Family planning and comprehensive abortion care toolkit for the primary health care workforce

Volume 2

Programme and curriculum development guide

World Health Organization

human reproduction programme hrp
research for impact
UNDP · UNFPA · UNICEF · WHO · WORLD BANK

Family planning and comprehensive abortion care toolkit for the primary health care workforce

Volume 2

Programme and curriculum development guide

World Health Organization

human reproduction programme hrp
research for impact
UNDP · UNFPA · UNICEF · WHO · WORLD BANK

Family planning and comprehensive abortion care toolkit for the primary health care workforce. Volume 2. Programme and curriculum development guide

(Family planning and comprehensive abortion care toolkit for the primary health care workforce. Volume 1. Competencies – Volume 2. Programme and curriculum development guide)

ISBN 978-92-4-006390-7 (electronic version)
ISBN 978-92-4-006391-4 (print version)

Suggested citation. Family planning and comprehensive abortion care toolkit for the primary health care workforce. Volume 2. Programme and curriculum development guide. Geneva: World Health Organization; 2022 (Family planning and comprehensive abortion care toolkit for the primary health care workforce). Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Design and layout: Annovi Design.

Contents

Note: All parts of the family planning and comprehensive abortion care toolkit for the primary health care workforce (the FP and CAC Toolkit) are available at: https://www.who.int/publications/i/item/9789240063907

Acknowledgements

The *Family planning and comprehensive abortion care toolkit for the primary health care workforce* was developed collaboratively by the UNDP-UNFPA-UNICEF-WHO-World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP) and the Department of Health Workforce at the World Health Organization (WHO). HRP and the Health Workforce Department gratefully acknowledges the contributions of many individuals and organizations to the development of *Volume 1: competencies* and *Volume 2: programme and curriculum development guide*. The following WHO headquarters personnel provided valuable input to the development of both documents: Mohamed Mahmoud Ali, Carolin Ekman, Mekdes Feyssa, Bela Ganatra, Claire Garabedian, Veloshnee Govender, Heidi Johnston, Rita Kabra, James Kiarie, Caron Kim, Antonella Lavelanet, Laurence Läser, , Ulrika Rehnström Loi (responsible technical officer) and Patricia Titulaer of the Department of Sexual and Reproductive Health and Research and HRP; Juana Bustamante Izquierdo, Laurence Codjia (responsible technical officer), Ibadat Dhillon, Siobhan Fitzpatrick, Tapas Nair and Pascal Zurn of the Department of Health Workforce; Fahdi Dkhimi, Catherine Korachais, Bruno Messen and Andrew Mirelman of the Department of Health Systems Governance and Financing; Hyobum Jang and Offeibea Obubah of the Department of Country Strategy and Support; and Sarah Borg, Sally Emma Parsley and Tana Wuliji of the WHO Academy.

The following personnel from WHO regional and country offices also provided valuable input to the development of both documents: Lisa Apini-Welcland, Chilanga Asmani, Frida Berg, Selassi A. d'Almeida, Sithembile Dlamini-Nqeketo, Hayfa Elamin, Dina Vladimirovna Gbenou, Finagnon Ghislaine Glitho Ep Alinsato, Yelmali Clotaire Hien, Theopista John Kabuteni, Janet Kayita, Elisabeth Kouaovi, Belete Mihretu, Leopold Ouedraogo, Ameyo Sekpon, Alren Vandy, Mugabo Maria Mujawamariya, Pamela Amaka Onyiah, Ina Kalisa Rukundo, Justin Adanmavokin Sossou, Mèdéssè Thierry Tossou Boco, and Souleymane Zan of the WHO Regional Office for Africa; Antony Duttine and Rodolfo Gómez Ponce de León of the WHO Regional Office for the Americas; Itimad Abuward, Mohammed Afifi, Mae Elezaby, Suzan O El Raey, Karima Gholbzouri, Marwa Ibrahim, Babar Ali Malik, Ellen Thom and Qudsia Uzma of the WHO Regional Office for the Eastern Mediterranean; Maj-liz Downey, Md Khurshid Alam Hyder, Chandani Anoma Jayathilaka, Amrita Kansal, Priya Karna, Shekh Abdul Majeed, Neena Raina, Mohammad Shahjahan, Pragati Singh, May Myat Thu, Meera Thapa Upadhyay, and Sameena Vaidya Rajbhandar, and Shwe Sin Yu of the WHO Regional Office for South-East Asia; and Daisuke Asai and Shogo Kubota of the WHO Regional Office for the Western Pacific.

The following individuals contributed to both documents through the focus group discussions, technical working groups and town hall meetings: Aletha Aakers, Asmaa Aboabed, Anna Af Ugglas, Yasmin Ahmed, Fauzia Akhter Huda, Charles Ameh, Rondi Anderson, Esther Arendt, Zalha Assoumana, Suha Baloushah, Karla Berdichevsky Feldman, Rachid Bezad, Lorena Mercedes Binfa Esbir, Shrestha Binjwala, Karl Blanchet, Teresa Bombas, Martha Brady, Catherine Breen Kamkong, Virginia Camacho, Bethan Cobley, Francois Regis Cyiza, Moussa Dajoari, Ruth Graciela De León, Serena Debonnet, Emily Deed, Jemima Araba Dennis-Antwi, Eva Depleker, Daniela Drandic, Titiola Duro Aino, Saoussen Elouaer, Belmar Franceschi, Dipendra Gautam, Caitlin Gerdts, Sameh Ghozzi, Laura Gil, Roopan Gill, Enrique Guevara, Miguel Gutierrez Ramos, Hien Herve, Bounmy Inthavong, Indie Kaur, Jameen Kaur, Mercy Kemigisa, Adeela Khan, Irfan Khan, Tamar Khomasuridze, Catherine Kirk, Mildred Komey, Eva Lathrop, Vavita Leblanc, Nabila Lejri, Carolyn Levy, Désirée Lichtenstein, Oriana López Uribe, Steve Luboya, Daniel Maceira, Mike-Antoine Maindo, Alongo Maindo, Chisato Masuda, Wolde Mesfin, Michaela Michel Schuldt, Polona Mivšek, Shirine Mohagheghpour, Basab Mukherjee,

Adefris Mulat, Priya Nanda, Gildas Romanique Naoussitatchié, Wendy Norman, Felix Ordeig, Noël Labama Otuli, Anissa Ouahchi, Mohamed Oueslati, Oni Owolabi, Sally Pairman, Karan Parikh, Dhammika Perera, Matthew Pretty, Lesley Regan, Michelle Remme, Regina Renner, Erin Ryan, Siriphone Sakulku, Jihan Salad, Jaime Sanchez Salazar, Chandrakala Sharma, Dorothy Shaw, Merina Shrestha, Agnes Simon, Cuma Byamumgu Socrat, Anna Maria Speciale, Karthik Srinivasan, Jaydeep Tank, Aster Teshome, Afrah Thabet, Julie Thorne, Francelle Kwankam Toedtli, Griet Vandevelde, Joris Vermeulen, Victoria Vivilaki, Florence West, Anne Yates, Asmaa Zaidouni and Nina Zamberlin.

HRP and WHO extend sincere appreciations to the individuals who provided anonymous feedback through the Delphi survey.

Special thanks are due to the following consultants for their work on the development of *Volume 1: competencies* and *Volume 2: programme and curriculum development guide*: Hilde Cortier, Véronique De Clerck, Mieke Embo, Marta Jacyniuk-Lloyd, Nigel Lloyd, Karen Luker, Ana Montoya, Tasrina Rahman and Roberta Troxell.

This document was developed with the financial support of the UNDP-UNFPA-UNICEF-WHO-World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP), a cosponsored programme executed by the World Health Organization (WHO).

Abbreviations

CAC	comprehensive abortion care
CBE	competency-based education
CPD	continuing professional development
FP	family planning
WHO	World Health Organization

Glossary

When building a competency-based and continuous family planning (FP) and comprehensive abortion care (CAC) educational programme and curriculum, there needs to be a common understanding of the definitions of some key concepts and terms. Competency, competency frameworks and competency-based education (CBE) are three overarching concepts in contemporary pre-service and in-service health-care education. The definitions of these and other key concepts and terms used in this document are provided here.

EDUCATION AND TRAINING TERMS	
Attitude	A person's feelings, values and beliefs, which influence their behaviour and the performance of tasks *(1)*.
Assessment	The appraisal of a learner's progress toward the attainment of a goal or objective of an educational programme. In the medical education literature, the term assessment is used in the context of the appraisal of learners; the term evaluation pertains to the appraisal of programmes *(2)*.
Behaviour	Observable conduct towards other people or tasks that expresses a competency. Behaviours are measurable in the performance of tasks *(1)*.
Competence	The array of abilities (knowledge, skills and attitudes) across multiple domains or aspects of performance in a certain context. Statements about competence require descriptive qualifiers to define the relevant abilities, context and stage of training. Competence is multidimensional and dynamic. It changes with time, experience and setting *(3)*.
Competence committee	A group or panel of educators who review and discuss assessment data on each learner's performance and progress over time, to ensure learner progression *(4)*.

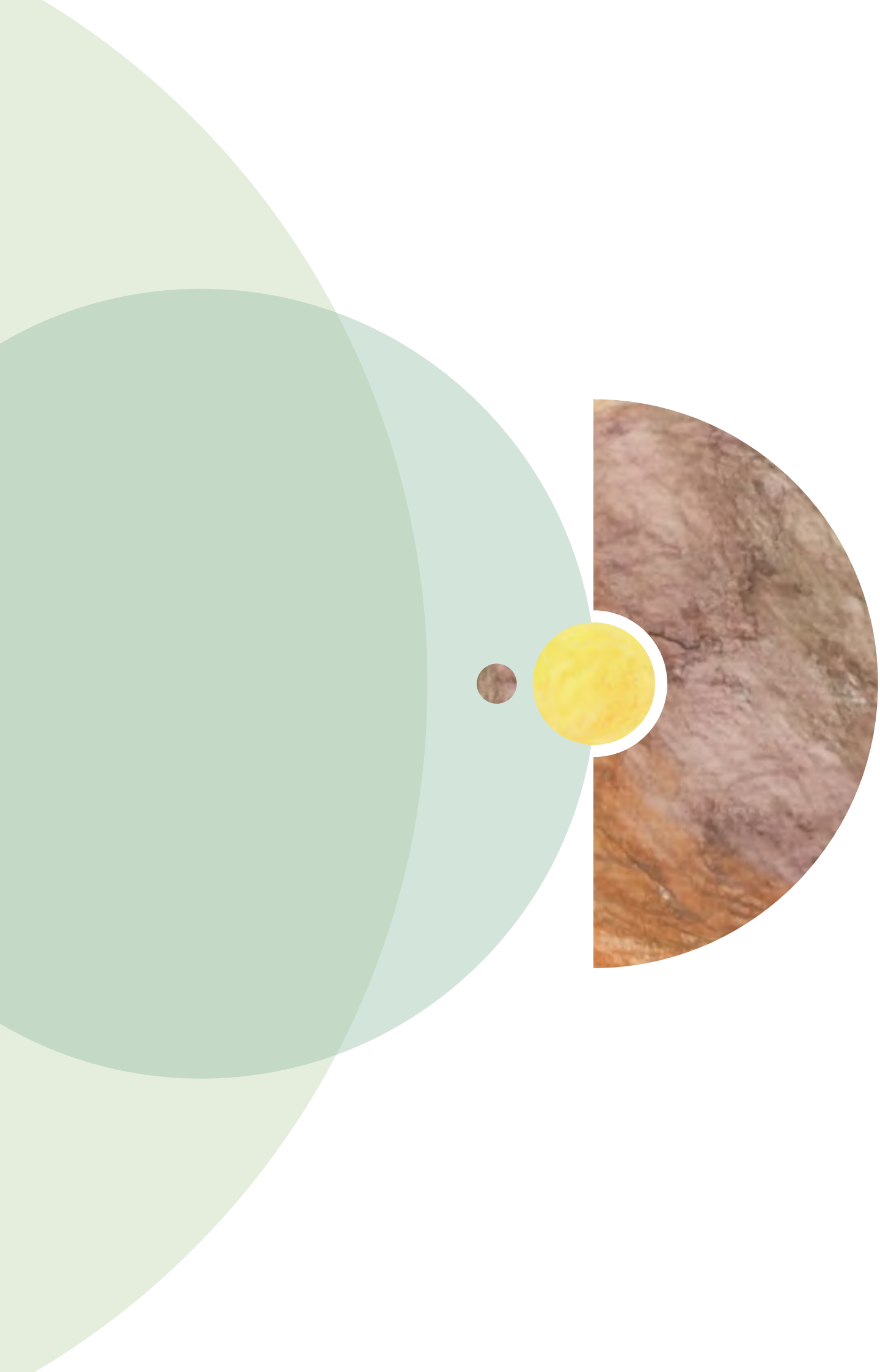
EDUCATION AND TRAINING TERMS *(continued)*	
Competency	The ability of a person to integrate knowledge, skills and attitudes in their performance of tasks in a given context. Competencies are durable, trainable and, through the expression of behaviours, measurable *(1)*.
Competency-based curriculum	A curriculum that emphasises the complex outcomes of learning rather than mainly focusing on what learners are expected to learn about in terms of traditionally defined subject content. In principle such a curriculum is learner-centred and adaptive to the changing needs of students, teachers and society. It implies that learning activities and environments are chosen so that learners can acquire and apply the knowledge, skills, and attitudes to situations they encounter in work environments *(5)*.
Competency-based education (CBE)	An approach to preparing [health workers] for practice that is fundamentally oriented to graduate outcome abilities and organized around competencies derived from an analysis of societal and patient needs. It de-emphasizes time-based training and promises greater accountability, flexibility and learner-centredness *(6)*.
Competency framework	An organized and structured representation of a set of interrelated and purposeful competencies *(7)*.
Competent	Possessing the minimum required abilities in all domains in a certain context at a defined stage of education, training or practice *(3)*.
Continuing professional development (CPD) (for the health workforce)	Training that is beyond clinical update and includes wide-ranging competences like research and scientific writing; multidisciplinary context of patient care; professionalism and ethical practice; communication, leadership, management and behavioural skills; team building; information technology; auditing; and appropriate attitudinal change to ensure improved patient service, research outcomes, and attainment of the highest degree of satisfaction by stakeholders. The form of CPD may include: courses and lectures; training days; peer review; clinical audit; reading journals; attending conferences; e-learning activity. National systems for CPD may be voluntary or mandatory. Mandatory CPD systems may include the requirement for both verifiable and general/non-verifiable CPD. Verifiable CPD is an activity that meets an agreed definition of CPD for which there is documentary evidence that the health worker has undertaken CPD with concise educational aims and objectives; clear anticipated outcomes; and quality controls *(8)*.
Course	The discrete units of study addressing specific subject areas. Courses generally increase in the depth of subject matter as learners move through the programme *(9)*. They may be weighted, often using the metric of “units” [or “credits” or “hours”] to indicate the degree to which they contribute to programme completion *(10)*.
Curriculum	The totality of organized educational activities and environments that are designed to achieve specific learning goals/objectives. The curriculum encompasses the content of learning; the organization and sequencing of content; the learning experiences; teaching methods; the formats of assessment; and quality improvement and programme evaluation *(1)*.
Curriculum development	The process of designing, implementing and evaluating a programme of learning *(2)*.
Curriculum plan	The organization of learning content within a curriculum. A curriculum plan demonstrates how curriculum content is structured and sequenced to enable the progressive attainment of competence, and offers a more detailed description of the learning experiences that learners will be offered *(9)*.
Domain	A broad, distinguishable areas of content; domains, in aggregate, constitute a general descriptive framework *(1)*.
Education	The process of receiving or giving systematic instruction, especially at a school or university *(11)*.

EDUCATION AND TRAINING TERMS *(continued)*	
Educational design	A systematic plan for designing, establishing and evaluating successful programmes for learners *(12)*.
Faculty development	Activities undertaken by faculty members to enable and enhance their performance in areas important to their academic mission *(2)*.
Interprofessional education	When learners from two or more occupations learn about, from and with each other *(13)*.
In-service education	Any structured learning activity for persons already employed in a service setting *(1)*.
Knowledge	The recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure or setting *(14)*.
Learning objective	A specific element of knowledge, skill or attitude to be realized by the learner as a direct result of the teaching provided by the educational programme *(2)*. There are three domains of learning objectives: • Cognitive domain: intellectual capability or "thinking" • Psychomotor domain: technical skills or "doing" • Affective domain: attitudes *(2)*.
Learning outcome	Learning outcomes are specific statements of what learners will be able to do when they successfully complete a learning experience (whether it is a project, course or programme). They are always written in a student-centred, measurable fashion that is concise, meaningful, and achievable *(15)*.
Learning technology	The broad range of communication, information and related technologies that are used to support learning, teaching and assessment *(16)*.
Performance (individual work performance)	Performance is a function of competence, motivation and opportunity to participate or contribute Where competence reflects what a health worker can do, performance is what a health worker does do *(1)*.
Pre-service education	Any structured learning activity that takes place prior to and as a requisite for employment in a service setting *(1)*.
Proficiency	A person's level of performance (e.g. novice or expert) *(1)*.
Programme	The totality of courses that provide a specific award or qualification to the learner on successful completion *(10)*.
Skill	A specific cognitive or motor ability that is typically developed through training and practice, and is not context-specific *(1)*.
Standard	The level of required proficiency *(1)*.
Supervision	The provision of guidance and support in learning and working effectively in health care by observing and directing the execution of tasks or activities and making certain that everything is done correctly and safely, from a position of being in charge *(17)*.
Syllabus	A description of the scope and depth of a subject matter to be covered in a course, as well as the specific learning experiences, materials and assessments that the course will entail, typically in greater detail than the curriculum plan. A syllabus communicates to learners what they can expect from a course and what it will require of them *(10)*.
Tasks	Observable units of work as part of an activity, which draw on knowledge, skills, attitudes and behaviours. Tasks are time-limited, trainable and measurable *(18)*.
Training	Training aims at improving the level of a trainee's competence in a specific area and may be defined as the process of developing, changing or strengthening knowledge, skills and attitudes of a target group *(19)*.

HEALTH TERMS	
Comprehensive abortion care (CAC)	Provision of information, abortion management (including induced abortion and care related to pregnancy loss), and post-abortion care *(20)*.
Family planning (FP)	Family planning allows people to attain their desired number of children, if any, and to determine the spacing of their pregnancies. It is achieved through use of contraceptive methods and the treatment of infertility. Contraceptive information and services are fundamental to the health and human rights of all individuals *(21)*.

References for the glossary

1. Global competency and outcomes framework for universal health coverage. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/352711).
2. Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons; 2011, pp. 92–3.
3. Frank JR, Snell L, ten Cate O, Holmboe ES, Carraccio C, Swing SR, et al. Competency-based medical education: theory to practice. Med Teach. 2010;32(8):638–45. doi:10.3109/0142159X.2010.501190.
4. Kinnear B, Warm EJ, Hauer KE. Twelve tips to maximize the value of a clinical competency committee in postgraduate medical education. Med Teach. 2018;40(11):1110–5. doi:10.1080/0142159x.2018.1474191.
5. Competency-based curriculum. In: IBE glossary of curriculum terminology. Geneva: UNESCO International Bureau of Education (IBE–UNESCO); 2013 (http://www.ibe.unesco.org/en/glossary-curriculum-terminology/c/competency-based-curriculum).
6. Frank J, Mugroo R, Ahmad Y, Wang M, De Rossi S, Horsley T. Toward a definition of competency-based education in medicine: a systematic review of published definitions. Med Teach. 2010;32(8):631–7. doi:10.3109/0142159x.2010.500898.
7. Englander R, Frank J, Carraccio C, Sherbino J, Ross S, Snell L. Towards a shared language for competency-based medical education. Med Teach. 2013;39(6):582–7. doi:10.1080/0142159X.2017.1315066.
8. National health workforce accounts: a handbook. Geneva: World Health Organization; 2017, p. 145 (https://apps.who.int/iris/handle/10665/259360).
9. Training tools for curriculum development. a resource pack. Geneva: UNESCO International Bureau of Education (IBE–UNESCO); 2013 (http://www.ibe.unesco.org/en/document/training-tools-curriculum-development-resource-pack).
10. Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339205).
11. Oxford Dictionary [website]. (https://www.lexico.com/definition/education, accessed 4 April 2022).
12. Houle Cyril O, editor. The design of education, second edition. Jossey-Bass Higher and Adult Education Series. San Francisco (CA): Jossey-Bass; 1996.
13. Cometto G, Buchan J, Dussault G. Developing the health workforce for universal health coverage. Bull World Health Organ. 2020;98:109–16. doi:10.2471/BLT.19.234138.
14. Bloom B. Taxonomy of educational objectives, handbook: the cognitive domain. New York (NY): David McKay; 1956.
15. Course objectives & learning outcomes. In: Teaching Commons [website]. Chicago (IL): DePaul University; 2022 (https://resources.depaul.edu/teaching-commons/teaching-guides/course-design/Pages/course-objectives-learning-outcomes.aspx, accessed 2 June 2022).
16. Strategy 2020–2025. Oxfordshire: Association for Learning Technology; undated (https://www.alt.ac.uk/sites/alt.ac.uk/files/public/ALTStrategy2020-2025.pdf).
17. ten Cate O. Supervision and entrustment in clinical training: protecting patients, protecting trainees. Rockville (MD): Agency for Healthcare Research and Quality; 2018 (https://psnet.ahrq.gov/web-mm/supervision-and-entrustment-clinical-training-protecting-patients-protecting-trainees, accessed 18 October 2022).
18. Mills JA, Middleton JW, Schafer A, Fitzpatrick S, Short S, Cieza A. Proposing a re-conceptualisation of competency framework terminology for health: a scoping review. Hum Resour Health. 2020;18(1):15. doi:10.1186/s12960-019-0443-8.
19. Child health and development: pre-service education. World Health Organization Regional Office for the Eastern Mediterranean; 2014 (archived) (http://www.emro.who.int/child-health/preservice-education/preservice-education/What-is-IMCI-pre-service-training/All-Pages.html, accessed 4 April 2022).
20. Abortion care guideline. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/349316).
21. Contraception. In: Health topics [website]. Geneva: World Health Organization; 2022 (https://www.who.int/health-topics/contraception, accessed 25 May 2022).



Introduction

What is the goal of this guide?

This document, *Programme and curriculum development guide,* presents a systematic approach to developing programmes and curricula for implementation of the family planning (FP) and comprehensive abortion care (CAC) competencies,[1] and the theory behind the approach. Specifically, the aim is for effective implementation of these competencies in the context of pre-service education and training, post-graduate studies and continuing professional development (CPD). This guide is designed for programme and curriculum developers who are preparing or revising formal education and training programmes and curricula for the FP and CAC workforce.

This guide proposes a new FP and CAC Educational Design Model for programme and curriculum development. This model can support competency-based education (CBE) for current and future FP and CAC services, with a pre-service training pathway of at least 12 months, and can also support in-service training. CBE provides the most effective means to orient educational programmes and curricula towards effective health services that meet population health needs, and this Educational Design Model provides a guide for linking the competencies required to provide a range of health services.

The model consists of 16 steps clustered into 6 sequential phases. This document presents the FP and CAC Educational Design Model by describing each of the 16 steps and connecting each step to CBE. It also provides examples and links to practical instruments that can support the development process. The glossary contains definitions of key terms used in this guide.

What are the limitations of this guide?

While this guide presents a systematic approach for CBE programme and curriculum development and implementation, there are aspects of this work that this guide does not address in depth, including the following.

- This guide does not define the content or specific educational approaches for either the programme or the curriculum. The educational designers should determine these by following the research-based educational design steps presented in this document so that they reflect the specific learning needs and objectives in the local context.
- The instruments referred to in this guide are derived from literature and practice but they are not exhaustive.
- It is crucial to have in place adequate institutional capacity, including competent leadership, educators/instructors and other supporting staff members, in addition to regulatory and political support, when implementing a CBE programme and curriculum.

1. These competencies are presented in *Volume 1: Competencies*, part of the FP and CAC Toolkit, available at: https://www.who.int/publications/i/item/9789240063884

How was this guide developed?

This guide is informed by a report of a comprehensive literature review and in-depth interviews. The original review and interviews were conducted during 2020 and, in 2021, the literature review was extended to cover the developments within health-care education in response to the COVID-19 pandemic.[2] The desk review included existing curricula for primary health care workers, WHO guidelines, guidance and tools (e.g. competency frameworks, curriculum guides), journal articles and grey literature addressing the use of competency frameworks and competencies as well as barriers and enablers of CBE, processes of curricula review and assessment reports. The in-depth interviews were conducted with key stakeholders from groups and institutions such as WHO, academic and educational institutions, professional associations, ministries of health and nongovernmental organizations, and also independent expert consultants.

The development of this guide was carried out by a team of experts in CBE and sexual and reproductive health and rights. This team used the evidence described above to create a new "Educational Design Model" with examples and links to practical instruments. This model, together with the FP and CAC competencies and the draft of the Dissemination, implementation, monitoring and evaluation (DIME) guide, was presented during a global, multilingual town hall meeting with diverse participants from all WHO regions. During this meeting, feedback on the draft documents was received, and revisions have been incorporated into the final documents, including this guide (*Competency project town hall report*, WHO, unpublished internal report, 2021).

How should the associated instruments be used?

A set of 25 evidence-based, practical instruments accompanies this guide. The instruments provide support for implementation of the 16 steps in this guide, intended to aid WHO Member States and partners who wish:

- to evaluate and/or strengthen their educational programmes and curricula, or
- to develop an educational programme and curriculum where this has not existed previously.

Considerations when selecting, using or adapting the instruments include the following:

- Contexts for educational design vary widely, so a variety of instruments are provided.
- The more complex the step, the more instruments are offered.
- There may be overlap due to the wide range of existing instruments and tools from various sources; you do not need to use all of the instruments – you can select the instruments that best fit your needs at each step.
- If you are developing a complete educational programme or evaluating a programme, we recommend that you use at least one instrument for each step.
- You could create your own instruments using selected elements of instruments in this catalogue, or create your own catalogue of instruments.
- Other instruments available in the literature or used in practice can complement this catalogue – the 25 instruments provided are not exhaustive.

2. Cortier H, Embo M. Family planning and comprehensive abortion care competencies for primary health care. Guidance for programme and curriculum development: desk review report. WHO, unpublished internal report, 2021.

This guide and the instruments are aimed at everyone interested in strengthening FP and CAC education in their country, including policy-makers, government officials, institutional leaders, programme and curriculum managers and educators/instructors.

Educational design

Principles of competency-based education

The FP and CAC Educational Design Model is built on the theory of competency-based education (CBE). With a focus on outcomes, both the CBE theory and the model have the potential to ensure that learners/trainees achieve the ultimate outcome of education and training in health care: the ability to competently provide high-quality care.

The following five principles are key to CBE, and relevant to FP and CAC.

1. Focus on outcomes

In an era that puts great emphasis on public accountability, educational programmes and curricula must ensure that all graduates are competent in all essential domains. The ultimate goal of the health-care education system is to prepare future health workers for unsupervised practice *(1)*.

2. Emphasize the abilities of the learner

CBE focuses on skills (including complex, cognitive skills, such as clinical reasoning) and attitudes as applied in practice, not just knowledge. The traditional approach to educational objectives is replaced with a step-wise developmental framework that establishes competencies – multidimensional abilities and behaviours – to be achieved at each stage *(2)*. Competency-based health-care education focuses on the abilities of the health worker, not just what he or she knows *(1)*.

3. De-emphasize time as the primary outcome metric of training

High-quality care requires the complex interplay of knowledge, skills and attitudes in multiple settings, and often in interdisciplinary teams. CBE recognizes the importance of context and complex adaptive systems in the educational process *(1)*.

4. Promote greater learner centredness

This requires learners to build competencies in self-directed learning, during which learners take the initiative with the support and collaboration of others *(1, 3)*.

5. Explicitly link the health needs of the population and the competencies required of health workers

CBE for health care begins with careful consideration of the competencies needed within the health workforce and the health system to address health priorities. As such, CBE aims to integrate the health needs of the country with the values of the profession *(1, 4, 5)*.

The FP and CAC Educational Design Model

This guide proposes a new FP and CAC Educational Design Model that can support CBE for current and future FP and CAC services. This model consists of 16 steps clustered into 6 sequential phases, as outlined in Table 1 and presented in detail in the next sections of this document.

Table 1. FP and CAC Educational Design Model: 16 steps in 6 phases

In the Phases 1 and 2, we prepare

Phase 1: Build foundations	
Step 1: Create a mission statement	The purpose (what the programme does and why) and its commitments to its learners and broader community.
Step 2: Create a vision statement	High-level goals and hopes for the future, what the institution hopes to achieve if they successfully fulfil their mission.
Step 3: Set core values	Guiding principles, fundamental convictions and ideals – standards which provide a reference point for institutional decision-making.
Phase 2: Plan	
Step 4: Conduct a needs assessment	An in-depth situation analysis of the educational system and the FP and CAC training needs.
Step 5: Facilitate stakeholder dialogue	Involving stakeholders in a meaningful way, to ensure the programme and curriculum meet community needs, to create collegiality between those in health practice and health education, and to develop a sense of community "ownership".
Step 6: Confirm resource availability	Competency-based education (CBE) requires a specific set of human resources, space/infrastructure, technology, facilities, and learning environments and experiences.

In Phases 3, 4 and 5, we develop the curriculum

Phase 3: Construct	
Step 7: Adapt and adopt competencies	Choose FP and CAC competencies to be developed at each stage of the programme and curriculum, and adapt their wording so they precisely describe what context-specific competencies (attitudes, skills and knowledge, applied in practice) the programme and curriculum will develop.
Step 8: Determine expected level of proficiency	The level of proficiency at which each competency is expected to be performed once the specified stage of the programme or curriculum is completed.
Step 9: Create learning objectives	Learning objectives provide an educational roadmap to guide both the educator and the learner. They tell learners what they need to learn and provide educators a means of prioritizing and structuring content.
Step 10: Determine learning methods	Instructional methods to achieve learning objectives.

Phase 4: Sequence	
Step 11: Structure curriculum content	A detailed curriculum plan is needed to structure the content and its teaching across the duration of study.
Step 12: Allocate time and resources	Operationalizing a curriculum requires specifying the time and materials required for each course and each learner. The time allocated should reflect the subject's complexity and its contribution to programme and curriculum learning outcomes.
Phase 5: Assess	
Step 13: Create assessments	CBE involves carefully aligning competency-based assessment methods with the learning objectives in a curriculum plan.
Step 14: Determine thresholds for progression or completion	Deciding what a learner needs to achieve before progressing to the next stage, and before successfully completing the programme.

In Phase 6, we implement

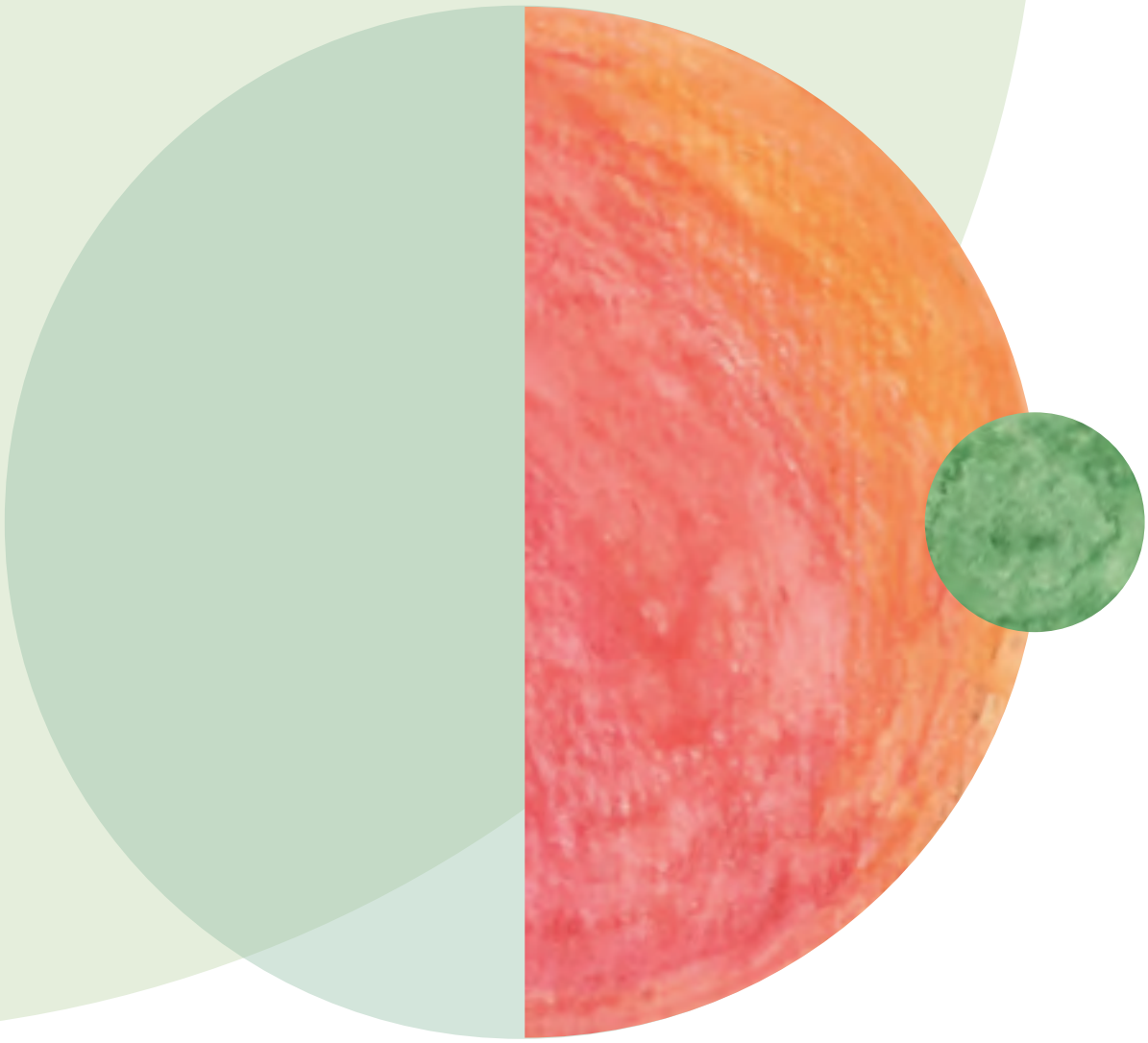
Phase 6: Implement	
Step 15: Build capacity to implement	CBE requires investment in institutional capacity, including strong administrative systems and staff, and educators who are equipped to teach the curriculum and assess learning achievements.
Step 16: Evaluate programme and curriculum	Regular evaluation and revision are good practices for all programmes and curricula. They may also be mandatory steps in accreditation processes.

CAC: comprehensive abortion care; CBE: competency-based education; FP: family planning

GO TO THE CHECKLIST WITH PHASES AND STEPS

The FP and CAC Educational Design Model:

6 phases and 16 steps



Phase 1

Build foundations

The steps of Phase 1:

- Step 1: Create a mission statement
- Step 2: Create a vision statement
- Step 3: Set core values

Step 1: Create a mission statement

What is a mission statement?

An educational programme's mission statement – or a mission – is a concise public statement of the purpose (what the programme does and why) and its commitments to its students and community *(6)*.

The components of a mission statement are *(7)*:

1. The primary functions or activities of the programme and curriculum – i.e. its most important functions, operations, outcomes and/or offerings (what it does);
2. The purpose of the programme and curriculum – i.e. the primary reasons for performing the major activities or operations (why it does what it does);
3. The stakeholders – i.e. groups or individuals that participate in the programme and curriculum, and those that will benefit from it (the students and wider community).

How do you write a mission statement?

A good structure is:

The mission of [name of your programme] is to [your primary purpose] by providing [your primary functions or activities] to [your stakeholders].

You may also wish to include additional clarifying statements *(7)*.

For example:

The mission of the FP and CAC health worker training programme is to produce competent health workers at the primary health care level by providing a competency-based educational curriculum built on the FP and CAC competencies to learners who will contribute to the improvement of health outcomes for individuals,[3] families, groups and communities through providing quality, culturally sensitive and evidence-based FP and CAC services.

3. All individuals have the right to equality and non-discrimination in sexual and reproductive health (SRH) care. In this document, we recognize that most of the available evidence on FP methods and abortion is based on study populations of cisgender women, and we also recognize that cisgender women, transgender men, non-binary, gender fluid and intersex individuals born with a female reproductive system require FP and CAC services. However, to be concise and facilitate readability, we use the terms "individual" or "women" to refer to all gender diverse people as relevant to the service in question. Health workers providing SRH services must consider the needs of – and provide equal care to – all individuals independently of gender identity or its expression.

Step 2: Create a vision statement

What is a vision statement?

An educational programme's vision statement – or vision – is a concise public statement of high-level goals and hopes for the future, describing what the programme hopes to achieve if it successfully fulfils its mission – it may include what it hopes its students will learn or be capable of doing after graduating *(6)*. All staff members must recognize a vision as a common direction of growth, something that inspires them to be better educators.

How do you write a vision statement?

Brainstorm with a group of stakeholders to:

- define the hopes and dreams of the group because these are the beginning of powerful visions;
- describe the ideal future state of the programme and/or its beneficiaries;
- articulate what the programme is trying to accomplish.

For example, this is the vision statement from WHO's Workforce Alliance:

"All people everywhere will have access to a skilled, motivated and supported primary health care worker, providing FP and CAC care, within a robust health system" *(8)*.

Step 3: Set core values

What are core values?

An educational programme's core values are guiding principles, fundamental convictions and ideals – standards which provide a reference point for institutional decision-making *(9)*.

An example of articulation of relevant core values for abortion care can be found in WHO's 2022 *Abortion care guideline*:

> "The core values of dignity, autonomy, equality, confidentiality, communication, social support, supportive care and trust are foundational to abortion care" *(10)*.

The core values of a programme and curriculum must be reflected throughout the programme and curriculum plans and teaching activities.

Further instructions can be found in Instrument 1.

INSTRUMENT 1

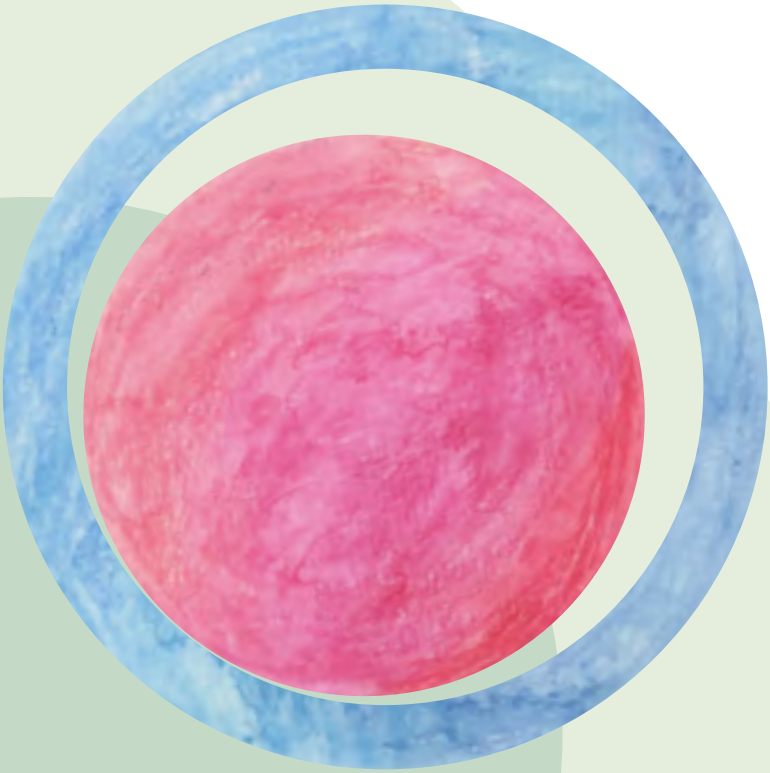
Mission, vision and values

The programme's mission (Step 1), vision (Step 2) and values (Step 3) must describe and reflect its overall direction. Together they function like a roadmap.

This instrument supports the writing process by listing elements that can be addressed:

1. define terms
2. gather leadership and involve the entire community
3. identify an objective facilitator
4. write the mission, vision and values
5. check pitfalls for mission and vision statements, and find solutions
6. create a visual model
7. define a strategy for how to disseminate and implement the mission, vision and values, and monitor subsequent outcomes.

GO TO ANNEX: INSTRUMENT 1



Phase 2

Plan

The steps of Phase 2:

- Step 4: Conduct a needs assessment for FP and CAC education
- Step 5: Facilitate stakeholder dialogue
- Step 6: Confirm resource availability

Step 4: Conduct a needs assessment for FP and CAC education

What is a needs assessment?

This step involves a thorough process of information gathering to assess existing needs or gaps – an in-depth situation analysis – in this case, in the area of FP and CAC education. The needs assessment in turn informs key considerations in programme and curriculum development.

What are the targets of a needs assessment for an FP and CAC programme and curriculum?

Information must be gathered at four levels during a needs assessment (see Figure 4.1) *(4, 11)*.

1. Educational programme and curriculum

Is the content of the existing programme and curriculum relevant for country health priorities? *(4)*. See also Step 16.

2. Organizational environment

What is the organization's commitment to developing a new or revised/updated programme? What is its capacity to support curriculum development and implementation? What are the priorities identified by a relevant professional organization (e.g. regulatory or licensing body, accreditation body, specialty society, hospital, medico-legal association)? *(4, 11)*.

3. Political and regulatory environment

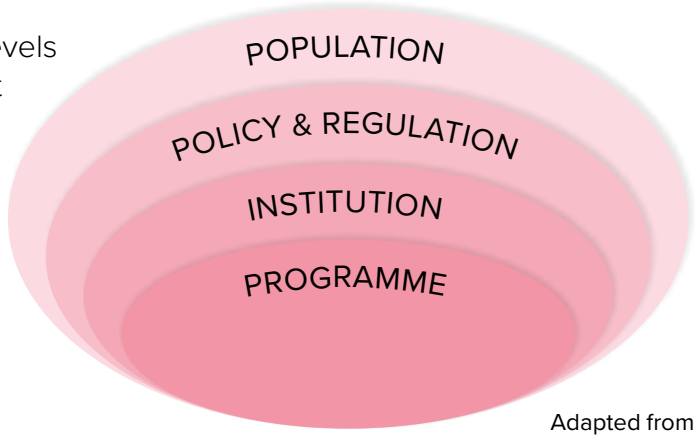
Do legal and regulatory frameworks relevant to the programme and curriculum exist? What content or conditions do they specify? What are the implications of this programme and its curriculum? *(4)*.

4. Population

What are the population or societal needs? These needs are the learning deficits in the health workforce as identified by society/the population served (e.g. patients and their families, and other community members) and based on the latest available data representing that society/population (e.g. epidemiologic studies among populations in the locality, demographic and fertility rates and data on morbidity/mortality related to sexual and reproductive health from census and population-based surveys) *(11)*. These needs will set the parameters for the specific competencies, behaviours, practice activities and tasks emphasized in the curriculum.

Although the core FP and CAC competencies should be the same everywhere that the training is being offered in a given country, they can be allocated appropriate time and weight in different programmes and curricula to meet specific needs. For example, if the majority of the population lives in rural areas, the curriculum may devote more time to knowledge and skills related to working in primary health care and community-based practice than a curriculum that trains health workers to operate in an urban-dominated setting *(4)*.

Figure 4.1 Different levels of needs assessment



Source:
Adapted from WHO, 2020 *(4, p. 10)*.

What methods are used to assess needs?

Many methods exist to conduct a successful needs assessment. Instrument 2 describes the information to be gathered, including examples, and Instrument 3 provides an overview of different data-collection methods and their strengths and weaknesses.

INSTRUMENT 2

Conduct a needs assessment for FP and CAC education

This instrument consists of 10 sub-instruments that can be used to gather information for a needs assessment for FP and CAC education (i.e. programmes and curricula). This list of tools is not exhaustive and it can be adapted to the local context. The choice of instrument(s) depends on the level of detail that the user wants to achieve with the needs assessment.

The following sub-instruments are presented:

1. Overview of the levels of needs assessment
2. Checklist to assess the educational approach
3. Checklist with key components of competency-based education (CBE)
4. Checklist to assess a competency-based course
5. Questionnaire to assess the educational programme and access to it
6. Questionnaire to assess curriculum development
7. Questionnaire to assess the educators
8. Questionnaire to asses the resources
9. Questionnaire to assess clinical learning
10. Questionnaire to detect challenges to competency-based education (CBE)

GO TO ANNEX: INSTRUMENT 2

INSTRUMENT 3

Support for selecting a method to conduct the needs assessment

This instrument is an overview table presenting the different methods and their strengths and weaknesses.

GO TO ANNEX: INSTRUMENT 3

Step 5: Facilitate stakeholder dialogue

Why is stakeholder engagement important?

Involving stakeholders in a meaningful way helps to ensure the programme and curriculum meet the needs of the community, to create collegiality between those in health practice and health education, and to develop a sense of community "ownership" of the programme and curriculum *(4, 12)*. An inclusive process can take time, but it is critical. Working groups or expert committees have driven the review and improvement of the educational systems and curricula in many countries *(13, 14)*.

Stakeholder dialogue can benefit the programme and curriculum development process in four important ways:

1. **Gathering crucial input:** Often, key stakeholders can deliver valuable insights about issues you were unaware of, and this can help keep your project on track and successful.
2. **Gaining more resources:** If your stakeholder has a full understanding of what it will take to make your project succeed, they may be more willing and able to help you secure the people, tools and resources you need.
3. **Building trust:** By consistently engaging and involving stakeholders in your process, you are building trust that may make them more likely to actively support upcoming projects.
4. **Planning ahead:** Continuous feedback from key stakeholders helps you anticipate feedback and requirements on future projects and gain results more quickly.

How can you perform a stakeholder analysis?

There are three steps in a stakeholder analysis.[4]

Action 1: Identify your stakeholders: Brainstorm who your stakeholders are. To do this, list all the people who are affected by the work or who have a vested interest in its success or failure.

- The learners themselves should be involved as stakeholders in programme and curriculum development. They are the key stakeholders in self-directed and competency-based curricula *(15)*. Their involvement may also bring to the surface bottlenecks or challenges that will need to be addressed before, during or after the implementation of the curriculum.
- Other relevant stakeholders can include educators, professional associations, council/board members, government ministries, civil society, donors/development partners, academics and the private sector.

Action 2: Prioritize your stakeholders: Assess the level of influence and level of interest of each stakeholder. Mapping stakeholders in a "power interest grid" can help understand what steps to take with each group.

Action 3: Understand your key stakeholders. Once the stakeholders have been identified and prioritized, you need to understand how they feel about the programme, and the development process.

4. Adapted from: Lucidchart, 2022 *(16)*.

Some good questions to ask include:

- Do they have a financial or emotional interest in the outcome of the programme? Is it positive or negative?
- What motivates them the most in relation to the programme?
- Which programme information is relevant to them, and what is the best way to relay that information?
- What is their current opinion of the programme? Is that opinion based on accurate information?
- Who influences their opinion, and are those influencers also your stakeholders?
- If they are not likely to be supportive of your programme (or the development process), what can you do to win their support?
- If you can't win their support, what can you do to manage their opposition?

For further instructions, see Instrument 4.

INSTRUMENT 4

A stakeholder analysis matrix – three actions to take

Action 1: Identify your stakeholders

Action 2: Prioritize your stakeholders using a "stakeholder power interest grid"

Action 3: Understand your stakeholders

GO TO ANNEX: INSTRUMENT 4

Step 6: Confirm resource availability

Why are the resources considerations?

In determining or choosing a strategy for FP and CAC programme and curriculum implementation, different external and internal factors must be considered. Introducing a CBE model for FP and CAC requires clear understanding of what teaching and learning the FP and CAC competencies means. This should be reflected and expressed through the design/organization of the programme resources such as human resources, material resources (e.g. buildings, infrastructure, furniture), learning experiences in and out of classroom learning environments, and technology *(17)*. Each of these are discussed below.

What are the key resource requirements?

1. Human resources

Consider the existing available human resources and what additions may be required.

- **Management and leadership:** The process of designing, implementing and evaluating a CBE programme and curriculum requires leadership and an understanding of the principles of change management *(11, 18, 19)*. Schultz and Griffiths (2016) defined eight steps of change with facilitating factors and processes that might be helpful to implement CBE: (i) create urgency, (ii) form a powerful coalition, (iii) create a vision for change, (iv) communicate the vision, (v) remove obstacles, (vi) create short-term wins, (vii) build on the change, and (viii) anchor the change in culture *(20)*. Through an iterative process, all relevant stakeholders are encouraged to participate in planned, collaborative processes to produce not only quality curriculum products, but also to ensure that those products are adequately disseminated, fully understood and supported on the ground, to enable effective implementation *(21)*.
- **Faculty or staff members/educators:** New courses or learning activities specific to the programme and curriculum may require new faculty or staff members with specific qualifications and experience. The right people may not be immediately available. They may need to be trained and/or recruited *(4, p. 11)*.
- **Learners**: The international shift to CBE marks a major transition in education that requires a shift in educators' and learners' approaches to clinical experiences, the way assessment data are collected and integrated, and in learners' mindsets. Learners beginning a CBE curriculum must actively drive their learning experiences and education goals. For some, this expectation may be a significant change from their previous approach to learning *(18)*.

2. Material resources, including infrastructure and learning materials

Implementing a programme and curriculum has very specific material resource requirements that should be reviewed, refined and/or planned during the development stages *(4, p. 11)*.

- **Infrastructure:** This may include an anatomy laboratory, clinical practice space and simulation space and equipment.
- **Learning materials**: Texts and other reading materials should be relevant to the local context. Clinical, technical and technological/electronic equipment for education and training should also be factored in, especially when they are not readily available.

3. Learning experiences

Developing proficiency in the practice competencies in real-world environments is a fundamental component of CBE. Therefore, it is essential to provide learners opportunities to learn and practise in a wide range of authentic health-care settings. These include public and private health-care facilities, community-based service settings, and university teaching clinics and hospitals *(4, pp. 11 and 14)*. Learning experiences encompass interprofessional education, problem-based learning, skills-based learning, as well as supervised clinical practice.

For further instructions, see Instrument 5.

INSTRUMENT 5

Confirm requirements for resources and learning experiences – a checklist

This instrument presents a list of human resources, material resources and learning experiences compiled as an example checklist, which also provides room to add context-specific topics and comments. Working through a checklist like this provides an opportunity to analyse the situation and detect strengths and weaknesses related to resources and learning experiences.

GO TO ANNEX: INSTRUMENT 5

Phase 3

Construct

The steps of Phase 3:

- Step 7: Adapt and adopt competencies
- Step 8: Determine expected level of proficiency
- Step 9: Create learning objectives
- Step 10: Determine learning methods

Step 7: Adapt and adopt competencies

What are the FP and CAC competencies?

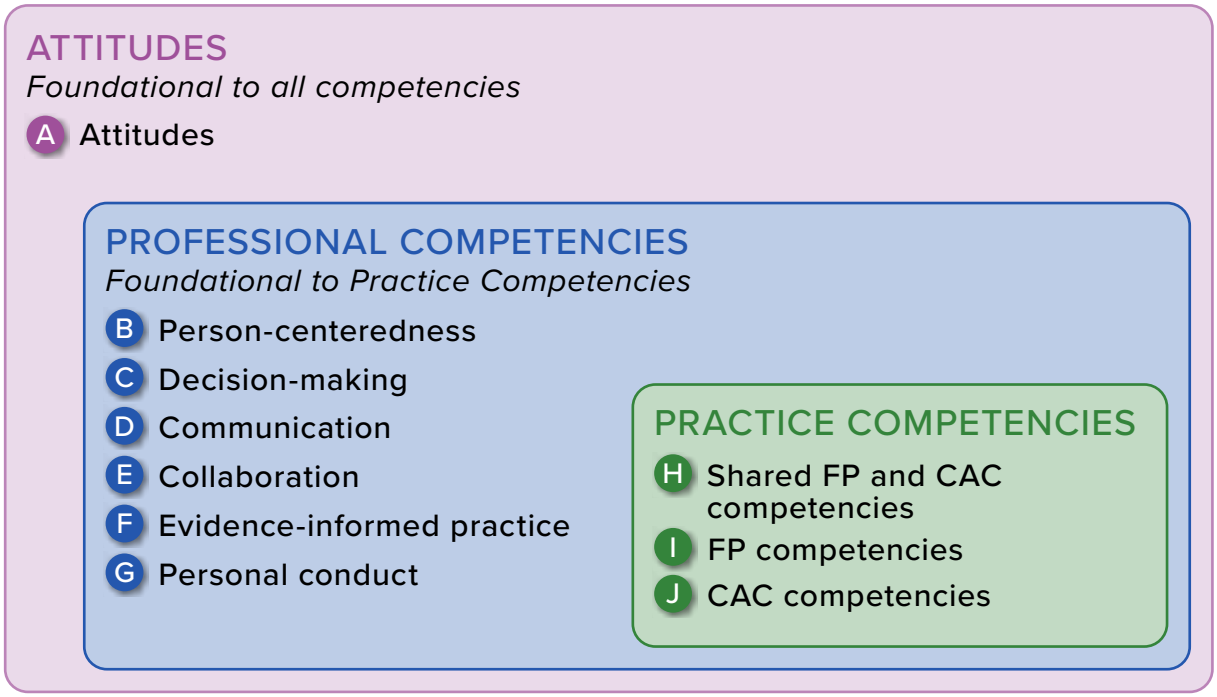
The FP and CAC competencies for the primary health care (PHC) workforce have been clearly articulated and compiled with the aim of advancing improvements in FP and CAC service delivery by aligning health worker education approaches with population health needs and health system demands.

See the detailed list of FP and CAC competencies

The competencies are listed and described in detail in *Volume 1: Competencies*.

Figure 7.1 outlines the 57 FP and CAC competencies, showing how they are organized into 10 domains (A to J) which fall into three groups: (1) attitudes, (2) professional competencies, and (3) practice competencies.

Figure 7.1 Domains of FP and CAC competencies for the primary health care workforce



➤ **1. Attitudes – Domain A (12 competencies/attitudes):**
Attitudes are foundational to all competencies. These attitudes are expressed and observed through behaviours, and require a base of knowledge. Therefore, attitudes are presented as key pillars of the competencies. All FP and CAC health workers are expected to perform all their practice with the 12 attitudes included within Domain A.

➤ **2. Professional competencies – Domains B to G (23 competencies):**
These competencies are overarching and apply to all areas of health practice, not just FP and CAC. Health workers need to use them to perform the practice competencies. Moreover, these professional competencies are needed and used by workers from all sectors, not just the health sector.

- B Person-centredness (competencies B1–B5)
- C Decision-making (competencies C1–C3)
- D Communication (competencies D1–D4)
- E Collaboration (competencies E1–E4)
- F Evidence-informed practice (competencies F1–F3)
- G Personal conduct (competencies G1–G4)

➤ **3. Practice competencies – Domains H, I and J (22 competencies):**
These competencies are specific (but not exclusive) to FP and CAC. They are required for many of the tasks performed by the health and care workforce for PHC.

- H FP and CAC competencies (competencies H1–H11) – These are competencies that both FP and abortion care health workers share, but other health workers may also use them. They underpin all the other practice competencies in domains I and J.
- I FP competencies (competencies I1–I7) – These competencies are specific to FP, but other health workers may use some or most of them.
- J CAC competencies (competencies J1–J4) – These competencies are specific to abortion care, but other health workers may use some or most of them.

How can the FP and CAC competencies be relevant in widely varied contexts?

The FP and CAC competencies outline the expected performance of health workers across specific professions, specializations and settings with the aim of providing quality care and service delivery.

The competencies were developed to help different stakeholders in many parts of the world respond to challenges in their workforce. The FP and CAC competency document can be viewed as a menu, from which organizations, institutions and services can build purpose-specific competency-based standards (or frameworks) that align with the local workforce and community context. Competency framework developers can adopt the structure and language of the FP and CAC competencies and adapt the content according to their situation and needs *(4)*.

Once the FP and CAC competencies are adapted and contextualized, they can effectively support workforce development in many ways:

- Regulatory bodies can use them to communicate standards required by a particular profession (e.g. a midwife, a skilled birth attendant);
- Educational organizations can use them to articulate the expected learning outcomes of their courses and to ensure the knowledge and skills taught by the institution are aligned with population needs;

- FP and CAC service organizations can use them for planning and human resource management; and
- Ministries of health can apply them in competence gap analyses, workforce evaluations and programme/policy planning *(22)*.

How can the competencies be adapted?

To adapt the competencies for use in the context of your CBE programme and curriculum, apply the following steps.

1. Select the appropriate competencies, including practice competencies, as the basis for your learning objectives.

Using the information from the needs assessment (see Step 4), review the menu of 57 competencies. Go through the 22 practice competencies to identify the role responsibilities of the learner on course completion, and go through the 23 professional competencies and 12 attitudes to identify the competency-based performance standards. Mark up the items that the programme should include, using the following scale:

Category 1	Essential to include, confirm, update or reinforce; almost certainly lacking in most learners.
Category 2	Desirable to include, confirm, update or reinforce; relevant although probably already achieved by most learners.
Category 3	Not a priority to include, confirm, update or reinforce; not relevant and/or already achieved by most learners.

Example: Selecting the right competencies

We might expect that the 12 attitudes listed in Domain A are desirable and relevant but that the participants should already demonstrate these attitudes – i.e. Category 2.

Therefore, one could explore whether there are any attitudes that, for example:

- should be developed in the training programme because they are innovative – e.g. the sustainability aspects of A6; or
- should be reinforced because they are crucial for upholding human rights – e.g. the needs of groups in marginalized and vulnerable situations in A5.

For other domains, one might need to consider, for example:

- Do the learners need to improve any of the behaviours in the competencies in domains B to G?
- Do they have the expected current knowledge to underpin their performance of these competencies?

As these competencies are widely shared with other occupations, even outside the health sector, are there other existing learning programmes that can be used or adapted?

2. Identify the concrete tasks within the practice competencies that learners must perform

These tasks will depend on:

- the health worker's specific profession and responsibilities in that country and within the scope of work for the position they are employed in;
- the facilities, tools, medicines and equipment the health worker can expect to have available;
- the availability of supervision and access to other support;
- the number of tasks. If there are many tasks – for example, in the case of communication (Domain D) – then identify both (i) the most typical/common task(s), and (ii) the most difficult task(s) that the learners should be able to achieve by the end of the training.

3. Use the right language to adapt competencies

Adapt the competencies' specific language for the context.

- Use the appropriate terminology (e.g. use "patient", "client" or another term).
- Translate the wording into the language used for the programme and curriculum.

INSTRUMENT 6

Competency mapping

This instrument provides an example of a paper-based and manual way to select competencies from the FP and CAC competency "menu" document, using a Word or Excel file. Computer-based systems may also exist locally.

GO TO ANNEX: INSTRUMENT 6

Step 8: Determine expected level of proficiency

Why define proficiency levels?

The level of proficiency at which each competency is expected to be performed at the end of the programme should be clear in the programme description, supported by the curriculum, and should reflect the requirements of the educational institution and the health worker's specific profession *(4, 5, 23)*.

It is also recommended to visualize occupational profiles using expected competencies for new graduates when preparing curricula for various cadres (e.g. medical doctor/general practitioner, midwives, nurses). These health worker groups may need different levels or intensity of training on specific topics in the curriculum *(24)*.

What do proficiency levels look like?

Proficiency is defined as a person's level of performance *(25)*. There is a wide range of scaled scores, typically segmented into achievement levels that denote proficiency levels. There can be any number of categories or scores in these proficiency-level scales. Some brief examples are shown in Table 8.1 below.

Clear descriptions of the required levels of proficiency (also called the standards) are important for competency-based learning, assessment and supervision. It is important that the standards/levels reflect the context in which a learner is expected to practise.

Table 8.1 Examples of three, four and five levels of proficiency

Three levels	Four levels	Five levels
1. Basic (B), introductory 2. Core (C), essential 3. High (H), advanced *(24)*	1. Below basic 2. Basic 3. Proficient 4. Advanced *(27)*	*With sublevels for some:* 1. Novice (sublevels: low, mid, high) 2. Intermediate (sublevels: low, mid, high) 3. Advanced (sublevels: low, mid, high) 4. Superior 5. Distinguished *(29)*
1. Beginner 2. Intermediate 3. Advanced *(26)*	1. Works with frequent direction and guidance; introductory level of knowledge and skills 2. Works with regular direction and guidance; working level of knowledge and skills 3. Works with occasional direction and guidance; advanced level of knowledge and skills 4. Works autonomously; specialist level of knowledge and skills *(28)*	*Entrustable professional activity:* 1. Be present and observe 2. Act with direct/proactive supervision (i.e. with supervisor physically present in the room) 3. Act with indirect/reactive supervision (i.e. readily available on request) 4. Act with supervision not readily available, but with distant supervision and oversight 5. Provide supervision to junior trainees *(30)*

Educators can choose which set they prefer to use (i.e. how many levels and the associated labels and descriptions), and then a required level of proficiency can be assigned for each FP and CAC competency for each type of health worker.

Learners have a responsibility to identify and acknowledge when they do not know what to do/how to do something, or when they need support. There will be times in practice where a learner reaches a proficiency threshold and needs to seek advice from, or hand over to, a supervisor or more specialized health worker(s) in the team who have the required proficiency level to perform a task *(25, p. 12)*.

A proficiency level can also be defined as a level based on a test/assessment score at which learners are ranked as being below, on or above grade level *(31)*. Assessment of competencies will be explained in Phase 5.

Table 8.2 below provides clear general definitions of five levels of proficiency as applicable to the use of any competency. Table 8.3 then provides an example of a four-level proficiency scale that has been adapted to more specifically refer to FP and CAC competencies.

Table 8.2 Example: Career Framework competency proficiency definitions – five levels

1. Being developed	2. Basic	3. Intermediate	4. Advanced	5. Expert
The individual demonstrates a *minimal use* of the competency and is currently developing it	The individual demonstrates *limited use* of a competency and requires additional training to apply without assistance or frequent supervision	The individual demonstrates a *working or functional* proficiency level which enables the competency to be exercised effectively (has working or functional command of the competency)	The individual demonstrates *in-depth* proficiency level; is able to assist, consult or lead others in the application of a competency	The individual demonstrates *broad, in-depth* proficiency; is recognized as an authority or master performer in exercising the competency

Source: The University of British Columbia; undated *(27)*.

Table 8.3 Professional proficiency levels adapted for FP and CAC

Proficiency level 1	Proficiency level 2	Proficiency level 3	Proficiency level 4
Works with frequent direction and guidance	Works with regular direction and guidance	Works with occasional direction and guidance	Works autonomously
Follows protocols or prescriptions to provide FP and CAC interventions	Follows prescriptions and adapts protocols to provide FP and CAC interventions	Prescribes FP and CAC interventions	Prescribes FP and CAC interventions
Supports the implementation of FP and CAC plans	Makes minor decisions regarding FP and CAC plans	Makes decisions regarding FP and CAC plans	Makes decisions regarding FP and CAC plans
Has an introductory level of relevant knowledge and skills that are applied when working with people with FP and CAC needs	Has a working level of relevant knowledge and skills that are applied when working with people with FP and CAC needs and their families	Has an advanced level of relevant knowledge and skills that are applied when working with people with complex FP and CAC needs and their families	Has a specialized level of relevant knowledge and skills that are applied when working with people with highly complex FP and CAC needs and their families

Source: Adapted from WHO, 2020 *(28)*.

How to develop a set of clear proficiency levels for learners in your programme?

Four chronological actions can be taken to describe the proficiency levels to be used in your programme.

1. Identify the desired competencies.
2. Decide how many proficiency levels to have in your scale, numbered from lowest to highest.
3. Develop clear and concise wording to describe your proficiency levels based on observable behaviours.
4. Review and refine the descriptions with a multidisciplinary team *(32)*.

INSTRUMENT 7

Example of proficiency levels assigned for specific FP and CAC competencies

This instrument provides a detailed example of how a four-level proficiency scale can be adapted for use with specific FP and CAC competencies.

GO TO ANNEX: INSTRUMENT 7

INSTRUMENT 8

Proficiency levels according to groups of health workers

This instrument consists of a blank template (8.1) followed by two completed examples – one to show that different levels of proficiency (for specified competencies) can be relevant for different groups/types of health workers (8.2), and another to show that different levels of proficiency can apply to the same type of health worker when performing different roles, or when they have different levels of education/experience.

GO TO ANNEX: INSTRUMENT 8

Step 9: Create learning objectives

Building a curriculum to facilitate competency-based learning involves transforming the knowledge, skills, attitudes and behaviours associated with the desired outcomes into learning objectives *(4)*.

What are learning objectives and how do they differ from learning outcomes?

Definitions of learning outcomes and learning objectives are provided in the glossary. In brief, **learning outcomes** are descriptions of what the learner will be able to do upon successful completion of an educational activity (project, course, programme) *(33)*. Meanwhile, **learning objectives** refer to specific elements of knowledge, skill or attitude to be realized by a learner as a direct result of the educational activity *(34)*. Both learning objectives and outcomes should be stated in a way that is measurable. Together, these provide an educational roadmap to guide both the educators and the learners. They give learners a clear indication of what they need to learn and educators a means of prioritizing and structuring content *(35, p. 33)*. When a learning programme is completed, the learners should have achieved all the learning objectives, and the learning outcomes.

The practice of writing clear learning objectives before formulating the content of an educational programme helps to provide a clear focus for content as well as benchmarks for assessing learning outcomes *(36, p. 33)*. In CBE, context is key – therefore there is a programmatic assessment of the learning outcomes to confirm that the learner has achieved the learning outcomes for the range of relevant contexts. Assessment of competence is the basis of the award of a certificate or other form of learning recognition *(37)*.

How can you write clear learning objectives?

In general, CBE programmes benefit from having more, rather than fewer, learning objectives.

Before formulating a learning objective, you need to know the following:

- the characteristics of the target audience (e.g. level of training and responsibility)
- the learning needs of the target audience (see Step 4)
- the setting is important because learning objectives will vary from one learning environment to another. For example, the learning objectives for providing an intrauterine contraceptive device as taught in a seminar will be different from those appropriate to a simulation laboratory or the consultation room *(35, p. 33)*.

Learning objectives in a CBE curriculum have four elements:

- A **time reference** during which learning occurs (anticipated period of time required). This may be reflected in the level of the learning objective. For example, internship-level objectives reflect competence acquisition over the course of the internship programme, whereas workshop-specific objectives reflect learning during an activity that takes place over a period of hours.

- A **performance description** – what the learner should be able to do, recall or demonstrate. Use of action verbs that identify the measurable knowledge, skills, attitudes or behaviour is crucial (see Instrument 11).
- The **conditions** under which the learner will demonstrate the learning objective. The educational tools and aids that will or will not be provided should be made clear.
- The **criteria for assessing learner performance**. These should include the minimum standard for performance, such as the degree of accuracy *(35)*.

How can you categorize learning objectives?

The action verb chosen for the formulation of a learning objective is crucial in determining the degree of sophistication of learner behaviour that the activity seeks to foster. Learning taxonomies – that is, classification of educational goals/objectives – articulate a progressive sophistication of learning. Many learning taxonomies exist *(38)*. One of the most widely used is Bloom's taxonomy of **the cognitive domain** *(39)*. An important premise of Bloom's model is that each level within the taxonomy (knowledge, comprehension, application, analysis, synthesis and evaluation) must be attained before the learner can progress towards the next level. Thus, the action verb (and its corresponding taxonomy level) will determine the level of learning or performance that is required. The second domain – **the psychomotor domain** – addresses skills development related to manual tasks and physical movement. Simpson (1972) developed a taxonomy with seven categories (perception, set, guided response, mechanism, complex overt response, adaptation, origination) *(38)*. Krathwohl, Bloom and Masia's taxonomy deals with aspects of the third or **affective domain**, addressing the manner in which we deal with things emotionally (e.g. feelings, values, appreciation, enthusiasms, motivations and attitudes). This domain is categorized into five sub-domains (receiving, responding, valuing, organization and characterization) *(40)*. Instrument 11 maps action verbs to common learning taxonomies for the cognitive, psychomotor and affective domains of learning: knowledge, skills and attitudes, respectively *(35, pp. 33–38)*.

How can you prioritize learning objectives?

Prioritizing learning objectives is a difficult but crucial step.

When triaging educational needs:

- consider whether the knowledge, skill or attitude you plan to address is common or essential to practice; and
- only include the objectives that are feasible within the practical considerations of the clinical and educational environment *(35, p. 37)*.

INSTRUMENT 9

Two methods to formulate a learning objective

The two methods are:

- Richardson and Flynn's formula for learning objectives (2011)
- Chatterjee and Corral's "SMART" learning objective method (2017)

GO TO ANNEX: INSTRUMENT 9

INSTRUMENT 10

Practical tips for writing effective learning objectives

This instrument gives seven practical tips for writing effective learning objectives, which can guide you during the writing process, or afterwards – to evaluate if the learning objectives are aligned with quality requirements.

GO TO ANNEX: INSTRUMENT 10

INSTRUMENT 11

Using action verbs for different categories of learning objectives

This instrument maps action verbs to common learning taxonomies for the cognitive, psychomotor and affective domains of learning: knowledge, skills and attitudes, respectively.

GO TO ANNEX: INSTRUMENT 11

INSTRUMENT 12

An example and a template for writing FP and CAC learning objectives by domain and competency

The instrument provides an example and a template that can be used to write learning objectives for the different FP and CAC competencies.

GO TO ANNEX: INSTRUMENT 12

Step 10: Determine learning methods

How do you select a learning method?

An important step in educational design is deciding what learning method or methods will best achieve the learning objectives.

When choosing a learning method, consider:

- the domain of the learning objectives: cognitive (intellectual capability), psychomotor (skills) or affective (attitudes);
- the level of learning or performance required to meet the objectives (e.g. recognition versus knowledge integration);
- the learning context (e.g. bedside or classroom); and
- the practical considerations for implementing the method *(41)*.

How will the domain of the learning objectives help determine the method?

Certain learning methods may be best suited to a particular domain of the learning objectives.

Cognitive domain (intellectual capability)

Learning methods for this domain can be lectures, direct readings, case-based problems or panel discussions, among others. A scenario or case involving a real patient is more engaging for learners.

Psychomotor domain (skills)

The intent of skills-based sessions is actual performance of the skill. Learning methods for this domain must consider:

- the skill level of the learners
- the number of the learners in the session
- the amount of time and other resources/equipment available.

Some considerations for planning and sequencing are as follows.

- Specific skills can be introduced and demonstrated in a lecture session to prime trainees' learning. Learners can also be provided with relevant readings or videos in advance of skills-based sessions.
- Skills sessions are best accomplished in small learning groups (eight learners or fewer) or one-to-one with a skilled supervisor.
- It is best if the learner has multiple opportunities to practise the skill.
- A real patient scenario is more engaging for learners.

- Depending on the task, and with the relevant supervision and patient safety controls, learners may begin by practising on peers, on healthy, or using low- or high-fidelity simulators, where available.
  - Low-fidelity simulations may reflect the actual scenario well, but may not include factors that would be experienced in real practice.
  - High-fidelity simulations strive to be as realistic as possible and include many elements, and simulate the relationship or interactions between these elements *(42)*.
- Once the learner has demonstrated the skill with a sufficient level of proficiency, the learner can perform the skill with patients under close supervision. It is critical that an informed supervisor provide immediate and constructive feedback.

Affective domain (attitudes)

Some learning methods for this domain are:

- lectures
- small-group sessions involving discussions of videotaped or written encounters
- role modelling
- role playing
- portfolios *(41, pp. 39–41)*.[5]

INSTRUMENT 13

Common learning methods in competency-based education (CBE)

This instrument is designed to support educators in choosing appropriate learning methods in CBE to best achieve the learning objectives. The table consists of a general description and the strengths and limitations of a dozen common learning methods.

GO TO ANNEX: INSTRUMENT 13

INSTRUMENT 14

Competency-based education (CBE) teaching/learning methods – checklist

This instrument provides an overview and checklist of CBE teaching/learning methods typically used in the context of a formal curriculum. Educators can complete the chart to get an overview of the variety and frequency of the methods they use (i.e. very often, often, seldom, never), to help them reflect on whether they need to adjust this pattern.

GO TO ANNEX: INSTRUMENT 14

5. Portfolios are purposeful collections of the learners' work that exhibit their efforts and achievements in selected domains. In the last two decades, with the advance of digital technology, ePortfolios have emerged *(43)*.

How can technology support learning methods?

Since the start of the COVID-19 pandemic, online learning is now more widespread, and the internet is widely used for educator–learner interactions and the delivery of curriculum material and whole learning programmes *(44)*. Certain courses or components of courses may work well using online learning – especially those that are theoretical. Indeed, a hybrid of in-person and online learning is increasingly becoming the norm, and offers the advantage of greater flexibility, reducing travel, building digital literacy and enabling access to a wider range of educators, such as international experts.

This hybrid form of learning is also called "web-enhanced blended learning". Some of the learning occurs in-person but is supported by remote learning using a range of technology solutions or platforms to deliver content and enrich learning activities. This approach requires the educational institution to have a certain level of digital infrastructure and web connectivity, which is not available in all contexts *(4, 45–51)*. It can be a challenge is to find learning tools that don't require internet access outside the classroom *(4, 47, 51)*, but one example is the "Safe Delivery App", which can be used offline once it has been downloaded. The Safe Delivery App is an open-source on-the-job reference tool for skilled birth attendants, which is based on WHO guidelines *(52)*.[6] Another challenge is to develop new models of online workplace-based learning. Due to the COVID-19 pandemic, different learning innovations and adaptations have been reported to allow students to continue their learning in the face of disruptions to education, including remotely delivered, simulation sessions and telehealth consultation *(45)*.

6. The app is available online at: https://www.maternity.dk/safe-delivery-app/

INSTRUMENT 15

Learning management systems and educational technology tools

During the COVID-19 pandemic, a paradigm shift has taken place in teaching and learning modes, and now online education has become part of the "new normal". Stakeholders have no alternative but to adopt this new approach. Online learning can be described as electronically supported learning that uses the internet for teacher–student interaction and for the delivery of prescribed educational curriculum and related materials. This instrument gives an overview of some learning management systems (online learning platforms) and online tools.

GO TO ANNEX: INSTRUMENT 15

INSTRUMENT 16

Considerations for careful selection of educational technology tools

The wide range of technology tools and apps available can be overwhelming for any educator who is trying to make the right choice. Picking the right app or tool that learners can easily navigate is important to help educators drive home the learning objectives. This instrument describes some factors to take into consideration when selecting educational technology tools.

GO TO ANNEX: INSTRUMENT 16

INSTRUMENT 17

Factors influencing educators' adoption of learning technologies

This instrument outlines factors that influence adoption of learning technologies by educators at educational institutions. These factors are organized by technology-related factors, educator factors and contextual factors.

GO TO ANNEX: INSTRUMENT 17

Phase 4

Sequence

The steps of Phase 4:

Step 11: Structure curriculum content

Step 12: Allocate time and resources for each course syllabus

Step 11: Structure curriculum content

What guides a curriculum's structure?

Curriculum content can be structured in multiple ways. The best structures are informed by:

- sound principles of pedagogy
- the experiences of implementing equivalent or similar curricula
- ongoing feedback between learners and instructors/educational designers.

The following questions can help determine how curriculum content is structured within a curriculum plan:

1. What learning should be theoretical and what learning should be applied?

There are different schools of thought relating to when a learner should be exposed to the settings in which they will eventually work. CBE encompasses early exposure to practice because it enables the contextualization of knowledge and early development of skills. Later exposure, on the other hand, enables the development of a strong theoretical foundation before beginning applied learning. Practical considerations – such as adequate access to supervision in a clinical setting – are also determining factors *(25)*.

2. What depth and scope of subject matter can feasibly be included within a course?

The curriculum content in a course should be realistic for the: (i) learners' baseline knowledge and skills (i.e. entrance criteria and pre-requisites) and (ii) the time allocated to the course *(4)*.

3. How do knowledge and skills intersect and consolidate in the context of different learning objectives?

A curriculum plan should reflect the accumulated knowledge and skills necessary to achieve the learning objectives *(4)*. Courses should include manageable components of curriculum content commensurate with expected learning outcomes, based on where the course is positioned within the programme *(9)*.

Some courses target specific knowledge or skills, while others require learners to integrate and apply a range of knowledge and skills. The former types of courses may not aim at achieving a programme learning outcome, but rather work towards a learning objective that serves as a foundational building block towards the achievement of programme learning outcomes in later courses *(4)*.

What is a curriculum plan and a syllabus?

A curriculum plan

The curriculum plan presents the programme's structure, or how the curriculum content is organized across the duration of study in the programme (see Glossary). The plan gives an overview the various courses included in the programme and often indicates which are mandatory/core and which are optional/elective *(4)*.

The plan is an important reference document for educators. It indicates where and how learning materials and experiences will be introduced, and the balance among different knowledge and skill areas. The plan is a roadmap that documents the path from knowledge and skills, to meeting learning objectives, and ultimately to achieving competencies at the expected level of proficiency *(53)*.

A curriculum plan should also detail the assessment methods used (see Step 13) and demonstrate that these methods are robust enough to validate competence and the required level of proficiency *(4, p. 16)*. The template in Instrument 18 may be helpful.

A syllabus

A syllabus describes the content and learning objectives of each specific course in greater detail. The syllabus should reflect the learning objectives of the relevant programme, and should outline the specific knowledge, skills and attitudes that the course targets. A course syllabus describes how the learning content will be taught lesson-by-lesson or week-by-week. A course syllabus informs the learners of what they can expect and what is required of them. Course syllabi will often have significant input from the educator(s) responsible for the course, although decisions concerning how a syllabus is designed will depend strongly on the educational approaches adopted by the educational institution *(4, p. 16)*. Further information can be found in Step 12 and Instrument 19.

INSTRUMENT 18

Template of a curriculum plan – overview of courses

This instrument provides a template (a table shell) for a curriculum with columns and rows in which to outline the following components of each course within the curriculum: year, semester, course title, course code, description, learning objectives, weight (units/credits), learning hours, learning environment (classroom, other settings, at home, etc.).

GO TO ANNEX: INSTRUMENT 18

Step 12: Allocate time and resources for each course syllabus

An important part of operationalizing a curriculum plan is determining the time and materials required to support the syllabus for each course within the programme.

What are the considerations for time allocation?

Prescribing set amounts of time to different areas of learning is somewhat at odds with the core principles of CBE (see the section on Educational design). CBE advocates a flexible approach to learning where learners may progress faster or slower then their peers in a given project or course. Theoretically, by accommodating these different rates of learning and attainment, a curriculum with flexible time periods may be more efficient and engaging than a strictly time-based curriculum *(2)*.

CBE focuses on developing the learner's abilities *(2)*. It is important to acknowledge that competence is not static and will continue to develop within and beyond the programme. It is possible to reconcile a time-based curriculum with CBE, provided that the curriculum activities and milestones towards developing competencies at the required levels of proficiency are defined and signal progression from one course to the next *(25)*.

The time allocated to a given subject area or course should reflect its complexity and its contribution to the learning outcomes of the overall curriculum or programme. Some subject areas may need to be taught and learned over several courses to adequately cover the scope and depth. For other subject areas, learners may need only a superficial or introductory level of exposure.

What are the considerations for resource allocation?

A programme's learning materials, infrastructure/facilities, equipment, administration and faculty members can considerably impact the quality of learning experiences. The process of identifying learning materials and human resources for a programme or a particular course can highlight gaps in the required resources *(4)*.

Materials should be **appropriate to the learning context**, meaning they should be relevant to the country and setting in which the curriculum will be taught and implemented. For example, some materials published in high-income or urbanized settings may need to be complemented with or replaced by information relevant to low-income or rural settings.

Learning materials should also be **up-to-date and reflect evidence-based practice**. Educational institutions can be important stakeholders in evidence-based guideline and protocol development.

INSTRUMENT 19

Template of a course syllabus – time and resource allocation

This instrument is a template which can be used to detail the following components of and resources for a course syllabus: course title/code/hours/instructor, course description, aim, learning objectives, content, teaching methods, assessment methods, material resources and target competencies.

GO TO ANNEX: INSTRUMENT 19

Phase 5

Assess

The steps of Phase 5:

Step 13: Create assessments

Step 14: Determine thresholds for progression or completion

Step 13: Create assessments

What are competency-based assessments?

CBE involves carefully aligning competency-based assessment methods to learning objectives *(54)*. In CBE, assessments gather evidence to verify if each learning objective has been met. This includes learning objectives focused on knowledge, skills and attitudes. Traditionally, learning objectives concentrated on knowledge, and used assessments such as written or oral exams. There was less assessment of skills and little to no assessment of attitudes. However, with renewed focus on performance of competencies, evidence of learning attainment can be of many types: witness testimony by supervisor, colleague or patient; direct observation of performance in real life or during a simulation; submission of a product (such as a report or project); or an interview providing answers to questions (often based on case studies), etc. *(25)*.

Both a curriculum plan and course syllabus should specify the types of assessment methods that will be employed so that the learner can demonstrate competence at the required level of proficiency. Determining development of professional competencies and mastery of practical competencies should incorporate multiple assessment types to triangulate the necessary evidence *(25)*.

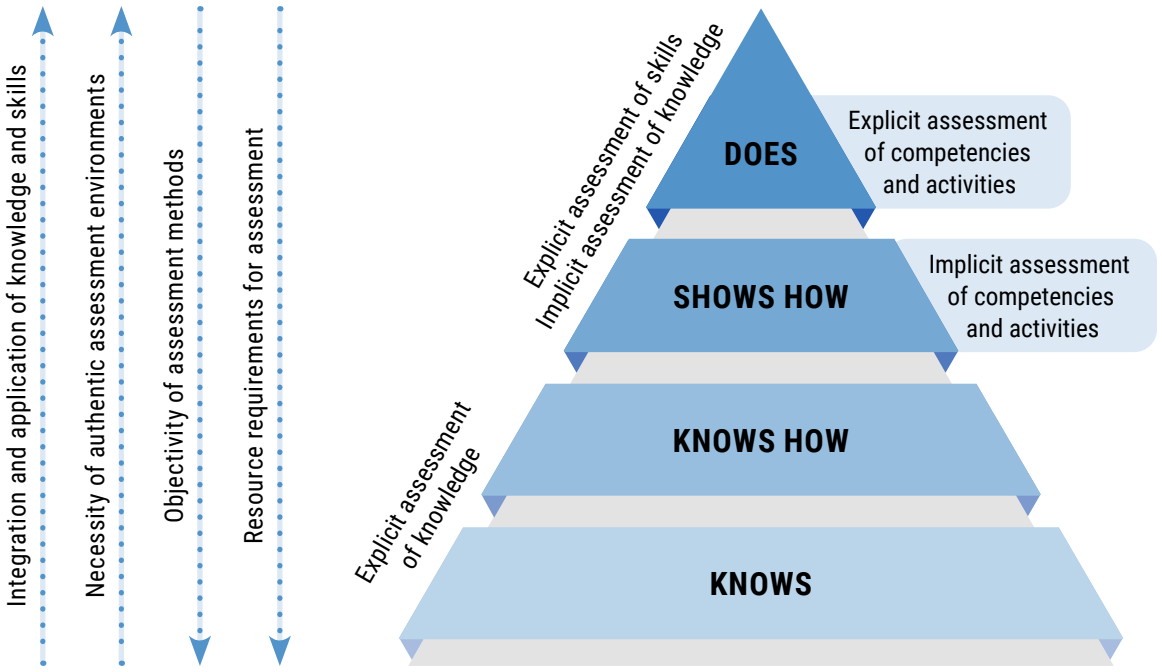
There are five principles to competency-based assessment.

1. Direct observation is central to assessment in practice.
2. There is an assessment tool for every competency-based outcome.
3. Assessment is multimodal (i.e. should include different assessment methods) and longitudinal (i.e. should take place across the duration of the course/programme).
4. It is unnecessary to assess all the competencies (roles, domains) during each assessment.
5. Appropriate assessment tools will be specific to the programme *(55)*.

How should assessment reflect learner progression?

An important model to visualize assessment is Miller's Pyramid. Miller suggests that the achievement of competence involves a hierarchical progression from "Knows" to "Knows how" to "Shows how" to "Does", as illustrated in Figure 13.1 *(56)*. Achieving competence (i.e. independent professional practice) is a process that occurs over time. The model shows how assessment methods reflect this hierarchical progression, and how progression corresponds with a shift in the objectivity and the resource requirements of the assessment methods, as the necessity for assessment in authentic practice environments increases *(4; 55, p. 50)*. Figure 13.1 shows that the third level – "Shows how" – focuses on implicit assessment and the top level of the pyramid – "Does" – focuses on explicit assessment of competencies and activities.

Figure 13.1 The implications for assessment as learning progresses through the stages of Miller's Pyramid

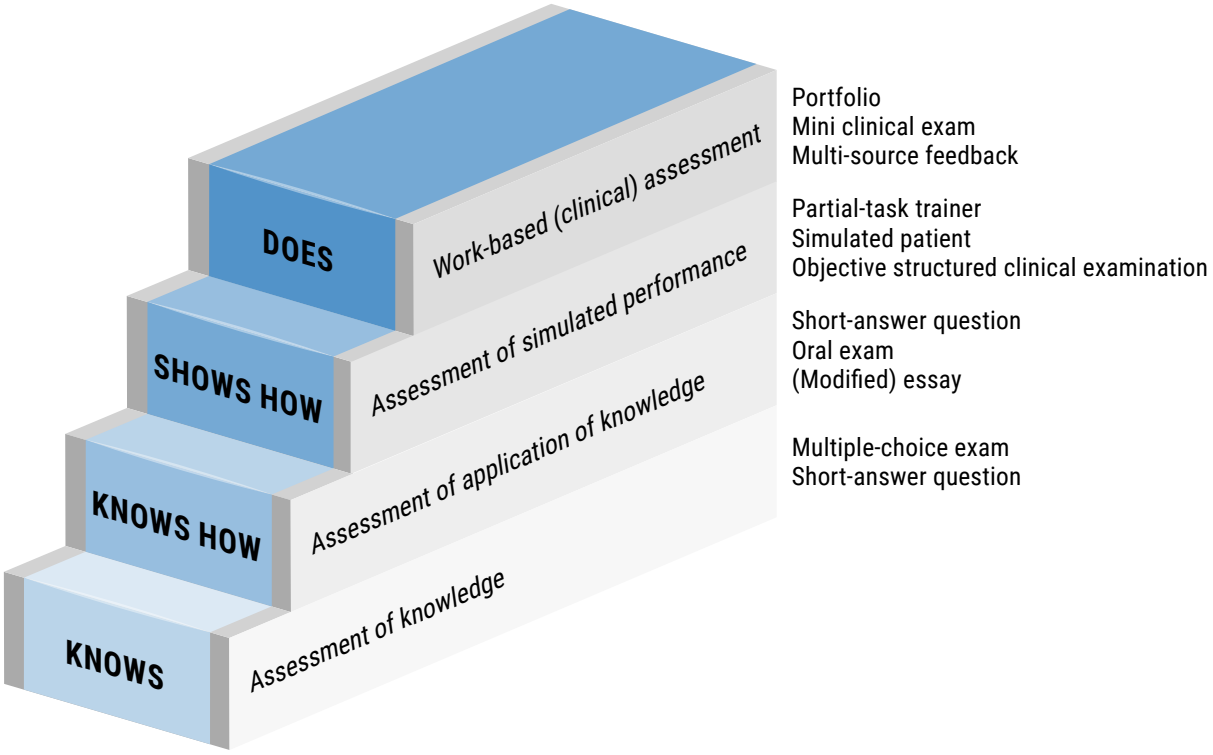


Source: WHO, 2020 *(4, p. 18)* and Miller, 1990 *(56)*.

How can we match assessment methods to learning objectives?

There are many different assessment methods used in CBE, as mentioned above *(25)*. An important challenge in assessment design is matching the assessment tools to this progression in competence development from "Knows" to "Does". An assessment tool should reflect the type and stage of learning, as illustrated in Figure 13.2 and Table 13.1. In other words, the complexity of the assessment tool should match the complexity of the learning objective. Multiple learning objectives may be assessed with the same method, and, where appropriate, these can be assessed simultaneously *(5, 25)*.

Figure 13.2. Matching assessment tools to progression of competence



Source: Adapted from Sherbino and Bandiera, 2011 *(55, p. 50)*.

Table 13.1. Assessment formats and their relevance to components and competencies

Stage in Miller's Pyramid	Examples of assessment methods	Components of a competency			Competencies
		Knowledge	Skills	Attitude	Behaviour
DOES	- Case-based discussion - Checklists - Direct observation of procedural skills - Mini-clinical evaluation exercise - Multi-source feedback - Patient record review - Portfolio	✓	✓	✓	✓
SHOWS HOW	- Observed structured clinical examination - Objective structured long examination record - Oral case presentation - Skills laboratory - Simulation exercises - Standardized patient encounter - Virtual reality case management	✓	✓	✓	✓
KNOWS HOW	- Chart-stimulated recall - Development of individual learning plan - Essay - Oral questioning with longer answers - Clinical problem-solving	✓	✓	✓	
KNOWS	- Constructed response questions - Multiple choice questions - Short answer questions - Interview - Quizzes - Tests	x			

Sources: Gruppen et al., 2012 *(5)* and WHO, 2022 *(25)*.

Table 13.2 provides an example of how assessment methods might align with learning objectives. This example demonstrates (i) the variety of different assessment methods (first column) that may meet objectives and (ii) how multiple methods can be used to assess a given learning objective (e.g. A1.1. and A1.2 can each be assessed with more than one method). It should be noted that the assessment methods listed are examples only, the list is not exhaustive, and the methods appropriate for each objective depends on the specific curriculum context, as previously discussed *(43)*.

Table 13.2. Example of programme learning objectives assigned to different assessment methods

Assessment methods	Sample learning objectives	
	A1.1. Describes the human rights	A1.2. Demonstrates the ability to give care with full respect for the human rights
Multiple-choice exam	Yes	
Essay		Yes
Oral questioning	Yes	
Case discussion		Yes
Oral presentation		Yes
Self-assessment		
Peer assessment		
Simulated patient		Yes
Mini clinical exam		Yes

Assessment methods are examples only; they are not applicable to all contexts, nor is the list exhaustive.

What factors should be considered when choosing assessment methods?

The following factors are helpful when selecting an assessment method.

1. **Suitability**: Is the assessment method appropriate to the learning objective being assessed? *(4)*.
2. **Reliability**: Does the assessment method perform consistently – is it reliable? *(4, 25, 54, 57)*.
3. **Validity**: Does the assessment really measure what it is intended to measure? *(4, 25)*.
4. **Resource requirements**: Are the required human and material resources for the assessment available? *(4, 25)*.
5. **Feasibility**: Is implementation of the assessment possible with the size of the cohort, the time required and/or the logistical factors? *(4, 25)*.

INSTRUMENT 20

Competency-based assessment methods – checklist

This instrument is a non-exhaustive list of some competency-based assessment methods. The choice of an assessment method or tool should reflect the complexity of learning being tested, based on Miller's Pyramid: knows, know how, shows how, and does.

GO TO ANNEX: INSTRUMENT 20

Step 14: Determine thresholds for progression or completion

What helps define progression?

The educational design process must determine what the learner needs to achieve before progressing in, or completing, learning objectives. Factors to consider include:

- the policies of the educational institution;
- objective signs of learner readiness to progress in the subject area, based on proficiency in a range of professional and practice competencies;
- implications for practice (e.g. does programme completion qualify the graduate to enter the workforce immediately, or is an additional process of assessment/certification/licencing needed? *(30, 25);*
- the conditions that the learner will be working in once completing the programme (e.g. how much supervision and support the graduate will receive) *(25)*;
- the potential risks of a learner performing below the level of required competence in the next stage of the programme or in a workplace setting *(30, 25)*.

In CBE, decisions about progression or completion should not rely on a single assessment method. Instead, these decisions should use a range of evidence from multiple assessments that demonstrate a learner's performance in a range of contexts *(25, 58, 59)*. Several varied pieces of evidence will help with "triangulation", yielding a more valid assessment than just using one isolated method.

What is programmatic assessment and how is it applied?

Programmatic assessment is the continuous and ongoing collection, analysis, aggregation and triangulation of evidence to assess a learner's progress and competence throughout the training or educational programme *(59–61)*. This approach uses various assessment tools – from multiple sources – to inform the learner and the teacher/mentor/supervisor(s) about the learner's achievements and areas where improvement is needed *(61, 62)*.

These are some key principles of programmatic assessments:

1. **Training activities involve a series of learning tasks** sequenced in such a way that they contribute to create a curriculum based on the principles/components of instructional design (i.e. analysis, design, development and evaluation) *(59)*.
2. **Assessment activities are designed to be meaningful to the learner and to support ongoing learning and growth.** They provide the teacher with multiple assessment data points from a wide array of assessment methods.
    a. In *formative assessment*, the main task of the assessor is to provide feedback to the learner by utilizing the information from each data point and to decide about the progress of the learner also based on previous assessment information. Low-stake data point information can be later utilized by the assessor.

b. Assessment and training activities are very closely interrelated and sometimes, they may be the same. Most assessment tasks are developmental, but some are mastery-oriented. Where a mastery-oriented task is high stakes, i.e. a *summative assessment*, it does still constitute an opportunity for feedback and may not be completely unrelated or unaffected by low-stakes activities.

3. **Assessment activities take place over time.** There is a continuous process of collecting evidence – either through formal assessments or through informal and formal feedback – in a (digital) portfolio with periodic reflections and meetings with a faculty member/ coach. The enactment on feed-back by the learner is an integral part of the assessment.
4. **Supporting activities include reflective and self-regulated learning.** Reflective learning performed by learners is based on information from learning, practice and assessment activities. Self-regulated learning is supported by faculty members, through student coaching and mentoring. Social interaction provides a scaffold for reflective activities and self-regulated learning.
5. **Intermediate and final evaluations are decision points interspersed throughout training and assessment activities across the continuum**. Intermediate evaluations are remediation-oriented, provide information-rich recommendations for learning, and are aimed at the longitudinal development of the learner.
6. **The final evaluation is a high-stakes decision** with the goal of determining whether the learners can progress in the programme or should exit. It is achieved by a committee of experts who make a judgment utilizing evidence from multiple data points and intermediate evaluations *(59)*.

What are portfolios and how can they support the learning process?

Portfolios are the backbone of CBE programmes

Portfolios are purposeful collections of the learners' work that exhibits their efforts and achievements in selected domains *(43)*. They are a way to compile and display assessment data and other evidence of a learner's progress *(63, 64)*. Items can be mapped to the relevant competencies and learning objectives. The process of gathering evidence is also valuable for reflection, supporting the self-directed learning process.

ePortfolios

In the last two decades, with the advance of digital technology, ePortfolios have emerged. Digital or ePortfolios can include various forms of evidence and are an effective way to collect and use data *(65)*. These tools also help all CBE stakeholders contribute to the portfolio. For example: front-line faculty members/educators can submit assessment data, competence committees can review the data and make decisions about progression, and learners can track their progress and develop personal learning plans. There are different types of digital portfolios, and they vary in their visualization, analytic and user features. Most have dashboards to display various data *(66)*.

Use of portfolios in ongoing education

Portfolios can also support continuing professional development (CPD). Learners can use portfolios to demonstrate their competencies to potential employers.

Employers are focused on skills directly relevant to their industry (in this case, health care). Higher education accommodates this priority by offering options to certify competencies (with badges, credits) within academic courses and by using the comprehensive learner record, which enables students to document the full scope of their post-secondary learning and thus exhibit the relevance of their portfolio to potential employers. Colleges and universities also see success with fast-track micro-credential programmes, which have proven especially popular with adults returning to complete and renew their education *(59)*.

INSTRUMENT 21

ePortfolio platforms

This instrument gives some examples of open-source and other ePortfolio platforms.

GO TO ANNEX: INSTRUMENT 21

Phase 6

Implement

The steps of Phase 6:

Step 15: Build capacity to implement competency-based education (CBE)

Step 16: Evaluate programme and curriculum

Step 15: Build capacity to implement competency-based education (CBE)

What capacities are required?

The successful implementation of CBE requires investment in strong administrative staff and systems, and in the capacity of faculty members/educators to teach the curriculum and assess learning *(53)*.

CBE has encouraged new thinking about the roles of faculty members and other educators/instructors. For example, some supervisors in the workplace are using in-the-moment observation and coaching to guide learners towards improvement *(1, 58, 67)*. This shift should soften the hierarchy between learners and educators, and create more opportunities for feedback.

Coaching

A learner may be assigned a faculty advisor who can provide coaching and guidance over time to support a learner's self-reflection and goal setting *(68)*. Skills for coaching are different from those needed for teaching or mentoring. An educator is focused on facilitating knowledge or skills acquisition, and a mentor is focused on guiding an individual to a path. A coach should be invested in understanding a learner's needs and interests, and helping the learner to grow through individualized guidance.

Progression decisions

In CBE, decisions about a learner's progression are made by a committee. This is usually a competence committee. This committee synthesizes a learner's various assessment data to make recommendations on progression to the programme director or programme committee. The programme director or programme committee then reviews the recommendations and makes the final decision *(18)*.

Research

An educational institution's research capacity should also be considered. Educational institutions should develop a strategy to expand research over time, which could include identifying potential funding sources, creating ethics committees, and building partnerships with national and international research institutions. Research capacity is especially important for educational institutions offering postgraduate courses, but is also valuable for exposing undergraduate learners to research *(4, p. 21)*.

INSTRUMENT 22

Approaches to building the capacity of educators to deliver competency-based education (CBE)

This instrument provides examples of approaches to building the CBE capacity of educators, and related considerations.

- Learning tours (or study tours)
- Faculty mentorship
- Continuing professional development (CPD) courses
- Comprehensive teaching and learning courses
- Comprehensive higher education leadership courses
- Courses on teaching and learning that are integrated into FP and CAC programmes.

GO TO ANNEX: INSTRUMENT 22

Step 16: Evaluate programme and curriculum

Why is regular evaluation important?

Regular evaluation and revision are good practices for all programmes and curricula. They are also often mandatory steps in accreditation processes.

Evaluation should examine:

- faculty performance
- course and programme structure
- learner outcomes in the programme
- learner outcomes once they have moved into employment.

What processes are needed?

Evaluation team

An evaluation team can include representatives from the faculty, administration and learners. The team can oversee the evaluation processes and ensure that the results are thoroughly reviewed and acted upon *(4)*.

Ongoing and embedded evaluation

Certain evaluation processes should be embedded within the curriculum and performed on an ongoing basis. These can include methods such as course evaluations and teacher evaluations at the end of a course, and programme evaluations as cohorts graduate.

Mechanisms should be in place to collect and process feedback on an ongoing basis so that it can be quickly responded to, for example, by changing the learning materials, refining teaching styles or increasing learner access to educators.

Reviewing curriculum

A curriculum's design should also be regularly reviewed and revised. This is a larger effort that requires substantial resources, but should be planned and budgeted for and occur at set intervals *(4)*.

INSTRUMENT 23

Examples of approaches to programme and curriculum evaluation

This instrument provides examples to help plan a programme and curriculum evaluation for different topics/areas of educational experience.

GO TO ANNEX: INSTRUMENT 23

INSTRUMENT 24

Overview of potential evaluation pitfalls and mitigation strategies

This instrument gives an overview of the potential pitfalls that may be encountered and mitigation strategies to use when evaluating a programme and curriculum.

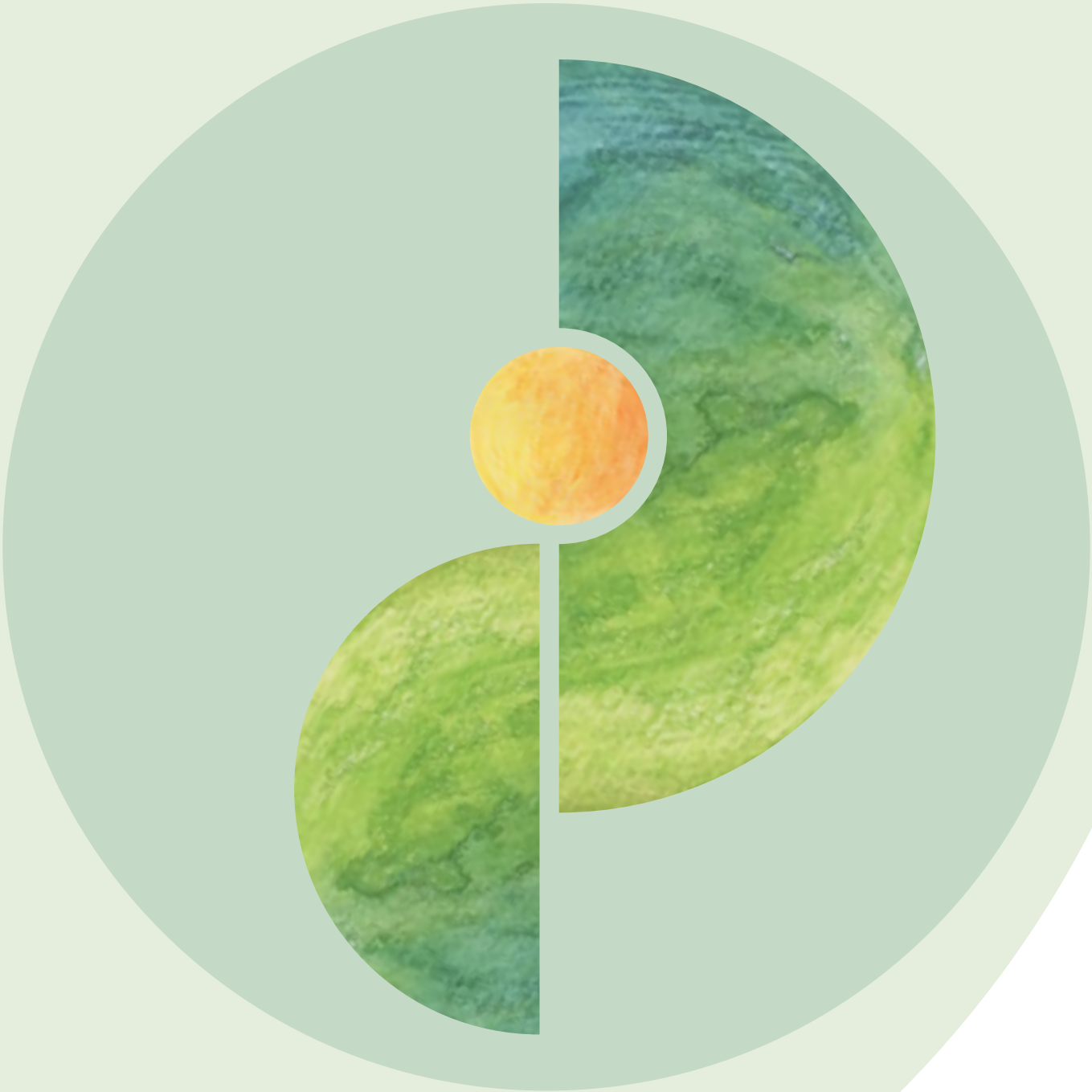
GO TO ANNEX: INSTRUMENT 24

INSTRUMENT 25

FP and CAC Educational Design Model – checklist with phases and steps

This instrument is an evaluation checklist that proceeds through the different phases and steps of the programme and curriculum development process. The checklist can be used at the start, during or at the end of the process to document completion of the steps and allow for follow-up.

GO TO ANNEX: INSTRUMENT 25



References

1. Holmboe E, Snell L. Principles of competency-based education: better preparation of learners for practice. In: Sherbino J, Frank JR, editors. Educational design. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 9–15.
2. Frank JR, Snell L, ten Cate O, Holmboe ES, Carraccio C, Swing SR, et al. Competency-based medical education: theory to practice. Med Teach. 2010;32(8):638–45. doi:10.3109/0142159X.2010.501190.
3. Hammond M, Collins R. Self-directed learning: Critical practice. New York (NY): Nichols/GP Publishing 1991.
4. Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339205).
5. Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. Hum Resour Health. 2012;10:43. doi:10.1186/1478-4491-10-43.
6. Mission and vision. The Glossary of Education Reform [website]. Last updated 18 May 2015 (https://www.edglossary.org/mission-and-vision/, accessed 15 October 2021).
7. How to write a program mission statement. Based on material from the University of Central Florida: "UCF Academic Program Assessment Handbook", 2005, and material from the University of San Diego (https://assessment.uconn.edu/wp-content/uploads/sites/1804/2016/06/HowToWriteMission.pdf).
8. Global strategy on human resources for health: workforce 2030. Geneva: World Health Organization; 2016 (https://apps.who.int/iris/handle/10665/250368).
9. Halstead JM. Values and values education in schools. In: Halstead JM, Taylor MJ, editors, Values in education and education in values. Falmer Press; 1996.
10. Abortion care guideline. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/349316).
11. Sherbino, J, Lockyer, J. Mind the gap: educational needs assessment. In: Sherbino J, Frank JR, editors. Educational design. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 25–32.
12. Keogh J, Fourie WJ, Watson S, Gay H. Involving the stakeholders in the curriculum process: a recipe for success? Nurse Educ Today. 2010;30(1):37–43. doi:10.1016/j.nedt.2009.05.017.
13. Jhpiego's approach to pre-service education. Baltimore (MD): Jhpiego; 2011 (https://www.jhpiego.org/wp-content/uploads/2016/03/Jhpiegos-Approach-to-Pre-Service-Education.pdf).
14. Nyoni CN, Botma Y. Implementing a competency-based midwifery programme in Lesotho: a gap analysis. Nurse Educ Pract. 2019;34:72–8. doi:10.1016/j.nepr.2018.11.005.
15. Johnson P, Fogarty L, Fullerton J, Bluestone J, Drake M. An integrative review and evidence-based conceptual model of the essential components of pre-service education. Hum Resour Health. 2013;11:42. doi:10.1186/1478-4491-11-42.
16. How to perform a stakeholder analysis. Lucidchart [website]. 2022 (https://www.lucidchart.com/blog/how-to-do-a-stakeholder-analysis, accessed 4 April 2022).
17. Hamdy, H. Medical college of the future: from informative to transformative. Med Teach. 2018;40(10):986–9. doi:10.1080/0142159X.2018.1498628.
18. Hall J, Oswald A, Hauer KE, Hall AK, Englander R, Cheung WJ; ICBME Collaborators. Twelve tips for learners to succeed in a CBME program. Med Teach. 2021;43(7):745–50. doi:10.1080/014215 9x.2021.1925233.
19. Sirianni G, Glover Takahashi S, Myers J. Taking stock of what is known about faculty development in competency-based medical education: a scoping review paper. Med Teach. 2020;42(8):909–15. doi:10.1080/0142159X.2020.1763285.

20. Schultz K, Griffiths J. Implementing competency-based medical education in a postgraduate family medicine residency training program: a stepwise approach, facilitating factors, and processes or steps that would have been helpful. Acad Med. 2016;91(5):685–9. doi:10.1097/ACM.0000000000001066.

21. Akala BM. Revisiting education reform in Kenya: a case of competency based curriculum (CBC). Soc Sci Humanit Open. 2021;3(1):100107. doi:10.1016/j.ssaho.2021.100107.

22. Adapting the WHO rehabilitation competency framework to a specific context: a stepwise guide for competency framework developers, version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339078).

23. Touchie C, ten Cate O. The promise, perils, problems and progress of competency-based medical education. Med Educ. 2016;50(1):93–100. doi:10.1111/medu.12839.

24. Expanded programme on immunization prototype curriculum for medical schools in the WHO African Region: Update December 2015. Brazzaville: WHO Regional Office for Africa; 2015 (https://apps.who.int/iris/handle/10665/250674).

25. Global competency and outcomes framework for universal health coverage. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/352711).

26. How are competency levels (beginner, intermediate, advanced) determined? In: Training Library [website]. Cloud Academy; 2020 (https://support.cloudacademy.com/hc/en-us/articles/360025334891-How-are-competency-levels-beginner-intermediate-advanced-determined-, accessed 7 June 2022).

27. Competencies. In: Career framework [website]. Vancouver: The University of British Columbia; undated (https://careerframework.ubc.ca/competencies/, accessed 7 June 2022).

28. Rehabilitation competency framework. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/338782).

29. What are the ACTFL proficiency guidelines? In: Arabic Oral Proficiency: a guide for students [website]. Center for Applied Linguistics (CAL); 2017 (https://www.cal.org/aop/guidelines.php, accessed 7 June 2022).

30. ten Cate O, Chen HC, Hoff RG, Peters H, Bok H, van der Schaaf M. Curriculum development for the workplace using entrustable professional activities (EPAs): AMEE Guide No. 99. 2015. Med Teach. 37(11):983–1002. doi:10.3109/0142159X.2015.1060308.

31. What is proficiency level. IGI Global; 2022 (https://www.igi-global.com/dictionary/proficiency-level/23745, accessed 7 June 2022).

32. Boateng BA, Bass LD, Blaszak RT, Farrar HC. The development of a competency-based assessment rubric to measure resident milestones. J Grad Med Educ. 2009;1(1):45–8. doi:10.4300/01.01.0008.

33. Course objectives & learning outcomes. In: Teaching Commons [website]. Chicago (IL): DePaul University; 2022 (https://resources.depaul.edu/teaching-commons/teaching-guides/course-design/Pages/course-objectives-learning-outcomes.aspx, accessed 7 June 2022).

34. Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons; 2011, pp. 92–3.

35. Richardson D, Flynn L. The roadmap: learning objectives. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons; 2011, pp. 33–8.

36. Chatterjee D, Corral J. How to write well-defined learning objectives. J Educ Perioper Med. 2017;19(4):E610.

37. van der Vleuten CP, Schuwirth LW, Driessen EW, Dijkstra J, Tigelaar D, Baartman LK, et al. A model for programmatic assessment fit for purpose. Med Teach. 2012;34(3):205–14. doi:10.3109/0142159X.2012.652239.

38. Hoque ME. Three domains of learning: cognitive, affective and psychomotor. J EFL Educ Res. 2016;2(2):45–52.

39. Bloom BS. Taxonomy of educational objectives: the classification of educational goals. Handbook I: the cognitive domain. New York (NY): David McKay; 1956.

40. Kratwohl DR, Bloom BS, Masia BB. Taxonomy of educational objectives: the classification of educational goals. Handbook II: affective domain. New York (NY): David McKay; 1964.

41. Dojeiji S, Cooke LJ. The core: a tour of instructional methods for clinical education. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 39–48.

42. What is the difference between low-fidelity and high-fidelity simulations? SimSTAFF Technical Services [website]. 2022 (https://simstaff.com/difference-between-low-fidelity-and-high-fidelity-simulations/, accessed 7 June 2022).

43. Siddiqui ZS, Fisher MB, Slade C, Downer T, Kirby MM, McAllister L, et al. Twelve tips for introducing E-Portfolios in health professions education. Med Teach. 2022:1–6. doi:10.1080/014215 9x.2022.2053085.

44. Ramane DV, Devare UA, Kapatkar MV. The impact of online learning on learners' education and health. Online J Distance Educ ELearn. 2021;9(2):303–9 (https://www.tojdel.net/journals/tojdel/articles/v09i02/v09i02-14.pdf).

45. Grafton-Clarke C, Uraiby H, Gordon M, Clarke N, Rees E, Park S, et al. Pivot to online learning for adapting or continuing workplace-based clinical learning in medical education following the COVID-19 pandemic: a BEME systematic review: BEME Guide No. 70. Med Teach. 2022;43(3):227–43. doi:10.1080/0142159X.2021.1992372.

46. Brown M, McCormack M, Reeves J, Brook DC, Grajek S, Alexander B, et al. 2020 EDUCAUSE horizon report: teaching and learning edition. EDUCAUSE; 2020 (https://library.educause.edu/resources/2020/3/2020-educause-horizon-report-teaching-and-learning-edition).

47. Goh PS, Sandars J. A vision of the use of technology in medical education after the COVID-19 pandemic. MedEdPublish. 2020. doi:10.15694/mep.2020.000049.1.

48. Grainger R, Liu Q, Geertshuis S. Learning technologies: a medium for the transformation of medical education? Med Educ. 2021;55(1):23–9. doi:10.1111/medu.14261.

49. He L, Yang N, Xu L, Ping F, Li W, Sun Q, et al. Synchronous distance education vs traditional education for health science students: a systematic review and meta-analysis. Med Educ. 2021;55(3):293–308. doi:10.1111/medu.14364.

50. Abu Talib M, Bettayeb AM, Omer RI. Analytical study on the impact of technology in higher education during the age of COVID-19: Systematic literature review. Educ Inf Technol. 2021;26(6):6719–46. doi:10.1007/s10639-021-10507-1.

51. Daniel M, Gordon M, Patricio M, Hider A, Pawlik C, Bhagdev R, et al. An update on developments in medical education in response to the COVID-19 pandemic: a BEME scoping review: BEME Guide No. 64. Med Teach. 2021;43(3):253–71. doi:10.1080/0142159x.2020.1864310.

52. The Safe Delivery App. Maternity Foundation; undated (https://www.maternity.dk/safe-delivery-app/, accessed 7 June 2022).

53. Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. Acad Med. 2002;77(5):361–7. doi:10.1097/00001888-200205000-00003.

54. Wass V, van der Vleuten C, Shatzer J, Jones R. Assessment of clinical competence. Lancet. 2001;357(9260):945–9. doi:10.1016/S0140-6736(00)04221-5.

55. Sherbino J, Bandiera G. What drives learning: assessing clinical competence. In: Sherbino J, Frank JR, editors. Educational design. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 49–54.

56. Miller GE. The assessment of clinical skills/competence/performance. Acad Med. 1990;65(9):S63–7. doi:10.1097/00001888-199009000-00045.

57. van der Vleuten CP. The assessment of professional competence: developments, research and practical implications. Adv Health Sci Educ Theory Pract. 1996;1(1):41–67. doi:10.1007/BF00596229

58. Lockyer J, Carraccio C, Chan MK, Hart D, Smee S, Touchie C, Holmboe ES, Frank JR; ICBME Collaborators. Core principles of assessment in competency-based medical education. Med Teach. 2017;39(6):609–16. doi:10.1080/0142159X.2017.1315082.

59. Torre DM, Schuwirth LW, Van der Vleuten CP. Theoretical considerations on programmatic assessment. Med Teach. 2020;42(2):213–20. doi:10.1080/0142159X.2019.1672863.

60. Schuwirth L, van der Vleuten C, Durning SJ. What programmatic assessment in medical education can learn from healthcare. Perspect Med Educ. 2017;6(4):211–5. doi:10.1007/s40037-017-0345-1.

61. Schuwirth LW, van der Vleuten CP. Current assessment in medical education: programmatic assessment. J Appl Test Technol. 2019;20(S2):2–10. (https://jattjournal.net/index.php/atp/article/view/143673).

62. Moreau KA. Exploring the connections between programmatic assessment and program evaluation within competency-based medical education programs. Med Teach. 2021;43(3):250–2. doi:10.1080/0142159X.2020.1841128.

63. Chertoff J. Global differences in electronic portfolio utilization: a review of the literature and research implications. J Educ Eval Health Prof. 2015;12. doi:10.3352/jeehp.2015.12.15.

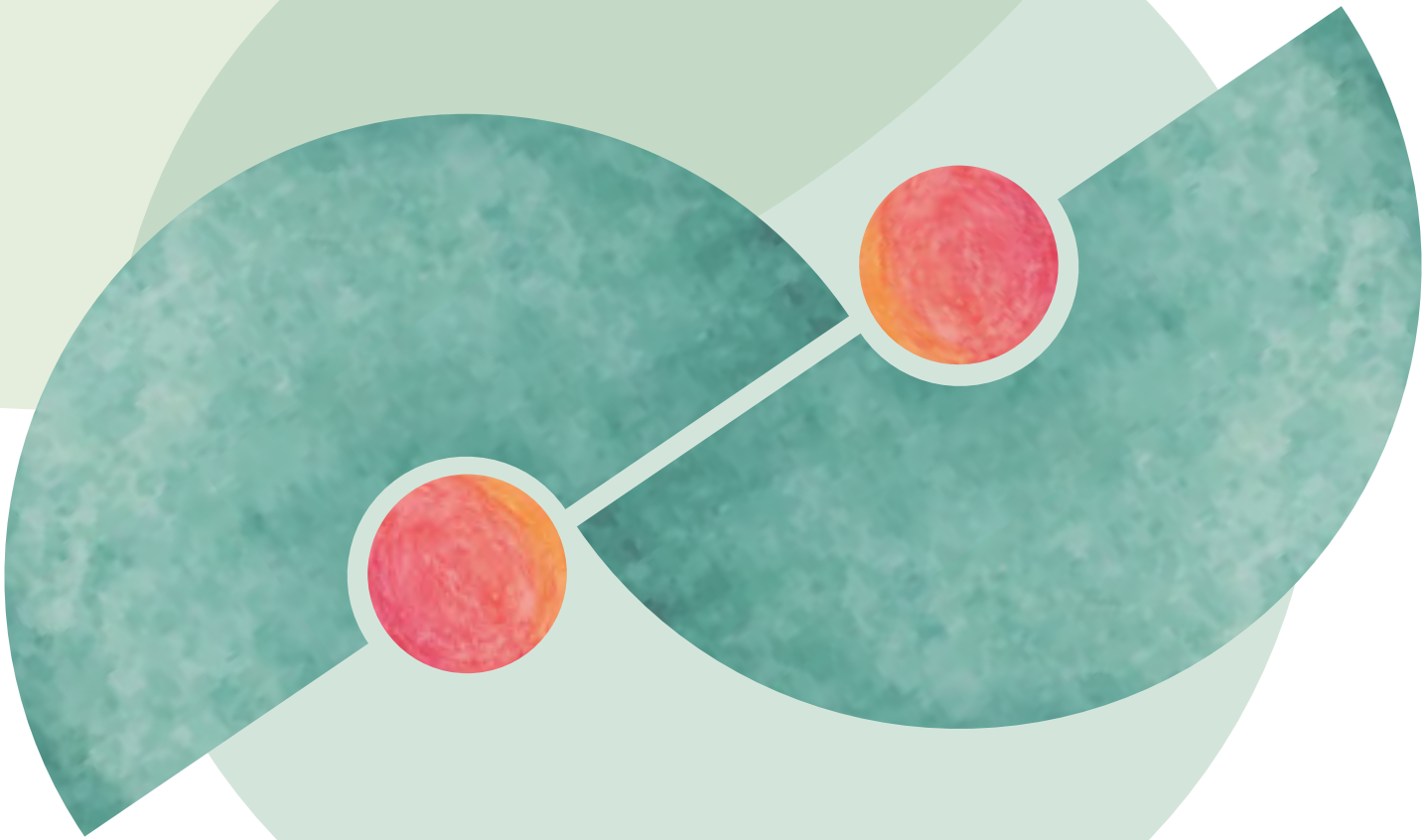
64. Sonnenberg LK, von Hauff P, Lemieux L. Electronic portfolios for assessment in your postgraduate medical education program: essential questions to ask when selecting a platform for competency-based medical education (CBME). Med Ed Publish. 2017;6:66. doi:10.15694/mep.2017.000066.

65. Hall AK, Rich J, Dagnone JD, Weersink K, Caudle J, Sherbino J, et al. It's a marathon, not a sprint: rapid evaluation of competency-based medical education program implementation. Acad Med. 2020;95(5):786–93. doi:10.1097/ACM.0000000000003040.

66. Ashokka B, Ching Lee DW, Dong C. Twelve tips for developing a systematic acute care curriculum for medical students. Med Teach. 2021:1–8. doi:10.1080/0142159X.2021.1987405.

67. Lovell B. What do we know about coaching in medical education? A literature review. Med Educ. 2018;52(4):376–90. doi:10.1111/medu.13482.

68. Landreville J, Cheung W, Frank J, Richardson D. A definition for coaching in medical education. Can Med Educ J. 2019;10(4):e109–10.



Annex

Instruments

Contents

PHASE 1: Build foundations

Step 1: Create a mission statement

Step 2: Create a vision statement

Step 3: Set core values

INSTRUMENT 1

MISSION, VISION AND VALUES

Purpose: This instrument supports the process of articulating the programme's mission, vision and core values by defining terms and discussing relevant elements and the writing process, based on the literature.

1. Define terms[1]

a. The words "mission", "vision" and "values" can hold very different meanings to different people. Each organization must clarify what it means by each of these terms.

b. The priority is to arrive at a shared understanding of these terms among the people involved – not to have "the right definition".

c. The following basic definitions provide useful guidance – and a memory support – for many organizations:

i. An educational programme's mission statement – or a mission – is a concise public statement of the purpose (what the programme does and why) and its commitments to its students and community.

ii. An educational programme's vision statement – or vision – is a concise public statement of high-level goals and hopes for the future, describing what the institution hopes to achieve if it successfully fulfils its mission – it may include what it hopes its students will learn or be capable of doing after graduating.

iii. An educational programme's core values are guiding principles, fundamental convictions and ideals – standards which provide a reference point for institutional decision-making.

2. Gather leadership and involve the entire community

a. Mission and vision statements generally result from a collaborative, inclusive development process that may include learners and community members, in addition to administrators and instructors. Educational institutions may also be required to develop the statements, or modify existing statements, as an extension of an accreditation process or a grant-funded improvement project.

b. Programme mission statements must also be consistent with the principle of purpose set forth in the broader institution's mission and goal statements. If possible, invite members of the board/management level to give their input.

1. Material in steps 1 and 2 has been adapted from two sources: Mission and vision. The Glossary of Education Reform [website]. Updated 18 May 2015 (https://www.edglossary.org/mission-and-vision/, accessed 2 June 2022); Halstead JM. Values and values education in schools. In: Halstead JM, Taylor MJ, editors, Values in education and education in values. Falmer Press; 1996.

3. Identify an objective facilitator[2]

a. If the organization has strong leadership, there may be someone at the board/ management level or a member of staff who can facilitate the session, or alternatively an external person could be contracted for the role.

b. The facilitator's role is to help drive the process without influencing the content – an experienced facilitator will know how to do this.

4. Write the mission, vision and values

a. First the facilitator should provide the invited group of participants with the institution's definitions of the terms "mission", "vision" and "values", as discussed above.

b. Brainstorm

i. Start by giving individual participants time to really reflect, "dream" and make their own notes independently.

ii. Divide participants into small groups of 3–4 people. Provide each group with a blank flip chart or several sheets of paper.

iii. Ask each group to discuss and answer the following questions among themselves (e.g. clustered in different corners of the room):

- What is the mission? What is the vision? What are the core values?
- Why do we want to develop this programme and curriculum?
- Who are we?
- What do we want this institution to look like in 5, 10 years?
- What would a newspaper headline about this institution say 10 years from now?

iv. This brainstorming process should take 20–30 minutes.

c. Share ideas

i. Next, ask each small group to nominate one member to share the thoughts and ideas the group came up with, and have each representative give a brief summary.

ii. Then, together, pick and compile the best thoughts and ideas from each of the smaller groups, and write them on a clean page or on the board.

iii. Develop draft mission and vision statements using the selected thoughts and ideas, inviting all participants to edit and agree on the wording and structure.

iv. Make sure the mission and vision statements are descriptive enough and measurable to determine progress toward the mission and vision.

v. List the core values on a separate sheet.

2. Material in steps 3 and 4 has been adapted from Lotich P. 7 steps to writing a vision, mission and values statement [blog]. The Thriving Small Business; 31 July 2019 (https://thethrivingsmallbusiness.com/how-to-write-a-vision-mission-values-statement/, accessed 23 May 2022).

d. Examine the mission and vision statements and the listed values

i. Read the draft statements and the listed values out loud to the entire group. Consider the common pitfalls and potential solutions, as shown in the table below.

ii. Choose the preferred statements and test them to see if the entire group agrees that they are reflective of the mission and vision of the programme and curriculum, and the institution.

iii. Choose the preferred core values, removing any from the list that participants strongly disagree with.

Common pitfalls for mission and vision statements, and potential solutions

PITFALL	SOLUTION
1. Too long?	Keep it short, simple and memorable.
2. Repetitious use of words?	Use keywords once for maximum impact.
3. Written by only a few people?	Involve your entire learning community in the process.
4. Uninspiring and not challenging?	Be courageous and aspirational.
5. Has no practical use (other than as a display or wording in the prospectus)	Commit to promoting your mission, vision and values on a daily basis to drive the behaviour system (e.g. on the website, during meetings).

Source: Adapted from: Rees I. How to write your school's vision, mission & values [blog]. LinkedIn; 20 October 2014 (https://www.linkedin.com/pulse/20141020155853-125499458-how-to-write-your-school-s-vision-mission-values/, accessed 2 June 2022).

5. Put your statements into action

After all the hard work of developing your mission, vision and values, ensure that you put them into action. Put them everywhere: on the walls in your office hallway and rooms, in your regular newsletter, on your website. Make sure they are visible to the entire community.[3]

6. Define a strategy for how to disseminate and implement the mission, vision and values, and how to monitor subsequent outcomes

An educational institution may periodically review its mission and vision statements, perhaps every few years, to assess whether it is making progress, reflect on setbacks that may have occurred, and reconfirm its commitments. During this process, an institution may choose to revise its mission and vision statements and/or its list of core values, to better reflect its evolving educational values, operational strategies, and learning goals.

3. School mission statements: the 2021 guide (+ 6 writing tips) [blog]. Prodigy; 27 May 2019 (https://www.prodigygame.com/main-en/blog/school-mission-statements/, accessed 2 June 2022).

The process of developing mission and vision statements, as described above, and of disseminating these statements via the institution's website, prospectus, etc., may be viewed with scepticism as inauthentic by some educators, learners and other stakeholders/community members, particularly if the resulting statements are perceived to be inconsistent with the existing culture and day-to-day learning experiences at the institution, or viewed as trying to mask contradictions. Consider whether such processes and statements will be worth the effort and whether they will actually effect positive change in the institution, and try to ensure that they will indeed lead to substantive improvements, honouring the spirit and intent of the expressed commitments.[4]

A range of templates and methods to develop and disseminate your mission, vision and values can be found online.

BACK TO PHASE 1

4. This section has been adapted from: Mission and vision. The Glossary of Education Reform [website]. Updated 18 May 2015 (https://www.edglossary.org/mission-and-vision/, accessed 2 June 2022).

INSTRUMENT 2

CONDUCT A NEEDS ASSESSMENT FOR FP AND CAC EDUCATION

Introduction

This instrument consists of 10 sub-instruments that can be used to gather information for a needs assessment. This list of tools is not exhaustive and can be adapted to the local context. The choice of instrument(s) depends on the level of detail that the user wants to achieve with the needs assessment.

2.1. Overview of the levels of needs assessment

Purpose: This instrument gives an overview of the different needs assessment levels and the information to be gathered for each level.

LEVEL	INFORMATION TO BE GATHERED
POPULATION	The gaps in FP and CAC education/practice, as identified by society or from the perspective of a population served (e.g. patients and their families, voluntary organizations, the populations in epidemiologic studies)
POLICY AND REGULATION	• Legal and regulatory frameworks relevant to FP and CAC • FP and CAC priorities as viewed by: - the government - regulatory bodies - accreditation bodies - medico-legal associations - professional organizations
INSTITUTION (UNIVERSITY)	The level of institutional commitment and the institution's capacity to support the development and implementation of the FP and CAC programme and curriculum
PROGRAMMES AND CURRICULA	The relevance of the content of existing FP and CAC programmes and curricula for the health priorities of the country

Source: Sherbino J, Lockyer J. Mind the gap: educational needs assessment. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for clinical education. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 25–32.

2.2. Checklist to assess the educational approach

Purpose: This instrument consists of the variables relevant to educational design. The variables of a traditional approach and a competency-based educational (CBE) approach are compared. The checklist provides an opportunity to assess the current approach and define the desired approach.

VARIABLES	TRADITIONAL STRUCTURE- AND PROCESS-BASED APPROACH	CHECK ✓	COMPETENCY-BASED EDUCATIONAL (CBE) APPROACH	CHECK ✓
Driving force for curriculum	Acquisition of content knowledge		Application of outcome	
Driving force for the process	Teacher		Learner	
Path of learning	Hierarchical (teacher to student)		Non-hierarchical (teacher with student)	
Responsibility for content	Teacher		Student and teacher	
Goal of educational encounter	Knowledge acquisition		Knowledge application	
Typical assessment tool	Single subjective measure (e.g. ratings)		Multiple objective measures (e.g. evaluation portfolios)	
Assessment tool	Proxy		Authentic (mimics real tasks of profession)	
Setting for evaluation	Removed (gestalt)		Direct observation	
Evaluation	Norm referenced		Criterion referenced	
Timing of assessment	Emphasis on summative		Emphasis on formative	
Programme completion	Fixed time		Variable time	

Source: Holmboe ES, Snell L. Principles of competency-based education: better preparation of learners for practice. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, p. 10.

2.3. Checklist with key components of competency-based education (CBE)

Purpose: This checklist contains core features of a CBE curriculum based on the FP and CAC competences.

KEY COMPONENTS OF CBE BASED ON FP AND CAC COMPETENCIES	CHECK ✓
Competencies are based on FP and CAC needs in the population.	
FP and CAC competencies to be attained are clearly articulated in the curriculum.	
FP and CAC competencies and their developmental markers are sequenced progressively in the curriculum plan.	
Learning materials and experiences facilitate the developmental acquisition of FP and CAC competencies.	
Some of the learning takes place in settings that model practice.	
Educational approaches promote the developmental acquisition of FP and CAC competencies.	
Formative and summative assessment supports and documents the developmental acquisition of FP and CAC competencies.	
Programmatic assessment allows for valid and reliable decision-making.	
Learner progression through, and from, the programme is based on multiple points of information, careful interpretation, observation and feedback.	
Assessment thresholds that determine a learner's progression from the programme reflect the expectations and responsibilities of learners once they graduate.	

Source: Adapted from: 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;94(7):1002–9.

2.4. Checklist to assess a competency-based course

Purpose: The instrument lists statements that address core elements of competency-based education (CBE). They are minimum requirements when developing a course based on the CBE approach.

STATEMENTS	YES, MOSTLY	YES, SOMEWHAT	NO	DON'T KNOW
There is a defined list of the competencies to be acquired by the end of the course.				
The learning objectives are defined and available in writing.				
The teaching methods are tailored to the learning objectives.				
The teachers have been trained in the field of education/pedagogy.				
The teachers have received specific orientation to competency-based education.				

Source: Core competencies in adolescent health and development for primary care providers: including a tool to assess the adolescent health and development component in pre-service education of health-care providers. Geneva: World Health Organization; 2015 (https://apps.who.int/iris/handle/10665/148354).

2.5. Questionnaire to assess the educational programme and access to it

Purpose: The following questions address core elements of a FP and CAC educational programme and access to it. The answers to these questions will give a picture of the current and desired situation.

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
1. What initial preparation (i.e. education) currently exists in your country for the different FP and CAC health workers?		1. What initial preparation (i.e. education) would you like there to be in your country for the different FP and CAC health workers?	
2. How long are the different programmes?		2. How long should the programmes be?	
3. How long are the FP and CAC components of the programme?		3. How long should the FP and CAC components of the programme be?	
4. How many applicants does the programme receive?		4. How could you promote FP and CAC as a career?	
5. What are the minimum high-school requirements to be accepted into the programme?		5. What should the minimum high-school requirements be for acceptance into the programme?	
6. What are the other entry requirements?		6. What other entry requirements should there be (e.g. qualifications, languages, experience, personal qualities)?	
7. How are the students selected?		7. How should the students be selected?	
8. Do you monitor how many students leave the programme and the reasons why they leave?		8. How could you record the number of students who leave the programme and the reasons why they leave?	

Source: Adapted from: Midwifery Assessment Tool for Education (MATE). Copenhagen: World Health Organization, Regional Office for Europe; 2020 (https://apps.who.int/iris/handle/10665/358932).

2.6 Questionnaire to assess curriculum development

Purpose: The following questions address core elements of a FP and CAC curriculum. The answers to these questions will give a picture of the current and desired situation.

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
1. How much time is spent on theory in the programme?		1. How much time should be spent on theory in the programme?	
2. How much time is spent in practice during the programme?		2. How much time should be spent in practice during the programme?	
3. Is there a system for monitoring quality of education (external examiners, moderators, etc.)? a. In theory? b. In practice?		3. What system could be implemented for monitoring the quality of education (external examiners, moderators, etc.)? a. In theory? b. In practice?	
4. What proportion of time is spent gaining experience in FP and CAC?		4. How much time would you like students to spend gaining experience in FP and CAC?	
5. Do students gain experience in hospital and primary health care/community settings?		5. Would you like students to gain experience in hospital and primary care/ community settings?	
6. What proportion of time is spent in gaining experience in the community? a. In community-based primary health centres? b. Home visiting?		6. If so, what proportion of time should be spent gaining community experience? a. In community-based primary health centres? b. Home visiting?	
7. What proportion of time is spent gaining experience in simulation facilities?		7. What proportion of time would you like students to spend gaining experience in simulation facilities?	
8. What proportion of time is spent gaining experience in "real-life" clinical practice?		8. What proportion of time would you like students to spend gaining experience in "real-life" clinical practice?	

Questionnaire *(continued)*

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
9. What is the minimum number of FP and CAC client contacts/sessions before qualification?		9. What would you like the minimum number of FP and CAC client contacts/ sessions to be, before qualification?	
10. What is the minimum number of CAC clients that the students have to care for before qualification?		10. What is the minimum number of CAC clients that you would like students to care for before qualification?	
11. Are there opportunities for students to reflect on their practice experiences? If yes, with whom, e.g. teachers, mentors?		11. Would you like students to have opportunities to reflect on their practice experiences? If yes, with whom, e.g. teachers, mentors?	

Source: Adapted from: Midwifery Assessment Tool for Education (MATE). Copenhagen: World Health Organization, Regional Office for Europe; 2020, pp. 18–20 (https://apps.who.int/iris/handle/10665/358932).

2.7. Questionnaire to assess the educators

Purpose: The following questions address the teaching capacity within the academic faculty. The answers to these questions will give a picture of the current and desired future situation.

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
1. Who teaches the students in the classroom?		1. Who will teach the students in the classroom?	
2. How are educators trained to teach? (How long is this preparation/education, and at what level?)		2. How will you prepare educators to teach the programme? (How long should this preparation/education be and at what level?)	

Source: Midwifery Assessment Tool for Education (MATE). Copenhagen: World Health Organization, Regional Office for Europe; 2020, p. 20 (https://apps.who.int/iris/handle/10665/358932).

2.8. Questionnaire to assess the resources

Purpose: The following questions address the resources required for an effective programme. The answers to these questions will give a picture of the current and desired situation.

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
1. Is the school campus Wi-Fi enabled?		1. Determine the resources that will affect your ability to implement Wi-Fi.	
2. Does the institution have a "learning management system" (LMS; i.e. an electronic learning environment) and devices with security provisions (firewalls and spam-blocking technology)?		2. What do you need to implement a safe LMS and devices with secure provisions?	
3. Is the physical environment conducive to learning (i.e. ventilation, electricity, light, seating, etc.)?		3. What do you need to be able to create a conductive learning environment?	
4. How many classrooms are there? What is the capacity?		4. How many classrooms/ how much capacity do you need?	
5. Are the classrooms well equipped (e.g. projector, screen, white board, flipcharts)?		5. What additional teaching and learning equipment do you need?	
6. How many skills laboratories are there and what condition are they in?		6. What do you need to enable you to teach skills?	
7. Is the library well equipped (i.e. with updated and appropriate textbooks)? Is it accessible?		7. What do you need to enable you to provide learners and faculty with a well equipped library?	
8. Is there an IT room with computers? What is the ratio of students to computers? Is it accessible all the time?		8. What do you need to enable you to provide the students with adequate IT access?	
9. Are the anatomic models and simulators in good condition?		9. Which/how many additional anatomical models and simulators do you need?	

Questionnaire *(continued)*

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
10. Do you have internet access?		10. What do you need to enable you to provide students and faculty with internet access?	
11. How many lecturers are there? What is the ratio students to lecturers?		11. How many additional lecturers are needed to provide an acceptable ratio?	
12. Is there adequate administrative support?		12. What type of administrative support do you need?	

Sources:

Midwifery Assessment Tool for Education (MATE). Copenhagen; World Health Organization, Regional Office for Europe; 2020 (https://apps.who.int/iris/handle/10665/358932).

Lombardi P. Instructional methods, strategies and technologies to meet the needs of all learners. eBook; 2018 (https://socialsci.libretexts.org/Bookshelves/Early_Childhood_Education/Instructional_Methods_Strategies_and_Technologies_(Lombardi_2018)).

2.9. Questionnaire to assess clinical learning

Purpose: The following questions address core elements of clinical education. The answers to these questions will give a picture of the current and desired situation.

WHERE ARE YOU?	RESPONSE	WHERE WOULD YOU LIKE TO BE?	RESPONSE
1. Who teaches the students in clinical practice – midwives? nurses? doctors? other?		1. Who will teach the students in clinical practice?	
2. How is the clinical practice teaching staff prepared to support/ mentor the students? What training is available, how long and at what level?		2. How will you prepare the staff in practice to teach and support/ mentor students? (What training should be available, how long and at what level?)	
3. How are students supported/mentored in practice?		3. How could students be supported/ mentored in practice?	
4. How are new graduates supported in practice (preceptorship)?		4. How will new graduates be supported in practice (preceptorship)?	
5. Which clinical placements are used for clinical practice (location, level, capacity)?		5. Which clinical placements should be used for clinical practice (location, level, capacity)?	
6. Is continuous quality assurance present in those facilities?		6. How should continuous quality assurance be organized in those facilities?	
7. Does the client to student ratio at the placement facility allow adequate opportunity for practice?		7. How will the client to student ratio at the placement facility allow adequate opportunity for practice?	
8. Are learning journals, portfolios used? Which type?		8. How will learning journals, portfolios be used? Which type?	

Source: Adapted from Midwifery Assessment Tool for Education (MATE). Copenhagen: World Health Organization, Regional Office for Europe; 2020, p. 21 (https://apps.who.int/iris/handle/10665/358932).

2.10. Questionnaire to detect challenges to competency-based education (CBE)

Purpose: This instrument aims to support the detection of challenges if your programme, curriculum or course is not competency-based. What issues make it difficult to introduce a competency-based approach at your institution? Managers and educators can transform these challenges into recommendations for introducing or improving CBE.

CHALLENGES	YES	NO	DON'T KNOW
It will be difficult to get all departments/educators/courses to agree upon one consistent teaching methodology.			
We don't have the resources to train or orient all educators in a CBE training approach.			
Educators may not be interested in adopting a new approach.			
We may not have the capacity to develop educational materials to support a CBE approach.			
Other challenges:			

Source: Core competencies in adolescent health and development for primary care providers: including a tool to assess the adolescent health and development component in pre-service education of health-care providers. Geneva: World Health Organization; 2015, p. 37 (https://apps.who.int/iris/handle/10665/148354).

BACK TO PHASE 2, STEP 4

INSTRUMENT 3

SUPPORT FOR SELECTING A METHOD TO CONDUCT THE NEEDS ASSESSMENT

Purpose: This instrument describes different ways to conduct a needs assessment when developing an educational programme and curriculum. Each row of the table below presents a different method including a description of the method and its strengths and weaknesses. This overview aims to provide support for managers or educators who need to choose a method that is most appropriate for the situation and/or aligns with their preferences or available resources.

METHOD	DESCRIPTION	STRENGTHS	WEAKNESSES
External environmental scan	Examination of data generated outside the organization (e.g. recommendations from accreditation surveys, publications and web-based information about similar programmes and curricula)	- Provides a starting point for subsequent approaches to data collection - May identify areas not suggested by people in the organization because they lack knowledge of options or perceive that they cannot address difficult issues	- May not be applicable to small or local curricula - Time and resource intensive
Internal environmental scan	Examination of data generated within the organization (e.g. faculty assessments, performance data from previous student cohorts, committee minutes, leadership reports, patient care data)	- New data collection not required - Low cost	- Data of variable quality and utility - Data must be interpreted and re-purposed - Privacy issues if individuals are identifiable
Epidemiologic analysis	Review of epidemiologic reports relevant to the training programme	- Provides objective data to guide selection of abilities that graduates will require - An understanding of the burden of illness(es) to be treated by graduates helps to set priorities for learning	- Can sometimes be difficult to translate data into an educational gap to be addressed by teachers - Can be time consuming - Sometimes difficult to find and access the most useful data

METHOD	DESCRIPTION	STRENGTHS	WEAKNESSES
Strategic planning session for curriculum development	–	- May involve a range of learners, teachers, educators and administrators - May involve brainstorming of learner needs as well as curriculum strengths and weaknesses - Allows leaders to generate and prioritize needs - May facilitate a commitment to changes in the curriculum	- Requires skilled facilitation - Time intensive
Focus group	A trained facilitator poses a set of questions to a group of 4–7 participants	- Efficient way to interview several people simultaneously - Group interaction may provide insights not suggested in one-on-one interviews - Provides qualitative data	- Resource intensive to collect and analyse data - Requires trained facilitator - Requires expertise in data analysis - Data may be skewed by the discussion and the people present - Participants may be reluctant to disclose critical information if anonymity cannot be guaranteed
Standardized scripted interview (by phone or in person)	–	- Particularly suited to collecting qualitative, in-depth data - Responses can be clarified - Standardized approach to data collection - Methodological rigour	- Resource intensive to collect and analyse data - Requires trained interviewers - Requires expertise in data analysis - Self-reported data
Questionnaire or survey	–	- Captures knowledge, attitudes, behaviours - Can be designed to have methodological rigour - Quantitative and qualitative data can be collected - Easy to disseminate the questionnaire or survey and send reminders through a variety of methods (e.g. email, fax, paper) - Low cost	- Skill needed to write items - Data quality is dependent on getting an adequate response rate - Self-reported data
Knowledge test	Knowledge tests can be in multiple-choice, short-answer or essay-answer form	- Efficient means to assess cognitive domain (i.e. knowledge) - Often possible to obtain questions from national and international databanks or access practice examinations	- Time, effort and expertise are required to construct valid tests of skills and higher-order cognitive abilities - These tests assess knowledge, not application of the knowledge in real settings - Difficult to make questions clinically applicable

METHOD	DESCRIPTION	STRENGTHS	WEAKNESSES
Direct observation	Learners are observed, with the observer using a checklist, global rating scale or other systematic approach to data collection	- Optimal method of assessing performance - Can be rigorous	- Time and resource intensive to develop guidelines and checklists - Observer must be knowledgeable about the behaviour(s) or skill(s) being assessed - Observer bias
Audit of patient records	–	- Can be methodologically rigorous - Assesses real-life performance	- Requires development of standardized reporting of outputs - Resource and time intensive - Privacy issues, if individuals are identifiable - Only recorded elements are evaluated (e.g. actual performance – if not recorded – is not included)
Multi-source feedback	Involves focused surveys of patients, peers and other health-care professionals	- Data are collected as part of other assessment processes - Assesses real-life performance - Identifies needs related to the competencies	- Resource intensive (large amount of data required to generate reliable reports) - Data may be skewed by reporting biases
Analysis of data from reflective tools (e.g. portfolios, web- or paper-based diaries/ journals)	–	- Data are collected as part of other educational processes - Can identify needs not identified through course evaluations or testing procedures	- Data are of variable quality and quantity, making analysis difficult - Requires expertise to review and analyse data in a meaningful and consistent way - Requires development of standardized reporting of outputs

Source: Adapted from: Sherbino J, Lockyer J. Mind the gap: educational needs assessment. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for clinical education. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011.

BACK TO PHASE 2, STEP 4

INSTRUMENT 4

A STAKEHOLDER ANALYSIS MATRIX – THREE ACTIONS TO TAKE

Purpose: This instrument describes and provides tools for three actions as part of conducting a stakeholder analysis: Action 1: identify; Action 2: prioritize; and Action 3: understand your stakeholders.

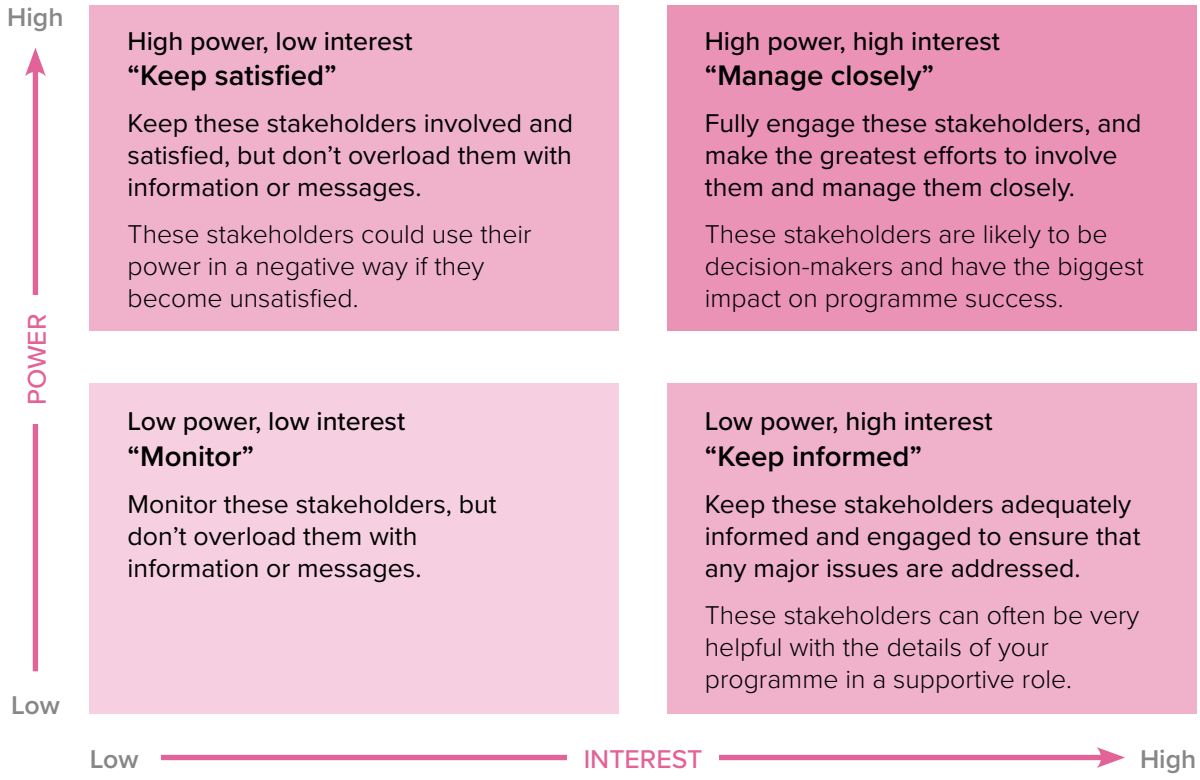
Action 1: Identify your stakeholders

STAKEHOLDER NAME	CONTACT PERSON *Name, address, contact details*	POWER *Their ability to stop or change the programme*	INTEREST *The size and location of the overlap between their interests and the programme goals*	ENGAGEMENT STRATEGY *The type and frequency of communication*
Educators				
Professional associations				
Council/board members				
Government				
Ministries				
Civil society				
Donors				
United Nations agencies and other development partners				
Academics				
Private sector				
Learners				
Communities				
Others (specify):				

Action 2: Prioritize your stakeholders using a "stakeholder power interest grid"

The "stakeholder power interest grid" is the leading visual tool for assessing key stakeholders. The position that you allocate to a group or type of stakeholders on the grid shows you the actions you need to take with regard to them, as shown in the grid below.

Stakeholder power interest grid and effective communication strategies with different groups of stakeholders



Sources: Adapted from:

How to perform a stakeholder analysis. Lucidchart [website]; 2022 (https://www.lucidchart.com/blog/how-to-do-a-stakeholder-analysis, accessed 4 April 2022).

Stakeholder management using the power interest matrix. Solitaire Consulting; undated (https://www.solitaireconsulting.com/2020/07/stakeholder-management-using-the-power-interest-matrix/, accessed 22 May 2022).

A variety of "stakeholder power interest grid" templates (e.g. https://www.lucidchart.com/blog/how-to-do-a-stakeholder-analysis) and digital systems (e.g. the miro platform, https://miro.com/) can be found on the internet.

Action 3: Understand your stakeholders

Topics and questions to consider during stakeholder dialogues

TOPIC	QUESTIONS	YES	NO	COMMENTS DESCRIPTION
Qualification to be awarded	Will the learners receive a certificate, diploma, bachelor's degree, master's degree or doctorate on completion of the course or programme?			
Accreditation and legal recognition	Will the programme be accredited by the local accreditation authority?			
	Will the programme be recognized by the legal authority, under health practitioner law?			
	What requirements need to be met?			
	What timelines need to be considered?			
Recruitment of prospective learners	What are the programme entrance criteria?			
	How competitive will entry be, compared with equivalent programmes at the institution?			
	Will the learners' fees be subsidized by the government or other organization?			
	How will the need to have diversity within the learner cohort be addressed?			
	Will international students be accepted, and how will their fees differ from national students?			
	Is the recruitment of international students necessary to help fund the programme? If so, what impact will this have on how the programme is delivered and on curriculum content (e.g. will the programme be taught in English or another language to accommodate a greater range of learners, and will the content require a more international scope)?			
Employment prospects for future graduates of the programme	What is the estimated number of paid posts that will be open to graduates with the qualification being awarded?			
	How will these be distributed across the levels of the health system and between the public and private sector?			
Modes of education	Will courses be entirely taught face-to-face, or have online components?			
	Will education be enhanced with technology in any way?			
	What are the infrastructure and resource implications of these decisions?			

Source: Adapted from: Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020, p. 11 (https://apps.who.int/iris/handle/10665/339205).

BACK TO PHASE 2, STEP 5

INSTRUMENT 5

CONFIRM REQUIREMENTS FOR RESOURCES AND LEARNING EXPERIENCES – A CHECKLIST

Purpose: This is an example checklist that can be used to assess which essential resources and learning experiences are available. The list is not exhaustive.

CHECKLIST OF RESOURCES	YES	NO	COMMENT
Faculty members/educators/instructors			
Clinical supervisors			
Administrative staff			
Physical environment conducive to learning (i.e. electricity, ventilation, light, seating, etc.)			
Classrooms			
Classroom equipment			
Skills laboratory			
Library			
Equipped IT room			
Anatomic models and simulators			
Internet access			
Clinical mentors in practice sites			
Clinical placement sites			
Quality assurance in clinical practice sites			
Learning journals/diaries and portfolios			
Other?			
Comments:			

BACK TO PHASE 2, STEP 6

INSTRUMENT 6

COMPETENCY MAPPING

Purpose: This instrument provides an example of a paper-based and manual way to select competencies from the FP and CAC competency "menu" document, using a Word or Excel file.

Computer-based systems exist but they are beyond the scope of this guide/toolkit.

Example 1: Mapping existing competencies against the FP and CAC competencies

EXISTING COMPETENCY (e.g. Midwifery competencies)[5]	FP and CAC COMPETENCY (domain, number)	COMMENTS
1.d Use research to inform practice	F1. Promote evidence-based practice F2. Assess information from a range of sources	
1.e. Uphold fundamental human rights of individuals when providing midwifery care	A1. Treat each individual with full respect for her/his human rights	
4.f Provide family planning services	I1. Instruct on natural family planning I2. Instruct on/provide barrier methods I3. Provide/remove intrauterine contraception I4. Provide/remove contraceptive implants I5. Provide other hormonal contraceptives I6. Perform vasectomy I7. Perform female sterilization	
3.a Promote physiologic labour and birth	NA	
Etc.		

	FP and CAC competency 1	FP and CAC competency 2	FP and CAC competency 3	Etc.
Existing competency 1	X			
Existing competency 2		X		X
Existing competency 3			X	
Etc.				

BACK TO PHASE 3, STEP 7

5. Essential competencies for midwifery practice, 2019 update. The Hague: International Confederation of Midwives (ICM); 2019 (https://www.internationalmidwives.org/our-work/policy-and-practice/essential-competencies-for-midwifery-practice.html).

INSTRUMENT 7

EXAMPLE OF PROFICIENCY LEVELS ASSIGNED FOR SPECIFIC FP AND CAC COMPETENCIES

Purpose: This instrument provides a detailed example of how a four-level proficiency scale can be adapted for use with specific FP and CAC competencies.

A person's level of proficiency is the extent to which they can perform a competency. A required level of proficiency can be assigned for each FP and CAC competency for each type of health worker. Examples of general scales of proficiency levels are provided in Step 8 of the *Programme and curriculum development guide*. Generally, level 1 is the lowest level of competency attainment, rising up in sequential numbers to the highest level.

The table below outlines four proficiency levels for the FP and CAC competencies B.1 and D.2.

Example of proficiency levels for FP and CAC competencies from Domain B: Person-centredness and Domain D: Communication (professional competency group)

COMPETENCIES	BEHAVIOURS			
A competent FP and CAC health worker must be able to:	PROFICIENCY LEVEL 1	PROFICIENCY LEVEL 2	PROFICIENCY LEVEL 3	PROFICIENCY LEVEL 4
B1. Place the individual at the centre of all practice	B1.1. ***[ALL PROFICIENCY LEVELS]*** Provide the best possible health care that supports an approach to health services that is effective, equitable, efficient, inclusive, integrated, person-centred, safe and timely.			
	B1.2. Adapt practice to the individual – ***[PROFICIENCY LEVELS 1–2]*** by seeking support to adapt practice towards the desired outcomes of the individual, responding to their needs, preferences, goals and circumstances.		B1.2. Adapt practice to the individual – ***[PROFICIENCY LEVELS 3–4]*** by independently adapting practice towards the desired outcomes of the individual, responding to their needs, preferences, goals and circumstances.	
D2. Listen actively and attentively	D2.1. Show empathy and genuine concern – by adapting communication to frequently encountered needs and practices, including through the use of interpreters, assistive technology and relevant accommodations.	D2.1. Show empathy and genuine concern – by adapting communication to a range of needs and practices, including through the use of interpreters, assistive technology and relevant accommodations.	D2.1. Show empathy and genuine concern – by spontaneously adapting communication to a range of needs and practices, including through the use of interpreters, assistive technology and relevant accommodations.	D2.1. Show empathy and genuine concern – by spontaneously adapting communication to complex needs and practices, including through the use of interpreters, assistive technology and relevant accommodations.

Source: Adapted from: Rehabilitation competency framework. Geneva: World Health Organization; 2020, pp. 9–10 (https://apps.who.int/iris/handle/10665/338782).

BACK TO PHASE 3, STEP 8

INSTRUMENT 8

PROFICIENCY LEVELS ACCORDING TO GROUPS OF HEALTH WORKERS

Purpose: This instrument consists of a blank template (8.1) followed by two completed examples – one to show that different levels of proficiency (for specified competencies) can be relevant for different groups/types of health workers (8.2), and another to show that different levels of proficiency can apply to the same type of health worker when performing different roles, or when they have different levels of education/experience.

8.1. Template: Required proficiency level by type of health worker (HW) per competency

	REQUIRED PROFICIENCY LEVEL[a]		
COMPETENCIES IN [DOMAIN X]	[HW 1]	[HW 2]	[HW 3]
X1			
X2			
X3			
Etc.			
COMPETENCIES IN [DOMAIN Y]	[HW 1]	[HW 2]	[HW 3]
Y1			
Y2			
Y3			
Etc.			

[a] Key: B = basic or introductory competencies; C = core or essential competencies; H = high competencies (advanced); NA = not allowed to perform (not applicable)

Source: Adapted from: Expanded programme on immunization prototype curriculum for medical schools in the WHO African Region: update December 2015. Brazzaville: World Health Organization, Regional Office for Africa; 2015, p. 21 (https://apps.who.int/iris/handle/10665/250674).

8.2. Example for different groups or types of health workers (HWs)

	REQUIRED PROFICIENCY LEVEL[a]		
	HW1 Profession 1	HW2 Profession 2	HW3 Profession 2
COMPETENCIES IN [DOMAIN A = attitudes]			
A1 Treat each individual with full respect for human rights	H	H	H
A2 Tailor care to the individual, respecting their circumstances, views and needs	H	H	H
A3 Act consistently in accordance with professional ethics and standards	H	H	H
Etc.			
COMPETENCIES IN [DOMAIN I = FP competencies]			
I1. Provide support on natural family planning	H	H	C
I2. Provide support on barrier methods	H	H	C
I3. Insert and remove intrauterine contraception	H	H	NA
Etc.			
COMPETENCIES IN [DOMAIN J = CAC competencies]			
J1. Perform cervical preparation	H	B	NA
J2. Provide medical abortion	H	NA	NA
Etc.			

[a] Key: B = basic or introductory competencies; C = core or essential competencies; H = high competencies (advanced); NA = not allowed to perform (not applicable)

8.3. Example for one type of health worker (HW) in different roles/with different levels of education/experience

	REQUIRED PROFICIENCY LEVEL[a]		
	HW1 Profession 1 *– new graduate*	HW1 Profession 1 *– 1 year of expertise*	HW1 Profession 1 *– serving as district officer*
COMPETENCIES IN [DOMAIN E = collaboration]			
E1. Engage in collaborative practice	B	C	H
E2. Build and maintain interprofessional partnerships	B	C	H
E3. Learn from, with and about others	C	H	H
E4. Constructively manage tensions and conflict	B	C	H
Etc.			
COMPETENCIES IN [DOMAIN I = FP competencies]			
I1. Provide support on natural family planning	C	H	H
B2. Provide support on barrier methods	C	H	H
B3. Insert and remove intrauterine contraception	B	C	H
Etc.			
COMPETENCIES IN [DOMAIN J = CAC competencies]			
J1. Perform cervical preparation	NA	C	H
J2. Provide medical abortion	NA	NA	NA
Etc.			

[a] Key: B = basic or introductory competencies; C = core or essential competencies; H = high competencies (advanced); NA = not allowed to perform (not applicable)

Source: Adapted from: Expanded programme on immunization prototype curriculum for medical schools in the WHO African Region: update December 2015. Brazzaville: World Health Organization, Regional Office for Africa; 2015, p. 9 (https://apps.who.int/iris/handle/10665/250674).

BACK TO PHASE 3, STEP 8

INSTRUMENT 9

TWO METHODS TO FORMULATE A LEARNING OBJECTIVE

Purpose: This tool describes two methods to formulate a learning objective:

Method 1: The formula for learning objectives (Richardson and Flynn, 2011).

Method 2: The "SMART" learning objective method (Chatterjee and Corral, 2017).

Method 1: Formulation of a learning objective

Model	At the end of the [time reference], the learner should be able to [action verb] + [observable behaviour] + [conditions] + [criteria].

Source: Richardson D, Flynn L. The roadmap: learning objectives. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons; 2011, p. 35.

Method 2: Is my learning objective SMART?

Learning objective:

IS MY LEARNING OBJECTIVE SMART?	YES	NO	COMMENT
Specific It is clear what action will be performed and by whom			
Measurable The amount of change is quantified/can be measured			
Achievable The learning objective can be achieved within a given time and with available resources			
Relevant The objectives are aligned with the instructional and assessment methods			
Time-bound The objective provides a time frame indicating when the objective will be met			

Source: Adapted from: Chatterjee D, Corral J. How to write well-defined learning objectives. J Educ Perioper Med. 2017;19(4):E610.

BACK TO PHASE 3, STEP 9

INSTRUMENT 10

PRACTICAL TIPS FOR WRITING EFFECTIVE LEARNING OBJECTIVES

Purpose: This instrument gives seven practical tips for writing effective learning objectives. These tips can be used to guide you during the writing process or afterwards – to evaluate if the learning objectives are aligned with quality requirements.

PRACTICAL TIPS FOR WRITING EFFECTIVE LEARNING OBJECTIVES
- Each learning objective must essentially answer the following questions: Who will do what, how much or how well, by when? (see Instrument 9).
- Identify content areas that the learners are expected to learn.
- Choose an action verb that is measurable and observable to specify the desired learner performance, followed by a description of the content (see Instrument 12).
- Use more complex or higher-order action verbs when appropriate (see Instrument 12).
- Avoid using action verbs such as understand, know, learn, appreciate, believe, be familiar with, comprehend, etc., because they are too vague to meaningfully assess (see Instrument 12).
- Each learning objective must be separate: two separate actions (such as diagnosis and management) or topics (such as family planning and abortion) must not be combined in one learning objective.
- Specify the condition in which the action will occur. An example of a good way to begin the statement is: "Upon completion of this learning activity, participants should be able to …".

Source: Adapted from: Chatterjee D, Corral J. How to write well-defined learning objectives. J Educ Perioper Med. 2017;19(4):E610.

BACK TO PHASE 3, STEP 9

INSTRUMENT 11

USING ACTION VERBS FOR DIFFERENT CATEGORIES OF LEARNING OBJECTIVES

Purpose: This instrument maps action verbs to common learning taxonomies for the cognitive, psychomotor and affective domains of learning: knowledge, skills and attitudes, respectively.

LEVEL	DESCRIPTOR	ACTION VERBS
COGNITIVE DOMAIN		
Knowledge	Recalls data or information	Defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states
Comprehension	Demonstrates understanding	Assesses, classifies, compares, describes, differentiates, explains, predicts, interprets, restates, gives an example
Application	Applies what was learned to clinical practice	Constructs, chooses, demonstrates, develops, selects, employs, prepares, predicts, matches, uses
Analysis	Separates material into component parts and shows relationship between parts	Analyses, compares, contrasts, appraises, distinguishes, differentiates, discriminates, separates, outlines
Synthesis	Uses diverse elements to form a whole with new meaning	Combines, compiles, creates, formulates, integrates, organizes, plans, explains, summarizes, constructs
Evaluation	Makes judgments about the value of ideas or materials	Appraises, determines, evaluates, judges, ranks, recommends, concludes, critiques, assesses, tests

LEVEL	DESCRIPTOR	ACTION VERBS
PSYCHOMOTOR DOMAIN		
Perception	Uses sensory cues to guide motor activity	Chooses, describes, detects, differentiates, distinguishes, identifies, isolates, relates, selects
Set	Possesses a mental, physical or emotional state underpinning a readiness to act	Begins, displays, explains, visualizes, proceeds, reacts, shows, states, volunteers
Guided response	Imitates, follows instruction, trial and error	Copies, traces, follows, reacts, reproduces, responds, mirrors
Mechanism	Applies learned responses habitually and with increasing confidence	Assembles, calibrates, constructs, displays, measures, manipulates, palpates, percusses
Complex overt response	Performs without hesitation or automatically	Assembles, calibrates, constructs, displays, measures, manipulates, palpates, percusses Note: the key verbs are the same as for Mechanism, but will have modifiers that indicate that the performance is quicker, better, more accurate, etc.
Adaption	Modifies skills to fit special requirements	Innovates, modifies, adapts, alters, changes, rearranges, reorganizes, revises, varies
Origination	Shows creativity based on highly developed skills	Rearranges, innovates, builds, combines, composes, constructs, creates, designs, initiates, makes, originates
AFFECTIVE DOMAIN		
Receiving	Willingly hears and considers	Perceives, acquires, identifies (demonstrates awareness of), attends, appreciates, realizes, questions, listens, selects
Responding	Attends and reacts to a particular phenomenon	Answers, completes, reports, participates, discusses, describes, establishes, writes, records, develops
Valuing	Attaches worth to a particular object, phenomenon or behaviour	Initiates, invites, shares, follows, selects, proposes, influences, appreciates, justifies
Organizing	Organizes values into priorities, with an emphasis on comparing, relating and synthesizing	Arranges, combines, integrates, organizes, prepares, relates, conceptualizes, formulates, examines, balances
Internalizing	Acts consistently in accordance with internalized values	Acts, discriminates, displays, avoids, resists, influences, requires, modifies, practises, judges

Source: Richardson D, Flynn L. The road map: learning objectives. In Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, p. 36.

BACK TO PHASE 3, STEP 9

INSTRUMENT 12

AN EXAMPLE AND A TEMPLATE FOR WRITING FP AND CAC LEARNING OBJECTIVES BY DOMAIN AND COMPETENCY

Purpose: This instrument provides an example followed by a template that can be used to write learning objectives for the different FP and CAC competencies.

Example of learning objectives formulated for one FP and CAC competency and its related behaviours

Domain C: *Decision-making*

Competency C2: *Take a solutions-oriented approach to problem-solving*

Behaviour	Possible examples of learning objectives *On completion of the course, the learner:*
C2.1. Take initiative to mitigate anticipated problems	C2.1.1. Identifies the range of possible problems, monitor the warning signs of potential problems, and respond to warning signs
C2.2. Focus on solutions, goals and results	C2.2.1. Sees opportunities for creative problem-solving while staying within the parameters of good practice. Generates unique but workable and useful solutions to difficult problems
	C2.2.2. Judges in terms of desired outcomes, not just reactive, quick solutions
	C2.2.3. Creates ways to turn the ideal into reality
	C2.2.4. Experiments with new ideas, methodologies and procedures
C2.3. Create pragmatic solutions to identified problems	C2.3.1. Engages in a joint problem-solving discussion with a person and their family.
	C2.3.2. Identifies a range of potential solutions to optimize functioning by addressing relevant personal, environmental and health factors
	C2.3.3. Identifies factors that contribute to selection of the most appropriate approach for a person and their family

Source: Learning objects C2.2.4 and C2.3.1–3 have been adapted from information in: Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020, p. 13 (https://apps.who.int/iris/handle/10665/339205).

Template: Learning objectives by FP and CAC domain and competency

DOMAIN A. ATTITUDES		
Competency (A1–A13)	Behaviours	Programme learning objective[a] *On completion of the programme, the learner is able to:*
A1.	A1.1	A1.1.1 A1.1.2
	A1.2	A1.2.1
...		

DOMAIN B. PERSON-CENTREDNESS		
Competency (B1–B5)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*
B1.	B1.1	B1.1.1 B1.1.2

DOMAIN C. DECISION-MAKING		
Competency (C1–C4)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN D. COMMUNICATION		
Competency (D1–D5)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN E. COLLABORATION		
Competency (E1–E4)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN F. EVIDENCE-INFORMED PRACTICE

Competency (F1–F3)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN G. PERSONAL CONDUCT

Competency (G1–G4)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN H. CORE COMPETENCIES

Competency (H1–H11)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN I. FAMILY PLANNING COMPETENCIES

Competency (I1–I17)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

DOMAIN J. COMPREHENSIVE ABORTION CARE COMPETENCIES

Competency (J1–J4)	Behaviours	Programme learning objective *On completion of the programme, the learner is able to:*

[a] The programme learning objective can be formulated as "On completion of the [programme], the learner is able to [action verb] + [observable behaviour] + [conditions] + [criteria]." Alternatively, it can be formulated as a SMART objective.

BACK TO PHASE 3, STEP 9

INSTRUMENT 13

COMMON LEARNING METHODS IN COMPETENCY-BASED EDUCATION (CBE)

Purpose: This instrument is designed to support educators in choosing appropriate learning methods in CBE to best achieve the learning objectives. The table consists of a general description and the strengths and limitations of a dozen common learning methods.

It is important to emphasize that most of the instructional methods outlined in this table are used in planned, formal sessions designed to meet specific learning objectives.

Common instructional methods to choose from in CBE

METHOD	DESCRIPTION	STRENGTHS	LIMITATIONS
Case-based problems	Real-life or simulated clinical scenarios are provided to learners for discussion	- Application of knowledge - Effective for discussions of content related to FP and CAC care - Cases can be changed to increase or decrease the level of complexity - Immediate feedback provided to learners	- Time intensive to create - Time intensive to review and provide feedback
Directed readings	Readings selected by an expert are reviewed independently by the learner	- Resource efficient - A large amount of content can be covered - Can be used to prime learners for a formal learning session on a large topic or to focus learners' attention on a specific area after a learning/teaching intervention	- Learners can become overwhelmed by the amount of content - No opportunity for the learner to ask questions or receive clarification - Learners are likely to develop superficial comprehension of complex issues
High-fidelity simulation	Computer-guided robotic mannequins mimic a clinical scenario	- Effective for team training and crisis resource management	- Expensive - Difficult to schedule multiple professionals for team training - Training requires extensive preparation

METHOD	DESCRIPTION	STRENGTHS	LIMITATIONS
Journal club/ literature reading group	Session for in-depth discussion and critical appraisal of selected literature	- Facilitates critical thinking - Promotes knowledge of key literature - Promotes lifelong learning skills	- Resource intensive - Requires facilitation by an expert in critical appraisal
Lecture	Large-group session presented by a speaker or lecturer (live and/or online; it can be recorded for use later, e.g. like a podcast or YouTube video)	- Efficient delivery of information - Complex ideas can be connected - Human resource efficient - Best when interactive	- Passive learning - May not accommodate varying levels of ability or different learning styles
One-on-one teaching	Clinically based ("bedside") teaching	- Tailored learning - High relevance and utility - Essential to medical education - Allows role modelling	- Requires intensive effort by supervisor - Supervisors' one-on-one teaching responsibilities compete with their clinical responsibilities
Panel discussion	Large-group session with multiple speakers providing multiple perspectives on an issue	- Complex or controversial topics can be explored	- Human resource intensive - May not be ideal for the novice learner - Limited utility for psychomotor domain
Partial-task trainers	A simulator that allows a learner to practise a particular psychomotor skill/task (e.g. pelvic exam trainers)	- Useful for introducing skills to novices - Useful for the teaching of rare or high-risk procedures - Allows the learner to practise repeatedly	- Can be expensive - Models have varying fidelity
Self-learning module	Expert-developed content is reviewed independently by the learner, either on paper or electronically	- Content can be tailored to the needs of learners - Resource effective once established - Learner works at their own pace - Can prime learners in advance of a formal learning session	- Development is resource intensive - Content must be revised regularly to maintain currency
Seminar	Small-group interactive session facilitated by an expert (e.g. morning report); the online version is called a "webinar"	- Actively engages learners - Promotes greater insight into content	- Time intensive - It may be challenging to coordinate participants' schedules

METHOD	DESCRIPTION	STRENGTHS	LIMITATIONS
Simulated patients (SPs)[6]	Person trained to act as a patient simulates a set of symptoms	- A valuable resource for teaching and assessing communication and clinical/physical examination skills - Can be used to give feedback to students and evaluate performance	- Resources and staff time must be dedicated to recruiting, training and managing a pool of SPs.
Videotaping	Videotaping is used to capture learner performance in a simulated or real-life situation	- Facilitates the provision of specific feedback to the learner, especially for psychomotor and affective domains	- Learners may feel uncomfortable about being videotaped - Patient consent is required in real-life situations
Workshop	Small-group interactive session that focuses on applied learning and practise of skills	- Excellent for deeper learning - Allows practice and repetition, especially for the psychomotor domain	- Resource intensive

Source: Dojeiji S, Cooke LJ. The core: a tour of instructional methods for clinical education. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011, pp. 39–48.

BACK TO PHASE 3, STEP 10

6. This item is adapted from: Cleland JA, Abe K, Rethans JJ. The use of simulated patients in medical education: AMEE Guide No. 42. Med Teach. 2009;31(6):477–86.

INSTRUMENT 14

COMPETENCY-BASED EDUCATION (CBE) TEACHING/LEARNING METHODS – CHECKLIST

Purpose: This instrument provides an overview and checklist of CBE teaching/learning methods typically used in the context of a formal curriculum. Educators can complete the chart below to get an overview of the variety of the methods they use, to help them reflect on whether they need to adjust this pattern (variety/frequency).

There are many different teaching or instructional methods and although they are not inherently good or bad, some provide a more appropriate and effective way to achieve a particular objective or outcome than others.

Several factors need to be considered when choosing an instructional method:

- the domain of the learning objectives (i.e. cognitive [knowledge], psychomotor [skills] or affective [attitudes]);
- the level of proficiency required to meet the learning objectives (e.g. recognition versus integration of knowledge);
- the learning context (e.g. patient bedside or classroom); and
- practical issues associated with implementing the method.[7]

7. Dojeiji S, Cooke LJ. The core: a tour of instructional methods for clinical education. In: Sherbino J, Frank JR (editors). Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011: pp. 39–48).

Checklist of different CBE teaching/learning methods

TEACHING/LEARNING METHOD	USED VERY OFTEN	USED OFTEN	SELDOM USED	NEVER USED
Case-based problems				
Direct readings				
High-fidelity simulation (robotic mannequin simulates a clinical scenario)				
Journal club/literature reading group				
Lecture				
One-on-one teaching				
Panel discussion				
Partial-task trainers				
Self-learning module				
Seminar				
Simulated patient (person trained to act as a patient simulates a set of symptoms)				
Videotaping				
Workshop				
Other (please specify):				

BACK TO PHASE 3, STEP 10

INSTRUMENT 15

LEARNING MANAGEMENT SYSTEMS AND EDUCATIONAL TECHNOLOGY TOOLS

Purpose: This instrument gives an overview of some learning management systems (online learning platforms) and online tools.

During the COVID-19 pandemic, a paradigm shift has taken place in teaching and learning modes, and now online education has become part of the "new normal". Stakeholders have no alternative but to adopt this new approach. Online learning can be described as electronically supported learning that uses the internet for teacher–student interaction and for the delivery of prescribed educational curriculum and related class materials.[8]

Learning management systems (online learning platforms)

Platform	Website
Blackboard	https://www.blackboard.com
Brightspace (open source)	https://trial.brightspace.com/d2l/home
Canvas	https://www.instructure.com
Florida Centre for Instructional Technology (FCIT)	https://fcit.usf.edu/
Google Classroom	https://edu.google.com/workspace-for-education/classroom/
Moodle (open source)	https://moodle.org/
Other	

8. Ramane DV, Devare UA, Kapatkaret MV. The impact of online learning on learners' education and health. Online J Distance Educ Elearn. 2021;9(2):303–9 (https://www.tojdel.net/journals/tojdel/articles/v09i02/v09i02-14.pdf).

Online tools

Type of online tool	Description and/or examples
App (application, usually on a mobile device)	Apps can have educational uses, such as providing a reference tool for trainee health workers, and assessments to monitor progress. They can make learning more engaging. Example: the Safe Delivery App for skilled birth attendants (www.maternity.dk/safe-delivery-app)
Chatbot	Chatbots are interactive, virtual agents/assistants that engage in text or audio interactions with humans. This technology is designed to interact with users through the usage of natural language (Przegalinska et al., 2019).
Emails	Emails can be a tool for asynchronous education, e.g. dissemination of typed information/attached documents/hyperlinks, or typed question and answer interactions.
Online assessments	Advancement in information technology gave rise to multipurpose computer-assisted educational assessment programs (e.g. https://proctorexam.com/) (Khalaf et al., 2020).
Podcasts	Podcasts are audio files that listeners can download from the internet. They can be created via an online free recording studio. Podcasts by educators are a form of asynchronous distance education. Related question-and-answer sessions can often take place on associated social media platforms.
Simulation and virtual reality techniques	These are augmented reality digital applications. They are offered as a solution to the challenge of providing an authentic learning experience in settings where there is limited access to real clinical environments for the number of students who need this experience. Many simulation technologies, however, require specialized technical expertise and dedicated time for teachers and students to learn to use them. Examples: simulated workplace environments (Hudson et al., 2020), virtual clinics (Hudson et al., 2020), reimagining internships through online experiences (Briant and Crowther, 2020) and distance learning workstations for residents (McRoy et al., 2020 and Talib et al., 2021).
Smartphones	Smartphones are a ubiquitous technology, and they have been readily and easily adopted to support learning as supplement to provision of institution-based teaching. Smartphones afford instant access to information, instant communication among students and teachers and on-the-go time management. Almost all students and faculty members have smartphones and have mastered their use, so this familiar technology can be used for a transformational educational approach.
Social media	Social media platforms are free and widely available and can facilitate sharing of information within public or private groups – including livestreaming on some platforms – and as such they can be useful educational tools (e.g. WhatsApp) (Kara et al., 2020; Nel and Marais, 2020).
Video recordings	These recordings can provide asynchronous education, such as pre-recorded lectures or presentations. There is no live audience or real-time interaction, although it may be possible to submit questions while or after viewing the recording. The videos are made available online for a specific group of students or the general public to access at their own convenience.
Virtual classrooms	These online spaces facilitate live, real-time interaction between teachers and students. This is a key form of synchronous distance education (SDE) that aims to simulate the teaching model of a traditional classroom.

Web-based learning systems	There are different types of web-based learning systems such as computer-mediated communication (CMC), web course tools (WebCT), Microsoft Teams (Teams) and Blackboard (Bb) (Khalaf et al., 2020).
Webinars	Webinars are seminars conducted online. They involve real-time interaction between teachers and groups of learners on a specified topic (questions can be asked verbally or by text message during or after the presentations). This is another form of SDE that aims to simulate the teaching model of a traditional in-person seminar. Webinars can be recorded to be watched later by those unable to attend live, providing a form of asynchronous distance education, without the real-time interaction.

References for online tools:

Briant S, Crowther P. Reimagining internships through online experiences: multi-disciplinary engagement for creative industries students. Int J Work-Integr Learn. 2020;21(5):617–28 (https://files.eric.ed.gov/fulltext/EJ1271577.pdf).

Hudson L, Engel-Hills P, Winberg C. The potential of a simulated workplace environment for emergency remote teaching. Int J Work-Integr Learn. 2020;21(5):559–72 (https://www.ijwil.org/files/IJWIL_21_5_559_572.pdf).

Kara N, Çubukçuoğlu Devran B, Elçi A. Using social media to support teaching and learning in higher education: an analysis of personal narratives. Res Learn Technol. 2020;28. doi:10.25304/rlt.v28.2410.

Khalaf K, El-Kishawi M, Moufti MA, Al Kawas S. Introducing a comprehensive high-stake online exam to final-year dental students during the COVID-19 pandemic and evaluation of its effectiveness. Med Educ Online. 2020;25(1):1826861. doi:10.1080/10872981.2020.1826861.

McRoy C, Patel L, Gaddam DS, Rothenberg S, Herring A, Hamm, J, et al. Radiology education in the time of COVID-19: a novel distance learning workstation experience for residents. Acad Radiol. 2020;27(10):1467–74. doi:10.1016/j.acra.2020.08.001.

Nel C, Marais E. Preservice teachers use of WhatsApp to explain subject content to school children during the COVID-19 pandemic. Int J Work-Integr Learn. 2020;21(5):629–41 (https://files.eric.ed.gov/fulltext/EJ1271253.pdf).

Przegalinska A, Ciechanowski L, Stroz A, Gloor P, Mazurek G, et al. In bot we trust: a new methodology of chatbot performance measures, Bus Horiz. 2019;62(6):785–97. doi:10.1016/j.bushor.219.08.005.

The Safe Delivery App. Maternity Foundation; undated (https://www.maternity.dk/safe-delivery-app/)

Talib MA, Bettayeb AM, Omer RI. Analytical study on the impact of technology in higher education during the age of COVID-19: systematic literature review. Educ Inf Technol. 2021;1–28. doi:10.1007/s10639-021-10507-1.

BACK TO PHASE 3, STEP 10

INSTRUMENT 16

CONSIDERATIONS FOR CAREFUL SELECTION OF EDUCATIONAL TECHNOLOGY TOOLS

Purpose: This instrument describes some factors to take into consideration when selecting educational technology tools, in the form of five concrete tips for selecting educational technology.

The wide range of technology tools and apps available can be overwhelming for any educator who is trying to make the right choice. Picking the right app or tool that learners can easily navigate is important to help educators drive home the learning objectives.

1. Start small	Trying to get a handle on too many technologies causes unnecessary stress. Learning a digital instrument takes time and applying it as part of the lesson can require preparation time ranging from an hour to a couple of days, and it is hard to know if it will work smoothly during the class session the first time you use it. You also must provide and demonstrate clear and specific instructions to the students, and ensure this information is available all semester.
2. Focus on your goals	It can be tempting to get caught up in the list of features a technology tool provides rather than focusing on whether or not the educational goal will be met through its use. Choose a few tools at a time based on reading reviews to gauge whether they met the basic needs of other customers and to see how likely it is that the tool will align with your lesson goals. Try out the selected tools to see which are the easiest to learn and use, keeping your goal(s) in mind. The more you test out the tools, the easier it gets because you will know what you want. In this way, you can decide on the best tool(s) for your needs. You can move on to another tool when the current one no longer serves your purpose.
3. Assess what you have	Take stock of the existing available technology and any relevant limitations in your educational setting, e.g. your classroom and the wider campus. This will help you determine which new tools you need and which can be successfully used. It is a good idea to find out what websites and apps your students have already used and get their feedback. Be mindful of firewalls in place at your location, which may affect usage of the selected technology.

4. Consider the implications of whether or not to pay	As a teacher, the excitement of a new tool and the possibility of enhancing your lessons can be overpowering. Being clear about how you intend to pay for the new tool(s) is crucial. It is also important to bear in mind that your actions can reinforce the digital divide if you don't think carefully about who will bear the cost. Questions to ask yourself include: - Are you willing to pay for full functionality or choose the basic free version of the tool (if any)? - What are additional features you will get by paying for the tool, and how difference will they make for effective education? - How does the company that owns the tool cover their costs if they provide their tool for free? - Is there a chance that students' (users') data is being used by that company in an unacceptable way (e.g. being sold to other companies)? - If you decide on a tool that must be purchased with a one-off payment or subscription, who will pay?
5. Revise and reflect	Go back to your goals and reflect on how well the tool(s) helped you to meet them. How long and how often is each tool used? Did any problems arise while using the new technology? Remember, if it is not working well enough, you can pick a different one (refer again to the steps and tips above, and your experience with various tools so far).

Source: Adapted from Lombardi P. Instructional methods, strategies and technologies to meet the needs of all learners. eBook; 2018, p. 277 (https://socialsci.libretexts.org/Bookshelves/Early_Childhood_Education/Instructional_Methods_Strategies_and_Technologies_(Lombardi_2018)).

BACK TO PHASE 3, STEP 10

INSTRUMENT 17

FACTORS INFLUENCING EDUCATORS' ADOPTION OF LEARNING TECHNOLOGIES

Purpose: This instrument outlines factors that influence adoption of learning technologies by educators at educational institutions. These factors are organized by technology-related factors, educator factors and contextual factors.

Type of factors	Factors influencing adoption of learning technologies
Technology-related factors	- **Relative advantage** – is it perceived to be superior (more useful/effective) than existing tools? - **Ease of initial adoption** – is it easy to learn to use, and easy to use? - **Availability** – is it readily accessible?
Educator factors	- **Attitude towards change** – educators who view change as positive are more likely to adopt it - **Capabilities** – educators who lack of capability to use technologies and/or the capability to design lessons using new tools are less likely to adopt it - **Pedagogical beliefs and practice** » educators with constructivist beliefs (who view teaching as the process of facilitating student knowledge construction) tend to adopt learning technologies to a greater extent than do teachers who regard teaching as a transformative endeavour » when a new technology suggests a way of teaching that contradicts the current practice, educators may question and reject it - **Control** – educators may sense (and resist) a loss of control over teaching matters if the implementation of a new technology gives greater control to learners and institutions
Contextual factors	- **Institutional bureaucracy** – top-down implementation of learning technologies may not fully engage educators and may be at odds with their views/beliefs on disciplinary teaching approaches - **Politics and purpose** – there may be a rift between institutional intention and educators' priorities, which can lead to the non-adoption of innovative learning technologies - **Prioritization of research** – up-take of innovative technologies may vary between academic units/disciplines. - **Culture and discipline (rules/ways of operating)** – educators both influence and are influenced by the context (institution/culture) in which they work, and this will affect their differential adoption of innovative technologies in ways that may not be immediately clear

Source: Adapted from: Grainger R, Liu Q, Geertshuis S. Learning technologies: a medium for the transformation of medical education? Med Educ. 2021;55(1):23–9. doi:10.1111.medu.14261.

BACK TO PHASE 3, STEP 10

INSTRUMENT 18

TEMPLATE OF A CURRICULUM PLAN – OVERVIEW OF COURSES

Purpose: This instrument provides a template for a curriculum plan with columns and rows in which to outline the following components of each course within the curriculum: year, semester, course title, course code, description, learning objectives, weight (units/credits), learning hours, learning environment (classroom, other settings, at home, etc.).

Template for a competency-based FP and CAC curriculum plan

NAME OF THE CURRICULUM: _____

OVERALL LEARNING GOALS: _____

YEAR	SEMESTER	COURSE TITLE	COURSE CODE	DESCRIPTION	RELEVANT PROGRAMME LEARNING OBJECTIVES	WEIGHT (UNITS)	LEARNING HOURS
				Summary			
1	1			Course learning objectives			
				Assessment			
				Summary			
1	1			Course learning objectives			
				Assessment			
				Summary			
1	1			Course learning objectives			
				Assessment			

Source: Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339205).

BACK TO PHASE 4, STEP 11

INSTRUMENT 19

TEMPLATE OF A COURSE SYLLABUS – TIME AND RESOURCE ALLOCATION

Purpose: This instrument is a template which can be used to detail the components of a course syllabus, including allocation of the appropriate time and resources.

COURSE DETAILS
Name of the curriculum/programme:
Course title:
Course code:
Semester/year:
Total hours/credits:
Educator(s)/instructors:
DESCRIPTION OF THE COURSE
AIM OF THE COURSE
The aim of this course is to enable the learner to:
LEARNING OBJECTIVES
At the end of this course, the learner should be able to:
COURSE CONTENT
TEACHING METHODS
ASSESSMENT METHODS
Formative assessments:
Summative assessments:

MATERIAL RESOURCES
Infrastructure/facilities: *Learning materials:* *Reading materials:*

COMPETENCIES

Competency 1:

KNOWLEDGE	SKILLS	ATTITUDES

Competency 2:

KNOWLEDGE	SKILLS	ATTITUDES

Source: Three-year regional prototype pre-service competency-based midwifery curriculum 2016. Brazzaville: World Health Organization, Regional Office for Africa; 2016 (https://apps.who.int/iris/handle/10665/331474).

BACK TO PHASE 4, STEP 12

INSTRUMENT 20

COMPETENCY-BASED ASSESSMENT METHODS – CHECKLIST

Purpose: This instrument is a non-exhaustive list of some competency-based assessment methods, which can be adapted for use as a checklist to review which ones have or have not been used.

The choice of an assessment method or tool should reflect the complexity of learning being tested, based on Miller's Pyramid: knows, know how, shows how, and does.[9] For example, a written test can measure only "knows" and "knows how", whereas a simulation assessment instrument can assess "does". Therefore, any assessment method used as part of an educational programme should match the type and stage of learning being assessed (and taught).[10]

Checklist for competency-based assessment methods

Stage in Miller's Pyramid	Assessment methods (examples)	Assessing components of a competency			Assessing competency	ASSESSMENT METHODS USED?		
		Knowledge	Skills	Attitude	Behaviour	YES	NO	DON'T KNOW
Does	Case-based discussion	✓	✓	✓	✓			
	Checklists	✓	✓	✓	✓			
	Direct observation of procedural skills	✓	✓	✓	✓			
	Mini-clinical evaluation exercise	✓	✓	✓	✓			
	Multi-source feedback	✓	✓	✓	✓			
	Patient record review	✓	✓	✓	✓			
	Portfolio	✓	✓	✓	✓			

9. Miller GE. The assessment of clinical skills/competence/performance. Acad Med. 1990;65(9):S63–7. doi:10.1097/00001888-199009000-00045.

   Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339205).

10. Sherbino J, Bandiera G. What drives learning: assessing clinical competence. In: Sherbino J, Frank JR, editors. Educational design: a CanMEDS guide for the health professions. Ottawa: Royal College of Physicians and Surgeons of Canada; 2011.

Checklist *(continued)*

Stage in Miller's Pyramid	Assessment methods (examples)	Assessing components of a competency			Assessing competency	ASSESSMENT METHODS USED?		
		Knowledge	Skills	Attitude	Behaviour	YES	NO	DON'T KNOW
Shows how	Observed structured clinical examination	✓	✓	✓	✓			
	Objective structured long examination record	✓	✓	✓	✓			
	Oral case presentation	✓	✓	✓	✓			
	Skills laboratory	✓	✓	✓	✓			
	Simulation exercises	✓	✓	✓	✓			
	Standardized patient encounter	✓	✓	✓	✓			
	Virtual reality case management	✓	✓	✓	✓			
Knows how	Chart-stimulated recall	✓	✓	✓				
	Development of individual learning plan	✓	✓	✓				
	Essay	✓	✓	✓				
	Oral questioning with longer answers	✓	✓	✓				
	Clinical problem-solving	✓	✓	✓				
Knows	Constructed response questions	x						
	Multiple choice questions	x						
	Short answer questions	x						
	Interview	x						
	Quizzes	x						
	Tests	x						

Sources:

Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. Hum Resour Health. 2012;10:43. doi:10.1186/1478-4491-10-43.

Global competency and outcomes framework for universal health coverage. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/352711).

BACK TO PHASE 5, STEP 13

INSTRUMENT 21

ePORTFOLIO PLATFORMS

Purpose: This instrument gives some examples of open-source and other ePortfolio platforms.

Open-source platforms

These platforms are mostly free of charge, they generally don't support complex features such as artificial intelligence (AI) or peer feedback forums.

Source	Website
Google Sites	https://workspace.google.com/products/sites/
Mahara	https://mahara.org/
WordPress	https://wordpress.com/

Other platforms (private companies or professional associations)

Platform	Website
Medbook	https://www.medbook.be
MyProgress	https://www.myprogressapp.com/
Royal College of Physicians and Surgeons of Canada	https://www.royalcollege.ca/rcsite/cbd/cbd-eportfolio-e
Scorion	https://scorion.nl/
PebblePed	http://pebblepad.co.uk/
Vametric	https://www.vametric.com/

BACK TO PHASE 5, STEP 14

INSTRUMENT 22

APPROACHES TO BUILDING THE CAPACITY OF EDUCATORS TO DELIVER COMPETENCY-BASED EDUCATION (CBE)

Purpose: This instrument provides examples of approaches to building the CBE capacity of educators, and related considerations.

This instrument was designed by the WHO Rehabilitation Working Group.[11]

APPROACH	CONSIDERATIONS
Learning tours (or study tours) Visits by faculty members to educational institutions that have a strong reputation for delivering competency-based education (CBE). During these tours, visiting faculty members observe and study the approaches being applied, in order to better implement these in their own institution. Typically, lessons learned during a tour are shared with other faculty members to maximize the benefits of the time and resources invested in the tour.	Sending multiple faculty members on learning tours can be resource intensive, in terms of costs for both travel and time. Faculty members are also diverted from their teaching responsibilities for the duration of the tour, which can disrupt the delivery of the programme. Learning tours are valuable in that they offer an immersive experience which can be difficult to replicate through other approaches. They can also foster positive relationships between institutions and provide wider and longer-term benefits for the programme.
Faculty mentorship Faculty members from educational institutions that have a strong reputation for delivering CBE are brought in to teach and mentor faculty members for a specified time period.	Bringing one or several CBE experts to the institution where the new programme or curriculum is being implemented can be more cost-effective than sending one or two faculty members on a study tour, and it does not disrupt the delivery of the programme – this can be especially important when the number of faculty members is very limited. However, compared with a study tour, this does not provide the same immersive experience for the faculty members wanting to learn the CBE approach.
Continuing professional development (CPD) courses Faculty are supported to undertake courses in CBE, such as those offered by a university or teaching college.	Supporting faculty members to undertake professional development courses in CBE involves allowing them the required time to participate and meet the demands of the course, as well as potentially covering the cost of the course.

11. Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020, p. 21 (https://apps.who.int/iris/handle/10665/339205).

APPROACH	CONSIDERATIONS
Comprehensive teaching and learning courses	Faculty members, or potential faculty members, can be supported to attend specific comprehensive teaching and learning courses, either as an intensive block, or part-time. These courses may be offered by the educational institution where they will work after completing the course, or externally. Typically, these courses may include the following topics: - Teaching and learning principles - Syllabus development - Course design - Course goals - Instructional methods - Teaching in the classroom - Assessment of teaching and learning - Development of assessment scoring criteria (rubric development). Comprehensive courses are likely to be more resource intensive than incremental training, or ad hoc CPD training; they are also likely to cover a wide range of content to greater depth. Comprehensive courses should be particularly considered for faculty members with limited to no teaching experience, acknowledging that specific knowledge and skills are needed to deliver education and training effectively, and that well trained faculty members are fundamental to providing quality education.
Comprehensive higher education leadership courses	As described above, faculty members, or potential faculty members, can be supported to attend specific comprehensive courses on leadership in higher education, either as an intensive block, or part-time. Typically, these courses may include the following topics: - Personal leadership development - Leading others - Leadership in the classroom - Leadership in the clinic/health system - Conflict resolution. Faculty members who will be supporting other staff, or holding a leadership or managerial role, can benefit from such courses, especially in a new programme where challenges associated with establishing courses call for clear direction and guidance.
Courses on teaching and learning that are integrated into FP and CAC programmes	Where a certain profession is still being established in a country, and the pool of potential faculty members is very limited, courses on teaching and learning can be integrated into FP and CAC programmes so that graduates emerge with some capability to take on faculty roles. While faculty members should ideally be highly experienced and hold postgraduate qualifications, this option may be suitable as a mechanism of progressive realization.

BACK TO PHASE 6, STEP 15

INSTRUMENT 23

EXAMPLES OF APPROACHES TO PROGRAMME AND CURRICULUM EVALUATION

Purpose: This instrument provides examples to help plan a programme and curriculum evaluation for different topics/areas of the educational experience.

Examples of a programme and curriculum evaluation

EVALUATION TOPIC	AUDIENCE	FORMAT	EXAMPLE POINTS OF ENQUIRY
Course content	Learners	Course evaluation questionnaire	- Content relevance - Educational approach - Learning materials - Learning experiences - Level of difficulty - Learner readiness - Methods and burden of assessment
	Educators	Interview or survey	- Learner readiness - Learning materials - Learning experiences - Methods and burden of assessment - Adequacy of teaching support
Educator/ supervisor performance	Learners	Educator/ supervisor performance evaluation questionnaire	- Knowledge of subject area/skills - Preparation - Organization - Teaching/supervisory style - Fairness - Communication - Availability - Approachability
Learner performance	Educators and supervisors	Learner performance evaluation questionnaire	- Learner/graduate general readiness for practice - Learner/graduate performance in relevant domains (practice, professionalism, learning and development, research) - Learner/graduate confidence - Learner/graduate values and attitudes

EVALUATION TOPIC	AUDIENCE	FORMAT	EXAMPLE POINTS OF ENQUIRY
Programme quality	Learners and educators	Programme evaluation questionnaire/ focus group discussion	- Achievement of learning objectives - Quality of programme/course organization - Quality of learning materials - Quality of learning experience - Quality of infrastructure/facilities - Quality of faculty - Overall satisfaction
Graduate experiences	Learners	Survey/ interview	- Employed (or not) in which sector and location - Average time until employed - Readiness for job responsibilities - Alignment of knowledge and skills with population needs
Service-user satisfaction	Service users	Service-user survey	- Quality of care - Communication and cultural competence

BACK TO PHASE 6, STEP 16

INSTRUMENT 24

OVERVIEW OF POTENTIAL EVALUATION PITFALLS AND MITIGATION STRATEGIES

Purpose: This instrument gives an overview of the potential pitfalls that may be encountered and mitigation strategies to use when evaluating a programme and curriculum.

Potential pitfalls	Mitigation strategies
Neglect of culturally significant competencies, such as establishing rapport, in favour of competencies related to performance of FP and CAC interventions (i.e. skewing curriculum focus to activities, especially those linked to employment)[a,b]	- Ensure courses and assessments place weight on learning objectives related to cultural and other "soft" competence. - Ensure evaluation processes review cultural and other "soft" competencies.
A focus on individual components of performance, e.g. specific tasks and activities, leading to an underemphasis on comprehensive performance (i.e. "checkbox education")[c,d]	- Ensure ample exposure to authentic learning environments that enable learners to develop and integrate a range of competencies. - Ensure assessment places proportional emphasis on competencies in the context of performance of tasks.
A prohibitive assessment burden[d]	- A combination of formative and summative assessment, as well as assessment in authentic environments, is integral to competency-based education. Curriculum developers can explore approaches to relieve the burden of assessment (e.g. through use of technology). Institutional capacity needs to accommodate the assessment load.

[a] Training tools for curriculum development: a resource pack. Geneva: UNESCO International Bureau of Education (IBE-UNESCO); 2013 (http://www.ibe.unesco.org/en/document/training-tools-curriculum-development-resource-pack).

[b] Carraccio C, Wolfsthal SD, Englander R, Ferentz K, Martin C. Shifting paradigms: from Flexner to competencies. Acad Med. 2002;77(5):361–7. doi:10.1097/00001888-200205000-00003.

[c] Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. Hum Resour Health. 2012;10:43. doi:10.1186/1478-4491-10-43.

[d] Lockyer J, Carraccio C, Chan M, Hart D, Smee S, Touchie C et al.; ICBME Collaborators. Core principles of assessment in competency-based medical education. Med Teach. 2017;39(6):609–16. doi:10.1080/0142159X.2017.1315082.

Source: Using a contextualized competency framework to develop rehabilitation programmes and their curricula: a stepwise guide for programme and curriculum developers. Version for field testing. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/handle/10665/339205).

BACK TO PHASE 6, STEP 16

INSTRUMENT 25

FP AND CAC EDUCATIONAL DESIGN MODEL – CHECKLIST WITH PHASES AND STEPS

Purpose: This instrument is an evaluation checklist that proceeds through the different phases and steps of the programme and curriculum development process. The checklist can be used at the start, during or at the end of the process to document completion of the steps.

Evaluation checklist by phase and step of programme and curriculum development

PHASES/STEPS	SHORT DESCRIPTION	CHECK
Phase 1: Build foundations		✓
Step 1. Create a mission statement	The purpose (what the programme does and why) and its commitments to its learners and broader community.	
Step 2. Create a vision statement	High-level goals and hopes for the future, what the institution hopes to achieve if they successfully fulfil their mission.	
Step 3. Set core values	Guiding principles, fundamental convictions and ideals – standards which provide a reference point for institutional decision-making.	
Phase 2: Plan		✓
Step 4. Conduct a needs assessment	An in-depth situation analysis of the educational system and the FP and CAC training needs.	
Step 5. Invite stakeholder dialogue	Involving stakeholders in a meaningful way, to ensure the programme and curriculum meet community needs, to create collegiality between those in health practice and health education, and to develop a sense of community "ownership".	
Step 6. Confirm resource availability	Competency-based education (CBE) requires a specific set of human resources, space/infrastructure, technology, facilities, and learning environments and experiences.	
Phase 3: Construct		✓
Step 7. Adapt and adopt competencies	Choose FP and CAC competencies to be developed at each stage of the programme and curriculum, and adapt their wording so they precisely describe what context-specific competencies (attitudes, skills and knowledge, applied in practice) the programme and curriculum will develop.	
Step 8. Determine expected level of proficiency	The level of proficiency at which each competency is expected to be performed once the specified stage of the programme or curriculum is completed.	
Step 9. Create learning objectives	Learning objectives provide an educational roadmap to guide both the educator and the learner. They tell learners what they need to learn and provide educators a means of prioritizing and structuring content.	
Step 10. Determine learning methods	Instructional methods to achieve learning objectives.	

Phase 4: Sequence		✓
Step 11. Structure curriculum content	A detailed curriculum plan is needed to structure the content and its teaching across the duration of study.	
Step 12. Allocate time and resources	Operationalizing a curriculum requires specifying the time and materials required for each course and each learner. The time allocated should reflect the subject's complexity and its contribution to programme and curriculum learning outcomes.	
Phase 5: Assess		✓
Step 13. Create assessments	CBE involves carefully aligning competency-based assessment methods with the learning objectives in a curriculum plan.	
Step 14. Determine thresholds for progression or completion	Deciding what a learner needs to achieve before progressing to the next stage, and before successfully completing the programme.	
Phase 6: Implement		✓
Step 15. Build capacity to implement	CBE requires investment in institutional capacity, including strong administrative systems and staff, and educators who are equipped to teach the curriculum and assess learning achievements.	
Step 16. Evaluate programme and curriculum	Regular evaluation and revision are good practices for all programmes and curricula. They may also be mandatory steps in accreditation processes.	

BACK TO PHASE 6, STEP 16

For more information, please contact:

Department of Sexual and Reproductive Health and Research
World Health Organization
20, avenue Appia
1211 Geneva 27
Switzerland

Email: srhhrp@who.int
Website: www.who.int/teams/sexual-and-reproductive-health-and-research