Designing Workplace Hybrid course

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Abstract: Workplace training can be challenging, especially when employees work different shifts or in various locations. Finding a suitable time slot for all employees can be tricky. Often, training sessions place employees in a passive listener role, where they are presented with all the necessary information on a topic. However, it's uncertain whether employees will apply what they learn to change their everyday work practices or if they will continue as before. Our goal was to design a workplace training program that would effectively upskill employees by offering hybrid training that integrates work-life experiences, preparing them for future co-working with robotic assistants.

List of devices that were used in training:

- **Owl 360-degree camera** – to give a full view of what is happening in the classroom.
- **Logitech c920** web camera – to show a detailed screen of the TPR.
- **CatchBox throw-able microphone** - to get all in-person participants' audio to online participants.
- **CatchBox clip-microphone** - to make TEMI's audio hearable to online participants.
- **Camera** with an operator to keep focus on action.
- **TEMI robot** – to demonstrate and give experience to online participants.

35 cm — 45 cm

The training was designed to prepare Nursery Home employees to co-work with semi-autonomous robot assistant TEMI v3 [1].
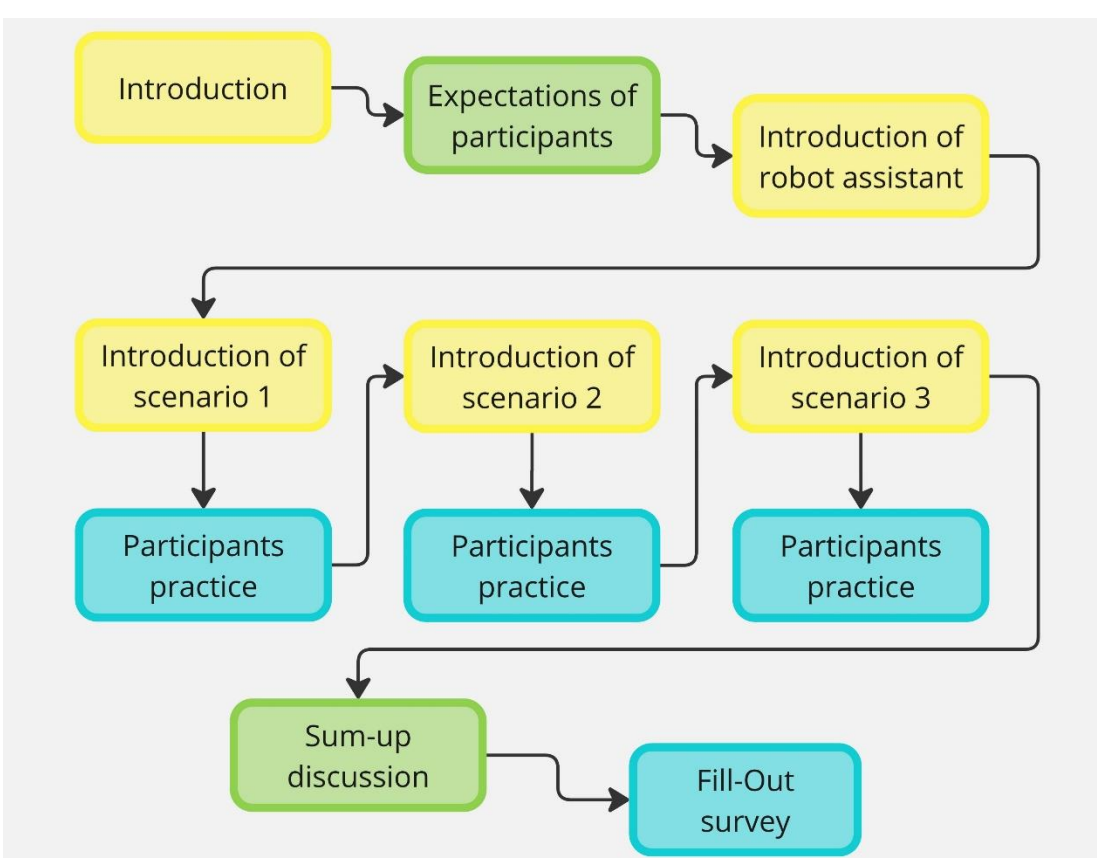
Yellow marks educators' presentations, green marks discussions, and blue marks hands-on activities or fill-out surveys.

The training design focused on activities or change that the employee must do after the learning [2].
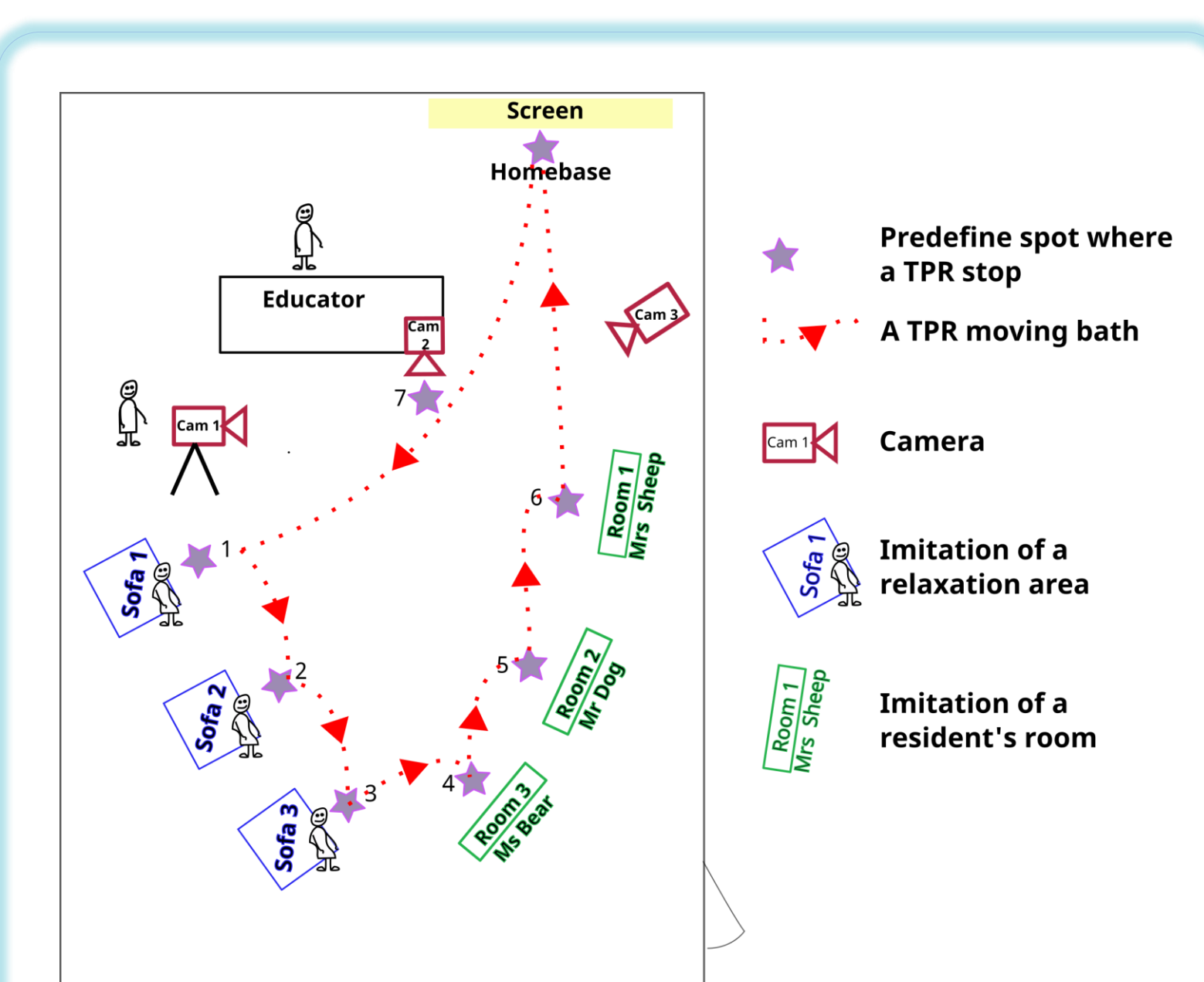**One hour of training** consisted of the following activities:
1. Providing the **necessary basic knowledge** about the robot assistant and on how to co-work with it.
2. **Introducing three different scenarios** with different roles for the robot assistant.
3. After each scenario the participants could **try out the scenarios by themselves.**
4. Finalizing with a **training summary.**
5. Participants fill-out **a knowledge appropriation survey** adopted from [3].

One classroom was designed to be an imitation of the nursery home facilitation. The classroom layout was:
1. Three **relaxation areas** where residents can rest, watch TV and communicate with others. In all areas, one physically present person is sitting.
2. Three **resident rooms**. Residents were represented by soft toys.
3. **Homebase** for a TPR in the front of the classroom.
4. Six **predefined TPR locations** for patrolling and guiding visitors to the right room.
5. Place for a **camera with an operator.**
6. Place for an educator.
7. One predefined place to show **a closeup shot from a TPR screen.**

In the training, participants got familiar with the **TEMI app** that enabled them to use robot assistant to **lower employees work-load** to inform residents or guide visitors to correct location.

All **employees who participated** in the training, joined the hybrid training via a **Zoom meeting**. The educators were in the **preset training environment.**

Owl's 360-degree camera was used to create **environmental awareness to online participants**.

In the classroom there was one **camera with an operator** to ensure that all online participants could **see what was happening** in the classroom. The operator's role was to set the camera focus on the action that was taking place.

In the **knowledge appropriation survey**, participants were asked for their opinions about how the **robot assistant is influencing their work**, how **motivated** and ready (s**elf-efficacy**) they feel to co-work with the robot assistant, and whether they feel that the robot assistant could **belong** to their team and is one of them (**ownership**).

Research papers:

[1] "Introducing temi robot V3," *Temi Robot*, 2023. https://www.robotemi.com/product/temi-sales-contact/ (accessed Aug. 27, 2024).
[2] C. Moore, „Map It: The action mapping book - Training design, Rumeenia: Montesa Press, 2017.
[3] T. Ley, K. Tammets, E. M. Sarmiento-Márquez, J. Leoste, M. Hallik, and K. Poom-Valickis, "Adopting technology in schools: modelling, measuring and supporting knowledge appropriation," *European Journal of Teacher Education*, vol. 45, no. 4, pp. 548–571, Jun. 2021, doi: 10.1080/02619768.2021.1937113.
[4] S. Kalya, C. H. Lee, and T. H. Teo, "Enhanced Learning Experience for Remote Students in Hybrid Class Model using 360° View Camera and Telepresence Robot," Dec. 2022, doi: 10.1109/tale54877.2022.00133.

Five out of ten participants completed the survey at the end of training. Participants were positive. One participant said, "*I am looking forward to the implementation*." Participants were interested in how robot assistants will fit in the Nursery home environment: "*I responded with a 3 to the statement that 'I feel the need to defend the robot activity instructor in case of criticism' because I want to see the criticism as a feedback to improve cooperation with the robot. If the criticism is unfounded, I will likely feel the need to defend the robot, especially if I can help raise awareness or dispel misconceptions.*" They also highlighted the need to contribute: "*The success of the robot activity instructor reflects my success if it depends on my contribution.*".