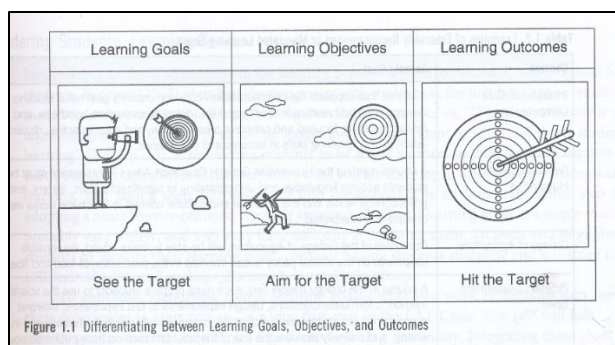# Making Student Learning Objectives Relevant and Transparent

Student Learning Objectives (SLOs), Goals, Outcomes: Is there a Difference?

Educators have difficulty reaching agreement on this question. As a rule, **goals** broadly state what a program or course wants to achieve e.g. problem-solving and writing skills. **Objectives** define or describe specific skills at the course level. On the other hand, **"learning outcomes"** "… describe how students will be different because of a learning experience. … The knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience."[1] In short, what the desired results are going to be.

Learning Goals	Learning Objectives	Learning Outcomes
See the Target	Aim for the Target	Hit the Target

Figure 1.1 Differentiating Between Learning Goals, Objectives, and Outcomes

Elizabeth Barkley and Claire Howell Major use this graphic to differentiate.[2] Kevin Kelly and Todd Zakrajsek have suggested recently in *Advancing Online Teaching* that the debate remains unresolved and defer to the use of outcomes for the sake of simplicity. In writing outcomes, instructors need to know if they are writing program-level outcomes, that is upon earning a degree, or course-level outcomes. Program-level might be more broadly stated and be evaluated in a capstone project or assessed at different points across a program. At the course-level, not all program outcomes may be appropriate, and in fact a course might have outcomes that are not associated with the program. When you see examples of student learning outcomes (SLOs), make yourself aware if it is addressing course- or program-level. Course-level SLOs tend to me more specific to the content.

A case for Student-Centered SLOs

When we propose a course for curriculum review, our primary audience are colleagues and administrators, who may not need to be persuaded about the relevancy of our goals, objectives, or outcomes. However, when students become our audience, our learning objectives, goals, and desired results should be made relevant and transparent. Therefore, the language of a course-level SLO should focus on students, use action verbs from the cognitive, affective, and psychomotor domains (see below) that are "observable and actionable," and convey relevance.

Consider this example from a course on the History of the Holocaust:
> Students will evaluate primary and secondary sources to advance a plausible interpretation of how Germany created a racial state under the Nazis.

This SLO focuses makes the student the subject of the sentence. Evaluate is at the highest cognitive level that can be assessed through a variety of assignments. To help students achieve this outcome, they will complete several learning and teaching activities including critical reading and discussion of sources, writing-to-learn exercises, and an essay.

Research on learning and motivation offers several reasons to make SLOs relevant and transparent.
First, if we engage students in our subject matter in a positive emotional level, they are more likely to learn. L. Dee Fink, author of *Creating Significant Learning Experiences*, argues that mobilizing students' affective domains by helping them discover ways to care about their course content or see its human dimensions will increase student engagement.

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[1] Linda Suskie, *Assessing Student Learning: A Common Sense Guide*, 2nd ed (San Francisco: Jossey-Bass, 2009), 117.
[2] Elizabeth F. Barkley and Claire Howell Major, *Learning Assessment Techniques: A Handbook for College Faculty* (San Francisco: Jossey-Bass, 2016), 15.

Second, motivation theories note that tapping into intrinsic motives will improve student engagement more so than extrinsic motivators such as grades, awards, or credentialing. If students' only motivation is extrinsic, they are more likely to cram, not learn, to earn a grade. In *How Learning Works*, the authors maintain that if students' subjective values and expectancies are met, they will deepen learning.

Third, relevant objectives and goals define the significance of what we are doing, which may increase student engagement and learning. Note that simply telling students why a topic or unit is essential, does not guarantee "buy in" any more than a patient follows a doctor's advice, but it's a start. Many of our students take an instrumental approach to their learning – they want to know how assignments and course will benefit them. If we are teaching a general education course, then students may even see the course and its assignments as an obstacle to their career and thereby engage in resistance. Therefore, when we articulate our course objectives, goals, units, and daily lessons, choose language that is relatable and relevant.

Finally, not only should we make our content relevant, we should also be transparent about how to achieve our desired results. This will not be conveyed in the SLOs but we should make "obvious the intellectual practices involved in completing and evaluating a learning task." [3] As experts we know what A-level work looks like, but can we articulate that to students? If you struggle with this, welcome to the "curse of expert knowledge." Our goals should help students uncover our disciplinary ways of knowing. We cannot assume that students know how to read, write, research, etc. in our discipline. In making our goals transparent, helping them to learn how to learn, we will create a more equitable classroom in which every student has the potential to thrive. And it all begins with writing SLOs that are student-centered. These SLOs must guide us in every decision we make about assessments, learning activities, and teaching strategies. Rule of thumb: if a student were to ask us why they must learn the content, we should have a persuasive answer that begins with clearly developed SLOs.

Incorporate your SLOs into Teaching, not just your Syllabus

We have many ways to build SLOs into our teaching. To create coherency, it's important to routinely use the language of the SLOs which might be broken down into more specific goals for daily class meetings. Here's a short list of potential teaching techniques:

- Create a graphic syllabus that provides a "road map" on how SLOs will be achieved through learning activities and assessments.
- Preview upcoming work, and review previous lessons as a reminder of objectives or goals and how they relate to the desired results.
- Start class with a writing prompt, activity, or problem that sheds light on the significance of daily goals (a.k.a. bell ringers).
- Start a new topic or unit with prior knowledge survey or short quiz to provide focus on the goals and course outcomes.
- Pose a scenario or tell a story that creates dramatic interest or demands a solution then relate to the goals.
- Point out the creative, critical, or practical skills that are being developed which are promised in the SLOs and shed light on disciplinary ways of thinking.
- Use the words of your SLOs and goals in course assignments and feedback to students. For example, advancing plausible historical interpretations asks students to interpret evidence in its context and to corroborate, yet also requires inference when evidence is lacking. So, in preparing students for the essay, reading drafts, and grading, these terms (plausible, context, corroborate, inference) would be used to create a coherent experience that reflects disciplinary standards.
- Encourage students to ponder the stakeholders who might benefit from the mastery of any goal. Terry Doyle, in *Helping Students Learn* (2008) describes a strategy used by Dr. Cecil Queen, a Criminal Justice professor, "The purpose of the exercise is to help students discover reasons beyond a grade for deeply learning the course material presented. In this activity students are asked to identify other people or organizations who are stakeholders in their being successful learners of the new material. Dr. Queen then maps all of the major and minor stakeholders who are depending on his criminal justice students to become fully competent with the new material." [4]
- Make time in-class to discuss an upcoming assignment and how it will contribute to the learning outcomes.

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[3] Amy B. Mulnix, "The Power of Transparency in your Teaching," *Faculty Focus*, 12 November 2018. (https://www.facultyfocus.com/articles/course-design-ideas/power-transparency-teaching/ accessed on 8 June 2020)
[4] Terry Doyle, *Helping Students Learn* (Sterling, WV: Stylus, 2008), 39.

- Make time to explain various aspects of your disciplinary ways of knowing when it's appropriate to the content or class activity. For example, before my students write a historical essay, in the days leading up to the submission, we spend a few minutes of class time answering questions about the assignment, discussing the writing process, looking at examples, etc.
- End a topic or unit that compares their prior knowledge and perception to their current state of knowledge.
- Encourage students to make connections between earlier objectives and goals through review activities or low-stakes or no-stakes quizzing.
- Use or assign concept maps or flow charts that enables students to make connections during a unit or throughout the semester that align with the language of objectives and goals.
- At the end of class, use a writing prompt, e.g., minute paper, etc. that encourages students to reflect upon what they have learned and how it contributes to the course outcomes.
- Before each class ends, review goals for the next class meeting or assignment and relate them to the course outcomes. (I have my syllabus and calendar ready to share and relate.)

If the curse of expertise leads you to struggle with making your goals relevant and transparent, many disciplinary organizations offer resources. In addition, consult your department's master syllabus to explore the wording. Yet, be open if allowed by your department, to presenting the SLOs that are more relatable, relevant, and transparent to students.

Student Learning Objectives
1. Should focus on students and what they will be able to do, value, think, etc.
2. Use **action verbs** (i.e., "observable and actionable language") that accurately reflect the levels of aspiration found in taxonomies (see below)
3. Convey relevance

The key to crafting learning goals, objectives, and outcomes is to be neither too vague nor too specific. Linda Suskie illustrates with an example from information literacy: [5]

Too vague: Students will demonstrate information literacy skills.
Too specific: Students will be able to use the college's online services to retrieve information.
Better: Students will locate information and evaluate it critically for its validity and appropriateness.

Student learning goals should explain **"why"** the outcome is important, and this is the advantage of Suskie's third example.

Some phrases that are often considered too vague: "students will learn, know, understand, etc." These terms are "fuzzy" because they may carry several meanings. For example, to understand might mean that students will memorize, recall, or be able to use information; these are not synonymous cognitive skill levels.

Taxonomies
Countless taxonomies are available on the internet; many of these match action verbs, i.e. "observable and actionable language," to learning activities, assignments, and/or assessments. The correlation of verbs to activities makes it easier to recognize if our outcomes are pitched to the appropriate level of difficulty. The most famous is Bloom's taxonomy (1956), which groups behavior into affective, psychomotor, and cognitive domains; the cognitive domain is the most well-known among these. The original levels of Bloom's taxonomy of the cognitive domain are knowledge, comprehension, application, analysis, synthesis, and evaluation. In 2001, L. W. Anderson and D. R. Krathwohl revised Bloom's taxonomy. The levels of their taxonomy are remember, understand, apply, analyze, evaluate, and create. The hierarchy found in either taxonomy is not meant to suggest that higher-order thinking must be delayed before mastery of factual knowledge is proven.

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[5] Suskie, *Assessing Student Learning*, 2nd ed., 130.

For a more thorough discussion with action verbs and a description of student learning activities, see EdPsychInteractive. Table 1 draws together Bloom's taxonomy, the revision by Krathwohl and Anderson, and verbs for the digital age. Tables 2 and 3 provide taxonomies for the affective and psychomotor domains. L. Dee Fink's original Taxonomy of Significant Learning (Table 4) places the six domains into a circle so they interact with one another – a refreshing departure from the hierarchy of Bloom's taxonomy.

Table 1: Cognitive Domain

Level of Cognition	Action Verbs	Student Learning Activities
Knowledge (Bloom):	Define, describe, draw, identify, label, locate, memorize, name, recite, recognize, select, state, write	**Information gathering Activities:** A definition, a dictionary, events, films, magazine articles, newspapers, radio, recordings, relevision shows, text readings, video, podcasts, vodcasts, slidecasts
Remember (Krathwohl and Anderson Revision)	**Definition:** To retrieve relevant knowledge from long-term memory. **Verbs:** Recognize; recall ⏩ **Verbs for the Digital Age**: Bullet point, highlight, bookmark, social network, social bookmark, search, google	
Comprehension Level 1 (Bloom):	Change, match, confirm, express, illustrate, match, paraphrase, restate, transform	**Confirming Information Gathering Activities:** Analogy, causal relationship, conclusion or implication based on data, outline, summary
Comprehension Level 2 (Bloom):	Extend, distinguish, compare, infer, generalize, defend, explain, predict, relate	**Confirming Use of Knowledge Activities:** Cartoon, collage, diagrama, drama, graph, photograph, poster, skit, speech, story, own statement, podcast, vodcast, slidecast
Understand (Krathwohl and Anderson Revision):	**Definition:** To construct meaning from instructional message, including orial, written, and graphic communication. **Verbs:** Interpret (clarify, paraphrase, represent, translate); Exemplify (illustrate, instatiate); Classify (categorize, subsume); Summarzing (abstract, generalize); Infer (conclude, extrapolate, interpolate, predict); Compare (contrast, map, match); Explain (construct models) ⏩ **Verbs for the Digital Age:** [6] Advanced search, boolean search, blog journaling, tweet, categorise, comment, annotate, subscribe	
Application (Bloom):	Apply, change, choose, classify, collect, discover, dramatize, draw, interpret, make, model, modify, paint, prepare, produce, report, show	**Making Use of Knowledge Activities:** Creating a cartoon, drama, video, forecast, list, map, meeting, mobile, painting, paper, a project, puzzle, question, diagram, illustration, photograph, sculpture, solution, and shifting smothly from one gear to another
Apply (Krathwohl and Anderson Revision):	**Definition:** To carry out or use a procedure in a given situation **Verbs:** Execute; Implement (use) ⏩ **Verbs for the Digital Age:** Run, load, play, operate, hack, upload, share, edit	

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[6] All lists for "Verbs for the Digital Age" originate from Andrew Churches, "Bloom's Digital Taxonomy".

Analysis (Bloom)	Analyze, categorize, classify, compare, construct, contrast, differentiate, distinguish, examine, infer, investigate, point out, research, select separate, sudivide, survey, take apart	**Taking Apart Activities:** Break down an argument, draw a conclusion, graph, identify parts of a propaganda statemetn, model, queionnaire, report, survey, syllogism
Analyze (Krathwohl and Anderson Revision):	**Definition:** To break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose **Verbs:** Differentiate (discriminate, distinguish, focus, select); Organize (finding coherence, integrate, outline, parse, structure); Attribute (deconstruct) ▸▸ **Verbs for the Digital Age:** Mash, link, tag	
Synthesis (Bloom):	Add to, combine, construct, create, design, develop, formulate, hypothesize, invent, organize, originate, plan, produce, role-play, what if	**Putting Together Activities:** A play, article, book , cartoon, game, invention, poem, report, song, story, formulate a hypothesis or question, set of rules, principles, or standards, speculate on or plan an alternate course of action
Create (Krathwohl and Anderson Revision):	**Definition:** To put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure **Verbs:** Generate (hypothesize); Plan (design); Produce (construct) ▸▸ **Verbs for the Digital Age:** Program, film, animate, blog, video blog, mix/remix, create wikis, publish, videocast, podcast, direct, produce	
Evaluation (Bloom):	Apprise, assess, compare, consider criticize, critique, judge, reocmmend, relate, solve, summarize, weigh	**Judging the Outcome Activities:** Comparison of standards, conclusion, court trial, editorial, establishment of standards, evaluation, group discussion, recommendation, self-evaluation, survey, valuing
Evaluate (Krathwohl and Anderson Revision):	**Definition:** To make judgments based on criteria and standards **Verbs:** Check (coordinate, detect, monitor, test); Critique (judge) ▸▸ **Verbs for the Digital Age:** Comment, review, post, moderate, collaborate a blog	

Outcomes Assessment and the Affective Domain: The cognitive and psychomotor domains are easier to quantify if you are being asked to measure and report results, whereas providing direct measures of student learning in the affective domain may involve more qualitative data. At the highest level, how would you know if students internalized values? Though they may not be easily quantifiable, do not be discouraged from writing SLOs in the Affective Domain or assessing them. Asking our students to embrace our disciplinary standards and become life-long learners is at the heart of our vocation as teachers.

Table 2: Affective Domain

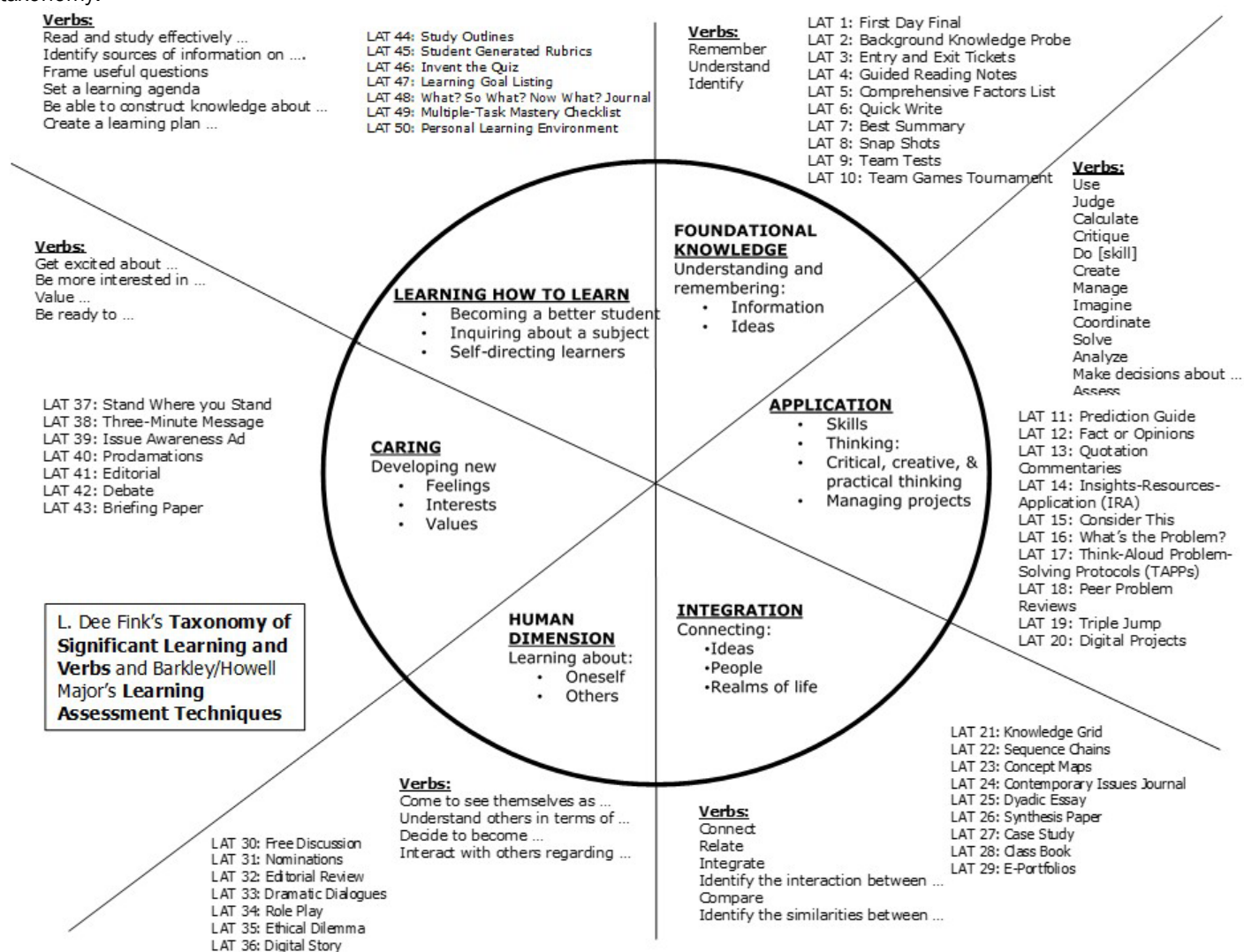| Level	Verbs
Receiving Phenomena: Awareness, willingness to hear, selected attention	Ask, choose, describe, follow, give, hold, identify, locate, name, point to, select, sit, erect, reply, use

Responding to Phenomena: Active participation on the part of the learners. Attends and reacts to a particular phenomenon. Learning outcomes may emphasize compliance in responding, willingness to respond, or satisfaction in responding (motivation)	Answer, assist, aid, comply, conform, discuss, greet, help, label, perform, practic, present, read, recite, report, select, tell, write
Valuing: The worth or value a person attaches to a particulare object, phenomenon, or behavior. This ranges from simple acceptance to the more complex state of commitment. Valuing is based on the internalization of a set of specified values, while clues to these values are expressed in the learner's overt behavior and are often identifiable.	Complete, demonstrate, differentiate, explain, follow, form, intiate, invite, join, justify, propose, read, report, select, share, study, work.
Organization: Organizes values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system. The emphasis is on comparing, relating, and synthesizing values.	Adhere, alter,a rrange, combine, compare, complete, defend, explain, formulate, generalize, identify, integrate, modify, order, organize, prepare, relate, synthesize
Internalizing Values (characterization): Has a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most importantly, characteristics of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).	Act, discriminate, display, influence, listen, modify, perform, practice, propose, qualify, question, revise, serve, solve, verify

Table 3: Psychomotor Domain

Level	Verbs
Perception: The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation.	Choose, describe, detect, differentiate, distinguish, identify, isolate, relate, select
Set: Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's responses to different situations (sometimes called mindsets).	Begin, display, explain, move, proceed, react, show, state, volunteer
Guided Response: This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency.	Assemble, calibrate, construct, dismantle, display, fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, sketch
Complex Overt Response: The skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinate performance, requiring a minimum of energy. This category includes performing without hesitation, and automatic performance.	Assemble, calibrate, construct, dismantle, display, fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, sketch (the verbs are identical to Guided Response, but would include adverbs or adjectives that indicate performance is quicker, better, more accurate, etc.)
Adaptation: Skills are well developed, and the individual can modify movement patterns to fit special requirements.	Adapt, alter, change, rearrange, reorganize, revise, vary

Origination: Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.	Arrange, build, combine, compose, construct, create, design, initiate, make, originate

Table 4: Verbs for Significant Learning Matched with Learning Assessment Techniques

In L. Dee Fink's taxonomy, he urges faculty to integrate all six domains into the design of a course to create significant learning experiences.[7] Note that he avoids hierarchy and emphasizes the integrative nature of learning by placing six domains in a circle in which all points are shared in the center. This emphasizes the importance of all six being present to achieve significant learning experiences. In the outer part of the circle are Fink's verbs combined with learning assessment techniques (LATs) identified by Elizabeth Barkley and Claire Howell Major that promise to achieve the outcomes. José Antonio Bowen and C. Edward Watson's *Teaching Naked Techniques: A Practical Guide to Designing Better Classes* (2017) frequently reference Fink's taxonomy.

Verbs:
Read and study effectively …
Identify sources of information on ….
Frame useful questions
Set a learning agenda
Be able to construct knowledge about …
Create a learning plan …

LAT 44: Study Outlines
LAT 45: Student Generated Rubrics
LAT 46: Invent the Quiz
LAT 47: Learning Goal Listing
LAT 48: What? So What? Now What? Journal
LAT 49: Multiple-Task Mastery Checklist
LAT 50: Personal Learning Environment

Verbs:
Remember
Understand
Identify

LAT 1: First Day Final
LAT 2: Background Knowledge Probe
LAT 3: Entry and Exit Tickets
LAT 4: Guided Reading Notes
LAT 5: Comprehensive Factors List
LAT 6: Quick Write
LAT 7: Best Summary
LAT 8: Snap Shots
LAT 9: Team Tests
LAT 10: Team Games Tournament

Verbs:
Get excited about …
Be more interested in …
Value …
Be ready to …

Verbs:
Use
Judge
Calculate
Critique
Do [skill]
Create
Manage
Imagine
Coordinate
Solve
Analyze
Make decisions about …
Assess

FOUNDATIONAL KNOWLEDGE
Understanding and remembering:
• Information
• Ideas

LEARNING HOW TO LEARN
• Becoming a better student
• Inquiring about a subject
• Self-directing learners

LAT 37: Stand Where you Stand
LAT 38: Three-Minute Message
LAT 39: Issue Awareness Ad
LAT 40: Proclamations
LAT 41: Editorial
LAT 42: Debate
LAT 43: Briefing Paper

CARING
Developing new
• Feelings
• Interests
• Values

APPLICATION
• Skills
• Thinking:
• Critical, creative, & practical thinking
• Managing projects

LAT 11: Prediction Guide
LAT 12: Fact or Opinions
LAT 13: Quotation Commentaries
LAT 14: Insights-Resources-Application (IRA)
LAT 15: Consider This
LAT 16: What's the Problem?
LAT 17: Think-Aloud Problem-Solving Protocols (TAPPs)
LAT 18: Peer Problem Reviews
LAT 19: Triple Jump
LAT 20: Digital Projects

L. Dee Fink's **Taxonomy of Significant Learning and Verbs** and Barkley/Howell Major's **Learning Assessment Techniques**

HUMAN DIMENSION
Learning about:
• Oneself
• Others

INTEGRATION
Connecting:
• Ideas
• People
• Realms of life

LAT 21: Knowledge Grid
LAT 22: Sequence Chains
LAT 23: Concept Maps
LAT 24: Contemporary Issues Journal
LAT 25: Dyadic Essay
LAT 26: Synthesis Paper
LAT 27: Case Study
LAT 28: Class Book
LAT 29: E-Portfolios

Verbs:
Come to see themselves as …
Understand others in terms of …
Decide to become …
Interact with others regarding …

Verbs:
Connect
Relate
Integrate
Identify the interaction between …
Compare
Identify the similarities between …

LAT 30: Free Discussion
LAT 31: Nominations
LAT 32: Editorial Review
LAT 33: Dramatic Dialogues
LAT 34: Role Play
LAT 35: Ethical Dilemma
LAT 36: Digital Story

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[7] L. Dee Fink, *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses*, rev. ed. (San Francisco: Jossey-Bass, 2013), 89.