A Gender-informed Curriculum for Teaching Volunteered Geographic Information

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Gender and Geographic Information

Public Participation GIS (PPGIS) is a field which became prominent since the 1990s. It focuses on “ways the public uses various forms of geospatial technologies to participate in public processes, such as mapping and decision making” ([Tulloch 2008]). It has been found that this field lacks references to or contributions from women. This deficiency of women-centric geographical information is alarming. As Elwood ([2008]) argues, “the exclusion and under-representation of information from already marginalised people and places in existing data records is linked to the ensuing exclusion of their needs and priorities from policy and decision making processes”.

Special case of Geographic Information: VGI

Volunteered Geographic Information (VGI) is a term coined by Goodchild ([2007]) to describe the creation of geographic data outside of professional routines.

Action Learning in VGI

In 2012, the fem2map* project team designed a curriculum that aimed to equip female students with the knowledge and skills that would lead them towards becoming meaningful contributors to VGI, and also to capture their experiences, attitudes and expectations of VGI. The former is to encourage action learning in VGI, while the latter is to identify some key barriers to women’s participation in VGI and to make evidence-based policy-directed interventions.

Process

With an action research design, 12 female students who were new to OpenStreetMap were recruited to a 3-month course. They were guided to do different mapping activities (e.g. outdoor mapping with GPS devices, mapping from satellite images). After each activity participants reported their experiences. After these sessions, two post-event questionnaires were sent out after two and four months to follow the participants’ mapping activities. The feedback received from the participants was mixed with positive and negative feelings. Here are some quotes from the participants on the most mentioned positive and negative aspects of mapping:

- Positive aspects of mapping
  - “It takes time to find the right symbols and tags – if they exist.”
  - “We use our own knowledge to map something and other people can see that and maybe it is useful for them and it makes you happy if your contribution is used by others.”

- Frustrating and negative aspects of mapping
  - “There is a time-dependent interest level”
  - “It would be useful if mistakes would be highlighted when you did a lot of work and you cannot upload it, it's really frustrating.”

GIS Education in HE

Geographic Information Systems (GIS) are increasingly used in higher education across disciplines and departments. If the barriers for women in participating in VGI and PPGIS are not properly understood and duly addressed, this imbalance in geographical and spatial knowledge production and a gender digital divide may endure or even exacerbate. As defined by de Lauretis ([1987]), gender is “not a property of bodies or something originally existent in human beings […] it is the product and process of various social technologies, institutional discourses, epistemologies, and critical practices, as well as practices of daily life.” How GIS is taught in the higher education requires a rethink in relation to gender issues.

References


Most participants had a positive attitude towards OSM and stated that they wanted to contribute to OSM in the future. However, post event questionnaires showed that after two months only two students had contributed to OSM again, and after four months none of the students contributed to OSM anymore. Motivational factors reported by the participants, which may make them participate again particularly referred to projects, group activities, mapping for a specific goal, and tools which make mapping faster. The findings of this study lead us to recommendations about how to encourage and motivate women in VGI.

Towards a gender-informed VGI curriculum

Sanford et al. ([2014]) emphasise the importance of a gender-informed education by drawing on “a feminist understanding of gender, particularly as it relates to power, the social constructivist framework explains that there is no essential or distinct characteristic that is feminine or masculine.” They recount what feminists have been arguing that “behaviours are influenced by a range of factors including class, culture, ability, religion, age, body shape, and sexual preference” and that “issues of gender pervade social justice and equity in aspects of existing pedagogy, curriculum, philosophy, policy and institutional organisations.”

The fem2map project offered an opportunity for gender issues to be addressed alongside issues in education. This is just a beginning of how VGI can be improved, how the findings of a few students and researchers can have some impact on prospective teachers / instructors, their future students, or society at large.

*About fem2map

fem2map, short for ‘feminizing females to map,’ is the title of a project aiming at fostering the participation of women in Volunteered Geographic Information. It was supported by the Austrian Ministry for Transport, Innovation and Technology (BMVIT) within the research program FEMTECH FORTE. Details can be found on https://cartography.tuwien.ac.at/fem2map


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Positive aspects of mapping

- cyber wellbeing
  - “Looking back, I would say that mapping is all about interaction – with people, with space, with maps.”
  - “A motivating experience when the results are immediately visible.”

- technical feedback
  - “It would be useful if mistakes would be highlighted once you try to upload your edited parts.”
  - “Insufficient technical feedback when you did a lot of work and you cannot upload it, it’s really frustrating.”

- social experience
  - “You get to know your city when you go and map.”
  - “Mapping is fun, and you can add things that you like and that are interesting.”

- visual feedback
  - “After tagging so many points the map will be more complete.”
  - “We use our own knowledge to map something and other people can see that and maybe it is useful for them and it makes you happy if your contribution is used by others.”

- outdoor experience
  - “Being outside mapping is really a lot of fun.”
  - “After tagging so many points the map will be more complete.”

- feedback
  - “It takes time to find the right symbols and tags – if they exist.”
  - “It would be useful if mistakes would be highlighted once you try to upload your edited parts.”