there has to be a happy median.

11. While learning outcome statements often include qualifiers of adjectives, adverbs and adverbial phrases, these are reference performance criteria set by individual faculty or departmental committees, i.e. the "how well" of performance, not the boundaries of performance itself. Examples include "persuasive...reasonable...suitable...creative...sophisticated... effectively...thoroughly...systematic...extensive...appropriately" (AHA, 2015b, pp. 20-21). Too abstract, you say? True, and that is one reason that this exploration leaves qualifiers alone. They are neither precluded nor prescribed. We can urge a greater degree of concretion, but stepping on the faculty turf of "how well," even to endorse committee-developed rubrics for "how well," lies outside of the basic syntactic form and diction of learning outcomes that is our subject. The *Degree Qualifications Profile* does not touch this territory, and on the same grounds.

While learning outcome statements often include qualifiers of adjectives, adverbs and adverbial phrases, these are reference performance criteria... the "how well" of performance, not the boundaries of performance itself.

12. An authentic learning outcomes statement does not rely on the proxies of course or credit or curricular segment completion, let alone the provision of opportunity to learn or Grade Point Averages, none of which have anything to do with the specifics of student learning. Unfortunately, such proxies are too frequent in accreditation requirements that institutions express explicit standards for learning. In examination of 47 accrediting association standards documents from 37 regional, national, and specialized organizations, I found only 18 that included standards for the type of student learning outcome statements described here, while 18 employed proxies, and 11 did not mention student learning at all (Adelman, 2014c). Clearly, accrediting bodies have to take student learning outcome standards more seriously, one of my concluding points in Part V below.

Having set forth these orientation points, what language do we not allow into the room? The text so far has provided some previews.

Part III: Preclusions

Let us begin with four third-rail words: "ability," "capacity," "teamwork," and "communicate," and one phrase, "critical thinking." They are guaranteed to impede transparency and cloud student acceptance.

First, a learning outcome statement does not ascribe "**ability**" to do or demonstrate something. One does not know a student has the "ability" to do anything until the student actually does it, for which point we use verbs that indicate what the student actually did. Too, one cannot assess an unseen "ability," whereas one can write prompts that extend the description of a competence/proficiency demanding that a student *identify, categorize, differentiate, design, disaggregate, reformulate,* or *evaluate,* for example. Furthermore, in U.S. education discourse, "ability" should be a red-flag word, as it was tied to "aptitude" in IQ testing and discriminatory judgments of minority populations. "Ability" is a noun that simply does not fly anywhere—let alone in a governing position—in something one thinks is a learning outcome statement.

"**Capacity**" evidences similar problems. At least in an English language environment, "capacity" describes a dark hole that, one assumes, will be filled in time. But one doesn't know what is in that hole until it is filled. So it is not a matter of "capacity for analysis and synthesis" (Tuning Subject Area Group: Physics 2005, p.6), rather "demonstrated fluencies in analyzing problems and synthesizing components of solutions," or something like that. But one of the most difficult of the "capacity" phrases is "capacity to learn," posited as a learning outcome. My instinctive response is that if the student had no "capacity to learn" that student would not be in higher education to begin with. The student has already demonstrated learning—at least up to a range of points on the mastery scale. It's where you go from that point

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on, what you actually show, that counts toward the degree award. And what counts toward the degree award is what we describe in learning outcome statements.

Some putative learning outcome statements invoking the nominal "capacity" leave one gasping, e.g. the program's graduates "have achieved an advanced capacity" (Australian Learning and Teaching Council, 2011, p. 8) How does one "achieve" a "capacity"? It's conceptually impossible. Even "a highly developed capacity" (p. 9) is not a demonstrable characteristic of students to whom one is about to award degrees, particularly since whatever "capacity" is claimed is not truly realized in the present, rather in the future, hence, its consequences are unknowable. Indeed, a learning outcomes statement is not a subjunctive or conditional; it is not a wish list; it is not a set of hopes. The realization of "ability" (assuming one accepts the term at all) and "capacity" (a close analogue of "ability") is future, hence subjunctive, not present and descriptive. Another reason for avoiding both words.

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Second, "critical thinking" is one of the championship mush phrases of our time, used as a default umbrella to indicate a range of cognitive activities. Ask students what they think it means, and you will read answers from 491 solar systems. An effective and clear learning outcome statement does not use the nominal phrase, "critical thinking" as a primary subject. Instead, it employs active verbs that describe what students actually do when they "think critically," e.g. "*selecting* sources and *choosing, describing* and *defending/challenging* a path of investigation of an unscripted problem." This is a description of what the student does under an otherwise formless and empty banner. Alternatively, if one cannot resist using the default frame, one might say that the student "will evidence such operations of 'critical thinking' as prioritizing and evaluating approaches to the issue/problem, differentiating likely effects of these approaches, and selecting/challenging and defending a stance . . ." and then indicate the medium through which the student will evidence these cognitive behaviors. Yes, it's a mouthful (so, you can cut it back), but it is a statement the student is far more likely to understand than mush.

Another nominal mush phrase of default learning outcomes writing is "**teamwork**." In place of this too-common blah mantra, the UK's Quality Assurance Agency's benchmarks for Social Work include "teamwork" activities that can be elicited and judged in the process of student work, e.g. "consult actively...liaising and negotiating across differences...challenge others when necessary..." (Quality Assurance Agency, 2008, p. 13). To be sure, a significant portion of Social Work interactions take place in the field, either in cooperative placements or post-graduation work environments, so this area continues to be fraught with difficulties, and one can certainly question how "operational" some of the invoked verbs may be, but one can say that this group made a good effort to get beyond slogans. The Texas engineering groups in Tuning USA had the opportunity to do something along similar

lines, particularly the civil engineering group, since what civil engineers wind up doing in practice involves constitutive interactions with public authorities, economic analysts, construction managers, architects, logistics personnel, cost estimators, etc. In the organization of a civil engineering project—whether routine infrastructure or non-routine responses to environmental challenges (what a euphemism!)—are rotating intersections of the activities of such groups (see Texas Higher Education Coordinating Board, 2011).

So don't call it "teamwork": describe the variations, and build them into your curriculum. Otherwise, students don't know what you are talking about. Any group working on a common project or task rotates roles, assigns project management tasks, and expects converging contributions from these sources. So say so, instead of "teamwork" or "participate" (which says very little about what a student does), and include a glossary-type set of preface statements to learning outcomes collection that basically says, "By 'teamwork,' we do not mean a generalized set of task relationships. What we mean is covered by the following student activities, each of which is a competence to be developed in the course of higher education:..."

Finally, consider "**communicate/communication**," unproductive defaults which we should find easier to transpose to an operational key. These terms cover forms of transfer: *reporting, requesting, persuading, defining, refuting, negotiating*, etc. Students understand specific forms of transfer; less so the default cloud of "communicate." They also better understand if their roles in these forms of transfer are specified, e.g. "edit," "contribute," "debate," "explain," "narrate," along with their contexts of place, conditions, and expectations. The generalized "communicate" does not capture any of this. Students deserve more precise language. One way to save the verb yet provide that direction is to indicate the mode of communication, e.g. paper, graphic, PowerPoint presentation, written feedback, etc.

Next, we turn to exclusionary principles:

> Whether verbal or nominal, if you cannot say what it means in 6 words or less, it does not belong in a learning outcomes statement. Some examples:
>
> "the student will recognize the relevance of . . ."
> "the student will acquire understanding of. . ."
> "the student will become familiar with. . ."
> "the student will have a systematic approach to. . ."
> "the student will function effectively in . . ."

None of these is a learning outcome, let alone one the writer could *try* to explain in transparent terms in less than a paragraph. Try it, for example, in the case of "become familiar with." What does the student actually do to demonstrate that he/she is "familiar" with something?

Whether verbal or nominal, if you cannot say what it means in 6 words or less, it does not belong in a learning outcomes statement.

Ellipsis has no place in learning outcome statements. One cannot say, for example, that a student "demonstrates advanced understanding" and assume that the student (let alone others) knows what "advanced understanding" means. Is the student's failure to meet this achievement a case of "not-so-advanced understanding"? And what does that mean? There are too many missing referents in such language.

Tautologies also have no place in learning outcome statements. Unfortunately, the word "knowledge" is often at the core of such tautologies, as in "basic knowledge and understanding is characterised by knowledge of a topic. . ." Honestly, that statement was written, literally, in a degree qualifications document I will not identify (though obviously not from the U.S.).

Verbs that describe routine activities of teaching (behavioral commands/requests/prods) and learning are not learning outcome statements. For example: *ask, consider, practice, question, read, think, comply, consult, act,* and *discuss* may all be default verbalizations of assignments or classroom interactions or learning directions, but are intermediary processes, not outcomes.

Verbs that are statements of fact, not competence or proficiency, do not belong in learning outcome cadences. The best known—and overused—examples are *have/has* and *possess* (see Part II, no. 4 above for a different context for this issue). To say that students "possess" knowledge, for example, refers to a prior state. It does not indicate that students learned anything. One cannot even begin to evaluate student competence/proficiency with that vocabulary. All of this is fixable: drop the nominal and generalized diction, e.g. "possesses skills relating to the conduct of laboratory work," and replace it with operational verbal specificities, e.g. "measures and reports unknown quantities with precision," or "maintains laboratory notebooks of sufficient detail that others could repeat the experiments described."

Non-operational verbs. Some of these have been marked previously, but it never hurts to repeat: these verbs do not produce observable behaviors or objects:

> recognize, develop, relate, consider, prepare, comply, reflect, realize, anticipate, foresee, observe, review, extend, work

"Work!" you object. Yes, for unless the learning outcome statement specifies what kind of "work," e.g. construct, build, model, shape, compose, and on, it cannot be observed and judged.
It is not operational.

Verbs that are statements of fact, not competence or proficiency, do not belong in learning outcome cadences.

Part IV: Productive Active, Operational Verb Groups

Writing verb-driven outcome statements requires an expanded vocabulary, along with a typology matched to the cognitive activities at issue. The extant literature addressing this requirement tends to default to Bloom's six-stage taxonomy (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation) for typological form, then places sometimes formless lumps of verbs under each stage. I advocate a different approach. With some expansion from their original appearance (Adelman, 2014a), I recommend serious consideration of the following operational verbs, grouped according to their governing functions. This is by no means an exhaustive list, and by no means would I suggest that a verb found in Group M cannot also be invoked in Group J. In a way, the writing of learning outcome statements works backwards from assignments and prods that faculty present every day. Think of what you are asking students to do, referencing one or more of the 20 categories of operational verbs below, then, in constructing the outcome statements, pick from the verbs presented (or others that you deem roughly synonymous and operational). Those steps will bring writers a long way toward what students will recognize and understand (ironically, two verbs one does not use in such statements).

I am far more governed by the methodologies and categories of Natural Language processing. So if other analysts wind up with six groupings of operational verbs, parralleling Bloom, I posit 20.

A) Verbs describing student acquisition and preparation of tools, materials, and texts of various types (including digital and archival):

access, acquire, collect, accumulate, extract, gather, locate, obtain, retrieve

B) Verbs indicating what students do to certify information, materials, texts, etc.

cite, document, record, reference, source (v)

C) Verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit

categorize, classify, define, describe, determine, frame, identify, prioritize, specify

D) Verbs describing what students do in processing data and allied information

calculate, determine, estimate, manipulate, measure, solve, test

D1) Verbs further describing the ways in which students format data, information, materials

arrange, assemble, collate, organize, sort

E) Verbs describing what students do in explaining a position, creation, set of observations, or a text

articulate, clarify, explicate, illustrate, interpret, outline, translate, elaborate, elucidate

F) Verbs falling under the cognitive activities we group under "analyze"

compare, contrast, differentiate, distinguish, formulate, map, match, equate

G) Verbs describing what students do when they "inquire"

examine, experiment, explore, hypothesize, investigate, research, test

H) Verbs describing what students do when they combine ideas, materials, observations

assimilate, consolidate, merge, connect, integrate, link, synthesize, summarize

I) Verbs that describe what students do in various forms of "making"

build, compose, construct, craft, create, design, develop, generate, model, shape, simulate

J) Verbs that describe the various ways in which students utilize the materials of learning

apply, carry out, conduct, demonstrate, employ, implement, perform, produce, use

K) Verbs that describe various executive functions students perform

operate, administer, control, coordinate, engage, lead, maintain, manage, navigate, optimize, plan

L) Verbs that describe forms of deliberative activity in which students engage

argue, challenge, debate, defend, justify, resolve, dispute, advocate, persuade

M) Verbs that indicate how students valuate objects, experiences, texts, productions, etc.

audit, appraise, assess, evaluate, judge, rank

In a way, the writing of learning outcome statements works backwards from assignments and prods that faculty present every day.

N) Verbs that reference the types of communication in which we ask students to engage:

report, edit, encode/decode, pantomime (v), map, display, draw/diagram

O) Verbs, related to modes of communication, that indicate what students do in groups:

collaborate, contribute, negotiate, feed back

P) Verbs that describe what students do in rethinking or reconstructing

accommodate, adapt, adjust, improve, modify, refine, reflect, review

Certainly there could be more than 20 categories; certainly many of the verbs apply in more than one category; and certainly there are many other examples under each. Finally, and mostly importantly, these operational verbs do not stand alone in learning outcome statements. Without the nouns, the intuitions of complete statements, the student has little idea of the object(s) of his/her activity.

But there is a very practical purpose in offering these categories for, particularly in combination, they fit so much of what faculty expect students to do in demonstrating learning. For obvious examples:

We prod students to locate and retrieve information or materials (Category A), record and cite what they have found (Category B), to arrange this material (Category D1), and describe and classify what they have assembled (Category C).

We challenge students to explicate and elaborate their positions on an issue (Category E), to distinguish and compare alternatives in the process (Category F), and to justify and defend their positions (Category L).

We require students to explore phenomena and to offer hypotheses about why those phenomena behave in the manner observed (Category G), to measure the phenomena and test their hypotheses (Category D), and to synthesize their observations and measurements (Category H), presenting them to peers in a narrated visual display (Category N).

And we can gloss these, and other combinations of learning prod categories with elements of group production (Category O), presentation (Category N), model building (Category I), and evaluation (Category M). Voila! We have a set of reference points for writing clear benchmarks of performance! It is not the only set, but it offers constructive guidance missing in too many other de facto checklists.

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Part V: Syntax, Samples, Proddings, and Public Pressure

How do the ideal forms of learning outcome statements read, and what do we do about expanding their presence in higher education?

First, the subject of any learning outcome statement is the student, and there are many ways to label the student besides "the student," e.g. "the graduate," "the degree candidate," "the learner." Choose one according to your institution's notion of the subject.

Second, a student learning outcome statement can be written to generic or subject-specific proficiencies. In our world, the former are DQP-oriented, the latter, Tuning. The proficiency statements in the *Degree Qualifications Profile* follow all the principles indicated in Part II of this paper, and certainly do not include any of the tattered language marked in Part III (well, the DQP is not wholly guiltless here). Some examples:

> "The student frames, clarifies, and evaluates...using..."
> "The student elucidates...articulates...and illustrates..."
> "The student describes...explains...and shows how..."
> "The student designs and executes...and assesses..."
> "The student identifies, categorizes, evaluates, and cites...so as to create..."
> "The student frames...explores and evaluates...and presents..."
> "The student analyzes...articulates...explains..."
> "The student translates...constructs...presents..."
> "The student identifies, chooses, and defends..."
> "The student locates, gathers, and organizes...and offers..."
> "The student negotiates...implements...communicates..."

Nothing is perfect, of course. And with 25 associate's level outcome statements, 27 at the bachelor's level, and 20 at the master's level in the DQP, there are bound to be repetitions. But these are very clear statements of cognitive activities that bracket learning outcomes. Yes, as one of the DQP writers, I'm biased and will defend such statements as models. But in the spirit of the DQP, which invites iterative improvements, I know the reader will no doubt create others. Yes, I will admit to some slippages from principles in the text, and that the form of these statements can be criticized for its monotone.

In fact, if, as an instructor, I want my students to contradict me, to dream of new worlds, to taste the results of experimentation, to feel the surfaces of objects they have created, to scramble cliches into laughable implausibilities– if I seek such expansions of mind and soul, the language of learning outcomes described here would be mechanically restrictive and, yes, boring. But with the principles, exclusions, and operational verb groups presented above as reference points, I am sure future student learning outcome writers

With the principles, exclusions, and operational verb groups presented above as reference points, I am sure future student learning outcome writers will find the task of writing their own configurations a productive and rewarding one.

will find the task of writing their own configurations a productive and rewarding one. Just ask your students when you are done!

++

Assume for a moment that readers of this document accept all or most of the rules, exclusions, verb categories, and principles of writing student learning outcome statements set forth above. A sensitive language-oriented approach to this field will not entice a critical mass of followers without external push. Call it public pressure, call it high-level persuasion. So what do we need from our formal professional and quality assurance bodies to drive us along toward this more productive end?

A sensitive language-oriented approach to this field will not entice a critical mass of followers without external push.

From professional associations: Tuning. Everybody has to do it, whether they have specialized accreditors glaring over their shoulders or not. And Tuning that goes far beyond discipline/field profile statements to specific sought-for student learning outcomes. What does it mean to complete a degree program in Allied Health? in Linguistics? in Anthropology? in Economics? in Geology? in Statistics? Tuning USA may have started some out on the path, but we don't see as much of it as we should. How do we begin to push? The American Council of Learned Societies, for example, could easily hold organizational convocations to articulate the Tuning process and shape discipline action groups to take it up. ACLS is not alone. The task can also fall to the American Academy of Arts and Sciences, the American Association for the Advancement of Science, the National Academy of Engineering, and, through these umbrella organizations to the hundreds of disciplinary associations in the U.S. alone. Such endeavors would cast a new color on the historical purpose of learned societies in promoting disciplines, for "promoting" would come to mean the inclusion of learning outcomes for both students and practitioners. Embracing organizations have big voices. We haven't heard from them yet on this playing field because we have not made the effort.

And who is the "we"? And what do "we" do? "We" means NILOA getting on the phone and bringing together a cadre representative of those who have gone through the Tuning process in fields such as chemistry, biology, history, civil engineering, psychology, and nursing, and carry titles that open doors (sorry, but the academic hierarchy still functions). Then, this group, through NILOA, gets very modest foundation backing to conduct visits to both the heavyweight umbrella groups and a selection of disciplinary associations that lie at the fulcrums of their fields, be convincing, and force the declaration and planning of discussion Tuning workshops at their annual meetings or special convenings. The "we" don't leave until we get those commitments, and members of the "we" participate in the events. I will put good money on the table that a raft of serious and engaging Tuning projects follows.

Why an initial jolt from NILOA and not The American Council on Education (ACE) or the Association of American Colleges and Universities

(AAC&U)? Learning outcomes are the core of NILOA's portfolio; ACE has not demonstrated much interest in the territory; and AAC&U is stretched with its own embracing projects. No, NILOA is not a household name in the academy, but the real fulcrums of this effort are the umbrella organizations of academic life, the ACLS, AAAS, etc. of this world. They address the disciplines, and the generation of student learning outcomes through the disciplines yields greater faculty comfort with generic degree-level proficiencies.

From quality assurance bodies, i.e. accreditors: No more proxies for student learning, no more mush in standards for student learning, in fact, universal required templates, across the board of all accrediting bodies (regional, national, and specialized) for meaningful, operational verb-driven student learning outcomes. No, accrediting bodies do not spell out which outcomes, nor should they, but, at the least, they can ensure that their member institutions have promulgated genuine outcome statements. How do we get there? Noise! That sounds raw, but it's necessary. It's pressure-noise. From many quarters it says, and is very politic, "you folks do a good job, but all of you—not just some of you—have to be far more explicit in your student learning outcome standards than you are at present." The National Advisory Committee on Institutional Quality and Integrity (NACIQI), which advises the U.S. Department of Education on accreditation policy, has already said something along these lines in its 2015 recommendations, but you don't want U.S.E.D. playing a major role here (and I speak as a former employee). Instead, the same umbrella organizations must be brought to challenge all of the accreditors to refute this basic critique, and bring thorough textual analysis to back up that challenge. Lacking a convincing response, the noise will move accreditors across the line of requiring transparent student learning outcome criteria. That's not hard, and it doesn't hurt anyone. The harder the push, the higher volume of noise, and the greater the chances of genuine change. It's the way propaganda works in democratic societies. Try it!

The harder the push, the higher volume of noise, and the greater the chances of genuine change.

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NILOA Mission

NILOA's primary objective is to discover and disseminate ways that academic programs and institutions can productively use assessment data internally to inform and strengthen undergraduate education, and externally to communicate with policy makers, families and other stakeholders.

DQP

The Degree Qualifications Profile was created by the Lumina Foundation for Education in 2011, tested in the field, revised and released in 2014. The DQP illustrates clearly what students should be expected to know and be able to do once they earn their degrees — at any level: the associate, bachelor's and master's degrees — which constitute the great majority of postsecondary degrees awarded by U.S. colleges and universities — regardless of a student's field of specialization. The Degree Profile describes five basic areas of learning: Broad, Integrative Knowledge; Specialized Knowledge; Intellectual Skills; Applied and Collaborative Learning; and Civic and Global Learning.

About NILOA

- The National Institute for Learning Outcomes Assessment (NILOA) was established in December 2008.
- NILOA is co-located at the University of Illinois and Indiana University.
- The NILOA website contains free assessment resources and can be found at http://www.learningoutcomesassessment.org/.
- The NILOA research team has scanned institutional websites, surveyed chief academic officers, and commissioned a series of occasional papers.
- One of the co-principal NILOA investigators, George Kuh, founded the National Survey for Student Engagement (NSSE).
- The other co-principal investigator for NILOA, Stanley Ikenberry, was president of the University of Illinois from 1979 to 1995 and of the American Council of Education from 1996 to 2001.

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