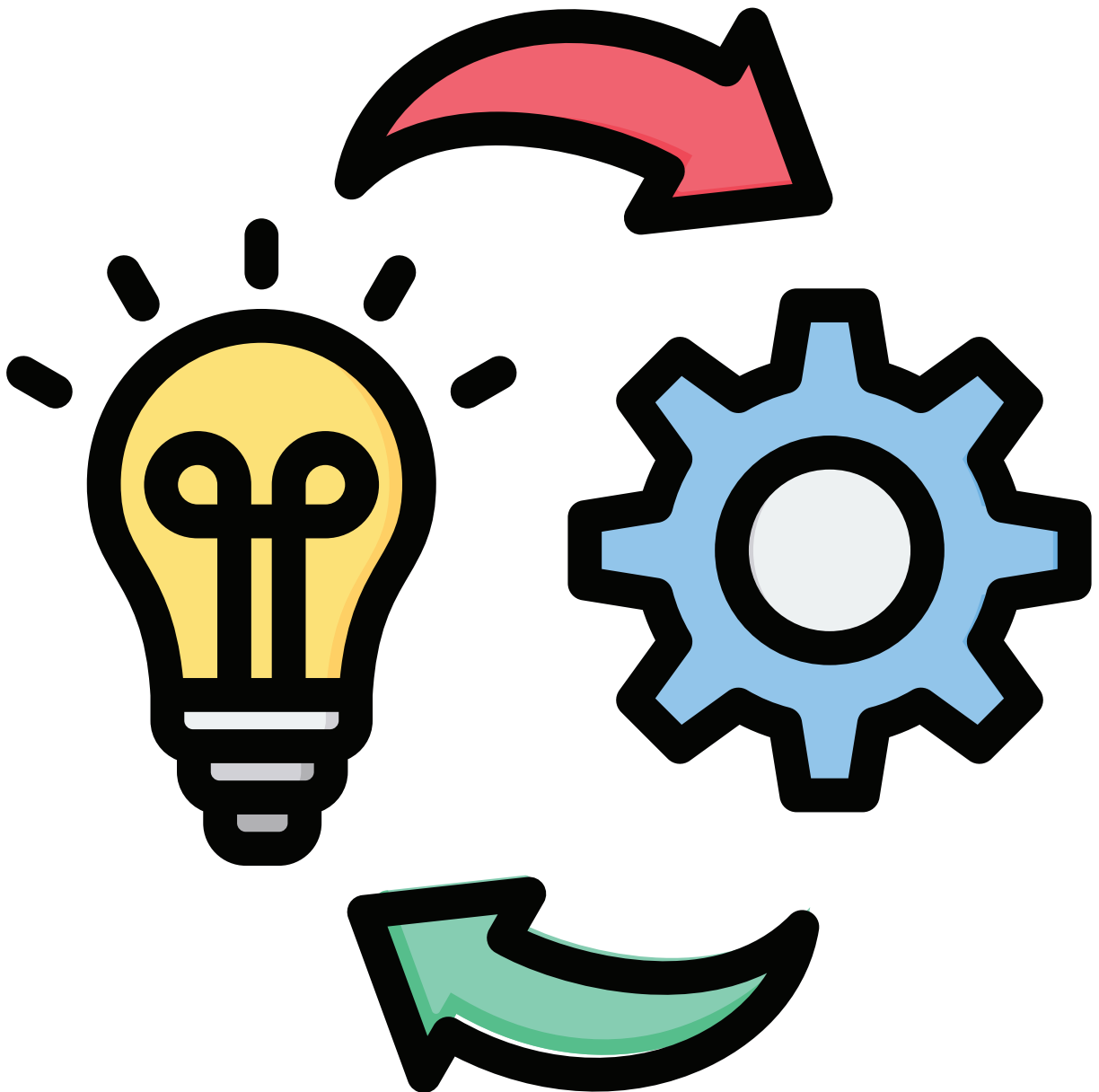AAVMC®
CBVE
Competency-Based
Veterinary Education

Competency-Based Veterinary Education:
Implementation Strategies

Using CBVE in your program

When implementing the CBVE Model, it is critical to maintain fidelity to the model to allow evaluation of its effectiveness. According to medical education literature, fidelity of implementation broadly includes the following five core components:

- clearly articulated outcomes,
- sequenced progression of learning,
- tailored learning experiences,
- competency-focused instruction,
- and programmatic assessment.[1]

The CBVE Competency Framework provides clearly articulated outcomes for the learner. Milestones describe the expected progression of learners from early training (Pre-Novice 1 and 2) to graduation (Competent) and beyond (Proficient). Tailored learning experiences allow for flexibility in time spent in training, recognizing that learners may not progress at the same rate across all competencies. A learner struggling with a specific competency will take more time to achieve competence. Building in curricular time for additional practice and reassessment (i.e., remediation) is critical to support learner progress. Competency-focused instruction involves teaching to program outcomes and providing feedback to support individual learner progress. Programmatic assessment provides useful feedback to learners by gathering longitudinal data across multiple assessments to support evidence-based decisions on learner progression and achievement of program outcomes. Programmatic assessment is supported by review of critical data with a committee devoted to progress decisions. Faculty development and change management strategies are essential to support the adoption of CBVE.

Over time, fidelity of implementation of the CBVE Model, standardization of assessment forms, and data sharing across institutions will enable evaluation of the CBVE Model and related educational interventions. These efforts, accompanied by scholarly work, will advance the field of veterinary education.

This section provides practical guidelines for helping institutions and faculty implement the CBVE Model as they engage in activities such as the following:

A. Curriculum mapping and alignment in the curricular review process

B. Curriculum redesign

C. Opportunities for customization of the CBVE Model

D. Assessment in the pre-clinical environment

E. Assessment in the workplace

F. Remediation

---

1. Van Melle E, Frank JR, Holmboe ES, Dagnone D, Stockley D, Sherbino J; International Competency-based Medical Education Collaborators. A Core Components Framework for Evaluating Implementation of Competency-Based Medical Education Programs. Acad Med. 2019 Jul;94(7):1002-1009. doi: 10.1097/ACM.0000000000002743. PMID: 30973365.

CBVE: Implementation Strategies

A. Curriculum mapping and alignment in the curricular review process

The CBVE Competency Framework provides a list of competencies that can serve as program outcomes for curricular mapping. The CBVE Competencies define what graduates should know and be able to do as they complete a veterinary training program. A program's existing course and learning session outcomes can be mapped to the CBVE Competencies to demonstrate alignment and identify gaps. While many mapping tools are available, the simplest way to map competencies is using a spreadsheet that compares existing program outcomes with the CBVE Competencies.

The CBVE Milestones can be used to sign-post the developmental pathway of learners by making expectations explicit at each stage of training and showing the anticipated progression over time. This also leads to a better understanding of the purposeful structural design of the competency-based program and is helpful for learners to identify how foundational instruction early in the program prepares them for the demands and expectations as training progresses.

B. Curriculum redesign

Curriculum redesign or curriculum development requires alignment of intended outcomes, teaching methods, and a program of assessment. The CBVE Competency Framework and the CBVE Milestones guide curricular redesign as they provide the roadmap for learner achievement across the program.

Using the CBVE Competency Framework as a list of pre-determined outcomes accelerates the redesign process by avoiding the slow, often painful process of writing competencies across faculty groups within individual institutions. In addition, it is essential to seek internal and external stakeholder feedback regarding expectations for graduates in the professional workplace. Stakeholder input can then be mapped to the CBVE Competency Framework, assuring them their expectations for graduate performance are met.

C. Opportunities for customization of the CBVE Model

The nine domains of competence and the 32 associated competencies, the milestones, and the eight core EPAs should be maintained across veterinary educational programs. However, programs may choose to develop additional EPAs and subcompetencies to reflect local context and culture. For example, additional subcompetencies may be developed related to diversity, equity, inclusion; well-being; spectrum of care; patient safety culture; public health; or others. The opportunity to customize subcompetencies allows for continual remodeling or evolution of a program's curriculum while maintaining fidelity to the fundamental CBVE components. Opportunities for flexibility in assessment are provided by the CBVE Toolkit and should be selected based upon program needs and resources.

D. Assessment in the pre-clinical environment

Assessment in the pre-clinical environment may include assessment of foundational and clinical knowledge, procedural skills, clinical reasoning, collaboration, professionalism, and communication. In some instances, educational programs incorporate experience in a veterinary workplace as a formal part of early training. The diversity of subject matter and learning environments in veterinary education requires a variety of assessment tools to assess learners. The CBVE Toolkit helps instructors identify specific tools for particular learning activities by mapping each tool to specific competencies.

CBVE Milestones help learners and educators visualize the roadmap for expected learning across the program. Data on individual student and cohort achievement of milestones helps progress committees make decisions regarding student progression and remediation.

CBVE: Implementation Strategies

E. Assessment in the workplace

In-training evaluation reports (ITERs) can be used to document learner progress and to provide feedback to learners about their performance during clinical experiences. Using ITER forms that feature the CBVE Milestones allows learners to obtain detailed information about the level at which they are currently performing and to identify opportunities for growth. The ITERs can also be reviewed across a cohort to provide collective information about cohort development across domains and competencies.

EPAs provide opportunities for observing learner performance in the clinical workplace within varying contexts (e.g., patient, client, clinical presentation). Entrustment-supervision scales are useful when paired with EPAs. Learners typically initiate the interactions and ask for observation by evaluators. Self-evaluation can also be performed. The comparison of ratings and comments between learner and evaluator can lead to rich discussion about what went well and what can be improved next time.

Performing multiple assessments, with different instruments over multiple points in time, is critical when gathering data for programmatic assessment. Performance data may be reviewed by a progress committee to determine if learners are meeting suitable targets for competency achievement set by the program, and to make decisions regarding individual learner progression.

F. Remediation

Students who struggle to achieve the expected milestones can be identified with feedback captured from a variety of assessment tools. CBVE Milestones and EPAs are useful to help frame feedback conversations and help to show learners opportunities for growth. In addition, they may guide conversations for remediation including identifying a comprehensive plan and timeline for performance practice. The remediation plan must consider a holistic view of learner performance (e.g., EPA performance) as well as more granular assessment based upon individual competencies and associated milestones. Showing learners where they have not yet met expectations and helping them to set a clear plan is important to support self-directed learning. Data on student performance across a cohort or between cohorts should be used to develop realistic targets for learner improvement.