BACKGROUND

1) The traditional pedagogical approach is "learning by knowledge transmission". The value of "learning by doing" has been promoted in pedagogies for more than one hundred years. In recent decades, the value of this approach has led to new (blended?) pedagogical approaches

'Those who enter the field of meteorological education often come from a background as a scientist rather than a teacher. Often the two roles do not occur naturally in the same individual, and the educator is inclined to follow (or feels an obligation to follow) a traditional lecture-style where they address the learners with little or no interaction.'

2) Learning by doing forms the basis of competency-based training, as promoted by WMO, by offering practice and feedback in applying new knowledge and skills in job-related activities.

3) New pedagogical approaches are based on the introduction of a variety of learning activities, such as
a. using the classroom for practice and feedback instead of information transfer (as in blended-learning)
b. assign a project - a problem/inquiry-based learning for providing active and authentic contexts for developing knowledge and skills
c. encourage collaborative learning for student/participant groups to actively support one another in their learning,
d. case-based learning and simulations,
e. guided discussions
f. and other approaches.

Example Goals/ Desired Outcomes:	1) New and diverse pedagogical approaches are formulated, tested and adopted/further adapted/rejected for addressing the needs of diverse learners and to aid in developing complex knowledge and skills	2) Successfully tested pedagogical approaches are documented and shared with other education and training institutions.	3) Traditional and culturally appropriate pedagogical approaches continue to be respected alongside new pedagogies.	4) Both classroom and online learning delivery modes are enhanced with a approaches that develop and pra competencies.

Learning by doing allows the appropriation and scaffolding of knowledge; the development of skills and abilities, integration in the real world.

Revisit Innovations Publication every 4 years?

Do you mean publish a new edition?

5) New forms of pre (prior to and at the start of training), formative (during training) and summative (end-of-training) assessment are used that reinforce learning and confidently demonstrate achievement of targeted skills and knowledge outcomes	6) Perceived weaknesses in online learning assessment are mitigated by applying new strategies and technologies.	7) Classroom and online delivery modes are combined in ways that maximize learning opportunities.	8) To address diversity, equity, and inclusion: re-evaluate traditional assessment strategies to minimize poor performance	9) Elevate the word 'pedagogy' to common usage. Promote pedagogy by defining it (what it means) in simple terminology.

Innovation in training the practical application of meteorology have been great, BUT cannot replace some of the hands on experiences. Thus blended format will be key

10) From the existing framework, demonstrate various strategies to approach Education and Training to address the various audiences and levels of teachers/students/participants/experts for both traditional subjects (meteorology, hydrology, climate), cross-disciplinery subjects (social science, emergency management, others), and the general public.	11) Encourage active learning in the workplace through peer to peer exchanges and mentoring.		12) Encourage informal learning through participation in WMO VLab Regional Focus Group Sessions.

Having trained personnel in education is an important asset to an RTC. Many of us are science in not trained educators. WMO Train the Trainer has also been an excellent way to introduce training in edcuation to Meteorology trainers

Active learning the workplace is excellent for Continuing Professional Development. The VLab Regional Focus Group discussions has been an excellent example of this

CHALLENGES (What barriers exist to achieving goals?):

It may seem easier to continue teaching the ways we have always done it, or the way our teachers taught us.

supporting from administrator and budget supporting.

knowledge of virtual didactics

Using a free online learning tools requiring less bandwidth

Maintain motivation and contact with students throughout the online-course, so they could feel accompanied and supported.

Yes, online courses can feel more lonely for teachers used to a live class.

development of interactive learning materials

Not knowing where to start. This is where a framework or guidline is helpful

education. It is important to motivate current and future instructors to prepare themselves as educators; the new paradigm of teaching-learning centered on the student, needs preparation in adequate

And, they require more planning in most cases.

For a program looking to hire an instructional designer (and has not done so before), what resources exist? Such as example job descriptions, instructional associations to tap into, etc?

Students may also need preparation to be good online learners. See this Guide to Online Learning that can be adapted for use: https://etrp.wmo.int/mod/resource/view.php?id=8985

OPPORTUNITIES (From what examples can we learn? What existing initiatives can be drawn from?):

inspiration in person

Having a chance to reach out to new groups and individuals is motivating, even if it is online only.

accessibility of time and place

classroom to the virtual classroom. Despite the difficulties, it opened up a new teaching-learning space, which has broken down borders with new challenges and undeniable opportunities. There

Corporate interactions

Do you think online learning will continue to be as "popular" when it become less necessary?

Examples: VLab, CALMet, WMO Courses for Trainers, education conferences like EDEN, AECT, Online Educa, etc.

WMO-1114 Guidelines for Education and Training Providers

Expand the function of the calendar. Include for example regularly scheduled annual events as well as special workshops and conferences.

Encourage RTCs to build their local knowledge library and share with the global campus

Collaboration (How can collaborative action contribute?):

take notice).2) for the training to be better, because you can get the best from different people 3) standarisation (complies with competencies and recommendations)4) There are people with different skills for instictional design

Sharing Model Course designs, if not actual whole courses, can be a good form of collaboration.

I agree that more collaborative development of courses would be a great thing to have.

Collaboration among diverse people from diverse organizations leads to new ideas

Generating spaces for collaboration and learning, where it is possible to contribute through the teaching of active methodologies and evaluation techniques, transfer of experiences, generation of support material, etc.

sharing successful model of human resources development

Benefit from the existing collaboration between regional training centers (VLabs, RTCs, ...) to develop new online training courses and materials

What steps might be required?:

collaborate we need 1) to have virtual meetings 2)a virtual space to share drafts , until you agree with a Plan to move forward.3) a list of experts/ trainers and areas of expertise, instructional designers, IT person, which are available to

To carry out a collaboration - check all other groups that might be doing the same courses or activities, look for useful resources.

Could other teachers/trainers be invited to our courses and sessions to be observers? It might help transfer teaching skills.

Who is willing to take responsibility to contribute? What contributions can you offer?:

RTC SMN (2 Univ, and the NMS)Argentina is eager to contribute with resources and trainers. Specially in Spanish and english language

ETR, with Lu and Pat (as contractor) plan to identify a new source for Open Educational Resources (which can of course also be pedagogical models to share)

Could a volunteer WMO Global Campus Task Team be formed to take responsibility for promotion and sharing of new pedagogical approaches.

Can CALMet Online be a venue for hosting sharing events that people offer to put on?

classroom virtual clas Despite the difficulties, up a new teaching-le space, whi broken dow with new c and unden opportunit

Questions to consider:	1. What cultural and practical barriers must be overcome with both teachers and students to adopt new pedagogical approaches?	2. How should new pedagogical approaches useful to WMO education and training providers be identified, compiled and examples shared?	3. How can increased institutional collaboration enhance awareness and willingness to try new pedagogical approaches?	4. What are the most compelling reasons to use classroom, online, or blended learning delivery modes?	5. What pedagogical approaches are most conducive to skills development?
	Stereotype threat / **language barrier**	Start with having trainers submit their favorite, least favorite, and middle of the road approaches and why. Then have interested members assess them to see what patterns emerge.	Students could receive certificates when they finished online courses from those institutes.	**Students could manage their times for studying.**	The wide range of active methodologies. Problem-based learning, project-based learning, learning capsules, case studies, flipped classes, workshops, etc.
	There is less interaction between teachers and students for teaching on screen. / inflexible curriculum	For example, this year SYMET offers great posters that have given me ideas for my own training management.	The more online courses from various institutes could ensure students that online learning is now a modern way to educate themselves.	Online education promote self-learning by doing.	Reflective and inquiry based learning is best to maximise students learning
	Students sometimes prefer passive modes of learning, because they require less effort, even if active modes offer more practice and feedback. / inflexible government regulations and not keeping up with the changes.	Include guidelines, examples from successful educational institutions in various forms , for example: model, infographic, video clip that easy to understand.	**Peer to peer learning** / make community of member on social media official platform, e-learning platform and e-library cooperation.	It creates a new dimension of learning style. That you can study anywhere, anytime and it works well in epidemic situations or emergency situations. / save cost, No border restrictions	Practice, practice from simulations. thinking exercise. exchanging and sharing experiences.
	material and synchronous classes, which requires more initial effort. Students, on the other hand, prefer the passive classroom, the old paradigm. Competency-based education requires the student to be / The availability of technological resources and connectivity.		**Group projects and sharing of experiences**		

Questions to Consider	6. How can formative assessment be used to maximize learning during training?	7. What summative assessment methods produce the most valid indicators of various types of learning?	8. How can we enhance online communication and interaction for more effective and engaging learning experiences?		
	The formative assessment could encourage students to practice their lessons.	Assessed before and after class. Assessed by behavior during class. Assessed by Evaluate the use or application	I suggest holding guided forums that invite collaboration, discussion, and the transfer of experiences.		
	Students will try more to understand the lessons so that they could make good scores.	assesment is a very good instrument for evaluating the learning acquired, session by session. I agree with this point. Diagnostic assessment is a very good tool to evaluate the learning acquired, session by session. It motivates the learner	Suggest ground rules for respectful engagement		
	experience as a teacher, evaluation is a process that does not end with the grade, but with the feedback to the student. To achieve a good evaluation experience, it is important to design adequate instruments and dedicate time to		Use AI to help translate languages to support more languages to increase confidence and reduce language restrictions. Give yourself the opportunity to introduce yourself at least in small groups.		
	Behavioral and Psychological Assessment. The students did not feel that they were evaluated.(no stress)				

Recommendations

Provide guidance on training personnel and resources necessary for various sizes of training events. Additionaly how to encourage facilitation and collaboration among partners on how to help each other out.

Development of guidelines for facilitation and separate recognition by certification for where that service is provided. This ties into the other working group for continuing professional development and micro-credentials.

Continue to strive to deliver online training, not undermining the value of face to face, but rather embracing new discoveries of what we have accomplished during the pandemic.

Arrange a workshop to explore assessment topics and evaluating the impact of training.

A volunteer WMO Global Campus Expert Team should be formed to take responsibility for promotion and sharing of new pedagogical approaches, and also to take on other actions decided upon.

Provide continued support and promotion for CALMet as an important mechanism for sharing training innovations and new pedagogical approaches.

Expand the function of the global training calendars. Include for example regularly scheduled annual events as well as special workshops and conferences.