

Experiences with distance teaching and learning in cartography – a European perspective

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Abstract:

During the COVID-19 pandemic, distance education has presented opportunities and challenges for students and teachers. Remote learning offers students more flexibility and allows for self-paced learning (Al-Arimi, 2014). However, to keep up with course material and solve questions, students must take self-initiative and be proactive, which can be more time-consuming and challenging due to a lack of exchange with teachers and fellow students (Sari & Nayir, 2020). Conversely, the teacher's role is to create and maintain an active learning environment and educational content that allows students to succeed through intrinsic motivation and engagement (Nguyen et al., 2021) and provide feedback when necessary.

After two years of forced distance education and a transitional year of returning to classrooms, the pandemic may go away, but it continues to affect education. In this abstract, we report on our activities in the past three years comprising student and teacher feedback, an expert workshop, and a student focus group to reflect on distance teaching and learning. By this, we hope to evoke discussions and establish insights into future cartography education.

Like many universities, when the pandemic first hit us in 2020, all lectures switched to distance education. At the end of the first affected semester, we invited the students to join our feedback session and the lecturers for a reflection afterwards. Combined with an anonymous student online survey, we identified the following key challenges:

1. How to engage students in distance teaching? What could be the appropriate interactivity?
2. Field measurements and experiments were hardly possible in distance education. Is it possible to have long-term alternatives to them? Which could those be?

To gain perspectives on distance teaching and elaborate on these challenges, we organized a workshop with higher education teachers in the Geo-domain from all over Europe. During the week-long workshop held at TU Wien in 2022, participants discussed online tools for teaching, experiences and challenges in distance education, team strategies for the development of distance learning at each university, and ways to create more activating learning experiences for students and opportunities for support. Further, they gave feedback and suggestions on our previously identified key challenges.

1. The content for distance education could be broken down into mini-learning activities, e.g., learning nuggets. This method could engage students mentally and emotionally by being more in line with the human attention span and reducing cognitive load and stress levels.
2. Field measurements and experiments are fundamental for students to understand the theory and deepen their knowledge. Alternatives in distance education can hardly achieve the same, yet some teachers successfully integrated accessible VR techniques and game-based approaches to simulate a similar learning experience in Geo-disciplines.

As we gradually transition to a post-pandemic era, a focus group interview with higher-semester students from TU Vienna is planned to gain deeper insights into students' perspectives on distance learning. We aim to recapitulate how attitudes and roles evolved during the pandemic and provide insights into which teaching techniques motivated students during distance learning. Further, it shall discuss how students envision a learning environment for cartography in the future.

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