

Expanding the Vision of Female Students From Users to Designers of Technology

Research Overview

Research Proposal

Data were collected on both student attitudes and school technology, to see whether positive female student attitudes toward computer science were correlated to technology policies and programs at independent schools.

25 Schools Participated with 530 students (295 males and 235 females)

Students completed the Computer Related Attitude and Intentions Scale, a 40-question Likert survey based on the Fennema-Sherman instrument and consisting of 9 scales:

1. Mother support
2. father support
3. teacher support
4. Confidence
5. intrinsic value
6. usefulness
7. Gender stereotyping
8. Future academic intentions
9. Future occupational intentions

Technology spokespersons at twenty-five private high schools representing 41% of the independent high schools associated with the Florida Council of Independent Schools were also given an online 40-item demographic questionnaire of school policies and programs addressing:

1. Diversity of technology experiences
2. Mandatory student proficiency
3. Mandatory faculty proficiency
4. Gender awareness initiatives
5. Career guidance
6. Single-sex programs
7. Anytime, anywhere access (laptop access)

Expected Outcomes

As a result of this study the following outcomes were expected.

1. Female students will demonstrate less positive attitudes toward computer science study than their male counterparts.
2. Students attending schools that provide a greater diversity of computer experience will have more positive attitudes toward computer science.

3. Students who attend schools that require a level of technology skill as demonstrated by either mandated student technology instruction or proficiency testing will have more positive attitudes towards computer science.
4. Students who attend schools that require faculty to demonstrate a minimum level of proficiency whether through amount of technology instruction hours required, inclusion of technology through faculty evaluation, or other demonstrable proficiency assessment will have more positive attitudes towards computer science.
5. Students who attend schools that have taken any initiatives to recognize gender-equity on computer attitudes, such as by targeting special programs toward females, or modifying programming curriculum to address gender learning differences, will have more positive attitudes towards computer science.
6. Students who attend schools that have provided career guidance including computer science will have more positive attitudes towards computer science.
7. There will be no relationship between the female attitudes toward computer science and their attendance at single-sex schools.
8. Students who attend schools that provide students anytime, anywhere access to technology, such as through laptop or handheld programs, will have more positive attitudes towards computer science.

Results

The results supported the primary hypothesis and showed that female students had less positive attitudes toward computer science than males on all attitudinal measures, except gender stereotyping. A significant positive relationship was found between School Size and Confidence in Using the Computer and School Size and Teacher Support for both male and female students. Due to the unequal sample size between schools, the remaining 6 hypotheses regarding relationships between positive female attitudes and school policies and programs were not supported by the data.

It had been hoped that there would be equal variances from the mean for the various schools so that a non-significant Levene's test would be returned, but there was substantial variance due to the sample size disparity between schools.