* **What are three key lessons you learned?**

1. Detailed planning for data collection is crucial. Since we used the H5P as our main platform for instructional activities and data collection was based on google forms, learners could still rely on the H5P materials as a reference. We did not provide any method to prevent the “cheating” while they were taking the pre-test. It could be one reason why they could easily get the correct answers.
2. Some learners’ feedback for our final course material was too easy and learners could guess the correct answers. Therefore, I think when designing a treatment group with audio narration, it would be great to assess the course material difficulty with some learners in the first place before we implemented the final version. It would be great to also have one expert to check our course contents and provide relevant suggestions for the wording.
3. The final lesson is about how could better implement the modality principle. In my opinion, it would be great to create a learner-control audio narration and they could self-adjust the audio speed. They could also use the pause button to help them reflect on the audio narration.

* **What challenges did you face?**

1. The main challenge for our team was how to design better course content for these hidden KC. During our research, we realized that online bakery courses often emphasized some key procedures but ignore some earlier preparation steps like how to use the kitchen scale or mixer correctly. Then we started to look for helpful course materials as references. However, since these materials were not written by professional instructors, the wording of these materials was not explicit for some learners. Therefore, we modified the content various times based on different learners’ feedback to make sure we address their concerns.
2. Another challenge is how could we create better assessment tasks. Since we searched for some online tutorials and they mostly focus on the hands-on experience process not assessing earners’ knowledge. It was hard to find some sample questions for references and without difficulty factor analysis, we didn’t know about whether the questions we created were too difficult for learners.
3. The final challenge is how could we analyze the transfer task results. We used one of the H5P plugins called H5PxAPIkatch to collect our results for the learners’ transfer tasks. However, we noticed that it was impossible for this plugin to record short answers for the participants’ prolific ID. As a result, we had to manually match the participants’ responses with their pre and post-test performance.

* **How did you overcome them and/or why do some remain?**

1. The first challenge was solved by conducting more learner testing and collecting their think-aloud results. We did 10 more tests before the final version in order to collect learners’ feedback about our baking techniques terms and also asked for some opinions from participants who learning in a second language.
2. The second challenge was solved partly when we collect some intermediate bakers’ opinions. However, we did not solve the issue completely since we didn’t find a chance to talk with a bakery expert who had experience in teaching novice learners in a bakery school.
3. We were planning to manually sort the data, however, these participants in Proflic almost finished the lesson at the same time. It was hard for us to match these learners’ answers with their course transfer task results.

* **What are your next steps, either with respect to this project if you plan to continue it, or with respect to other projects that could benefit from this approach?**

For us, the future improvement of the project would be how to better integrate the modality principle in our design. An audio narration play should have a control button to adjust the pace of learners. Then I think it would be helpful to have some discussions with experts in bakery school and know about their course content deeply, therefore we could better assess tasks and instructional activities. Finally, I think we could also design an in-person lesson that allows learners to practice these skills with these kitchen tools while they are learning our lessons. The hands-on experience provides students a better understanding of the procedure without forcing them to remember this factual knowledge.

* **The next time you have an opportunity to begin a new project, how do you plan to proceed differently?**

If I have a chance to begin a new project, I think I will proceed with deeper research with experts and know about their methodologies. These discovery interviews with SMEs would provide me with some insights which could scaffold the project. It would be also helpful to conduct more think-aloud with learners since we only design our course content with 2-5 users’ feedback. In addition, in order to quickly troubleshoot some problems, I will plan to check in with the instructor frequently with in-time feedback. Finally, I will try to combine the teaching and data collection phases in the same platform so that we could prevent “cheating” in our learner testings.