Guiding Questions and Best Practices for CCN Outcomes Writing

Updated February 15, 2024 (*for more information refer to the CCN Handbook revisions, below).

Guiding Questions	Best Practice
*What is the **highest level verb** on Bloom's taxonomy that represents the knowledge and skills a learner needs to meet course expectations?*	➔ If students accomplish the highest level verb, there is no need to address lower level verbs in the outcome. ➔ Multiple verbs in one learning outcome complicate the assessment process.
*What is the **broadest conceptual level** to communicate what students will learn to successfully complete the course?* - *How can we capture lists of topics under umbrella terms?*	➔ Including general terms and principles in place of lists of specific content provides flexibility for instructors.
*Can we **avoid specific terminology** or jargon that may shift with changes in the field (e.g., proprietary computer programs, technology, or slang)?*	➔ Avoiding perishable terminology (e.g., proprietary names in a developing field) helps to prevent updates when the field or technology changes.
*Are the course learning outcomes **measurable**?* - *How would you measure learning in the course?* - *How would an instructor "see it happening" in a way that represents what students are taking away from the course?*	➔ Address what a student knows and/or is able to do *upon completion* of a course, not what a student experiences *during* the course. ➔ Start with an active and observable verb from Bloom's Taxonomy. ➔ Avoid verbs like: *Know, Understand. Appreciate, Improve*, or *"Demonstrate knowledge of…"*
*Are the learning outcomes **realistic and attainable** given the course and context (e.g. course level, time frame, delivery methods)?*	➔ Outcomes are clearly written to the level of the student and the course context. ➔ **4-7 outcomes per course**
*Are the outcomes **clear and concise**?*	➔ One sentence ➔ Comma lists and semicolons complicate assessment by requiring "all or none" achievement on listed concepts. ➔ Avoid acronyms
*Are the student learning outcomes **culturally inclusive** and do they **center equity**?*	➔ Student learning outcomes should be simply stated in accessible terms ➔ Outcomes should be able to be explained to students of different backgrounds, experiences, expectations, etc. ➔ Give consideration to social, historical, and cultural impacts on a field where relevant

Oregon Transfer Compass

HIGHER EDUCATION COORDINATING COMMISSION

Bloom's Taxonomy Verb List*

Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis
Arrange	Cite	Adhere to	Analyze	Appraise	Adapt
Count	Classify	Administer	Appraise	Argue	Arrange
Define	Conclude	Apply	Assess	Assess	Assemble
Describe*	Convert	Articulate	Breakdown	Attach	Categorize
Draw*	Defend	Change	Calculate	Choose	Collaborate
Duplicate	Describe*	Chart	Categorize	Compare*	Collect
Enumerate	Discuss	Choose	Characterize	Conclude	Combine
Find	Distinguish	Collect	Classify	Contrast*	Communicate
Identify	Estimate	Compute	Compare*	Criticize	Compile
Label	Explain	Construct	Contrast*	Critique	Compose
List	Express	Contribute	Correlate	Decide	Construct
Match	Extend	Control	Debate	Defend	Create
Memorize	Generalize	Determine	Deduce	Discriminate	Design
Name	Generalized	Develop	Diagram	Estimate	Develop
Order	Give	Draw*	Differentiate	Evaluate	Devise
Outline	Identify*	Employ	Discriminate	Explain	Express
Quote	Illustrate	Establish	Distinguish	Interpret*	Facilitate
Read	Indicate	Extend	Examine	Judge	Formulate
Recall	Infer	Illustrate	Experiment	Justify	Generate
Recite	Interpret*	Implement	Focus	Predict*	Incorporate
Record	Locate	Inform	Identify*	Prioritize	Integrate
Relate*	Paraphrase	Instruct	Illustrate	Prove	Invent
Repeat	Predict*	Interpret*	Infer	Rank	Model
Reproduce	Report	Initiate	Limit	Rate	Modify
Select	Restate	Interview	Model	Reframe	Negotiate
Sequence	Review	Modify	Outline	Relate*	Organize
State	Rewrite	Participate	Point out	Select	Perform
Tell	Select	Practice	Prioritize	Summarize	Plan
View	Summarize	Predict*	Question	Support	Prepare
	Trace	Prepare	Relate*	Validate	Produce*
	Translate	Produce*	Research		Progress
		Provide	Select		Reconstruct
		Relate*	Test		Reinforce
		Report			Relate*
		Select			Reorganize

		Solve			Revise
		Utilize			

*Depending on the context and/or discipline, some verbs can reflect different levels of cognitive rigor.

Adapted from: National Institute for Learning Outcomes Assessment (2019)
https://www.learningoutcomesassessment.org/wp-content/uploads/2019/08/Blooms-Taxonomy-Best.pdf

CCN Handbook Outcomes section update

1. **Defining related terms**
    a. Learning Goals
        i. *Learning Goals* are typically higher-order statements regarding aspirations of a learning experience that frame intentions for what students will experience within the learning environment, as well as long term impacts on students' careers and lives. Learning goals also commonly include socio-emotional development during and after a course. These characteristics, along with the issues of scope and timeline, are a challenge to assessing Learning Goals.
        ii. **Example:**Students will live healthier, more active lives after the completion of this course.
    b. Learning Outcomes
        i. *Learning Outcome*s are measurable statements regarding what a student should be able to do as a result of successful completion of a learning experience. The purpose of student learning outcomes assessment is to identify patterns of performance and achievement that suggest opportunities for improvement in instruction, curriculum, and student support.
        ii. **Example:** Create an individualized goal related to health, wellness, and/or performance.
    c. Learning Objectives
        i. *Learning Objectives* are specific statements regarding content and activities within the learning experience. They frame intended student actions on–and results of–individual assignments or projects. Learning Objectives describe more

granular aspects of student learning that lead to the higher level *Learning Outcomes.*

ii. **Example:** Complete at least 1500 workout minutes throughout the term.

2. Inclusion of course content in learning outcomes

a. For some sequential courses, more detail related to course content needs to be listed in order for a student to be able to seamlessly progress through one part of a sequence at one institution and be prepared to successfully complete other parts of the sequence at another institution. This is particularly true in math and science courses, where specific topics or skills are essential to progress but are at a level of detail that does not fit in course learning outcomes.

b. If a subcommittee decides that listing some course content is necessary, they should determine the minimum, essential content that needs to be listed. This should be included after the course outcomes and contain the following introductory statement:

i. The statement from the 2022-2023 Math CCN group highlights this issue: “In order to ensure alignment across institutions, faculty needed to develop a shared understanding of the skills and concepts that must be covered in this course. Each institution is responsible for ensuring that faculty have access to this outline to inform course content.” https://www.oregon.gov/highered/policy-collaboration/Documents/Transfer-Credit/STAT_243Z.pdf

3. GQBP Handbook Sections Guiding Questions & Best Practices Document

a. Highest Level Verb

i. Only include the highest level of Bloom’s taxonomy verb in your outcome. You do not need to list the lower level verbs since there is an expectation that they are included precursors when you use the highest level verb.

ii. Depending on the context and/or discipline, some verbs can reflect different levels of cognitive rigor. For example:

1. *organize objects according to their sizes (understanding) vs. organize an event (creating)*

2. *combine two mathematical equations to solve a problem (analyzing) vs. combine a few ingredients to make a new recipe (creating)*

3. *test the tensile strength of plastics given the varying chemical composition (analyzing) vs. test multiple variables to validate a hypothesis (evaluating)*

iii. Examples:

1. Original: **Define, identify, and describe** the functions of cellular structures, and analyze the importance of each structure in various cellular processes.

   Improved: **Describe** how the function of each cellular structure allows various cellular processes to occur.

2. Original: **Explain and apply** theories of color harmony.

   Improved: **Apply** theories of color harmony.

b. Broadest conceptual level

i. Use of general terminology supports academic freedom and programmatic variation across the state.

ii. Outcomes should not address course assignments or classroom activities but rather the transferable knowledge and skills from those experiences.

iii. Examples:

1. Original: Describe the function of **dendrites, soma, axon, myelin sheath, and terminal buttons**.

   Improved: Describe the function of the **parts of a nerve cell**.

2. Original: Interpret the periodic table to determine periodic trends including **atomic number, mass number, and electron configuration**.

   Improved: Interpret the periodic table to determine **atomic structure** (*see the handbook section on including course content above)

c. Avoid Specific Terminology when the outcome can be met without it.

i. Fields that have perishable terminology (e.g., names of software, advancing technology, vocabulary likely to shift with perspectives on diversity, equity, inclusion, and justice) would best be served by using more general terms to avoid

having out of date terms and language. This is especially important given the three-year review cycle of CCN courses.

ii. Qualifiers such as “current technology,” “contemporary theories,” and “best practices” provide flexibility in moving with changes in one’s field while gathering a stable set of longitudinal assessment data.

iii. Example:

1. Original: Use **Logger Pro software** to interpret data gathered in **the** chemistry lab.

2. Improved: Use **data collection and analysis software** to interpret data gathered in **a** chemistry lab.

d. Measurable

i. Address what a student knows and/or is able to do *upon completion* of a course, not what a student experiences *during* the course.

ii. Start with an active and observable verb.

1. Use verbs from Bloom’s Taxonomy

2. Avoid verbs like: *Know, Understand. Appreciate, Improve*, or *“Demonstrate knowledge of…”*

iii. Outcomes wording needs to support faculty in gathering evidence of learning outcomes attainment that would be transparent to an observer or reviewer.

iv. Examples:

1. Original: **Demonstrate knowledge** of nutrition

   Improved: **Apply science-based nutrition principles** to create and follow a healthy and sustainable eating plan.

2. Original: **Understand and appreciate** color theory.

   Improved: Produce artistic works using color theory.

3. Original: Participate in **graduate-level** research projects.

   Improved: Apply scientific methods and principles to conduct research.

4. Original: Develop a **lifelong appreciation** for diversity.

Improved: Reflect on the value of diversity as it relates to their life.

e. Realistic and Attainable

i. Outcomes language is not aspirational, but rather represents what students will be able to do upon completion of a course, allowing for authentic assessments and assignments.

ii. Use authentic assignments that resemble real-life learning tasks. Conversely, tests and standard book problems seem irrelevant to future application of student learning.

iii. Integrate assessment opportunities that prepare students to be successful outside of the classroom.

1. Choose real-world content.
2. Target real audiences.
3. Use real-world formats, i.e., instead of writing a paper, write a project proposal.

iv. Scaffold assignments to integrate multiple layers of feedback, reflection, and improvement.

v. Practice small tasks before combining them into a large task/project.

vi. Provide clear expectations (including timing) of all project details and evaluation criteria.

vii. Examples:

1. For an introductory class:

Original: **Demonstrate mastery** of various scientific theories and processes as they apply to geology.

Improved: Explain principles of scientific theories and processes as they apply to geology.

Original: Use appropriate quantitative methods to interpret and analyze financial statements for i**nternal and external decision making as a business manager**.

Improved: Analyze financial statements at an introductory level.

2. Lecture-only course:

   Original: **Demonstrate the steps** for how a vehicle oil change and inspection are done.

   Improved: Explain how a vehicle oil change and inspection are done.

f. Clear and Concise

   i. If the outcome becomes too long and contains too much specific content, but that specific content is deemed essential for alignment, it may be appropriate to move details to a document on content. (*see the handbook section on including course content above)

   ii. If alignment is not the issue, refer to the section on broadest conceptual level and consider whether terms and phrases are needed or can be removed.

   iii. Examples:

      1. Original: Apply **important, relevant, appropriate** science-based nutrition principles to create and follow a healthy, affordable, and sustainable eating plan **in order to maintain physical health and fitness**.

         Improved: Apply science-based nutrition principles to create and follow a healthy and sustainable eating plan.

      2. Original: Articulate theories of color harmony, **including complementary colors, split complementary colors, analogous colors, triadic harmonies, tetradic harmonies, and monochromatic harmonies.**

         Improved: Articulate theories of color harmony.

      3. Original: Utilize the art of critical analysis **by honing the significance of their discerning skills to separate fact from fiction, myth from reality, and propaganda** from genuine historical accounts.

         Improved:Identify credible historical sources.

      4. Original: Describe **with significant technical precision** the process of protein synthesis in prokaryotes and eukaryotes including **transcription, splicing, translation, as well as the importance of gene regulation (transcriptional, post-transcriptional, translational, post-translational, and epigenetic), and how they are important for the production of a protein.**

Improved: Describe how the expression of genetic information governs the growth and behavior of organisms.

g. Equity Lens

i. According to Montenegro and Jankowski (2020), equity-minded assessment entails the following actions:

1. Check biases; address assumptions & positions of privilege.
2. Use multiple sources of evidence.
3. Include student perspectives.
4. Increase transparency.
5. Ensure meaningful disaggregation and interrogation of data.
6. Make evidence-based changes that address issues of equity that are context-specific.

ii. In developing course-level student learning outcomes, consider how the instructor might explain the outcomes and recognize when they are accomplished by learners who represent a range of different backgrounds, experiences, expectations, and/or abilities. Learning outcomes should be simply stated in student-centered terms. If students are aware of the intended outcome, then they know where their focus should lie in the learning experiences in the course.

iii. Interrogate any language, concepts, or assumptions in the student learning outcome that may inherently privilege learners with specific backgrounds and experiences.

iv. Any instructor qualified to teach the subject matter should be able to design learning experiences and assessments of student learning that inform the course-level student learning outcomes across a range of educational contexts. Here is a resource to use backward course design to promote equity and inclusion in supporting learners to realize the outcomes of the course.

v. Examples:

1. Original: Produce **cognitive and physical conclusions** from the analysis of three-dimensional designs, elements and principles.

Improved: Describe the features of three-dimensional design.

2. Original: Communicate how diversity in cultures influences **ethics in criminal justice.**

   Improved: Explain how cultural diversity influences different perceptions of right and wrong in public institutions' provision of services.