EDUC 500: Research Methodology in Education
Activities
Observing, Categorizing, Sorting & Filtering

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Each phenomenon is over-determined in that it can be arranged, assembled, sorted, and filtered— described or explained— through any number of methods, any number of theories, or drawn into practice any number of ways. Is how we categorize, filter and sort dependent on how we observe? If we could map various representations of phenomena across a grid, we might eventually locate intersections and commonalties. Yet, intersections we locate today may not be the intersections we locate tomorrow. In *The Order of Things*, Foucault argues that the way we categorize, organize or map phenomena or locate intersections is somewhat arbitrary or provisional for any given moment or place. Particular conventions and specific modes of practice stabilize components of research and disciplines yet, even here, categories, research and disciplines remain complex, fluid, dynamic and interdependent.

Foucault (1970, p. xv) draws on Borges' description from "a certain Chinese Encyclopedia:"

> Animals are divided into: (a) belonging to the Emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) *et cetera*, (m) having just broken the water pitcher, (n) that from a long way off look like flies.

This "strange" way of ordering animals, says Foucault, demonstrates the more or less arbitrary nature of categorizing, filtering, mapping, framing, and sorting. It also demonstrates the power of an arrangement's, category's or map's author to organize culture and nature.

This process, which looks quite innocuous in everyday life, is fundamental to research. As Tesch (1990) argues:

> The main intellectual tool is comparison. The method of comparing and contrasting is used for practically all intellectual tasks during analysis: forming categories, establishing the boundaries of the categories, assigning the segments to categories, summarizing the content of each category, finding negative evidence, etc. The goal is to discern conceptual similarities, to refine the discriminative power of categories, and to discover patterns. (p. 96).

Categorizing and comparing characterize key research techniques such as the constant comparative method and triangulation. These fairly local processes also characterize the large global process of transforming web 2.0 to the semantic web and the 2D internet to the 3D internet of things. In computer science, this is a process of building "an ontology" to facilitate the secondary process of machine-generated knowledge.

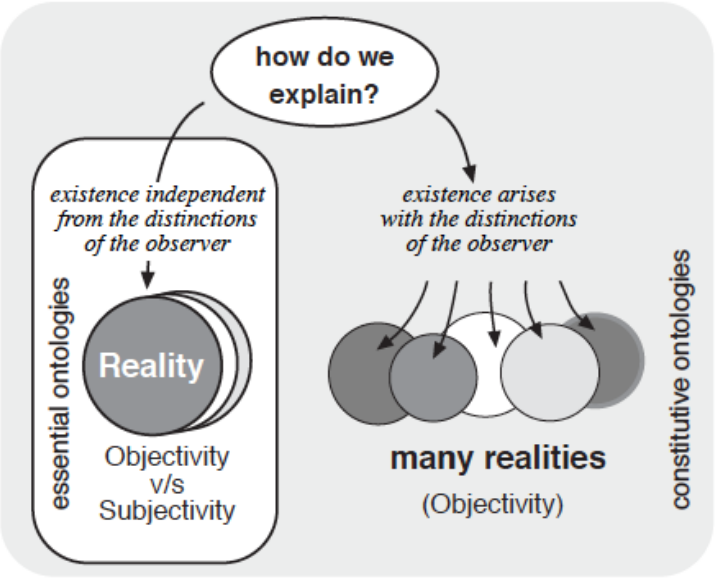
> The subject of ontology is the study of the categories of things that exist or may exist in some domain. The product of the study, called "an ontology", is a catalog of the types of things that are assumed to exist in a domain of interest, D, from the perspective of a person who uses language L for the purpose of talking about D. (Sowa, 2000, p. 492)

For example, OpenCyc offers the type of extensive ontology that is becoming a staple of the semantic web: Cyc is "the world's largest and most complete general knowledge base and commonsense reasoning engine. OpenCyc contains hundreds of thousands of Cyc terms organized in a carefully designed ontology." Cyc consist of 239,000 terms with "strings (a canonical one and alternatives) corresponding to each concept term, to assist with search and display."

But how do we know that how and what we categorized are valid and reliable in quantitative terms or credible and dependable in qualitative terms? How do we describe or explain our experiences or observations? If there are multiple realities given multiple observers or observations, which are valid and credible? If the answer is all, how do we establish objective knowledge?

Bunnell (2006, p. 76) (Figure 1) suggests that existence or reality is not independent from the observer; both categorization and observation are at base a matter of prior experience and observation:

> When someone realizes the nature of observing, as a happening in language, s/he very quickly realizes that different worlds, or different realities, may arise through this. I see these as lineages of distinctions in language that generate internally coherent domains of explanations…. One criterion which is consistently present is that of coherence with prior experiences and observations. Thus lineages of explanations grow in a manner that, besides being internally consistent, remains coherent with experiences.



Activity:

1. Gather to make sense of these artifacts.

Design
N= ∑ 2m+ 1po + 1ch +1o + eo

n	Manipulators	Participant observers	Chroniclers	Observers	External Observers
7	2	1	2	1	1

Materials: Artifacts, Flipchart, Markers, Document Camera, Overhead Projector, Computer, Smartboard

Pre- sort Activity/Instructions (minimal instructions)

- ∑: Form N groups (with n = 7-8 members)
- Assign roles for group members
- Gather to make sense of these artifacts.