ICO Ophthalmic Educators Curriculum

Content Outline

The International Council of Ophthalmology (ICO) Ophthalmic Educators Curriculum offers an international consensus on what Ophthalmic Educators should be taught. While the ICO curriculum provides a standardized content outline for educator training, it has been designed to be revised and modified, with the precise local detail for implementation left to the region’s educators.

Download the Curriculum: icoph.org/curricula
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I. Teaching and Learning Principles

Concepts and principles important for effective teaching and learning. These principles should be adopted by teachers to increase student learning and competency achievement.

A. Adult Learning Principles
   A variety of principles thought important to effective adult learning exist, including theories of Knowles, Schon and Ericsson.

B. Generational Learning
   Differences exist as to how generations learn best. These differences are delineated.

C. The Roles and Competencies of a Good Teacher
   Qualities and specific techniques employed by effective teachers.

D. Teaching & Learning Styles
   This section covers a variety of teaching and learning theories in addition as to why it is important to consider in your teaching.

E. Outcome- and Competency-Based Education
   Competency can be defined as the ability to perform a task well. New paradigms in education suggest competency-based education is the best approach in the medical field. The outcomes of tasks performed is a measure of competency.
   1. The Competencies
      a. ACGME Model
      b. CanMeds Model
      c. RCOphth Competency Model
   2. Milestones and Entrustable Professional Activities (EPAs)

F. Evidence-Based Teaching and Learning
   Principles of evidenced-based teaching and learning and why it is essential to guide the adoption and implementation of teaching and assessing methods and tools.

G. Developing Goals and Objectives
   Good goals and objectives facilitate teaching plan development and point the learner to the important aspects of the teaching. Principles of creating good goals and objectives.
   1. Bloom’s Taxonomy
II. Teaching Methods

Principles and methods used for instruction.

A. Teaching Concepts, Facts, Principles, Processes, Procedures

Different content types need different teaching methods to ensure learning.

B. Problem-Based Learning

Students learn about a subject matter through the experience of solving an open-ended problem.

C. Teaching Practical Skills

Describe and use the Peyton four-stage approach to teaching a practical skill.

D. Large Group Teaching

Traditional lecturing and its many variations and approaches.

1. PowerPoint Presentations
   Principles of creating good PowerPoint slides and presentations.

2. Combining Media Elements
   Appropriate integration of images, videos and any other media used in lecture.

3. Interactive Lectures
   Techniques to add interactivity to lectures including types of questions, exercises and audience response systems.

4. Lecture Structure
   Appropriate structure of the lecture with the key elements of introduction, body and conclusion and their sub-components.

E. Teaching Non-Technical Competencies

Non-technical or “soft” competencies are those beyond medical knowledge and technical/surgical skills. Special methods and tools are needed for teaching and assessing non-technical competencies.

1. Communication and Interpersonal Skills
   Teaches ways on how to better communicate with coworkers and patients.

2. Ethics
   Discusses moral principles of issues related to our profession.

3. Professionalism
   Analyses, conducts, and sets guidelines for conducts related to our profession.

4. Critical Thinking
   The process of analyzing thinking with the goal to improve it.

F. Simulated Patient Scenarios

Scenarios or case presentations that reproduce real life situations for the purpose of teaching.
G. **Mentoring**
A mentor is a counsellor or teacher who motivates and assists a junior colleague in attaining success. The mentor supplies information, gives advice, facilitates professional networking, and offers critical support to the mentee.

H. **Teaching Evidence Based Medicine**
How to ask answerable clinical questions (about diagnosis, therapy, prognosis, etc.), searching for the best research evidence, critically appraising the evidence for its validity and relevance, applying the evidence to groups of individuals, and evaluating your own performance.

I. **Small Group Teaching**
Small-group sessions may complement large-group teaching (i.e. lectures) by further exploring key concepts in lectures and readings, applicability, discussions, understanding of difficult material, etc.

J. **Work-Based Experiential Learning and Teaching in the Clinic**
Teaching students clinical skills for ophthalmic ambulatory patients, including clinical reasoning, patient care, doctor-patient relationship & communication skills, delivery of feedback, patient education.

K. **Surgical Teaching**
Strategies and tools for teaching and assessing surgical training.
1. Simulation-Based Surgical Teaching
   Principles and practices of a structured practice lab curriculum utilizing various forms of simulation; and involving instruction, sustained deliberate practice, feedback, and assessment.
2. Cognitive Skills
   Framework of the important surgical cognitive skills, including situation awareness, decision making and task management.
3. Teaching in the Operating Room
   Principles of surgical teaching including patient safety, resource utilization, controlling processes, feedback and assessment.
4. Reflective Learning
   Principles and benefits of reflection “in” and “on” performance as a learning tool.

L. **Independent Learning**
Students work on their own to meet their own learning needs. They have control over their own learning (also “self-managed/directed/regulated” learning). May precede or follow a lecture, small-group session, or clinical session; before a formal examination; and during e-learning.

M. **Achieving Student Engagement**
Capturing and maintaining learners attention.
1. Motivation
2. Active learning

III. Technology Assisted Teaching and Learning
Tools and instructional design strategies for developing electronic mediated teaching interventions.

A. Running Successful Webinars
   Theory and practice on running webinars.

B. Synchronous vs. Asynchronous Learning
   Comparison of online activities when students and teachers are online at the same time and when each gets online at any time.

C. Web-Based vs. Face-to-Face
   Compares pros and cons of each teaching channel.

D. Blended Learning
   Utilizing part online and part face-to-face activities.

E. ICO Online Resources
   Describes the ICO website and resources for educators.

F. Non-ICO Web Resources for Teaching and Learning
   e.g. AAO, RCOphth, Wills Eye Hospital, eyenet, etc.

G. The flipped classroom
   Utilizing lecture time at home and homework in class.

H. Tools for Online Collaboration
   Software for sharing and editing online.

I. Developing Performance Support Aids
   How to develop resources that will support work performance after training, including content curation, managing knowledge resources, etc.

J. Tips and Tricks for PowerPoint Presentations

K. Mobile Learning
   Uses of portable devices for teaching and learning, including podcasts.

L. Chunking
   How to segment lectures and other teaching interventions.

M. The Course Syllabus
   Describes the complete course regarding content, time table, requirements, duration, cost, registration, etc.

N. Working with Content Experts
IV. Curriculum Development

A. Curriculum Adaptation and Implementation

A curriculum is defined as a planned educational experience.

1. Six Steps Problem Identification and General Needs Assessment
   Identification and assessment of a health care need or other problem. This requires an analysis of the current approach of patients, practitioners, medical education system, and society to addressing the identified need. It is followed by identification of an ideal approach of how the need should be addressed. Difference between both represents a general needs assessment.

2. Targeted Needs Assessment
   Assessing the needs of one’s targeted group of learners and their medical institution/learning environment.

3. Goals and Objectives
   Goals are broad and general; objectives are specific and measurable. Objectives may include cognitive (knowledge), affective (attitudinal), or psychomotor (skill and behavioral); also process objectives (i.e. conduct of the curriculum), or health, health care, or patient outcome objectives. Objectives may also be termed “Intended Learning Outcomes.”

4. Educational Strategies
   Curriculum content and educational methods that are most likely to achieve the educational objectives.

5. Implementation
   i.e. obtaining political support; identifying and procuring resources; identifying and addressing barriers to implementation; introducing the curriculum; administering it; and refining it.

6. Evaluation and Feedback
   Of individuals and the curriculum; formative or summative.

B. ICO Curricula

Development, distinctive features (i.e. prioritization), international relevance, and specific examples.

V. Assessment Principles, Methods and Tools

A. Importance and Role of Assessment

To support teaching and learning by fostering learning; to provide information about students, teachers, and schools; to act as a selection and certification device; to predict future success; to ensure the safety of the public; to set standards and monitor the quality of education.
B. Giving Useful and Effective Feedback

Information describing students’ and/or faculty’s performance in a given activity that is intended to guide their future performance in that same or related activity. Important principles: timely, frequent, expected; based on first-hand data; descriptive; constructive; specific; nonjudgmental; balanced; objective.

1. Characteristics of a Good Assessment Tool
   a. Validity
      Does the assessment measure what you want it to measure?
   b. Reliability
      Is the assessment completed the same by different assessors viewing the same situation or by the same assessor viewing a situation multiple times?
   c. Feasibility
      Is the assessment practical in terms of frequency, duration?

2. Methods of Assessment

To assess all levels of Miller’s pyramid - knows, knows how, shows how, does - and Bloom’s taxonomy - knowledge, comprehension, analysis, application, synthesis, and evaluation.

   a. Formative vs. Summative Feedback
      Formative feedback is aimed at improving behavior whereas summative is a measure of competence.

   b. Workplace-Based Assessment
      Assessment done on-the-job observing skill of an individual.

      1. Rubrics
         A rubric is an assessment tool with dimensions (e.g. steps of a surgical procedure), levels (e.g. novice, beginner, advanced beginner, competent), and descriptors of the behavior one expects to observe for each dimension and level.

      2. 360-Degree Evaluation/Multi-Source Feedback
         Usually a survey of the various people (e.g. patients, peers, staff) who interact with the individual being assessed. Survey questions are tailored to the group doing the assessing.

      3. Observed Clinical and Procedural/Surgical Checklists
         Checklists are usually simply a list of steps of a procedure or task which are simply “done” or “not done.”

   c. Portfolios
      A collection of the work (e.g. presentations, manuscripts, surgical
cases) and assessments (e.g. checklists and rubrics) of an individual. These may be electronic or paper.

d. Multiple-Choice Questions
Principles of writing good MCQs.
e. Surgical Video and Chart Audits
Reviewing recorded surgeries and charts with students.
f. Self-Assessment
Verbal or written assessment of one’s own abilities, often part of a 360 evaluation.
g. The ICO Examinations
Multiple choice question tests available at www.icoph.org/exams

C. Faculty Improvement
Consider the goal of the evaluation, available data sources (e.g. participants, peers, students, etc.), and methods of evaluation (e.g. questionnaires, focus groups, objective tests, observations.

D. Program Evaluation
Kirkpatrick’s levels of evaluation - reaction, learning, behavior, results.

VI. Program Management
A. Role of the Program Director
To oversee and ensure the quality of didactic and clinical education, resident selection and evaluation and patient management - should be based on ICO document.

B. Selection Process
How selection takes place, how information is collected, how decisions are based on the information.
   1. Interviewing Skills
   Behavioral interviewing, which emphasizes candidate’s actual, previous behavior in concrete situations, is typically more effective than questions about hypothetical unknown situations in the remote future.

C. Faculty Development
Planned activities to prepare institutions and faculty members for their various roles and to improve an individual’s knowledge and skills in the areas of teaching, research and administration.

D. Remediation of Students in Difficulty
Definition of deficiencies, provision of resources for improvement, communication of clear goals for acceptable performance, and reevaluation of performance against these goals.
E. How to Achieve Faculty Cooperation
Tips for getting your faculty to participate in the teaching and assessing activities of residency training.

VII. Team Training Concepts
A. What is Team Training? (Interprofessional Education)
   Occasions when two or more professions learn from, with, and about each other to improve collaboration and the quality of care.
B. Principles and Benefits
   1. Principles
      Understand and respect the roles and expertise of health and social care professionals in the context of working and learning as a multi-professional team.
   2. Benefits
      An effective interdisciplinary team contributes to the delivery of safe and high-quality care in the context of a changing international health and illness profile, with an increase in chronic and complex disease as the population ages, the patient safety agenda, and the importance of self-promotion.
C. Models of Effective Team Training
   Effective team training models (e.g. LV Prasad pyramid) and essential principles of task sharing, redistribution and standardization.
D. Assessment in Inter-Professional Education (IPE)
   Assessment should be team-based - projects and presentations, simulations involving multiple professionals, team-based OSCE stations, preparation of patient care plans.

VIII. Certification/Accreditation
Definition and process for accreditation and certification.
A. Individual Certification
   Designation earned by a physician to assure qualification to perform a job or task.
   1. Methods
   2. Models
   3. Rationale
B. Individual Re-Certification
   Also called “Maintenance of certification.” A process that ensures physicians are
up-to-date and maintaining their professional competence.

C. Program Accreditation

The process that requires standards of structure, process, achievement, self-assessment, and review by outside experts of educational programs, to ensure quality of education.

1. Methods
2. Models
3. Benefits

IX. Continuing Medical Education/Continuing Professional Development (CME/CPD)

Learning must continue after formal training is completed. This section describes principles and creation of good CME/CPD.

Within the medical education continuum, CPD shares key pre- and post-graduate medical educational topics. This section focuses on essential attributes of effective CPD with particular relevance and interest for CPD educators. The topics are organized under the following thematic clusters: systematization, comprehensiveness, accreditation and regulation (SCAR).

A. Systematization

1. Essential steps to Create a CPD system
2. Essential Steps to Build a Learning Experience with
3. Personal Development Plan
4. Medical Competence Continuum
5. Interaction within the CPD circle: Educators, Providers, Patients, Public, Regulators, Health Authorities, Policy Makers, Sponsors

B. Comprehensiveness

1. CME and CPD and CBCPD: Basic Concepts
2. Roles and Competencies of the Expert Physician
3. The Patient as Teacher/Partner
4. Team Building and Leadership
5. Patient Safety and Quality Improvement
6. Knowledge Transfer and Competence Improvement Translation

C. Accreditation

1. Guidelines to Create a Learning Intervention to be Accredited
2. Guidelines to Create Unbiased Learning Events
3. Evidence Informed Learning and Workplace Points of Care

D. Regulation
1. Evaluation of CPD Systems
2. The Concepts of Re-Certification, Re-Licensure, and Revalidation
3. Professionals Assessment Modalities: Tools and Methods
4. CPD Documentation Tools and Methods: Logs, Curricula and Portfolios
5. The Role of the Clinical Audit in CPD
6. Research in CPD

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