Oregon CBA Program for Initial EMS Education

Guidance for CBA Course Setup

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This document describes recommendations and best practices from the literature for the effective design and administration of a CBA course. Refer to Oregon Administrative Rule (OAR) 333-264 for EMS provider course and CBA requirements.

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CBA Course Setup/Infrastructure

The move to competency-based assessment (CBA) to verify entry-level competency necessitates a different approach for administration of the CBA program. Incorporation of Programmatic Assessment (PA) as part of the CBA course will serve as the assessment infrastructure for all initial EMS CBA courses approved by OHA-EMS/TS. PA is a system of student-centered competency assessment. Its foundational principles encompass components of competency-based education, qualitative assessment, and technical standards of assessment design.

PA aligns course activities with competencies and outcomes and collects data of a student's development towards outcome targets. The collection of data serves two purposes: 1) to spur a student's continued learning and professional development through meaningful feedback, reflection, and refinement, and 2) to use the aggregated data as evidence of competency development and achievement (Baartman et al., 2022).

The core principles of PA are summarized by Baartman et al. (2022) and listed below as elements of CBA course design and deployment. Each element includes the PA principle, specific actions to be taken in the development of a CBA course and the rationale for inclusion.

Not all principles or actions are expected to be implemented at once. Actions highlighted in orange text are priority components to include in the initial phases of CBA course development; other elements may be added as instructors and programs become familiar with this new system of assessment.

PA System Principles, Elements and Actions

1. **PA is a framework of learning outcomes that serve as the backbone of the CBA course; the outcomes provide the basis for data points (student evidence) and aggregation.**

   Action:

   - Develop a blueprint of the specific assessments and assignments that will link to each OHA-EMS student performance outcome description and their learning targets. This will produce a collection of evidence that will be used to evaluate student progress towards, and achievement of, each outcome target. Blueprinting templates and a Power Point are available to assist with this work.
   - Refer to point #2 and #5 for additional recommendations for the blueprinting process.
   - All CBA courses must submit a CBA application for each EMT, AEMT and EMT-I course that follows the same blueprint. The application must be submitted to OHA-EMS 60 days before the start of a course and must include the course blueprint, CBA policies from the course syllabus, and a plan for student and

instructor orientation to CBA.   Refer to [Oregon Administrative Rule (OAR) 333-264-0070](#) for CBA program requirements.

- Review the effectiveness of the activities within the blueprint and modify, delete and add activities to increase the precision of each tool and to capture appropriate student evidence more clearly.

Rationale: this is critical element of the CBA system. Blueprinting will assure the collection of data will be relevant to the outcome expectations (this assures validity in assessment design). Activities identified in the blueprint will provide a clear path for directing and tracking student progress and be used to validate decisions regarding student achievement of the outcomes and their eligibility for NREMT certification testing.

2. **A mix of different data points is used to gain insight in student development.**

   Actions:

   - During the blueprinting process, select or create diverse assignment and assessment methods and contexts that capture a full picture of the expectations contained within each outcome. Capturing the student's performance relevant to the outcome in different contexts and with different types of assessment provides robust sampling and increases reliability for decision-making.   See point #5 for further recommendations regarding sampling.
   - Add or revise activities to promote opportunities for deeper learning, meaningful feedback and/or student reflection that will contribute to further learning and growth.

Rationale: no one method of assessment is superior to another; all have strengths and weaknesses (Schuwirth & van der Vleuten, 2019). A stronger case for competency is made when a student's performance and abilities related to the outcome are captured from different methods and contexts (think of corroborating evidence in a legal case). Strategic use of different assessment methods will offer a multi-dimensional view of a student's ability to transfer their learning n different manners and situations. In PA, all types of assessment and assignment data are useable if they align with some or all the expectations outlined in each

outcome (narrative data, numerical scores, checklists, rubric scores, peer and instructor feedback, student reflection, etc.).

3. **All data points focus on optimizing feedback [and do not involve pass-fail decisions].**

   Actions:

   - As a minimum, use the OHA-EMS Standardized Scoring Scale as the scoring standard for assessments and assignments linked to the proficiency target of each outcome.
   - Scoring of these activities with the Scale is required.
   - Instructors may expand their use of the Scoring Scale for developmental assignments and assessments; this is optional and beneficial for students and instructors to track early progress and adjust teaching and learning strategies to further enhance student learning.
   - Traditional grading practices are unavoidable in a college environment, but instructors are encouraged to explore methods to implement feedback with assessment that meaningfully spurs continued refinement of skills and thinking processes.

   Rationale: This is a distinct contrast between traditional testing/assessment philosophies and PA. Traditional testing approaches are often disconnected from learning processes, reward right responses over right processes and approaches, and place high stakes on a single moment of performance. This generates a superficial and short-sighted view of learning and orients student motivation and value on grades and results rather than on refinement and growth.

   PA emphasizes assessment as tools and processes that promote deeper learning and longitudinal student development. The results of each assessment are used to steer learning and used as data points for plotting, tracking, and communicating student progress. It creates a goal-oriented motivation for learning.

4. **A continuous dialogue about data points, feedback, and self-regulation promotes ongoing growth towards the learning outcomes.**

Actions:

- Create a learning environment that promotes meaningful feedback and a growth mindset. Include peer and self-assessment, individual and group reflection. Close the feedback loop with expectations for the students to act upon the input they receive and demonstrate improvement.
- Use an electronic tracking system for the outcomes when possible (Learning Mastery Gradebook in Canvas, for example) and connect these to the scoring standards of the OHA-EMS Standardized Scoring Scale. This allows students to track their own progress and seek strategies to improve their knowledge and skills.
- Develop policies and processes that encourage student agency and self-directed learning for refinement and remediation within outcome areas (with instructor guidance and approval.

Rationale: These actions encourage equity by providing opportunities for individualized and self-determined learning. They also assist students in building their foundations of professional development: identify gaps in learning, make plans for improvement, and act upon those plans.

5. **There is a proportioned relationship between the number of data points and the stakes of the decision.**

   Actions:

   - Develop and communicate policies and procedures for the review of student data and decision-making processes where decisions pose potentially significant consequences for the students – more details are provided in the next section of this guidance document.
   - Assure an adequate sampling of student evidence for decision-making of outcomes achievement (8-10 alignments per outcome are recommended as the minimum standard for blueprinting, and a minimum of 6 activities with student evidence per outcome is recommended for the final review).
   - Assure a mixture of assessment methods and contexts are represented in student evidence; this offers a three-dimensional view of the student's transfer of knowledge and understanding

required by the outcome and provides a stronger case for decision-making regarding outcomes achievement.

- Determine whether students may offer additional evidence as part of their final review of outcomes achievement. This may be considered as an option for borderline cases or when evidence in some outcomes is not clear. Parameters may be written into this allowance (additional evidence as requested by the course director, evidence must be specifically aligned to an outcome, inclusion of documented narrative feedback from previous assessments, etc.).

Rationale: The above actions align with elements of qualitative research and assessment that assure credible, trustworthy, and defensible decisions. Cook et al. (2016) provides extensive discussion on the application of qualitative research principles to competency assessment (the link to this article is listed in the References section).

6. **The higher the stakes of the decision, the more assessor expertise is needed.**

Actions:

- Create course policies and procedures to identify when and how additional instructors, other college faculty and/or the medical director will be involved in the review of student progress and achievement of competency. Consultation may be necessary for borderline cases or to reconcile conflicting or questionable evidence of achievement (Wilkinson & Tweed, 2018). A procedure should be developed for this work and communicated to students.

Rationale: Final evaluation of outcomes achievement is often compared to clinical reasoning processes necessary for complex patient presentations; consultation with other professionals and acquiring other data for sound decisions are standard practice in these cases (Schuwirth & van der Vleuten, 2019). A similar approach should be applied here as well.

Procedures for the Final Determination of Outcomes Achievement

The blueprinting of assessments and assignments to each outcome serves an important function in this stage of the CBA program: providing an accurate and complete picture of student performance to evaluate against the expectations of the outcome. A benefit to tracking these activities as they are deployed in the course is the ability to monitor the growth of proficiency, allowing the student opportunities to refine specific areas of need and strengthen their performance before the final review is made.

If the blueprinting process is strong and robust and the tracking system and processes are effective, then the trends and patterns of performance in each outcome will become clear; a full final review may not be necessary in most cases. For those cases with performance trends that are borderline proficient or presents evidence that is unclear or conflicting, then further review is necessary.

Minimum requirements for the final review should be set, including the amount and type of evidence produced by the student. Below is a list of questions to consider when building these requirements:

- What percentage of the blueprinted assignments and assessments must be completed by the student in each outcome area? A minimum of 6-8 artifacts per outcome produced by the student is recommended to assure an adequate sample size for decision-making.
- How diverse should the sampling be for this final assessment? What types of contexts and assessments should be represented (this can vary between the competency areas)? It is recommended that all three learning domains are represented within each competency area as well.
- How will you weigh narrative feedback with rating scales? Of the total sample size, how many of these should show performance at the correct learning target?
- If further review is warranted, who will perform the review? What additional evidence will be accepted (this will be important to communicate to students as part of the CBA orientation – they may want to keep a portfolio of their work for this purpose).

- What options are available to the student if they haven't completely met all outcome requirements?
- How will the final and further reviews be documented and communicated to the students?

Course Syllabus Policies

Below is a listing of recommendations for the course syllabus:

- Remove all references to state or NREMT psychomotor testing. Skills testing may be included as a course-specific requirement per the instructor's or educational program's discretion.
- Introduce the Oregon CBA program and reference the OHA-EMS/TS competency areas and outcomes. Additional details regarding outcomes scoring and tracking of student progress of the outcomes may be added to the syllabus in accordance with college standards and guidance.
- Add the requirement that all OHA-EMS/TS performance outcomes at their respective learning levels must be met for the student to pass the course and be eligible for the NREMT certification exam. Inclusion of other requirements for course completion may be added from the OHA-EMS/TS educational rules.
- Include or expand policy statements for remediation to include outcomes-specific triggers (lack of evidence, stalled progress, etc.), monitoring, actions, and consequences.
- Describe the requirements and parameters for the final review of outcomes achievement: number/amount of student evidence required; evidence demonstrating consistent performance at the correct learning level for each outcome; parameters for additional review by other faculty or the medical director; opportunities (or not) to consider additional evidence; and actions if outcomes are not fully met (issuance of an incomplete or other grading implications). Consultation with other CBE/CBA programs within the college and discussions with department-level administrators is

encouraged, as outcome-based grading policies may have impacts on a student's financial aid.

Student Orientation to the CBA Program

The CBA Program is designed to be a transparent, student-centered process of assessment. Students should be oriented to the outcomes and expectations for achievement, including the target learning levels. Students should be introduced to the outcomes tracking system and how the system will monitor progress and guide further refinement of learning.

Some best practices from other CBA courses are listed below:

- Provide all students access to the OHA-EMS/TS student competencies and performance outcomes document and the Standardized Scoring Scale (the expanded version may help students grasp a better understanding of each level of proficiency).
- Score low-stakes student activities with the scoring scale to give the students a feel for this new assessment approach.
- Provide resources and/or instruction for effective goal-setting and self-reflection; practices for constructive feedback; and strategies to develop self-directed learning and self-regulation. The student counseling center and the center for teaching and learning at the college may have resources available to students.
- Offer regular input and get feedback from students regarding their progress through the outcomes. This may include access to the electronic outcomes tracking system, scheduling individual appointments, or through student reflection or journal assignments.

Instructor Orientation to the CBA Program

As noted in the CBA Course Infrastructure section, the CBA program holds non-traditional perspectives towards student assessment. Many instructional practices inherent to competency education and assessment will likely be unfamiliar to instructors (and students) whose educational

experiences consistently included standardized testing processes and assessment forms.

Some new practices include: scoring on a learning continuum with a rubric; offering specific feedback and documentation geared towards student growth; and using forms other than checklists or sequence-oriented assessments. A few suggestions are listed below to assist in reshaping assumptions and approaches regarding assessment:

- Introduce the CBA program as a comparison and contrast to traditional psychomotor testing practices. While the comparisons will be loosely connected, these will highlight the key principles of assessment shared between the two approaches. The blueprinting Power Point describes the comparisons and contrasts in further detail, including:
    - The 'exam' goal in CBA is for the student to demonstrate consistent and safe performance of core attributes of entry-level competency at a minimum level of proficiency; the goal of psychomotor testing is the demonstration of a skill without causing harm to a patient.
    - In psychomotor testing, the question to answer is whether the student can do the skill without critical mistakes. In CBA, additional burden of proof includes the ability to apply skills and knowledge in different contexts appropriately and consistently.
    - Assessments in CBA serve as the conduits to produce the evidence needed to 'pass' the 'exam'
    - Instructor ratings and feedback are critical in providing the evidence needed to make accurate decisions of student competency. Consistently providing direct observations of what the student did (or did not) do and to what degree of entry-level competency was demonstrated can make the difference for student growth and in making a final determination regarding outcomes achievement.
- Keeping copies of the outcome expectations and the OHA-EMS/TS Standardized Scoring Scale in the classroom are helpful references for instructors and students. CBA instructors have laminated these or displayed them in the classroom during lab sessions.

- Consider using a student scribe during debrief sessions with an instructor and have the instructor review and sign off on the translated information.
- During the initial lab sessions where outcomes scoring is introduced, have the instructors review student performance simultaneously and review their scoring and rationale together. This will assist in assuring consistency of rater evaluation (inter-rater reliability).

References

Baartman, L., van Schilt-Mol, T., & van der Vleuten, C. (2022, October 4). Programmatic assessment design choices in nine programs in higher education. *Frontiers in Education*, *7*. [Frontiers | Programmatic assessment design choices in nine programs in higher education (frontiersin.org)](#)

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