A Gender-Informed Curriculum for Teaching Volunteered Geographic Information

**Yowie Lin**
University of the Creative Arts, UK, ylin21@ucreative.ac.uk  |  **Manuela Schmidt**
Vienna University of Technology, Austria, manuela.schmidt@tuwien.ac.at

**Gender and Geographic Information**

Public Participation GIS (PPGIS) is a field which became prominent since the 1990s. It focuses on "weaps the public uses various forms of geospatial technologies to participate in public processes, such as mapping and making decision" [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 all marginalized and non-traditionalized 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.

**Why Is This Relevant?**

The extremely low number of women participating in the VGI world means that... nearly half of the human talent pool is redundant in contributing to VGI, while ... the unequal knowledge base may become an impediment for women in PPGIS and the GIS job market.

**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 existing 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**


Elwood, M. 2008. "Motivational factors contributing to open data." After tagging so many points the map will be more complete.


**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-oriented interventions.

**Process**

1. **Getting to know the tools**
2. **Mapping from aerial imagery**
3. **Outdoor mapping with GPS (group activity)**
4. **Free mapping task and reflection**

**Positive Aspects of Mapping**

- Knowledge acquisition: "You get to know your city when you go and map."
- Outdoor experience: "Mapping is fun, and you can add things that you like and that are interesting."
- Social experience: "Looking back, I would say that mapping is all about interaction - with people, with space, with maps."
- Visual feedback: "A motivating experience is when the results are immediately visible."

**Frustrating and Negative Aspects of Mapping**

- Complexity of learning: "Beginners struggle to know what to do."
- Time-dependent interest: "If you did a lot of work and you cannot upload it, it’s really frustrating."
- Insufficient technical feedback: "When you did a lot of work and you cannot upload it, it’s really frustrating."

**Towards a Gender-Informed VGI Curriculum**

Sanford et al. [2014] emphasis the importance of a gender-informed education by drawing on "a feminist understanding about gender, particularly as it relates to power, the social constructivist framework explains that there is no essential or distinct character 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.

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"About fem2map"

fem2map, short for encouraging 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 (BMVI) within the research program FEMtech FORTE. Details can be found on http://cartography.tuwien.ac.at/fem2map