Developing, implementing, and disseminating an adaptive clinical reasoning curriculum for healthcare students and educators

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D3.2 Pilot implementations of the train-the-trainer course

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1. Summary

An important part of our project is the testing of the developed learning units for educators and clinicians within the target group. With such pilot implementations we receive valuable feedback from the course participants, which will help us to further improve the learning units. Thus, each medical school in our consortium planned such a pilot implementation during fall 2021. Overall, we conducted 9 courses covering five different clinical reasoning topics until the end of October and one additional course in December 2021. We managed to recruit 98 participants from different health professions, such as medicine, nursing, or physiotherapy. Participants were from our partner-, associate partner-, and external institutions. Overall, the feedback from the facilitators and the interest of participants in our courses especially from non-consortium institutions was very positive. The facilitators especially highlighted the constructive and productive collaboration and discussion among participants. But, we also encountered reservations from colleagues and technical problems reported by participants due to their unfamiliarity with our learning platform. The collected feedback together with the participant questionnaires will provide the basis for improving the courses.

2. Introduction

In this deliverable we describe how we conducted the pilot implementations of the train-the-trainer learning units within partner institutions. We will also summarize the results of these pilots, which will be analyzed in-depth as part of D5.2. Both deliverables will serve as a basis for revising the learning units.

3. Quality criteria

- More than 50 participants from partner and associate partner institutions, as well as external participants
- Covering a wide range of topics of the train-the-trainer courses that fit to the partner faculty development programs
- Piloting of at least two same learning units by 2-3 partners
- Thoroughly evaluated based on questionnaires for participants and instructors and learning analytics (in alignment with WP5)

4. Methods

The learning units we piloted in this deliverable are part of D3.1 Development of course outline and material based on our curricular framework (D2.2). The courses are implemented in a blended learning format in our learning management platform Moodle. In Moodle, facilitators can also access all resources required to run the learning units.

4.1 Planning phase

The planning of the pilot implementation of the train-the-trainer courses started in parallel with the planning of the pilots of the student learning units. This allowed each partner to align these pilots, so that the facilitators of the student courses could participate first in the train-the-trainer course related to this topic. The decision about which learning units to pilot was made by partners and depended mainly on the needs and requirements of their faculty development programs and our quality criteria for the pilots. We collected the relevant data for the pilots in a shared document, including:

- Topic of the course
- Piloting institution
- Dates of asynchronous phases and synchronous meetings
- Anticipated number of participants
- Professions of participants, i.e. whether the pilot was conducted in a mono-, multi-, or interprofessional setting

At the same time the consortium met regularly in the planning phase to discuss each partner's choices and ensure that our quality criteria were met. We also sought advice from

our associate partners from Sweden, Switzerland, and the US during these discussions to include their options and perspectives. In addition, we decided to open selected pilot courses for external participants to evaluate the applicability of our learning units outside of our consortium. Due to ongoing restrictions in some partner schools for some courses the synchronous meetings were held via video conferencing tools.

Table 1 shows the pilots conducted by partners aligned with the themes and topics defined in our DID-ACT curricular framework.

Theme	Topic	Piloted by
Theories; Teaching clinical reasoning	What is clinical reasoning & how to put theories into practice	JU
		UBERN
Gathering, interpreting & synthesizing information; Generating differential diagnoses; developing a treatment plan; Decision making; Teaching clinical reasoning	Information gathering, generating differential diagnoses, decision making, and treatment planning	JU
		UBERN
		MFUM
(Interprofessional) collaboration; Teaching clinical reasoning	Health Professionals' roles in clinical reasoning	UAU
		ORU
Patient perspective; Teaching clinical reasoning	Person-centered approach and the role of the patient	EDU
Teaching clinical reasoning	Application of clinical reasoning teaching and assessment methods	UBERN

Table 1: Overview about the topics and themes covered with the pilots at the partner institutions.

4.2. Implementation phase

Instruct provided the technical support for participants and facilitators. In our regular team meetings and additional 1:1 meetings Instruct configured course access for each partner and explained course access, structure of the pilots and required facilitator resources to the partners. Course registration and the invitation of participants was organized by the local facilitators via the following recruitment methods:

- JU: Directly approaching colleagues
- EDU: Participants recruited via email from the tutor team at EDU
- UAU: Open registration through faculty development course program, dissemination via email in own institution and through workshops and personal contacts to external educators.
- UBERN: Via email in their own institution and students of the postgraduate Master of Medical Education program in Bern and during team meetings.
- ORU: Recruitment via email in own institution and Swedish associate partner institutions.

- MFUM: Public call at university faculty development event and email list at Faculty of Medicine

Each partner also received a specific roadmap document prior to their pilot to provide basic information about the course access and aspects to keep in mind. Additionally, Instruct provided a short manual on how to register and access the Moodle platform.

During the piloting phases the courses were closely monitored by Instruct and the course facilitators for any questions asked by participants or arising issues.

4.3 Analysis and feedback phase

The evaluation questionnaire for piloting the train-the-trainer courses were developed as part of workpackage 5 (Evaluation) and will be described in the deliverable report 5.2. Also, as part of D5.2 we designed the analysis of usage data (learning analytics) within our learning management system.

In addition to these evaluation activities, we asked the facilitators to provide a structured summary of what went well and what could be improved during their pilots in a template (see appendix 1). This template has been developed as part of the quality control (WP6) by Instruct and reviewed and agreed upon by all partners. After all pilots were completed, we categorized the responses in the template inductively.

The feedback forms were completed during and shortly after the train-the-trainer pilot courses by all partners. Additionally, we met with all facilitators to collect and discuss their feedback and present the categories and analysis results.

5. Results

5.1 Overview

Overall, we piloted four learning units in a total of 9 courses with 98 participants from partner-, associate-, and external institutions until the end of October 2021 (two course implementations took place in November due to organizational reasons) From these 7 courses, we managed to implement 4 in an interprofessional setting and 3 with external participants. Our participants came from the following 5 health professions: medicine, nursing, paramedics, basic sciences, physiotherapy and included also two students.

Topic	Pilot lead	Number of participants	Participant Institutions	Professions	Dates
What is clinical reasoning & how to put theories into practice	JU	11	Jagiellonian University	Medicine, Paramedics, Nursing	Oct 6th - Oct 13th
	UBERN	21	University of Bern, Master of Medical Education students	Medicine	Oct 10th - Oct 18th
Information gathering, generating differential diagnoses, decision making, and treatment planning	JU	7	Jagiellonian University	Medicine	Oct 28th - Nov 4th
	UBERN	6	University of Bern	Medicine	Oct 19th - Oct 26th
	MFUM	6	University of Maribor	Medicine and preclinical educators	Oct 20th - Oct 27th
Health Professionals' roles in clinical reasoning	UAU	10	University of Augsburg University of Frankfurt University Mannheim Bildungszentrum Pflege Bern Charite Berlin LMU München	Medicine, Nursing, Medical Students	Oct 7th - Oct 21st
	ORU	8	Örebro University, Karolinska Institutet, Sophiahemmet University	Medicine, nursing physiotherapy, biomedical science	Oct 4th - Oct 13th
Person-centered approach and the role of the patient	EDU	7	EDU	Medicine	Sep 28th - Oct 5th
Application of clinical reasoning teaching and assessment methods	UBERN	22	UBERN and participants of the Master of Medical Education program	Medicine	Dec 10th

Table 2: Overview about topics, participants, and dates of the conducted pilots

5.2 Summary from course facilitators

The feedback from course facilitators will be one of the sources for the course refinement phase (D3.3) in combination with the quantitative and qualitative results of the questionnaires and learning analytics (will be reported in D5.2).

Table 3 summarizes the feedback we collected from the facilitators of the pilot courses with our template and during the discussions.

Category		Negative	Positive
Didactical		- Lack of interactivity - Not all participants completing the asynchronous phases	Participants completed the asynchronous assignments
Content		- Difficulty to balance between teaching the topic vs teaching how to teach - Heterogeneous expectations, experiences, and level of knowledge of participants - Unclear material	Good material
Technical		- Unfamiliarity with Moodle & Casus - Difficulty in using Moodle	Using Zoom and Padlet for synchronous meetings worked well
Interaction / Collaboration		- Unbalanced participants in terms of professions made discussions difficult and focused towards physicians - Strong opposition on basis of competencies from some staff at faculty	- Discussion, interactions, and sharing ideas among participants highly valued - Group work - Students among participants added a valuable perspective
Implementation	Time	- Not enough time in synchronous session - Suggestion to merge two sessions into one to save time	Low drop-out rate

	Facilitators		- Facilitators from different professions - Facilitators experienced in clinical work and teaching

Table 3: Summary of general feedback from facilitators

Instruct, who provided the technical support for the course facilitators and participants, did not record any support requests during the pilot phases.

6. Conclusions

With our pilot implementations we were able to test several themes covered in our train-the-trainer courses with a wide range of participants from partner-, associate partner-, and external institutions and different health professions.

Overall, the feedback from the facilitators and the interest of participants in our courses especially from non-consortium institutions was very positive. We did not encounter any major problems, although facilitators reported that participants had problems accessing the Moodle platform. To address this issue we are currently developing a short video in which we introduce the platform and provide a quick overview on how participants and facilitators can navigate within Moodle to find their course.

All facilitators highlighted that they highly valued the rich and engaged discussions of participants. Due to the still ongoing pandemic restrictions some of the synchronous meetings were held online, which had the usual disadvantages of being less personal, but gave us the opportunity to include participants from associate and external institutions. This aspect further enriched the discussions and was also valued by facilitators and participants and confirms that our courses can also be implemented in complete virtual settings.

Interestingly, we faced some of the barriers we identified during our needs analysis at the beginning of the project [1] during the pilots, such as time restrictions and cultural aspects. The participating clinicians mentioned their limited time and in one case even suggested to shorten the learning unit. On the other hand, facilitators highlighted that participants stayed until the end of the session, returned for the second session, and also completed the asynchronous assignments.

In two institutions the facilitators encountered opposition to the course from colleagues ("not invented here syndrome"). However, all facilitators mentioned that they valued the collaboration and communication among participants, which shows that such reservations were not common among our participants.

Further in-depth conclusions on the didactical and content level will be discussed based on the evaluation results and reported in D5.2. Based on that we will discuss and decide about the required revisions and improvements that we will implement as part of D3.3.

7. References

- Sudacka M, Adler M, Durning SJ, Edelbring S, Frankowska A, Hartmann D, Hege I, Huwendiek S, Sobočan M, Thiessen N, Wagner FL, Kononowicz AA. Why is it so difficult to implement a longitudinal clinical reasoning curriculum? A multicenter interview study on the barriers perceived by European health professions educators. Accepted for BMC Med Educ. 2021.

8. Appendix

8.1 Feedback Template for course facilitators

Please complete this feedback form after your pilot learning unit has ended. In addition to the regular evaluation activities this will provide valuable insights into the pilots at each institution.

Learning Unit:	
Partner Institution	
Date(s):	(including duration of asynchronous phases and days of synchronous meetings)
Instructor(s):	
Number of Participants:	
Profession(s)	
Recruitment	(how did you recruit participants - was it a regular activity, study with paid participants, favor of friends, etc….)
Evaluation types(s)	Participants questionnaire | Instructors questionnaire | Learning analytics
Description of setting	(face-to-face or virtual online, anything specific)
Adaptations made from the "standard LU"	(please describe changes you made)

For the following summary of your impressions, please think of any technical, didactical, integration-related, or content-related aspects:

Problems/Challenges encountered
(if possible please relate to barriers & solutions we have identified in WP1) and solutions implemented (if applicable)

Challenges / Barriers / Problems	Implemented Solution (if applicable) or what would you change next time

What went (very) well / What did you and/or the participants like?

Have you implemented this into your curriculum yet? If yes, please expand on your process below. If not, please highlight how you could imagine doing it.

Any other aspects you regard as important :

8.2 Impressions from the synchronous sessions

Facilitator M. Sudacka from Jagiellonian University in the course on clinical reasoning theories

Padlet view created in the course of clinical reasoning in different healthcare professions at Örebro University.

Saved padlet view created by participants during the learning unit on clinical reasoning in different health professions hosted by the University of Augsburg.