

An overnight shift towards remote teaching and learning of musculoskeletal physiotherapy in Karelia University of Applied Sciences in Finland

Maiju Issakainen¹, Sini Puustinen¹, Raija Kuisma¹

1. Karelia University of Applied Sciences, Joensuu, Finland

Submitted: 04 June 2020 | Accepted: 27 October 2020 | DOI: [10.14426/art/1355](https://doi.org/10.14426/art/1355)

Abstract

Background: Musculoskeletal physiotherapy (MSK) is learned and practiced in a classroom with the guidance of a physiotherapy teacher. In Karelia University of Applied Sciences, a flipped classroom approach has been implemented and developed actively since 2017 in MSK courses in physiotherapy education. However, the COVID-19 pandemic changed everyday life very fast all over the world. Karelia, like all other schools, moved all activities into remote mode very quickly and "normal" teaching methods had to change. **Aim:** This article describes how the change from contact to remote teaching was implemented in MSK courses in the physiotherapy programme at Karelia in Finland, using a flipped classroom approach. The article also highlights students' experiences of remote teaching in these courses, although theoretical analysis and discussion on the impact on students' learning is not considered in this Research Note. We are planning to continue exploring the impact and practice of this remote teaching approach, which is becoming the new normal. **Conclusion:** Well-planned pedagogical manuscript implemented with a flipped classroom approach seems to work well in teaching physiotherapy theory and skills remotely. Carefully planned learning tasks and individual feedback are particularly important for learning during remote teaching. Video and text material in theoretical and practical MSK topics seemed to support students' learning during the remote teaching and video feedback especially, could be used more in the future.

Keywords: flipped classroom, musculoskeletal physiotherapy, remote learning, remote teaching

Copyright: This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Introduction

Physiotherapy in musculoskeletal (MSK) disorders requires skills in examination, clinical reasoning, pain management, therapeutic exercise, manual therapy, and other physiotherapy modalities e.g. electrophysical therapies. Traditionally in physiotherapy education, these skills have been learned and practised in a classroom with the guidance of a physiotherapy teacher. In Finland, like all over the world, the COVID-19 pandemic changed everyday life very quickly on March 15th 2020, when the government imposed special restrictions for the whole country and all aspects of life. Karelia University of Applied Sciences moved all activities into a remote mode and teaching methods in physiotherapy education had to change quickly. Karelia University of Applied Sciences (Karelia) has bachelor level physiotherapy programme lasting 3.5 years with two intakes in a year. The physiotherapy student population is approximately 200 with ten physiotherapy teaching staff. Karelia is situated in eastern Finland and offers 21 degree programmes, 16 bachelors, and five at the master level, in seven study fields that accommodate about 4000 students (www.karelia.fi/en).

This article describes how the change from contact to remote teaching was implemented in MSK courses in physiotherapy at Karelia. MSK courses are included across first to fourth semesters and there are four MSK courses with one in each semester varying from three to ten ECTS. This article highlights students' experiences in different stages of their studies of remote teaching in MSK courses and three out of these four groups had no experience in clinical placements. The anonymous feedback was collected from Karelia's online course feedback system.

Flipped learning and *flipped classroom* are types of blended learning. According to the Flipped Learning Network (2014), "Flipped Learning is a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment, where the educator guides students as they apply concepts and engage creatively in the subject matter". Flipped classroom refers to a pedagogical ideology where students are encouraged to study independently before contact lessons. Contact lessons are then used in applying knowledge and practice skills with the guidance of a teacher (Toivola, Peura &, Humaloja, 2017.)

The flipped classroom approach has been implemented and developed actively since 2017 in Karelia Physiotherapy

Corresponding author

Maiju Issakainen (maiju.issakainen@karelia.fi)

ORCID: <https://orcid.org/0000-0002-8916-5260>

Karelia University of Applied Sciences, Joensuu, Finland

Issakainen, M., Puustinen, S. & Kuisma, R. (2020). *An overnight shift towards remote teaching and learning of musculoskeletal physiotherapy in Karelia University of Applied Sciences in Finland.*

education in MSK courses. In higher education, the flipped classroom approach usually includes a “pedagogical manuscript”, a vision of how independent studying, learning assignments and contact lessons support students’ learning. Independent learning is often structured by a learning assignment, which includes specific learning objectives, content, and materials. Independent studying can occur in teams or individually. Learning materials are listed and available online, consisting of videos, articles, books, etc. Karelia uses the Moodle e-learning environment, which enables the versatile use of pedagogical options.

In the beginning there was...

The decision from the start of the remote teaching period on 16th of March was that lessons were held according to the planned timetable, with only minor changes in MSK courses. The planned timetable included scheduled theory and practice sessions, both teacher led and independent, individual and group work sessions. Contact lessons, which included applying theory into practice and practising physiotherapy skills, were held online in the Moodle learning environment using the Collaborate tool instead of in a classroom.

Independent work sessions were structured around preplanned learning tasks and students submitted evidence of their learning in different formats into Moodle. Collaborate made it possible to divide the cohort into smaller groups during the learning session. Students were encouraged and instructed to use Collaborate in individual group work. According to the students, staying in the planned timetable helped them to organise their everyday life schedule and kept up the motivation to study. For teachers, it meant the chance to follow pre-planned pedagogical manuscripts of the courses systematically.

Remote teaching and learning

Following the Flipped Learning principle, before the online lessons, students worked with learning tasks independently, e.g. watched online lectures, videos or read about the new subject, as planned in the pedagogical manuscript. For example, based on a study guide, students were palpating bony landmarks and marked them to their partner which they then photographed and returned to Moodle for the teacher to evaluate. Students felt that these learning tasks during remote teaching, improved their learning: *“Assignments and course materials were designed to support learning.”*

Online lessons were broadcast mostly via Collaborate LTI (Moodle tool). Usually, online lectures started with a discussion about theories or concepts of the topic. The Collaborate LTI includes an easily used audience response system, that is, a polling tool which enables fast iteration of core concepts or level of learning. It was also an easy way to activate all participants in the beginning of the lesson, for example, when the teacher showed a pre-recorded video of a skill application students could then practice remotely.

Students reported that it was important during remote lectures to be able to ask questions that had arisen with the pre-assignments. Students felt that the threshold to ask questions during online lessons was low: *“Remote learning was useful because the questions to be considered were answered.”* This way discussions and exchange of ideas arose easily. Students were also encouraged to exchange their own experiences of the discussed subjects during the online lessons in a similar way as for contact lessons. Flipped classroom and learning approach enabled students to deepen their learning together by discussions and teamwork during online lectures.

In the beginning, the challenge of teaching and learning practical and manual skills needed in MSK physiotherapy was due to the restricted live video streaming, which was caused by the fear of the system collapsing. This meant that existing teaching materials had to be supplemented with photos, videos, and/or additional instructions, teacher-made or existing videos from the internet. Students were engaged in providing teaching materials and learning from each other. For assessing practical skills and getting feedback, students provided video-recordings demonstrating their manual therapy and mobilisation techniques.

Video materials supported students’ learning and with them most students were able to choose the time and place to practice skills with their classmates. During the remote teaching period, teachers provided or linked relevant videos to Moodle e-learning environment for students to support their learning. Students were also encouraged to find and share reliable and suitable material by themselves. It allowed students also to practice information retrieval and critical evaluation skills. In addition to the videos, teaching material was also in text format to support different learners and this also received positive feedback: *“The materials were in the form of videos as well as readable texts, which was a good thing for learning.”*

Some students felt that it was easier to focus on learning in lessons online than during normal classes: *“At home, I was able to focus better on listening. So, there were also positive aspects to remote teaching.”* Some students wished that participation in some lessons remotely should be possible in the future as well because it gives students the freedom to choose a suitable place for studying. Students found that online lessons suited especially for theoretical topics but also that teachers were able to implement functionality to lessons. *“Teaching was offered well and remote lessons were also functional. These could even be used in some form in the future.”*

The importance of feedback

Students made video material of their own practical skills, including examination and manual mobilisations, which teachers had chosen and instructed them to practice during the online lessons. Safety aspects and contraindications to manual techniques were taught and discussed with students before their independent practical tasks. Students were instructed to self-evaluate their own practical skills after each completed task.

Issakainen, M., Puustinen, S. & Kuisma, R. (2020). An overnight shift towards remote teaching and learning of musculoskeletal physiotherapy in Karelia University of Applied Sciences in Finland.

Students uploaded their tasks and self-evaluations to the Moodle e-learning environment for the teacher to evaluate and then the teacher gave written formative feedback for the students after each task. Students found this feedback meaningful and beneficial for their learning. Some students also felt that they received more feedback of their manual skills during the remote teaching period than in normal classes: *“I would have liked to get more feedback of the manual skills in the class, but it was corrected when Corona struck and the teacher commented on the videos that were made about the manual skills.”* From the teacher’s perspective video-recording and reviewing helped students to focus on self-evaluation of practical skills and noted the successful and correctable details. Self-evaluation is more difficult for students during the face-to-face lessons.

Teachers in MSK courses decided that they will give additional feedback to the students on their independent tasks and videos of the practical skills, which students perceived to be very helpful for learning: *“The individual feedback from the teacher on the tasks was relevant and important.”* It seems that written feedback is especially important to students. Students felt that they received feedback of their theoretical and practical competence which encouraged them to study. Surprisingly, during the remote teaching, satisfaction with the amount of feedback was higher than normal: *“The feedback from the teacher was extensive and rewarding.”*

What next?

The unfortunate events caused by the Covid-19 pandemic have led to great changes and disruption to everyday life. However, we have learnt some positive lessons for the future. Students were better prepared for practice by studying the theory in-depth beforehand and resolving some questions between themselves online. Video-recording their own practice before attending classes in the future would fit the flipped classroom principle and will be used in the future. This will give the teacher more time for individual feedback. From the physiotherapy teaching experience at Karelia, we will take these learnt lessons into developing our teaching and empowering students to take responsibility for their own learning. “A teacher cannot learn for the students, the students must do it themselves” (Anonymous), and by giving them responsibility with systematic guidance, we can achieve this, as has been shown during the period of remote learning.

Conclusion

In summary, a well-planned pedagogical manuscript implemented with flipped classroom and learning approach seems to work well for remote teaching of physiotherapy theory and skills. Carefully planned learning tasks and individual feedback are particularly important for learning. It supports the students’ learning process and enables the deepening of learning.

Video and text material in theoretical and practical MSK topics seemed to support students’ learning and video material especially could be used more in the future. This experience confirmed that students are very capable in self-directed, teacher-guided learning, and are able to search and find appropriate, relevant and evidence-based learning material on MSK physiotherapy. They are also capable and keen to share learning material and learn from each other. After the three-month remote teaching period, the teachers also learned to trust and give the responsibility of learning to students, where they can take it and learn regardless of the circumstances. “The teacher can only open the door; the student must walk in and discover” (Anonymous).

References

- Flipped Learning Network (2014). [What Is Flipped Learning?](#)
- Toivola, M., Peura, P., and Humaloja, M. (2017). *Flipped Learning*. Edita, Helsinki.

Peer review reports

Jill Morgan (morganj63@cardiff.ac.uk)

Reviewed: 12 June 2020

Citation: Morgan, J. (2020). Review - An overnight shift towards remote teaching and learning of musculoskeletal physiotherapy in Karelia University of Applied Sciences in Finland. OpenPhysio. DOI: [10.14426/opj/20200612](https://doi.org/10.14426/opj/20200612)

Karen McCreesh (Karen.McCreesh@ul.ie)

Reviewed: 17 July 2020

Citation: McCreesh, K. (2020). Review - An overnight shift towards remote teaching and learning of musculoskeletal physiotherapy in Karelia University of Applied Sciences in Finland. OpenPhysio. DOI: [10.14426/opj/20200717](https://doi.org/10.14426/opj/20200717)