



PhD Training

Training of Trainers

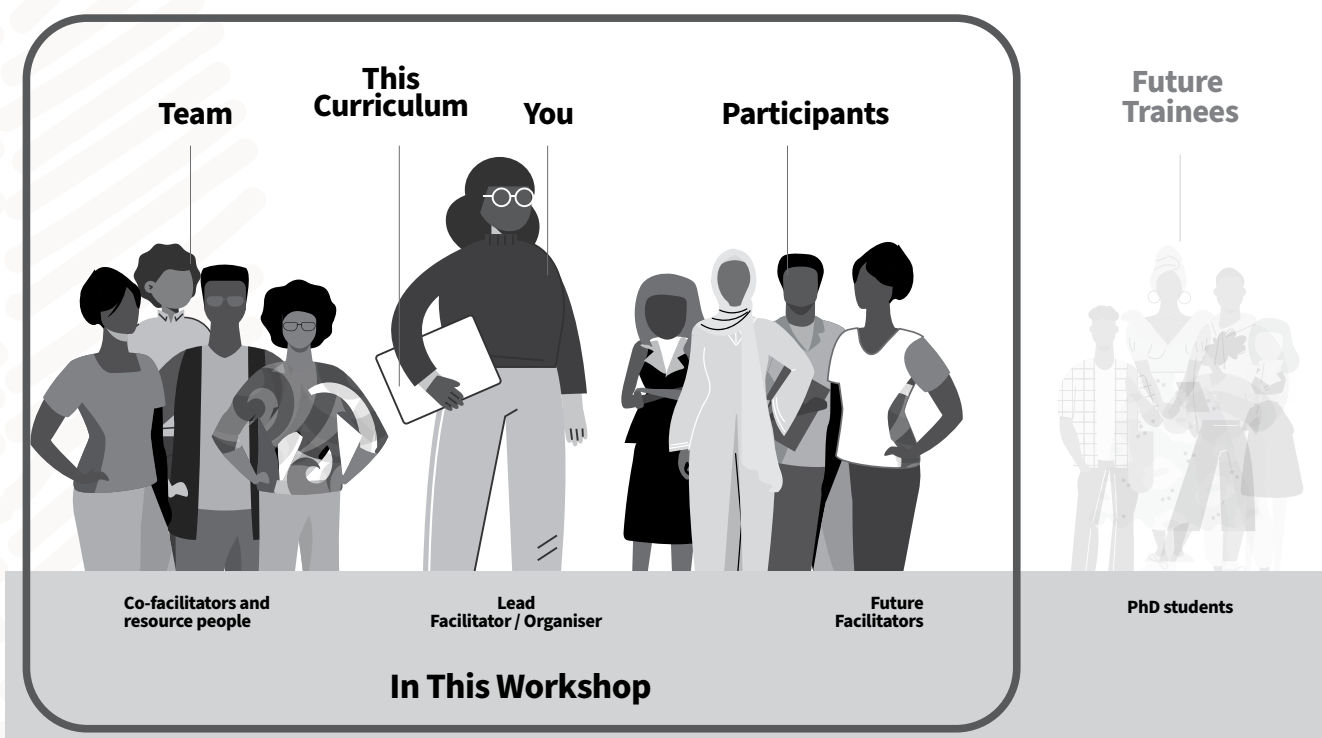


In this set of sessions, participants become familiar and comfortable with the methods that have made CARTA an effective model for teaching and supporting PhD students. Once mainstreamed, this approach:

- Improves the quality of postgraduate training.
- Enhances graduates' global competitiveness.
- Raises the quality of research outputs and, in turn, the contribution of research to strategic policy priorities and global knowledge production.
- Increases the likelihood of publication in high-impact journals and thus the visibility of the institution.

For the approach to be truly effective, however, trainers and facilitators need a thorough introduction. Use this manual to guide facilitators and trainers to plan, run, assess, and follow up on training for PhD students.

The guidance in this manual is for you as the facilitator and/or organiser of the Training of Trainers (ToT).



Objectives

1. To expose participants to the learning approaches in CARTA. Specifically, to:
 - Understand why CARTA is doing what it is doing.
 - Appreciate and experience the CARTA approach to learning and teaching.
2. To enable participants to explore and practise various teaching methods using CARTA techniques.
3. To introduce participants to the resources available on the CARTA curriculum website and give them time to explore and use it.
4. To provide an opportunity for participants to learn some skills in using virtual spaces to support blended learning.
5. To develop a step-down plan to institutional levels. Specifically, to:
 - Plan what they want to implement.
 - Develop a plan about how they will do this after the ToT.
 - Deliberate on what follow-up they may need.

The approach

There are many ways to offer training – CARTA takes a participatory approach. Participants work with each other and with inputs from the trainer to find solutions. Problem-posing education draws on creativity and stimulates both reflection and action on reality. It differs from the idea of transferring facts to a passive learner, where the trainer is seen as possessing all essential information and trainees as 'empty vessels' needing to be filled with knowledge.

The choice of participatory methods is deliberate: there is a coherence between the values that CARTA promotes and the way we share them. From the beginning, all participants are recognised as thinking people with the capacity for action. Each person contributes, bringing different perceptions based on their own experiences.

The trainer must make a conscious effort to use participatory methods to genuinely enable people to grow in awareness, maturity, and self-reliance, and not to control them. Any tool is only as good as the person using it and the use to which it is put.

Participants

Once trained, ToT participants will be expected to coordinate and co-facilitate PhD Training in their respective institutions. Think of these criteria when selecting the right candidates for this workshop:

- People involved in postgraduate training.
- CARTA graduates (where possible).
- People with facilitation skills.
- People in a position to advocate for further ToT workshops in their institutions.

Facilitator attributes

Some people assume that facilitating a workshop will be an easy process, until they try doing it. The participatory method for the Training of Trainers workshop requires you as the facilitator to guide the workshop, appreciating that the participants are in charge. Your responsibility – and the responsibility of those you are training – is to create an enabling environment that allows participants to learn from each other, come to an understanding, and pool their collective wisdom in resolving issues.

We recommend these as attributes of a good facilitator.

An unbiased perspective

Participants should feel comfortable that their opinions are welcomed and encouraged. An unbiased facilitator creates a neutral zone where alternative points of view can be shared and debated in a respectful manner. This is key to driving a constructive, productive discussion.

Sensitivity to individuals

To create and maintain an atmosphere of trust and respect requires the facilitator to be aware of how people are responding to the topics under discussion and to the opinions and reactions of others. Most people will not articulate their discomfort, hurt feelings, or even anger; instead, they silently withdraw from the discussion and often from the group. Sensing how people are feeling and understanding how to respond to a particular situation is a critical skill of facilitation.

Sensitivity to the group

In any group, the whole is greater than the sum of the parts, and group ‘chemistry’ generally reflects shared feelings: eagerness, restlessness, anger, boredom, enthusiasm, suspiciousness, or even silliness. Perceiving and responding to the group’s dynamic is essential to skilful facilitation.

Ability to listen

One way the facilitator learns to sense the feelings of individuals is by listening carefully, noting both the explicit meaning of words and their tone and implicit meaning. A good facilitator practices ‘active listening’. They may repeat, sum up, or respond directly to what a speaker says to ensure that the speaker’s meaning is correctly understood by the group.

Tact

Sometimes, a facilitator must say difficult things for the good of the group. The ability to do so carefully and diplomatically is critical. Examples include a group discussion dominated by one person or a group of silent participants. The facilitator must find a gentle, tactful way to engage the team so everyone can participate and get the most out of the session. Often, a participant asks a question, and then rambles on, eventually answering his own question. A capable facilitator knows how to diffuse these awkward moments and maintain a productive atmosphere.

Commitment to collaboration

Collaborative learning can occasionally seem frustrating and inefficient. At these moments, every facilitator feels tempted to take on the familiar role of the traditional teacher and to lead, rather than facilitate. However, genuine conviction about the empowering value of cooperative learning will help the facilitator resist a dominating role. Likewise, a good facilitator is willing to share facilitation with others in the group. The goal is always to conduct the best and most effective discussion. To that end, a good facilitator knows how to adjust his or her role accordingly.

A sense of timing

The facilitator needs to develop a sixth sense for timing: when to bring a discussion to a close, when to change the topic, when to cut off someone who has talked too long, when to let the discussion run over the allotted time, and when to let the silence continue a little longer.

Resourcefulness and creativity

Each group of participants presents different dynamics. Despite a well-planned agenda, discussions may not unfold as anticipated. A good facilitator should be able to think on their feet. This may mean changing direction in mid-stream, using other creative approaches to engage the group, or welcoming ideas from the group on how to shift the agenda. Good facilitators always have tricks up their sleeves that will help a group move forward while still keeping an eye on the overall objective of the meeting.

A sense of humour

As in most human endeavours, even the most serious, a sense of humour enhances the experience for everyone. A good facilitator appreciates life's ironies and is able to laugh at themselves and share the laughter of others.

Preparation

Invite minimum 10, maximum 30 participants. Identify and book a spacious venue, with movable furniture and two additional breakaway rooms.

Invite participants – the future trainers and facilitators – to acquaint themselves with CARTA's approach and materials in advance.

As the ToT facilitator, you also need to acquaint yourself thoroughly with CARTA's approach and materials. Review the suggested ToT program below and adapt it to meet the needs of your participants and institution/s. For example, you might choose to follow CARTA's five-day schedule or, rather, spread the sessions over a series of weekly workshops.

You might want to share the link to the [playlist](#) of CARTA learning and teaching videos and invite participants to watch them in advance.

Video as a training tool

CARTA produced these videos to guide trainers and facilitators who work with PhD students – not to use with the PhD students themselves. The videos are designed to illustrate aspects of a method that are difficult to explain in words. For example, you can see on the screen how the facilitator organises a room, how they engage participants, how they follow up discussions, and how they support participants. You can also see what the facilitator does NOT do, such as give all the answers or make themselves the centre of attention.

The question of how to facilitate is particularly important when you and your trainees use participatory methods and experiential learning. These approaches may involve unfamiliar ways of relating as a teacher, so video is a useful way to emphasise how to go about it. Many of the videos include the voices of students after experiencing this form of learning, explaining why it is particularly effective and how they have benefitted.

Like any other tool, audiovisuals depend on skilful use if they are to achieve real impact. In general, when you show a video or play another kind of audiovisual such as a podcast, you should prepare and follow three steps.

1. Before screening

Explain what you are going to show and why. For example, explain to a group of facilitators:

We are going to watch a video on sessions related to Multidisciplinarity, so that you can see the sequence of steps.

Give the group specific points to watch out for, that relate to their behaviour, skills, and manner as facilitators. Say, for example:

You will pick up many points, but I draw your attention especially to the role of the facilitator. What do you notice about how she engages with the students in the group?

2. During screening

The group watch with extra attention, focused on the specific questions and prompts you have given.

3. After screening

Always allow time for reflection and discussion. You could begin by giving people five minutes to note their observations in general and in answer to a specific task you gave them. Then in pairs, small groups or plenary, ask for reflections. For example:

What did you like about the video?

Was anything confusing/ Do you have any questions?

What did you see in relation to (the task)?

Your group may want to watch the video through again. Alternatively, share the link with group members so that they can play the video in their own time. Make sure that everyone understands that the videos are tools for facilitators as they prepare to train doctoral students. They are not tools to use with the students themselves.

Sample schedule

Use or adapt this timetable to suit your own ToT. The schedule links to the relevant session for students.

Day	Themes	Sessions		
1	Introduction	CARTA philosophy and learning resources Institutional Situation Analysis		
	Critical thinking	Scientific Blitz The Journal Club		
	Analytical skill	Writing and Analysis Sessions Searching, Reading, and Synthesising (Sessions 4, 5, and 7) Multilevel Framework (Session 9)		
	3	Reading and writing skill	Academic Writing Spiderweb - Social Determinants	
		4	Learning to give feedback	Diagnostic Sessions Research Development Clinics
	Presentation	Work in Progress Policy Engagement and Briefs Academic Posters		
		5	Research leadership	Professional Development Plans (Session 1) Hubs, Collaborations and Partnerships (Session 3) Grant Proposals
			Institutional engagement	

Sessions

Day 1

[CARTA philosophy](#) and learning resources

Institutional Situation Analysis

Using the strengths, weaknesses, opportunities, and threats (SWOT) framework, this session helps participants identify ways to improve graduate training and research outputs in their institution/s.

Guide them to:

- Describe institutional visions and goals for graduate training.
- Give a complete view of graduate training in their institutions.
- Identify institutional barriers to and facilitators of timely completion of PhDs.
- Identify institutional barriers to and facilitators of quality graduate training.
- Identify the current strategies and activities in place to overcome these barriers.
- Identify the best approach(es) to achieve institutional goals and visions for graduate training.

By the end of this session, ToT participants can:

- Provide an institutional situational analysis of graduate training and research output.
- Identify factors affecting good quality graduate training.
- Suggest solutions to overcome barriers to quality graduate training for their context.

Steps

Invite participants to form groups to discuss SWOT questions for their institution or department.

Strengths

What are the strengths of your institution or department in training graduates and building research capacity?

What unique capabilities and resources are available for training graduates and building research capacity?

Weaknesses

What are the weaknesses of your institution or department in training graduates and building research capacity?

What needs to improve?

Opportunities

What factors can be leveraged to enhance graduate training and research capacity-building in your institution?

What opportunities are available?

Threats

What are the systemic barriers that affect graduate training and research capacity-building in your institution?

What might negatively impact graduate training and research capacity-building?

What is the impact of the weaknesses you have identified on graduate training and research capacity?

Each group discusses and fills in a copy of this table, adding further items if needed.

	Describe what goes on in your institution	What needs to change?	How will it change?
Administrative process of PhD admission and registration			
Supervision (finding a supervisor, supervisor-supervisee relationships)			
Ethics approval (support to develop a protocol, protocol approval processes)			
Library access			
Taught component/s of PhD courses			
Monitoring PhD students' progress			

Scientific Blitz

This novel approach enhances PhD students' critical thinking and analytical skills, promotes multidisciplinary research, and encourages them to understand the context of their work. The Scientific Blitz generates controversy and stimulates argument in a fast-paced manner. Trainers can organize Scientific Blitzes at any point along the PhD journey to support students to conduct effective literature reviews, identify research gaps and build strong arguments.

Future facilitators should appreciate the structure of the [Scientific Blitz](#), know how to coordinate and moderate it, and understand the purposes it serves, which are to:

- Engage students in scientific debate.
- Promote multidisciplinary research.
- Enhance students' search skills and use of publicly available databases to identify relevant literature/materials.
- Alert participants to the broader social and scientific context of their research.

By the end of this session, ToT participants can:

- Identify relevant topics for Scientific Blitz.
- Source key materials/readings.
- Organize the Scientific Blitz effectively, including assigning roles to students as facilitators, presenters, and opponents.
- Moderate a lively scientific debate to expose participants to a broader, extensive social and scientific research context.
- Reflect on and critique the social and scientific context of specific research.

Steps

To introduce participants to the essence and objectives of the session, briefly describe the session and screen the Scientific Blitz [video](#).

Allocate 15 minutes to cover topic selection. Divide participants into groups of four. Each group selects a scientific blitz topic and associated text and prepares a presentation, focusing on the rationale behind selecting this particular topic and its relevance to your field, such as population and public health. As facilitator, you or a fellow facilitator then comment on the relevance and feasibility of the topics and on the participants' presentation style. Each group then refines and saves the final version of their choice of topic and text.

Allocate 25 minutes for a simulation or role play of a Scientific Blitz session. Divide participants into two groups. Within each group, volunteers take on lead roles as Facilitator, Presenter and Opponent while the rest of the group are the audience. The leads simulate a Scientific Blitz session. The "audience" of peers keep note of aspects to either commend or suggest improvements. After peer feedback on the session, you or a fellow facilitator give feedback.

Assess each participant's understanding of the purpose of method and ability to facilitate a Scientific Blitz.

Journal Club

The Journal Clubs strengthens PhD students' ability to read and interpret scientific literature, develop reading habits, improve their critical thinking and analytic skills, critique scientific opinions, and perform various roles in peer support and review processes. In addition, the [Journal Club](#):

- Exposes PhD students to relevant new material and to topics that may require further reading as part of their broader professional development
- Equips PhD students to participate in and organise a journal club.
- Trains PhD students to present a 10-minute overview of a journal article.
- Deepens skills in peer review and discussion.

By the end of this session, ToT participants can:

- Identify relevant articles for Journal Club.
- Divide PhD students into multi-disciplinary groups.
- Organise Journal Clubs and assign roles as facilitators, presenters, discussants, and chairs.
- Guide facilitators to perform their role.
- Monitor the performance of a number of Journal Clubs and provide feedback.

Steps

To introduce participants to the essence and objectives of the Journal Club, briefly describe the session and explain its purpose as a learning and teaching method.

Allocate 40 minutes to article selection. Divide participants into groups of four and ask each group is to select a collection of journal articles for a cohort of PhD students. Each group prepares and delivers a presentation on the articles they choose, explaining the rationale for their selection and relevance to participants' professional and integrated development.

Screen the Journal Club [video](#) to the full group.

Allocate 60 minutes to simulation of an abridged Journal Club. Divide participants into two groups. Each group assigns the roles of Coordinator, Facilitator, Presenter, Discussant and Chair, while the rest of the group are the audience. Each group simulates a Journal Club session and, afterwards, discusses the effectiveness of the session and aspects for improvement.

Allocate 20 minutes for a plenary session for general discussion, comments, and evaluation of the sessions.

Writing and Analysis Session

This is a core session, designed to give PhD students relevant skills, stimulate their thinking, and ensure they have quality advice and support along with opportunities to write, receive feedback, and submit manuscripts and thesis chapters. It is therefore important that the future facilitators in the ToT understand the structure and purpose of [Writing and Analysis](#) Sessions as:

- Protected time for PhD students to analyse their data, reflect on findings, and write up results.
- An opportunity for personalised expert support for PhD students as they analyse and write up their research findings.
- A process of building PhD students' confidence and capability as scientific writers.
- The moment to develop a progress plan for analysis and writing.

By the end of this session, ToT participants can:

- Pair a PhD student with an appropriate facilitator or mentor.
- Practice approaches to solving issues that a PhD student may experience as they analyse their data and write up their research.

To prepare for this ToT session:

- Provide a set of profiles of facilitators (actual or hypothetical) and a set of profiles of PhD students (actual or hypothetical) including their research topics.
- Provide a set of illustrative issues that PhD students might face.
- Engage other facilitators to work with ToT participants in related disciplines.

Steps

In an introductory summary, convey the components and overall objectives of the Writing and Analysis Session.

Allocate 20 minutes for groups to pair facilitators with PhD students. Divide ToT participants into groups of four. From the lists you prepared earlier, each group pairs two PhD students with the most suitable facilitators. Each group presents the rationale for their choices in the plenary.

Allocate 20 minutes for groups with four ToT participants in each to simulate a Writing and Analysis Session. Volunteers take on the roles of Facilitator and PhD Student, while the rest of the group are the audience. Working with the list of issues you prepared earlier, Facilitators and PhD Students simulate a Writing and Analysis Session. Afterwards, the group discuss the effectiveness of role play, raise questions, and make suggestions for improvement.

Searching, Reading, and Synthesising

Analytic thinking, synthesising information, and communicating with different audiences are key skills for all PhD students. An awareness of the contributions of different disciplines is essential for PhD students' future collaborative work and professional development.

As future facilitators, ToT participants need to understand how the interlinked sessions in [Multidisciplinary](#) introduce PhD students to:

- Working collaboratively across disciplines.
- Reflecting on the discipline within which they work.
- Understanding the epistemology and ontology of different disciplines.
- Conducting effective literature searches.
- Using appropriate databases.
- Screening titles and abstracts for relevance to their topic / research question).
- Reading selected articles.
- Synthesising the key literature in order to identify research gaps and communicate findings to an audience.

ToT participants need to understand the structure and teaching methods of the interlinked sessions and be able to teach this approach to other facilitators.

By the end of this session, ToT participants can:

- Plan the curriculum for a one-week course that integrates the contribution of different disciplines with skills in searching, analysing, selecting, and synthesising literature.
- Guide PhD students to:
 - Work with a librarian/information specialist to select databases and develop effective search strategies.
 - Scan databases and select relevant articles.
 - Read an article for meaning (key findings).
 - Synthesise the findings.
- Reflect on the implications for their own institutions of evaluations of doctoral training programs.

To prepare for the ToT session:

- Watch the video on [Multidisciplinary](#). Prepare to screen it to the ToT participants to consolidate their understanding at the end of the session.
- Source online resources on search strategies to share with ToT participants before the session, such as database search strategies.

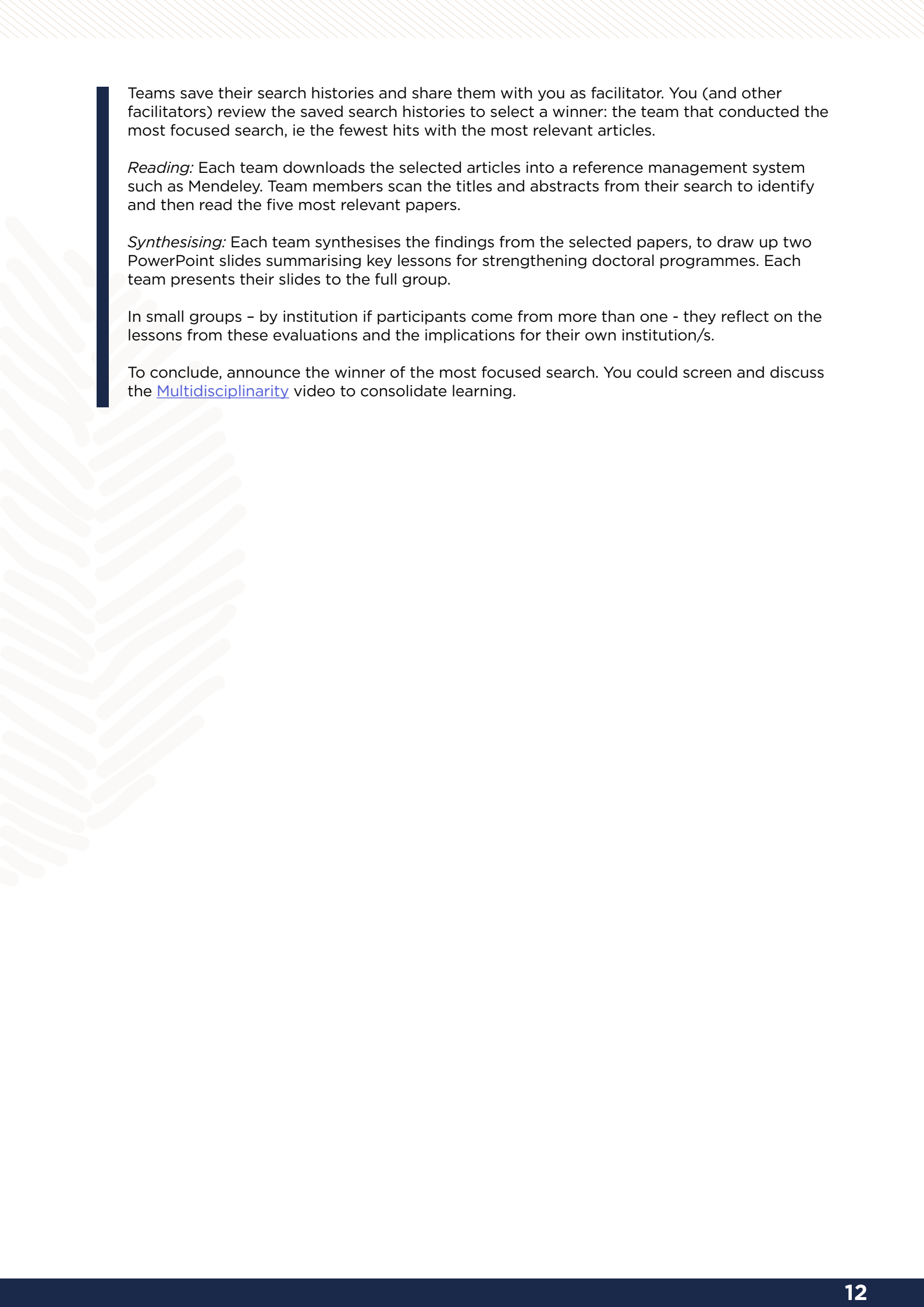
Steps

Give a short presentation to explain how the interrelated activities of [Multidisciplinary](#) teach intertwined skills and values.

Lead a light-hearted “agree-disagree” activity to divide ToT participants into teams that cross disciplines and institutions – the same activity that they will facilitate in future with PhD students, as shown in the video.

ToT participants simulate the activities of searching, reading, and synthesising that their PhD students will undertake. In this way, they experience the teaching methods in practice, for themselves.

Searching: Each team selects a database and develops a search strategy to find relevant papers on the topic of doctoral training in their field and geographic region. For public health in Africa, for example, teams could search evaluation results of doctoral training in Africa. (These should be on different programs, not five articles on the same program).



Teams save their search histories and share them with you as facilitator. You (and other facilitators) review the saved search histories to select a winner: the team that conducted the most focused search, ie the fewest hits with the most relevant articles.

Reading: Each team downloads the selected articles into a reference management system such as Mendeley. Team members scan the titles and abstracts from their search to identify and then read the five most relevant papers.

Synthesising: Each team synthesises the findings from the selected papers, to draw up two PowerPoint slides summarising key lessons for strengthening doctoral programmes. Each team presents their slides to the full group.

In small groups - by institution if participants come from more than one - they reflect on the lessons from these evaluations and the implications for their own institution/s.

To conclude, announce the winner of the most focused search. You could screen and discuss the [Multidisciplinarity](#) video to consolidate learning.

Multilevel Framework

Critical thinking and analytic skills are essential for a PhD student to review the literature, identify a research gap, and argue their point in written and oral presentations. The multilevel framework enhances these skills as PhD students generate ideas, categorise them, and then argue for the way they are categorised. The session also introduces a conceptual framework.

Session 9 of the [Multidisciplinarity](#) sequence introduces PhD students to the social determinants of health (the causes of the causes). In the activity, they construct a framework for the different levels at which different social determinants operate.

By the end of this session, ToT participants can:

- Facilitate the multilevel framework.
- Explain how the multilevel framework is an example of a conceptual framework.

To prepare for the ToT session:

- Ensure that your co-facilitator/s have a deep understanding of social determinants and the levels at which they operate (for example, gender is not an individual level social determinant).
- For the practical session, provide two large whiteboards, post-it notes in different colours, pieces of string, and gluetak/ stikkie stuff or masking tape.
- Divide the space on the whiteboards into levels with a heading per level.
- Ensure space for group work and for participants to sit around the two large whiteboards.
- (Re-)watch the [Multidisciplinarity video](#) with co-facilitator/s, focusing on the section on the multilevel framework.

Steps

In brief, introduce the idea of social determinants of health. Ground the idea in a specific example of a problem. In the video, for example, PhD students analyse the causes of infant mortality.

Divide ToT participants into groups of four or five (from different disciplines if possible), and hand out coloured post-it notes, one colour for each level: individual, household, community, national, global. In their groups, ToT participants identify social determinants of the problem example, agree what level it operates on, and write each one on a separate post-it of the appropriate colour.

Back in the plenary, ToT participants take turns to place their post-its one at a time under the appropriate level - no duplication - and explain their reasoning: why the factor fits at this specific level and how it operates as a social determinant. Encourage peer discussion and participation, especially if the determinant is not placed at the correct level.

At the end, invite one or more volunteer/s to use string to trace how the social determinants influence the outcome or problem.

Wrap up the session by summarising the main points. You could also screen the last section of the [Multidisciplinarity video](#).

Academic Writing

This session introduces the Academic Writing [manual](#) and methods developed by ESE:O for and with CARTA. Draw on the [Academic Writing](#) chapter to introduce the background and principles.

This approach uses the 50-word microtext as a tool to stimulate critical thought. PhD students learn concise expression in defining and justifying a research gap. Among other advantages, the microtext is:

- Easy to display in a workshop.
- Impossible without conciseness and coherence.
- An excellent starting point for online writing workshops.
- Stimulates focus and economic use of language.

Note that the methodology is essentially collaborative and encourages criticism. For this reason, it is vital that participants do not feel threatened by criticism in a group setting. The facilitator must not allow any participant to disrespect or demean anyone else. Ensure that – as future facilitators – ToT participants understand that this is imperative. Model it yourself, in the way you lead the ToT session.

By the end of this session, ToT participants can:

- Understand the purpose of teaching with microtext to stimulate focus and the awareness of the economy of language.
- Use microtexts successfully as a vehicle for clear communication of a research gap and stimulation of peer comment.
- Recognize the relationship between author’s voice and authority, credibility, and reputation.
- Acknowledge the importance of academic integrity and avoiding plagiarism.
- Use good posture and voice to communicate authority and credibility.
- Communicate why rubrics are useful and use them to evaluate participants and students.
- Understand the purpose and use of mind maps to define a research gap.
- Use autonomous learning and self-editing to improve and expand texts.
- Demonstrate the difference between unfocused literature summaries and a robust critical discussion.
- Understand the relationship between critical thinking and a robust critical discussion.
- Appreciate the difference between “descriptive” and analytical work.
- Use metacognition resources and strategies to stimulate learning processes, creativity, and critical thinking.

Steps

In this session, use the [Academic Writing](#) chapter lead the ToT participants through these three modules from the [manual](#):

Module 2 “Finding your own Voice and Stance in a Micro Text”

Module 3 “Focusing on the Research Gap”

Module 4 “Promoting a Robust Critical Discussion and an Insightful Metacognition”

Spiderweb – Social Determinants

Through this [activity](#), PhD students come to recognise that any population-level phenomenon is shaped or caused by more than one social determinant. They learn to identify the potential factors and understand how they operate and interact, by investigating a particular phenomenon from different disciplinary perspectives. They learn to apply two frameworks – social determinants and gender – to analyse a public-health phenomenon in order to inform policy and intervention design.

By the end of this session, ToT participants can distinguish between factors:

- That are common to men and women within a specific social group.
- That arise as a consequence of biological differences between men and women.
- That are related to gender-based differences within the same social group in terms of
 - roles and norms
 - access to and control over resources
 - power relations between men and women

Steps

Prepare for the ToT session exactly as the facilitator prepares for the PhD training [session](#) and follow the same steps.

Then ask ToT participants:

What is the connection between the multi-level framework (above) and this one?

Divide the factors common to both sexes and those that are specific to women for each of the five levels: individual household, community, national and international. For example, Miriam's father's attitude to the education of girls is a gender factor operating at the household level. The lack of a nearby school in the community is an economic or political factor operating at the community level.

To conclude the session, invite discussion of the main points:

- It is useful to distinguish between health determinants common to both women and men and those that are sex and gender related, because each of these sets of factors requires a different type of intervention.
- The analysis of a health problem should explicitly consider the gender dimension and its links to other determinants of the problem.
- Intervention design should be based on such an analysis and should take into account the potential impact of these interventions on gender power relations.
- Health problems caused by multiple factors need a multi-pronged strategy to address these factors simultaneously.
- A social-determinants perspective forces us to look at the issues of rights; to identify the rights whose neglect or violation contributes to the health problem; and to address rights violations or neglect to create the necessary conditions for addressing the health situation.

Diagnostic Sessions

A diagnostic session helps a PhD student to identify their needs and work out how and from whom to get the most suitable one-on-one support in order to make progress with their analysis and write up. The student is invited to map out their strategies for achieving the necessary goals to complete their research, thus developing skills in planning and self-monitoring. The interactive nature of the diagnostic session enables PhD students to communicate their needs effectively, make consistent and measurable progress, and sustain critical self-reflection. A department or university can organise [Diagnostic Sessions](#) as frequently as necessary over the course of graduate studies training.

By the end of this session, ToT participants can:

- Organise a diagnostic session to support a PhD student to address specific challenges related to their research.
- Teach other facilitators how to organise a diagnostic session effectively.

To prepare for this session, invite and brief two co-trainers per group of five participants.

Steps

Begin by introducing the purpose of the diagnostic session.

Organise ToT participants into small groups of about five, each with two trainers. In each group, participants discuss how to support PhD students in a diagnostic session. The trainers then ask questions and assist participants to identify what they help they would need in order to teach others how to organise a diagnostic session.

Next, participants form new groups: two to run a diagnostic session (DS) and one observer group. Each of two DS groups discusses the [Diagnostic Sessions](#), decides what their own session will look like, and then puts it into practice as a simulation. The observer group and trainers move between the two groups, taking notes.

Back in plenary, the observer group shares their observations and points out strengths and gaps. After that, the trainers add any further comments. Finally, as facilitator, you summarise the main points emerging from the session.

Research Development Clinics

These clinics help PhD students to develop high quality research proposals. In [research development](#) clinics, student get one-on-one support to address specific problems they are experiencing with their research. Each session runs for a maximum of one hour and the student needs to use this time well and to their own advantage. CARTA proposes that you schedule a series of four clinics for each student at defined intervals as they develop their research protocol:

- Clinic 1 to support the PhD student to define their research **question** and objectives.
- Clinic 2 to discuss research **methods** to ensure they will meet student's objectives.
- Clinic 3 to assess the feasibility of research **logistics**, given time and other resource constraints.
- Clinic 4 to develop a **data analysis plan**.

By the end of this session, ToT participants can:

- Identify the research needs of PhD students.
- Constitute multidisciplinary groups to support PhD research.
- Critique research proposals and provide constructive feedback.
- Implement clinic sessions for a cohort of PhD students.

To prepare for the ToT session, gather case studies for discussion, each one consisting of a student's original research proposal and their questions, with some key elements changed to avoid identification. If possible, invite ToT participants to bring case studies from among their own students, also with key elements changed to protect anonymity.

Steps

Give a brief presentation to describe the essence and objectives of the research development clinics.

Divide trainers into groups of four and assign each group a relevant case study to work on for 15 to 20 minutes. Each group discusses what feedback, questions, and advice they would introduce in a research development clinic with the student in the case study.

Back in the plenary, each group takes a turn to share the outcome of the task. Invite discussion.

Work in Progress

PhD students take turns to provide a coherent scholarly update on their entire doctoral thesis or a part of it to a group of peers, faculty, and facilitators. In a [Work in Progress](#) (WIP) session, the student gives a formal presentation, highlighting their research questions, background literature, methods, emerging findings, challenges, and next steps.

CARTA designed the WIP to sharpen PhD students' skills in:

- Giving succinct presentations.
- Communicating their research to an audience beyond their own discipline and specialisation.
- Debating and defending their work.
- Receiving and responding to critical comments.

The ToT session involves future facilitators in role play as they simulate and experience a WIP.

By the end of this session, ToT participants can:

- Organise an interactive, participatory, and inclusive WIP session featuring a PhD student's presentation to peers and facilitators.
- Provide constructive critical input on scientific work in light of academic standards.
- Prepare WIP participants to use good and constructive feedback to improve their manuscripts and presentation skills.
- Stimulate professional and collegial responses among participants to critical reviews.

To prepare for the ToT session, provide four sets of the following for group role plays:

- A list of 12 facilitators with brief profiles.
- A list of 30 PhD students and their PhD topics.
- A sample WIP presentation.

If you have facilitated a WIP before, use those from previous sessions. Otherwise, create imaginary ones.

Steps

Present an overview of the WIP session, its importance, and learning outcomes, and screen the [Work in Progress video](#).

Divide ToT participants into four groups.

Each group clusters the students from the list into six unique WIP groups based on similarities in their research focus. For each WIP group, they assign two facilitators and two ToT participants to role play as presenter and chair, from the list of students. Each ToT group prepares and gives a short presentation on how and why they formed the WIP groups.

As facilitator, give feedback on the rationales for forming the groups and on the ToT participants' presentation style.

Next, assign volunteers to the role play as Facilitators (2), Presenter (1) and Chair (1) of a WIP session. The other participants make up the audience. The volunteers simulate a WIP session, including the sample presentation.

Invite peer feedback before you and co-facilitators comment on and evaluate the performance of the WIP.

Policy Engagement and Briefs

Cover this material in two steps – first, policy engagement and then policy briefs.

Policy Engagement

By the end of this part of the session, ToT participants can:

- Explain knowledge translation and evidence-based practice.
- Provide PhD students with models, frameworks, and strategies for knowledge translation.
- Explain how to select the most appropriate means to translate types of research findings for types of audiences, particularly non-scientific audiences such as policymakers.

To prepare for this part of the session, share the resources and case studies provided in [Policy Engagement and Briefs](#) and ask ToT participants to read or watch them beforehand. You might augment or replace these with other articles and case studies.

Steps

Introduce policy engagement, why it matters, and how one can use evidence to influence policy.

Lead a discussion of two or three examples, for example the [case study](#) on reducing the amount of salt in processed foods in South Africa.

Policy Briefs

By the end of this part of the session, ToT participants can:

- Explain the key components of a policy brief to PhD students.
- Outline the purpose of a policy brief for a particular context.
- Teach key skills for writing a policy brief.

To prepare for this part of the session, gather examples of policy briefs and share copies or links with ToT participants. Share the resources and case studies provided in [Policy Engagement and Briefs](#) and ask ToT participants to read or watch them beforehand.

Steps

Introduce policy briefs, what they accomplish, and how one translates evidence into a policy brief. Invite discussion of the resources that ToT participants read in advance.

Divide ToT participants into four groups. Assign a topic plus a short academic article giving related evidence.

In each group, participants write a short policy brief, translating evidence from the paper.

Each group presents their policy brief and responds to questions and feedback from other ToT participants. Finally, give your feedback as facilitator.

Academic Posters

In training PhD students, this activity consolidates an appreciation of mixed-methods research and the importance of both qualitative and quantitative approaches. Students work in groups to analyse data and translate key findings into graphic figures and concise text. The [Academic Posters](#) project also serves to introduce or strengthen technical skills in poster design.

By the end of this session, ToT participants can:

- Cluster PhD students into multi-disciplinary groups.
- Define what constitutes a good poster.
- Effectively organize poster presentations.
- Critique posters and provide constructive feedback.

Professional Development Plans

CARTA recommends that early-career researchers plan their careers early by developing [Professional Development Plans](#). By regularly updating these plans, graduates can continually assess the range and depth of their skills, set career goals, create strategies, and identify resources that will help them become research leaders.

By the end of this session, ToT participants can facilitate a session for early-career researchers on how and why to develop and regularly updating Professional Development Plans.

To prepare for this session:

- Share this paper [Positioning Africa's public health doctoral students to lead societal transformation and development](#). (Alternatively, find an article that is more appropriate to your field and/or region.) Ask ToT participants to read the article beforehand and be prepared to discuss it in the session.
- Ask participants to read the relevant section of the CARTA curriculum for PhD training – session 1 in [Leadership](#).
- Source and share templates for Professional Development Plans.

Steps

Divide ToT participants into groups. Each group draws up a list of best practices from the article.

In plenary, groups take turns to share their lists of best practices. They avoid duplication, only adding points that have not been made before.

Conclude by sharing the templates.

Hubs, Collaborations, and Partnerships

In the curriculum for [PhD Training](#), CARTA devotes the last phase of the PhD journey to preparing for post-graduate life. The aim is to equip to students with post-PhD skills in teaching, leadership, research, and policy influence. An element in their future leadership involves forging hubs, collaborations, and partnerships, Session 3 in the series on [Leadership](#).

To prepare ToT participants to facilitate this session with PhD students, duplicate the preparation and steps of the session as outlined in the curriculum. Future facilitators thus experience the session that they will go on to facilitate in future.

Grant Proposals

The week-long Grant Proposals exercise uses a simulation approach to challenge PhD students in small groups to respond in a short time to a mock call for a collaborative research project. The groups compete with each other to develop the most promising proposal, learning a range of important competencies in order to do so, including critical thinking, research leadership, research management, budgeting, and receiving and reflecting on feedback. As they near completion of their doctorates, PhD students learn to distinguish the different phases over a project's life span and to use planning tools and scientific evidence to conceptualise a research project.

By the end of this session, ToT participants can:

- Identify and choose relevant topical issues and conditions for a mock call.
- Draft a session plan for a grant-writing exercise in their own institution/s, including all relevant inputs and support for group processes.
- Develop a grading scheme for the assessment of proposals.
- Give constructive feedback to PhD students.

Steps

Give a brief presentation, introducing the rationale for a grant writing simulation and its underlying pedagogical approaches.

Screen and discuss the [Grant Proposals video](#).

1. Introduce the first of four practical activities: Brainstorm topics and specifics for the mock call.

Divide ToT participants into groups of five or six. Each group selects a general topic for the call and then defines:

- The scope of the call (geography, time span, budget).
- The overall goal of the project, its specific objective.
- Expected deliverables.

In plenary, each group presents the topic and specifics they have decided on. As facilitator, give your comments on the feasibility of each one for the purposes of the grant writing exercise.

2. Introduce the second of four practical activities: Elaborate a session plan for the grant-writing exercise.

Each group agrees on:

- Planning tools to introduce to PhD students (such as the log frame).
- A sequence of inputs and group work.
- Milestones of group deliverables.
- A template for the grant submission.

In plenary, groups take turns to present their work. Participants discuss the strengths and weaknesses of suggested session plans.

Share CARTA's session plan for the grant writing exercise.

3. Introduce the third of four practical activities: Give constructive feedback.

ToT participants form pairs. In each pair:

- One plays the role of the interviewer, the other the interviewee.
- The interviewer asks for the most important factors in giving critical, constructive feedback to PhD students (5 minutes).
- They switch roles and repeat the exercise (5 minutes).
- They summarise their list of factors (5 minutes).



In plenary, each pair summarises their list of factors for general discussion.
As facilitator, links the results to CARTA's [approach](#) to teaching and learning.

4. Introduce the last of four practical activities: Reflect on the grant-writing exercise. Each ToT participant formulates three pro-arguments (strengths) and three con-arguments (weaknesses) for the grant proposals activity as an exercise for PhD candidates. They write a few words to summarise each argument on a physical or virtual post-it and take turns to introduce argument. No duplication.

As facilitator, you group the arguments on a physical or virtual pinboard.
Lead an open discussion on the feasibility and usefulness of the activity.

Institutional Implementation Plan

In this session, ToT participants identify implementation steps and strategies for building the capacity of PhD students.

Steps

ToT participants revisit the SWOT analyses of their institutions from Day 1 of this ToT. For each opportunity or weakness, they decide whether the CARTA curriculum and approach would be useful. Then, they identify and list aspects and components of the CARTA curriculum that they would like to implement in their own institution. (Note that if there are none this is also an acceptable outcome of the ToT workshop.)

If there are aspects a participant wants to take home – even if only for discussion within their own institution – they define for each one:

- My desired outcome – short or long-term (for example, do I want to try something out and get feedback from students – a short term goal – and/or have the university senate approve a changed curriculum – a long term goal?).
- The proposed level (for example, for the entire institution or for particular faculties or departments? a pilot project or wholesale change?)

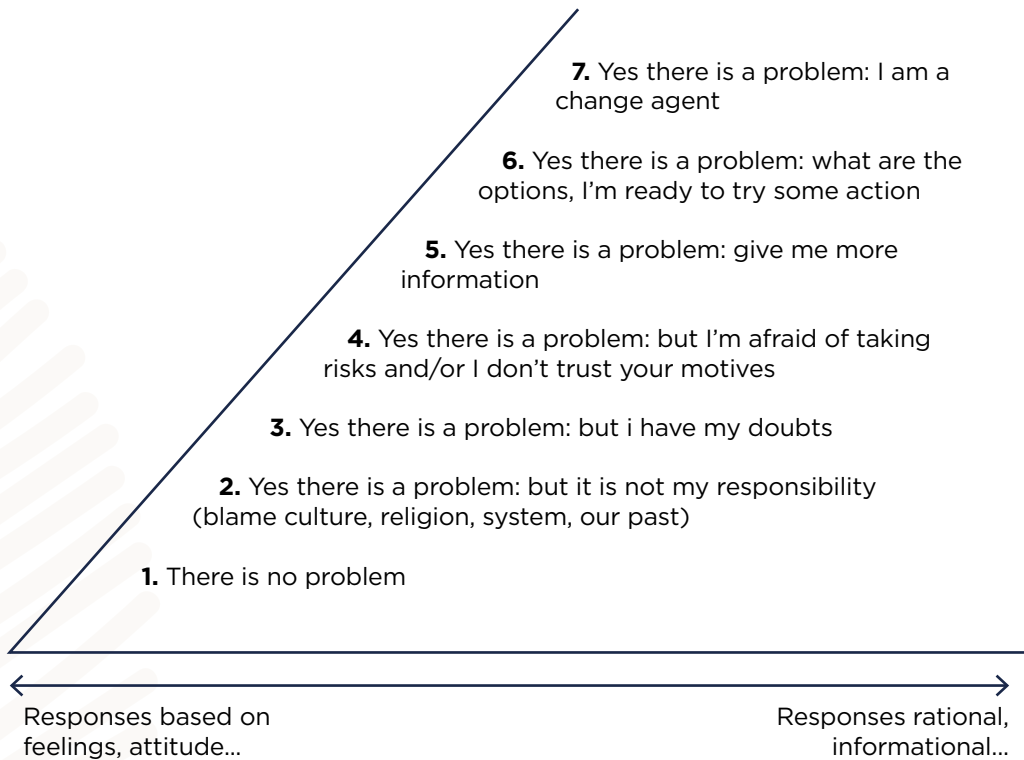
Ideally in groups, and in relation to their immediate outcome, ToT participants analyse how their institution works:

- How does my institution implement changes like this?
- Which people (committees, systems) are likely to support this and how do I engage them in this effort? Students may be a constituency who can also play a role.
- Which people (committees, systems) are likely to oppose me and how might I influence them to consider something new?

With the answers in mind, ToT participants design an implementation plan:

- What will I do when I get home?
- Who will I talk to?
- What will I show or tell them?
- What resources will I need and how will I get them?
- What external assistance might help? Can I get it? Examples may include a visit from an institution that is already doing this, an expert, materials that can be used, and/or scientific evidence in the published literature.

The resistance to change continuum



Adapted slightly from Srinivasan L. *Tools for community participation: a manual for trainers in participatory techniques*. New York: Prowess/UNDP Technical Series Involving Women in Water and Sanitation, 1990:162. Cited in Friedman M, Cousins C. Holding the space gender, race and conflict in training. In: Walters S, Manicom L, eds. *Gender in popular education*, Zed Books, 1996.
