

Institutional and Cultural Parameters Affecting Women's Participation in Higher Education in the Fields of Chemistry, Mathematics, Statistics and Computer Science

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Institution: The Research University

- Monopoly on Ph.D. conferral
- Requisite research facilities-Big Science
- Embodiment of Western Science
- Exists with a historical legacy of exclusivity, internal stratification, houses members of discrete professions
- Teaching functions pass values on

Preconditions

- A society wealthy enough to support
- A well functioning primary and secondary educational system
- An adherence to national/international norms of nature of scientific inquiry
- A political system supportive of higher education, site of critical inquiry
- Existence of professional associations

Multi-Cultural Environment

- Historically elite, separated from society by nature of intellectual work (independent legal entity, privileges, universal values)
- Cultural: The university and its faculty as public actors: advancing knowledge, transmitting this knowledge through teaching, publication, service to broader society.

Internal Differentiation by Discipline

- Each has a discipline specific scientific method
- Each has own training methods for doctoral students, inculcating a specific analytic framework—shared concepts, internal language, research methods and rituals
- Each has own professional association which sustains internal organization, standards.

Impinges on Participation of Women World Wide

- New actors in historically developed society, not yet necessarily members of the club
- Presence in university brings conflicts among broader social values about the role of women in society and the values/expectations of disciplines and those of the university more generally

Execution within the Body

- Historical development of the Western university
- Spread of Western science through European imperialism
- Creation of Western universities in European colonies
- Training local elites in these, or metropolitan universities
- By region, origins of present higher education system

Implementation con't

- Current higher education in region/country,
- Number and type of higher ed. institutions
- Percentage of age cohort attending, % women
- Secondary education for girls
- When women admitted to degree programs
- Establishment of chemistry, mathematics, statistics and computer science as university subjects
- Related founding of relevant professional associations
- Current numbers of women earning postsecondary degrees in 4 fields, change over last 30 years
- Professional employment of women in these fields, particularly in academia