

Exploring a blended learning approach involving crowd mapping for developing sense of place

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Abstract:

Geography is about the physical features and places on Earth, and how people interact with them. Therefore, field-based learning is essential for geographers for developing an understanding of place. Prompting students with “What do you see?” “What do you smell or hear?” or “What do you feel about this place?” when they are in the field, helps them to understand the complexities of place and to develop sense of place. Experiential learning can raise awareness of students’ own individual sense of a place and that of others, so that a collective sense of place develops (Pánek & Glass, 2018). This research was part of a project that explored how the use of technologies for understanding place (in the virtual world) is linked to the way we think about and perceive physical space (our mental maps), thereby contributing to cognitive geo(infor)matics (Schaab et al., 2023). The three participating universities from Germany, Kenya and South Africa each developed a set of digital teaching and learning resources related to sense of place. At the University of Pretoria in South Africa, a blended learning approach was developed for use in a human geography module. Several types of learning activities were combined to raise awareness about sense of place, aided by the collection of information about places with a mobile app and later visualising the data that was collected. While the approach was developed for a third-year module running for a whole semester, in this abstract, we present results of testing and assessing a pilot version of the blended learning approach as part of a one-week summer school in Karlsruhe, Germany in September 2023 with 20 participants from the three universities. As suggested by Korson (2023), we designed our approach to embrace the flexibility of blended modes of learning by incorporating activities in advance of discussions in the classroom. The approach was guided by Kolb’s Experiential Learning Cycle (Thomkins & Ulus, 2016):

Concrete experience: Capturing sense of place information on campus (Day 1 to Day 3)

Through crowd mapping, groups of 4 to 5 students, with at least one from each participating university, collected data about places from the afternoon of the first day to the end of the third day. They collected data using the Mergin Maps (<https://merginmaps.com>) mobile app with a set of close-ended questions about how places are perceived. Collecting data in groups allowed locals to guide the visitors through the study area and mitigated the impacts of any connectivity challenges.

Reflective observation: Group discussion (Day 2)

Group discussions among students about their understanding of sense of place.

Abstract conceptualisation: Recorded lectures (Day 2)

Students had one hour to work through a video (narrated presentation) of a theoretical introduction to sense of place.

Abstract conceptualisation: In-person lectures and discussions (Day 4)

In-person presentation by two UP lecturers about sense of place. A subsequent discussion was used to gauge students’ level of understanding of the concepts related to sense of place and its strategic importance in the context of geographical research. Students’ ability to apply and interpret these concepts was also explored. Heat maps of the place information were presented, leading to further discussions and debates about these encounters.

Active experimentation:

Due to time constraints, the final step of active experimentation was not possible during the summer school.

The summer school participants included students from human geography, geography and environmental science, geoinformatics and geomatics; three students were familiar with the study area and twelve were international visitors. On the last day, students completed a questionnaire to help us understand how the blended learning approach was perceived, followed by a reflective group discussion, also including maps (see Figure 1 for an example). Since the size of the summer school group was small, we could probe with follow-up questions to get a more in-depth understanding.

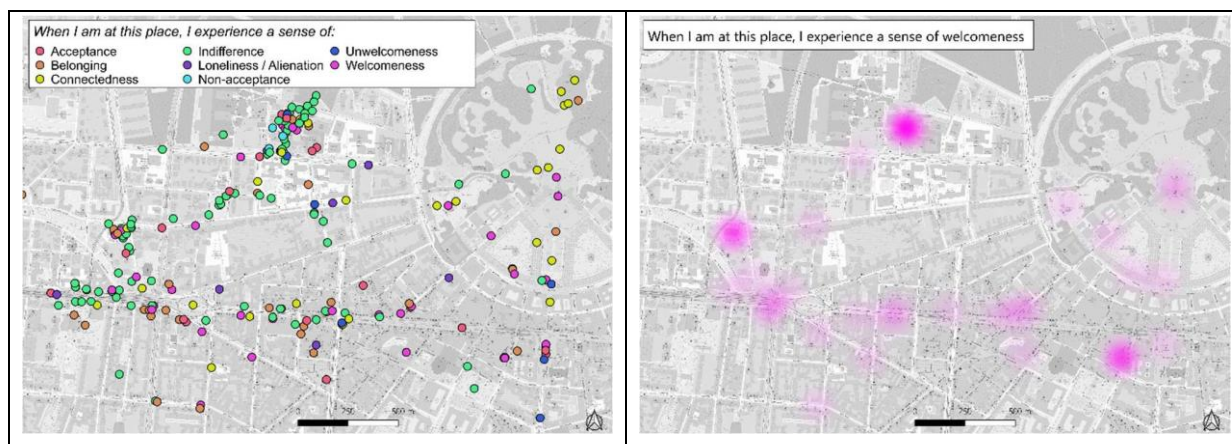


Figure 1. Place-based data collected by students with the mobile app (Map prepared in QGIS; OpenStreetMap data)

Most students agreed that each of the respective activities helped them to improve their understanding of the concept of sense of place, its complexity and multi-dimensionality, and the diversity of interpretations and experiences. The video was the only element with a negative response (disagree), and also the most neutral responses. This was echoed in the free text comments: one student proposed watching the video in groups and pausing it for group discussions, which suggests a willingness to learn in groups. All except one student agreed that the group discussions improved their understanding of the complexity and multi-dimensionality of sense of place.

Students thought that they had gained a coherent understanding of the sense of place concept through the combination of the learning activities. The variety of learning activities was generally well received with one student explicitly indicating that the combination of activities collectively improved his/her understanding. Students felt that the sequence of learning activities helped them with establishing a coherent understanding of the sense of place concept. They confirmed that the fieldwork at the beginning, without prior introduction to the topic, facilitated inquiry-based learning. They appreciated that the sequence of learning activities led them to improve their understanding incrementally. Students also appreciated the outdoor experience and expressed a desire for more such learning activities and more practical ones. Our approach encouraged inquiry-based learning through students' own real-world experience of places. Subsequent visualisation, reflection, conceptualisation, and application of the concepts further strengthened their understanding of sense of place. The lessons learnt during the pilot at the summer school informed and strengthened the blended learning approach developed for the human geography module.

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References

- Korson, C. (2023). A place-based approach to blended learning. *Journal of Geography in Higher Education*, 47(4), 569–588. <https://doi.org/10.1080/03098265.2022.2122032>
- Pánek, J., & Glass, M. (2018). Gaining a mobile sense of place with collector for ArcGIS. *Journal of Geography in Higher Education*, 42(4), 603–616. <https://doi.org/10.1080/03098265.2018.1515190>
- Schaab, G., Coetzee, S., Davis, N., & Karanja, F. N. (2023). Developing teaching/learning materials on 'Sense of Place' with students in an international university cooperation: overall approach and first phase outcomes at Karlsruhe University of Applied Sciences. *International Journal of Cartography*, 9(3), 525–540. <https://doi.org/10.1080/23729333.2023.2224487>
- Thomkins, L., & Ulus, E. (2016). 'Oh, was that "experiential learning"?!' Spaces, synergies and surprises with Kolb's learning cycle. *Management Learning*, 47(2), 158–178. <https://doi.org/10.1177/1350507615587451>