

The Sexual Equality of Physics Educational Opportunity and the Sexual Differentiation of Physics Educational Result In China and UK



From: <http://www.theory.caltech.edu/people/patricia/scigen.html>

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Research background

- Students get equal opportunity to receive physics education nowadays.
- Physics is broadly listed as one of the required courses for elementary school to high school in many countries.
- Different performance of female and male in physics.
- According to Werskey's essay, female's contribution in scientific research always is thought as supportive and less important.

Research object, issue and goal

- Object: physics and gender.
- Issue: how do male and female get the equal physics educational opportunity and appear different physics educational result? What are the possible influential factors? What are the possible solutions?
- Goal: describe the situation of male and female's role in physics learning. Analyze the possible influential factors. Render some suggesting solution for specific issue.

Research method

- Available data analysis.
- Interviewing.
- Document analysis.

The equal physics educational opportunity in China and UK

- 1. The increase number of female students in different level educational institution.

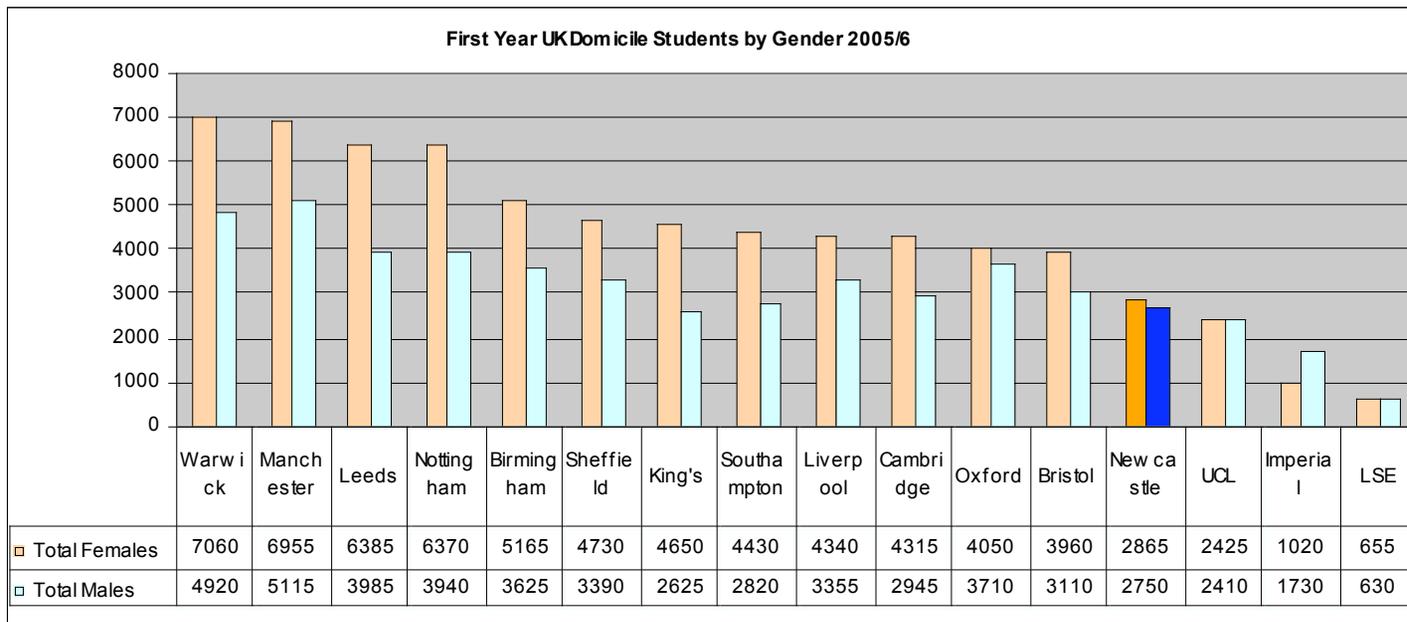
Table 1, percentage of female students by level and type of regular schools in China

Unit: %

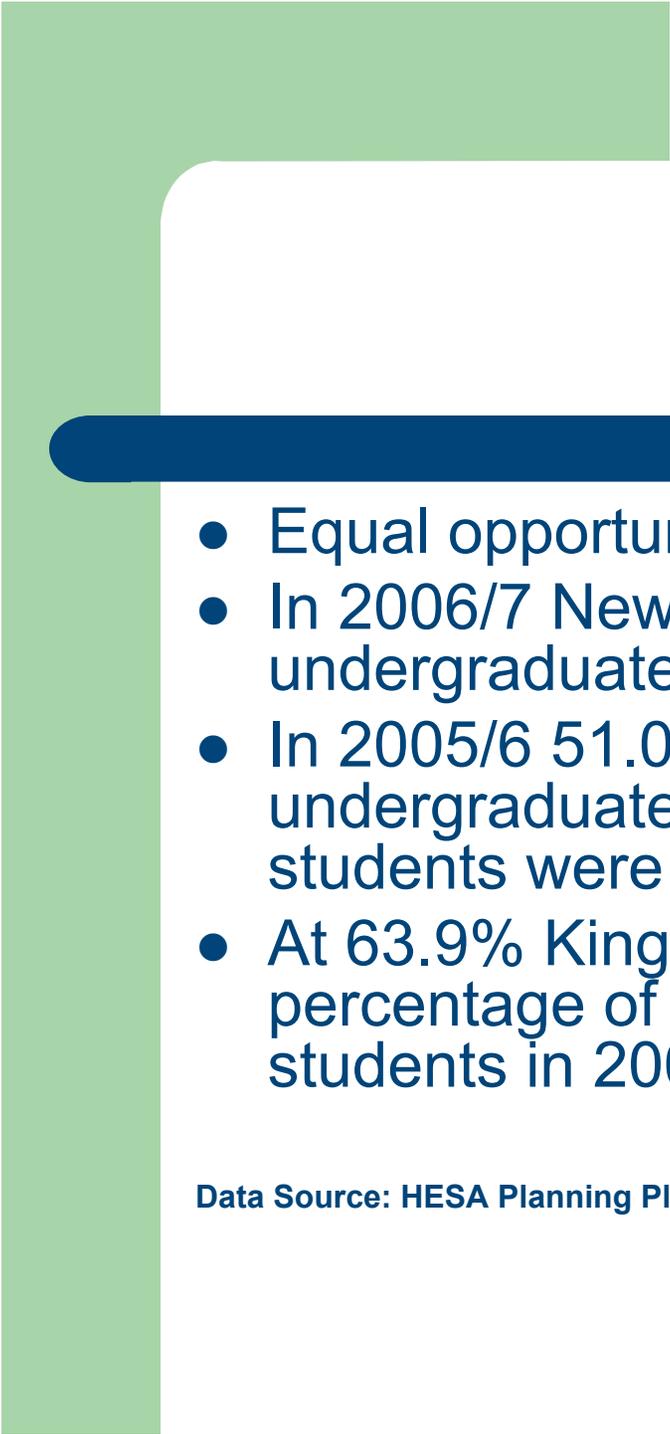
Year	Elementary School	General Secondary Schools	College and University
1997	47.63	45.46	37.32
2000	47.6	46.17	40.98
2006	46.66	47.05	46.035

Data source: Ministry of Education of P.R.China

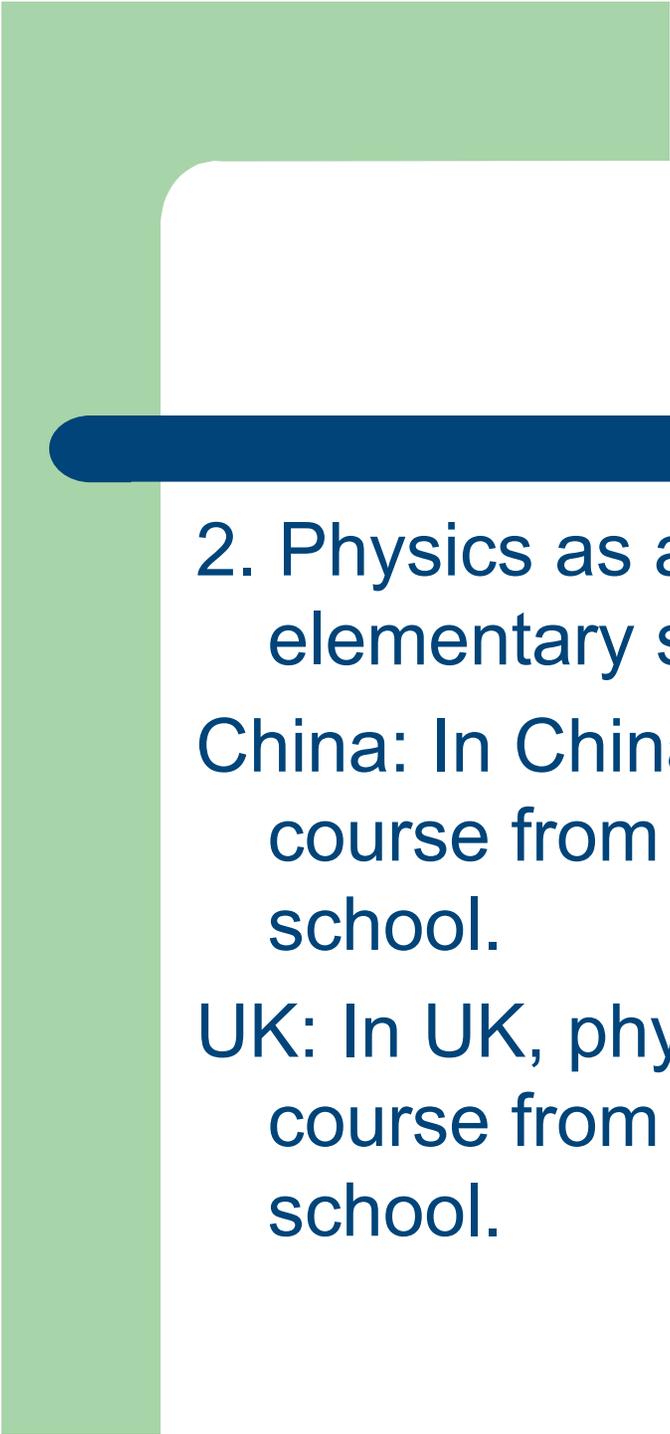
Graph 1



Data Source: HESA Planning Plus 2007 - Undergraduate and Postgraduate

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- Equal opportunity monitoring in UK
 - In 2006/7 Newcastle had 50.8% female undergraduate, UK domicile entrants.
 - In 2005/6 51.0% of Newcastle's first year, undergraduate and postgraduate, UK domicile students were female.
 - At 63.9% King's College London has the highest percentage of female first year, UK domiciled students in 2005/6.

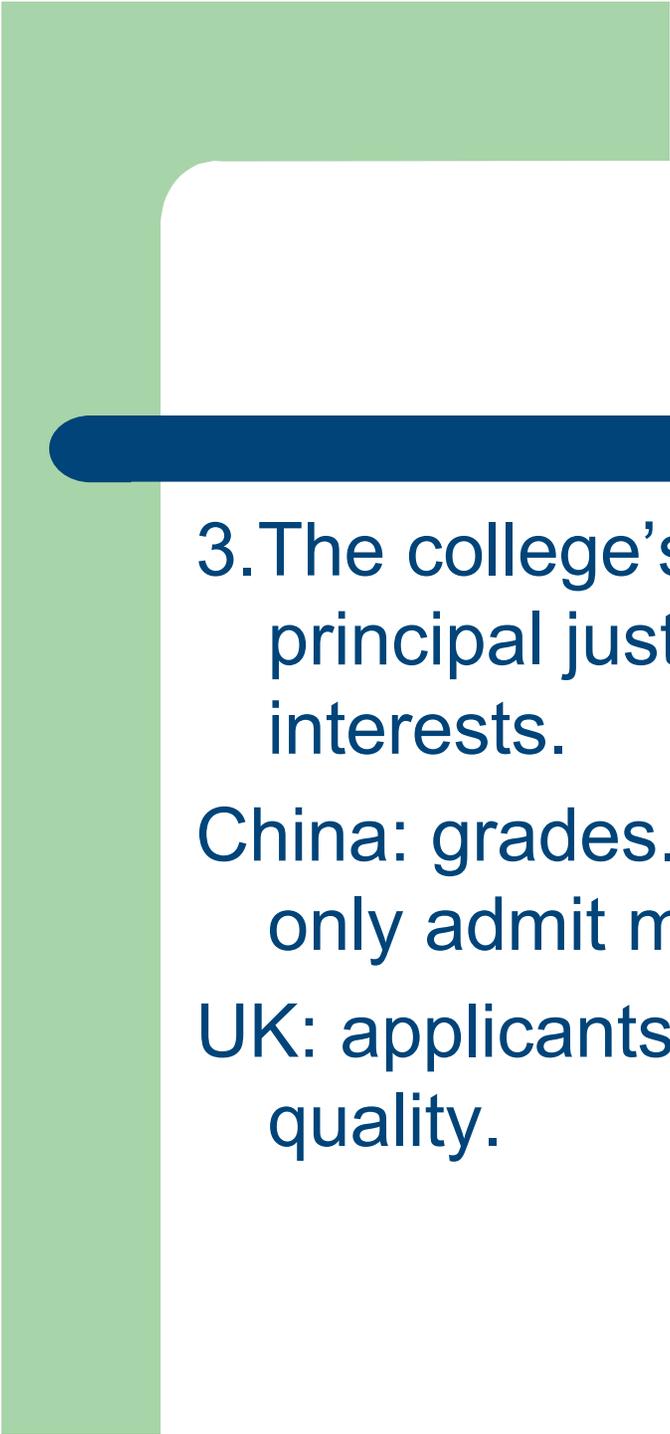
Data Source: HESA Planning Plus 2007 - Undergraduate and Postgraduate



2. Physics as a required course from elementary school to high school.

China: In China, physics is listed as required course from elementary school to high school.

UK: In UK, physics also is listed as required course from elementary school to high school.



3. The college's physics department admission principal just based on grades and students' interests.

China: grades. Except for some specific major only admit male students.

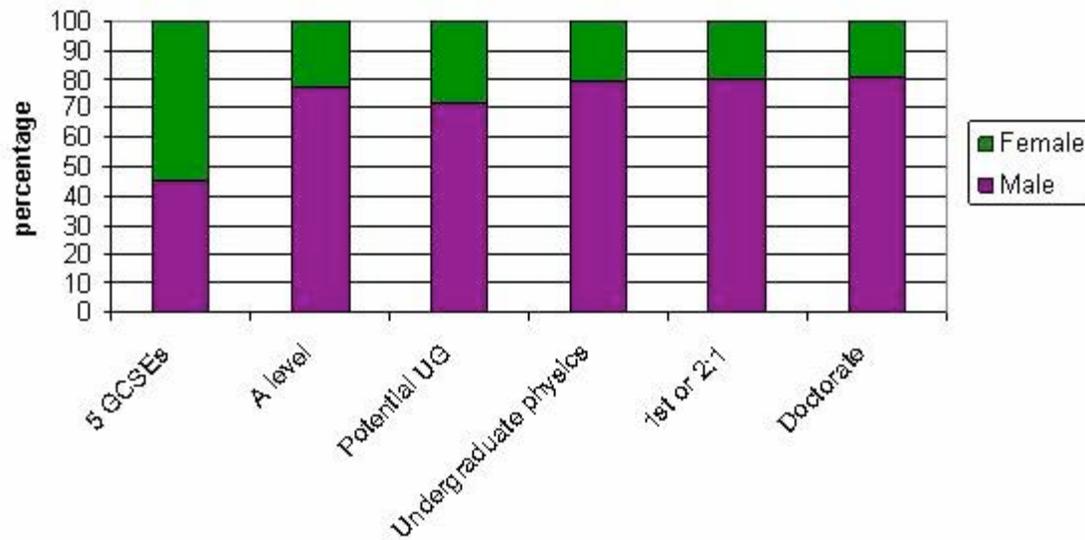
UK: applicants' interests. Comprehensive quality.

The differentiation in physics educational result

 The gender differentiation in school achievement.

China: In the Physics Olympics team, only 20% members are female.

Graph 2, the percentage of female students in physics department in UK



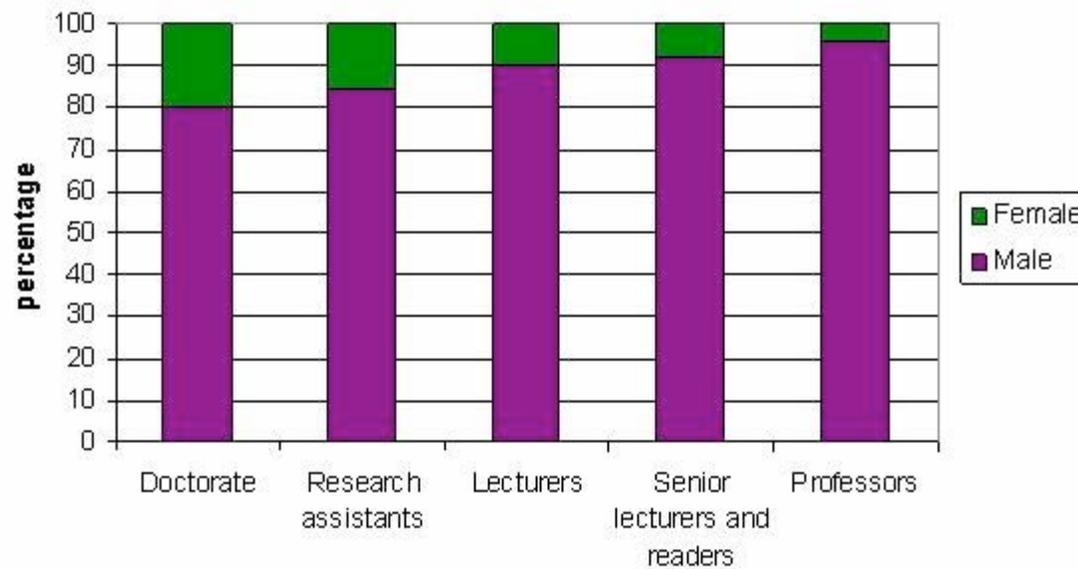
Data source, UK IOP Statistics



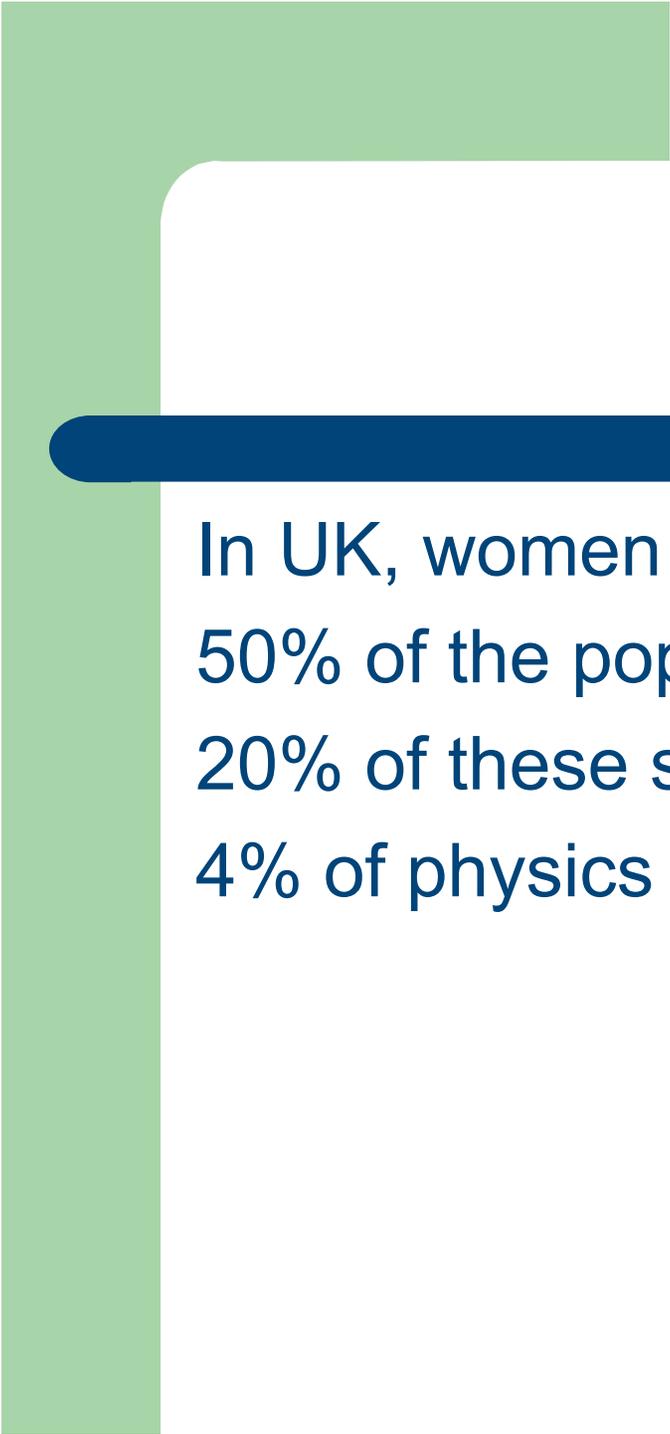
2. The gender differentiation in physics research.

China: All 7 present leaders in Chinese Physics Society are male. There are 699 members in Institute of Chinese Academy of Science, but there are only 10 female members in the math and physics department.

Graph 3, the percentage of female researcher in UK



Data source: UK IOP Statistics



In UK, women comprise:
50% of the population,
20% of these studying physics in university
4% of physics professors

Influence

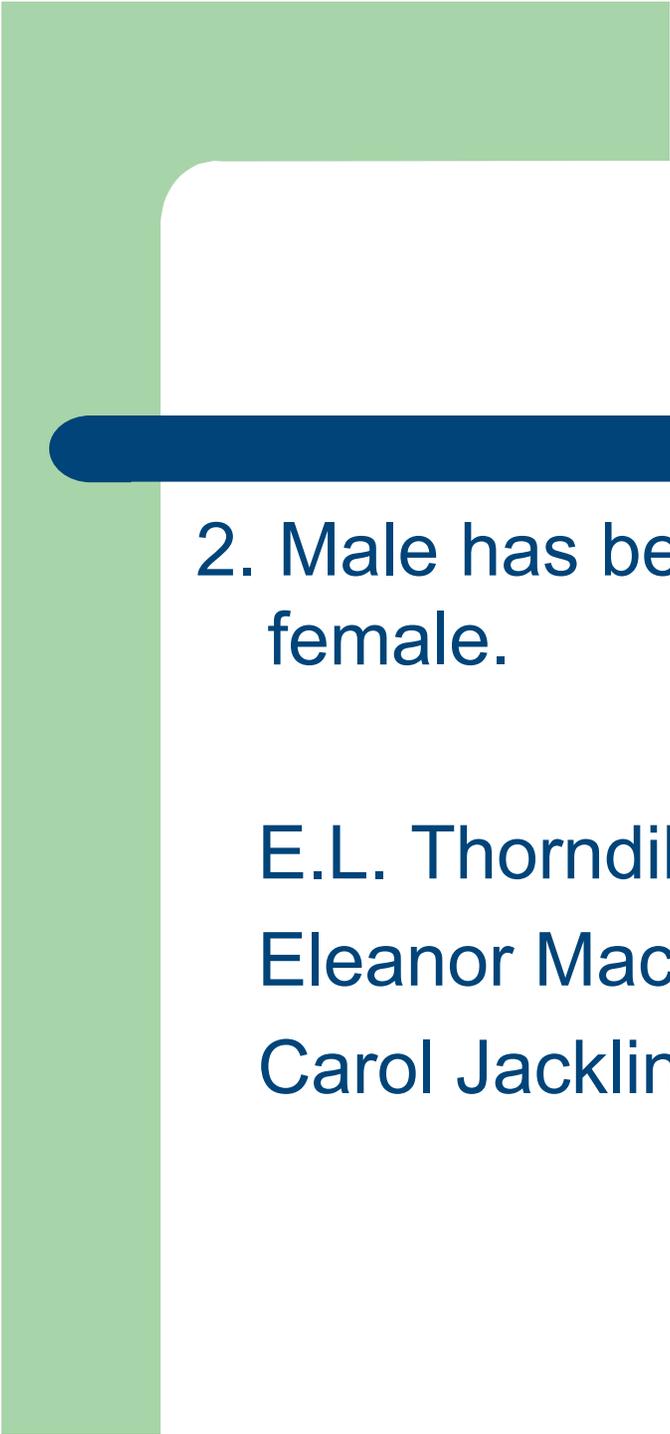
- 1. For female, it is the suppression of female's self-worth and achievement in physics.
- 2. For the society, it is the underestimate of female's physics capacity and it may be probably results in the loss of female physics talent.

Possible influential factors

1. The differentiation in physics learning has different characteristics according to the different development period.

Johson's space test for kids from 6 years old to 18 years old.

Female students' advantage on calculation and male students' advantage on issues' solution.

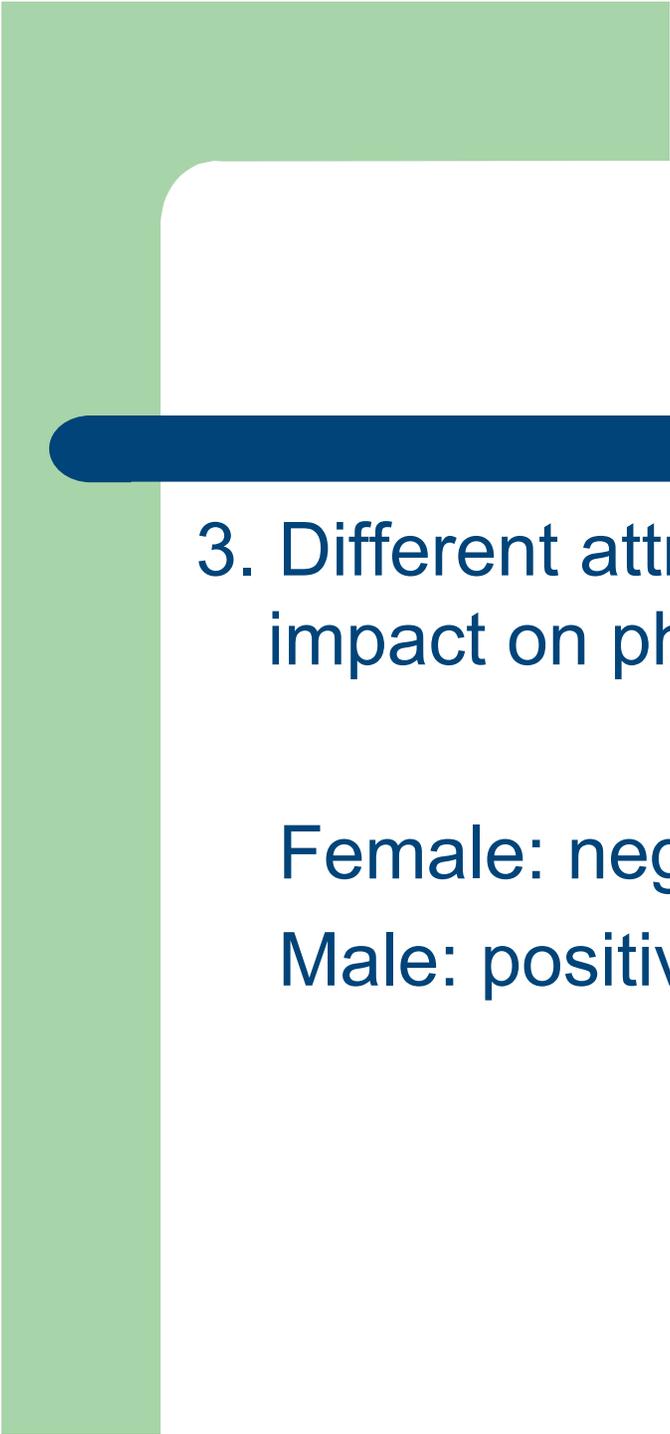


2. Male has better physics learning ability than female.

E.L. Thorndike

Eleanor Maccoby

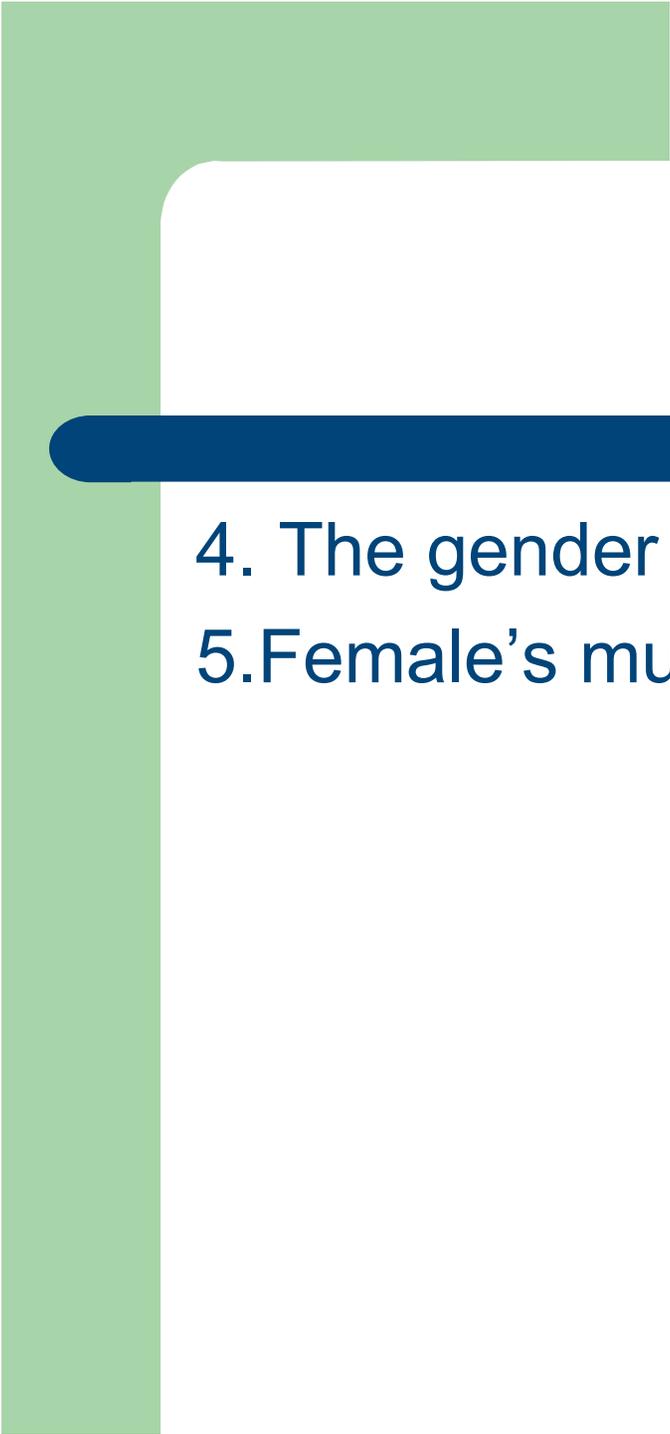
Carol Jacklin



3. Different attribution model has different impact on physics learning.

Female: negative

Male: positive

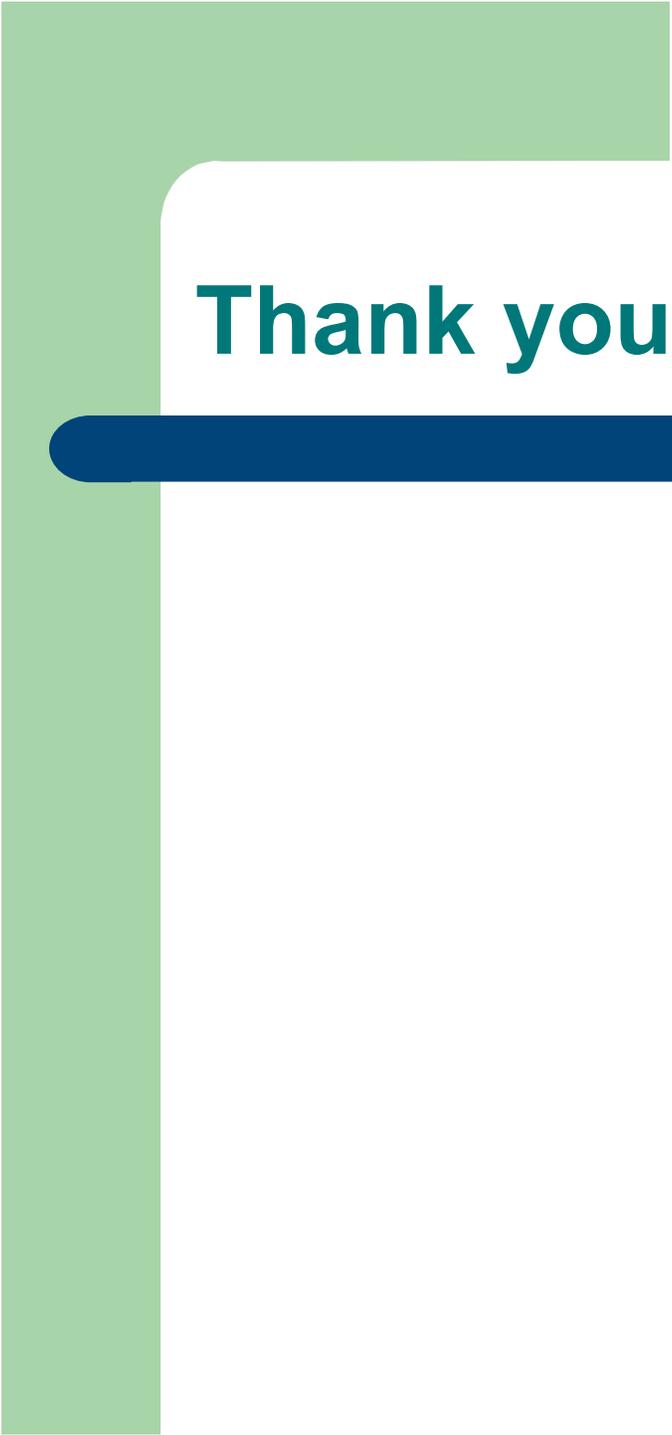
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4. The gender construction in physics culture.
 5. Female's multiple roles in family and society.

Suggesting solutions

- Inspire female students' interests in physics.
- Develop students' related ability according to their developmental characteristics.
- Share equal family and social responsibility.
- Develop students' ability according to their own interests.

What I got from this course

- PBL
- KAQF
- Presentation and discussion
- Be entitled enough space to develop own academic interests.
- Communication



Thank you for your attention



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