

The Role of Gender in Architectural Education

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Abstract

A study was done exploring whether women are treated differently than men during their architectural education. Thirty male and female 4th-year environmental design undergraduate students of Texas A&M University were given questionnaires about their educational experiences. Three students of each sex participated in follow-up interviews. In addition, design juries were observed and analyzed using behavior-mapping techniques and content analysis of the students' and jurors' comments. The results suggested that women were less inclined to continue with their education to become registered architects, less likely to work in the studio at night, and more likely to receive what they felt was unfair treatment based on gender. Women also spoke less in critiques and were interrupted more often. These findings are consistent with existing research, and indicate that women may be treated differently from men in architectural education settings.

Traditionally, issues of gender (along with issues of race) have been overlooked in architectural education. Architecture and its theories have generally been thought of as "raceless" and "genderless," especially in academic settings (Anthony & Grant, 1993) Gender-issue research in other disciplines shows that men and women are treated differently and that the curriculum often reflects more male-centered actions. One purpose of this research paper is to provide evidence that this is also true for the study of architecture.

Architecture has been traditionally a "gentlemen's profession." Architectural education is also quite often based upon a "hero" structure. In this form of teaching, famous architects are held up to students to be studied, analyzed, objectified and revered. "Under such conditions, exemplars become icons." (Ahrentzen and Anthony, 1993) However, most of the heroes in architecture, in fact all of the heroes prior to this decade, are men. "It is a male-centered curriculum from a male perspective." (Kingsley, 1988) Very little mention is made of women architects in textbooks or publications, and women architects are notably absent from history; one might reasonably assume from this that women architects are mostly absent from architectural history course syllabi. Ask any architecture student, male or female, to name three famous female architects; he or she will be hard-pressed to do so.

One consequence of the male-centered curriculum appears to be that a greater percentage of women than men leave the profession after graduation. Women receive approximately one-third

of all architecture degrees--Bachelor's, Master's and Doctorate (which is well under the national average for all disciplines)--but they comprise only 15% of the profession (Dept. of Commerce, 1990). These figures are much lower than those of other traditionally-male-dominated professions such as medicine, accounting and computer science. Also there are indications that women are less likely to complete architectural training, and less likely than men to pass the registration exam (Feldman, 1989). Tenured women make up less than 3% of architectural faculty nationwide, and as little as 3% of the leadership positions in architectural education are occupied by women (Ahrentzen & Groat, 1992). The conspicuous absence of women as leaders and role models in architectural education is a self-perpetuating condition. Women students, faced with a lack of female architects as role models, are less likely to stay in the discipline.

Although women seem to be entering architectural study in increasing numbers, they are not entering the practice with a corresponding increase, and are in fact lagging when compared to other professions. This is not due, as some might claim, to any cognitive or psychological differences women might have, as a number of research reviews have found no significant differences between men and women in areas of spatial visualization or mathematical ability (Shibley, 1990).

Juried critiques are considered an important part of design education. Critiques usually have students in a studio presenting their projects to one or more professors or jurors for criticism. A study on gender and racial bias in design juries has shown that juries

have a number of consistently biased identifiable practices and procedures (Frederickson, 1993). Studies indicate that women's verbal presentations were interrupted more than men's in the observed juries, and women received less overall presentation time, which suggests a more condescending attitude toward female students' designs. Juries also seemed to have lower expectations for female students. This is a self-fulfilling prophecy that is more and more difficult for women to resist.

While a number of studies have been done on gender issues in other professions, and subjects related to this profession, "empirical studies of architectural education are few and far between, and at present, studies of gender issues in architectural education are all the more rare." (Ahrentzen and Anthony, 1993) A purpose of this study, therefore, is to provide additional data on the subject, as well as to attempt to reproduce results found in previous studies.

The hypothesis of this study is that the experiences of men and woman relative to their architectural education will differ, even within the same university. The central purpose of the study is to research some of the ways that men and women are treated differently in their architectural education. I believe that gender inequality makes the educational atmosphere uninviting for women and only inhibits their development. Educators can benefit from this realization and endeavor to make the educational atmosphere more welcoming to all people, regardless of sex, race or orientation.

Experiment 1: Survey

Method

Participants. Questionnaires were distributed to 85 fourth-year design students. Thirty students (20 men and 10 women) at Texas A&M University chose to complete in the survey. The mean age of the participants was 21.1 years. The fourth-year level was chosen because the participants would be relatively experienced in the discipline and have clearer goals in mind than younger students. Volunteers were not compensated for their participation, and were treated in accordance with the policies of the Texas A&M Institutional Review Board.

Materials. An original, thirteen-question questionnaire was used. This consisted of basic demographic questions (race, sex, age, marital status) as well as questions about their reasons for deciding to study architecture, their experiences during the time they had spent in the environmental design program and what their future plans included.

At the end of the questionnaire, students were given an opportunity to submit their name to be chosen for a follow-up interview (see Appendix A for questionnaire)

Procedure. The surveys were distributed through the professors of the upper-level design studios. Students were asked to fill out a questionnaire and corresponding consent form (required by the review board) during their leisure time and return it to a box in a specified area. Participants were given approximately two weeks to return the questionnaire. Thirty students completed and returned the form for a 35% return rate. This was somewhat below the expected return rate of 45%, based upon average rate of return of an exit questionnaire distributed yearly by the college.

Results

The majority of men and women surveyed (85% and 80% respectively) entered the architecture program in either 1991 or 1992, and the majority of them (80% of the men and 90% of the women) expected to graduate from the undergraduate program in 1995. Seventy-five percent of the men and 60% of the women originally entered the program because they were interested in architecture as a career. However, plans after graduation became more spread out: only 35% of the men and 40% of the women actually intended to pursue a professional architecture degree. Many of the students (40% of the men and 30% of the women) said they would go to graduate school for an architecturally-related degree. Many more men than women (45% as opposed to 20%) said they would work in an architect's firm after graduation, while an equal percentage of each (40%) would try to find a non-architectural but design-related job. Thirty percent of women, as opposed to 15% of the men said they had definite plans to marry.

More men than women tended to work in the studio (80% versus 60%). Both sexes gave a variety of reasons for not working in the studio, the most popular being that they had space to work at home (35% of the men and 50% of the women). A couple of women said they did not feel safe leaving the building at night, but worked in the studio anyway.

Eighty percent of both sexes felt they had had a mentor-type relationship with a professor. None of the females and only 10% of the males had a mentor-type relationship with a female professor.

This could be due to the fact that Texas A&M has only a few females on the faculty.

Both men and women felt they had received unfair treatment from members of the faculty (55% of the men and 70% of the women). Forty-three percent of the women who received this treatment felt it was gender based. Seventy-three percent of the men who received unfair treatment felt they were given an unfair grade, as opposed to 29% of the women. Seventy percent of the men and eighty percent of the women were "very satisfied" or "moderately satisfied" with their architectural education overall.

Men and women's opinions were spread fairly equally throughout the choices on the question "How does the dedicated practice of architecture affect opportunities for significant relationships or marriage?" The responses also tended to be similar for the question "How does the practice of architecture affect parenthood?"

All the female students were Caucasian. Two of the male respondents were Hispanic and one was Indian. The population of Texas A&M and the College of Architecture as a whole tends to be racially homogeneous. Seventy percent of the women were 21, as opposed to 35% of the men. All of the students 23 and over were male (20% of male respondents). All of the female students were single, and none had children. Three (15%) of the male respondents were married and one had a child (see Appendix B for survey results).

Experiment 2: Interview

Method

Participants. Three men and three women, all classified as fourth-year environmental design majors, participated in a follow-up interview. One woman and one man expected to graduate in May 1995; the remaining women and one of the remaining men expected to graduate by December 1995. The students voluntarily participated in the interview and consented to being audio-taped. They were chosen because they had all participated in the earlier survey, and gave their names to be chosen for a follow-up interview.

Materials. The interview was an informal one-on-one audio-taped dialogue between the interviewer and the participant. Questions asked were based primarily upon the answers the student had given in the previous survey, requesting further detail or information. The survey was used as a guideline for asking questions. Additional questions included whether the student had ever had a female professor for design studio, and questions on the participants' attitudes about the profession. Audio-taping was done with a small hand-held recorder.

Procedure. Interviews were conducted at the students' convenience. The interviewer met with the student in a private or semi-private area. The student and the experimenter went over the responses the student had given earlier, and the student would go into more detail about the responses. The student was generally allowed to talk as much as he or she wished. Interview times ranged from 15 minutes to over an hour. Students talked about long-term

and short-term goals, their perception of their architectural education and educators, and their definition of the word "mentor."

Results

Four of the participants had started college as architecture majors (two women and two men). Of these, both the men and one woman had had drafting experience in high school. All of these students commented on the very small number of women in the drafting classes in high school, and said that this may be due to the fact that drafting is generally classed as a "vocational" course, along with male-dominated courses such as shop. Both men and women stated that their parents had been generally supportive of their decision to enter architecture as a profession. They also mentioned that architecture hadn't effectively been presented as a career choice when they were in high school, and they hadn't known much at all about the profession before they entered the major.

All of the men intended to eventually practice architecture after graduation. One of the women planned to teach design after acquiring the necessary degrees and one woman planned to go into a different field. The woman who planned to teach felt that architectural practice "is not about design anymore." "The only place that it matters is academia," Since design was important to her, she chose to stay in the university environment.

Two of the women occasionally worked in the studio or had in the past. All of the men worked in the studio at least occasionally. All of the students said that they felt the studio is an effective space to get work done in. The women all mentioned feeling unsafe walking to and from the building, and felt the lighting around the

building was inadequate. One woman mentioned seeing "anti-women decor" (suggestively-posed photos of nude women) in fellow students' spaces.

When asked to define what a "mentor" meant to them, the men tended to describe a relationship that was more professional in nature--"a professor that would provide good feedback on my design projects" on a one-on-one basis and nothing more. Women tended to describe a relationship that was more personal in nature--"a professor that takes an interest in things that are going on in my life and who also helps with design problems." All of the women and one of the men I spoke to said they had a professor they would consider a mentor.

All of the women spoke of being treated inappropriately by a professor or another student. One woman had been repeatedly harassed by a design professor, who would touch her inappropriately in the studio setting or would ask her out. She wrote her complaints on a teacher evaluation form but said nothing ever came of it. Another said that her professor made comments about women in design, and praised her projects in class but gave her lower grades than the rest of the class. This woman had planned to protest her grade after the course was over, but decided against it, because the people who said they would support her "disappeared" when they received their own grades. The third woman talked about being sexually harassed by a fellow student while trying to work in the studio.

All the students talked about the difficulty they foresaw in balancing the practice of architecture with relationships or family.

They all said that their relationship or family would take priority over practice. One of the males who is married and a father spoke about the current difficulty he was having studying architecture and being required by his professor to spend a certain amount of time at the studio. He was concerned that he was not spending enough time with his family.

Experiment 3: Juries

Method

Participants. A total of twenty male students and fourteen female students participated in my study of juried critiques, as well as eight male jurors and professors and 4 female jurors and professors. The first critique had eight male students, two female students and four male jurors. The second group had five male students, six female students, two male jurors and 2 female jurors. The third group consisted of seven male students, six female students, two male jurors and two female jurors. Students were all in second-, third- or fourth-year design studios, while jurors were a combination of studio professors, non-studio professors and laypeople. All participants consented to be audio-taped and observed and were not compensated.

Materials. The critiques were recorded using a small hand-held tape recorder. Physical movement was observed and recorded by hand onto a tally sheet designed for the experiment(See Appendix C). Pertinent information from the audio tape was recorded by hand at a later date onto a tally sheet designed for the experiment (see Appendix C).

Procedure. Three different critiques were observed at different times in the school year. All of the critiques observed were the final ones for the particular projects being discussed. Students and jurors were made aware they were being observed and audio-taped before the start of the critiques, and signed consent forms. The critiques all had a presentation area where the student and his or her models and drawings were located, and an audience area, the front row of which was occupied by the jurors. Two of the critiques were juried by professors while one of them was juried by laypeople, a committee serving as the class's "client." I watched the critiques and recorded the movements and gestures of the participants. Later, I listened to the audio tape and timed the presentations of the students as well as the jurors. I also recorded numbers of interruptions made by students and jurors and kinds of responses. Aggressive responses were defined as replies that were argumentative or defensive towards the juror, whereas passive replies were cases in which the student agreed with or deferred to the juror.

Results

Women were slightly more likely to position themselves with their hands clasped in front, a more 'demure' position (43% as opposed to 30% men). Men were more likely to have their hands by their sides (45% versus 21% women). Thirty-five percent of the women used a noticeable number of hand gestures, whereas only 15% of the men did this. Men were far more likely to move from where they were standing during the critique; women were more likely to root themselves in one position (80% of the men changed

position versus 43% of the women). Men were slightly more likely to speak to the audience rather than away, with seventy percent of the men speaking directly to the audience and fifty-seven percent of the women doing so. Jurors moved from their seats to examine 75% of the men's projects; they did this with only fifty percent of the women.

The results for the content analysis were divided into a series of ratios. The average presentation time was 45% of the total average critique time for men, but only 14% of the total critique time for women; men talked much more than women did during their respective presentations. During mixed group presentations, men also talked more than the women in their groups did. Women were also much more likely to insert "ums" or other fillers into their speech; the average number of filler words per minute was 1.01 for women and only .67 for men. The ratio of aggressive response to passive response was much higher for the males as well (91% for men and 46% for women). However, possibly due to the low number of females in my sample space, the number of jurors' interruptions per minute was almost equal for males and females (.47 per minute for males, .43 per minute for females).

Discussion

Although the sample space was small, findings tend to support the hypothesis. In each of the experiments there were differences between men and women's experiences and attitudes. Findings regarding women and juried critiques also seem to support results found in the study mentioned in the introduction. Women spoke less

during their critiques and were much less likely to respond aggressively. Women also were more likely to use filler words in their speech, indicating they were less comfortable in the critique situation, and possibly less sure of themselves than the men. This study may contribute additional data toward the overall body of data being accumulated by people who are studying gender roles in architectural education. The data in this study suggests that there are differences in men and women's perceptions of their architectural educations well enough to warrant a further study. The research would be enhanced if people from different universities were included in the subject population, and if a wider range of critiques with different conditions were investigated. Additionally, more interviews would have helped to clarify the implications of the questionnaire data.

The data did not directly answer the question of why female architecture students are less likely to become architects, although different reasons were suggested, among them gender biases in teaching, lack of female architects as role models, the perception of the profession as being a male one, and lack of education about the realities of the profession as a whole. As architectural educators become more aware of the gender biases inherent in architectural education, and compensate for these biases, more women will feel comfortable in the discipline and practice of architecture.

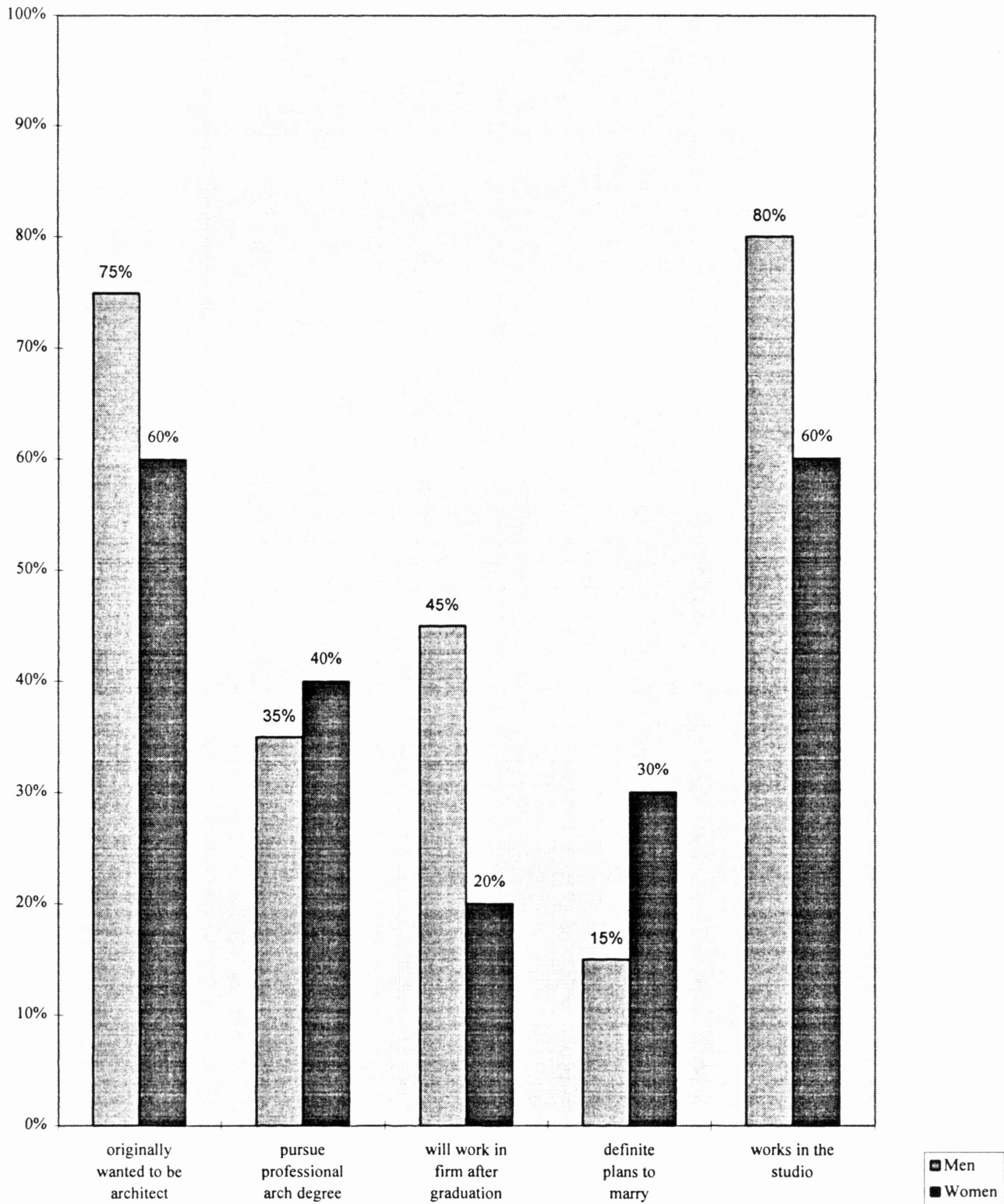
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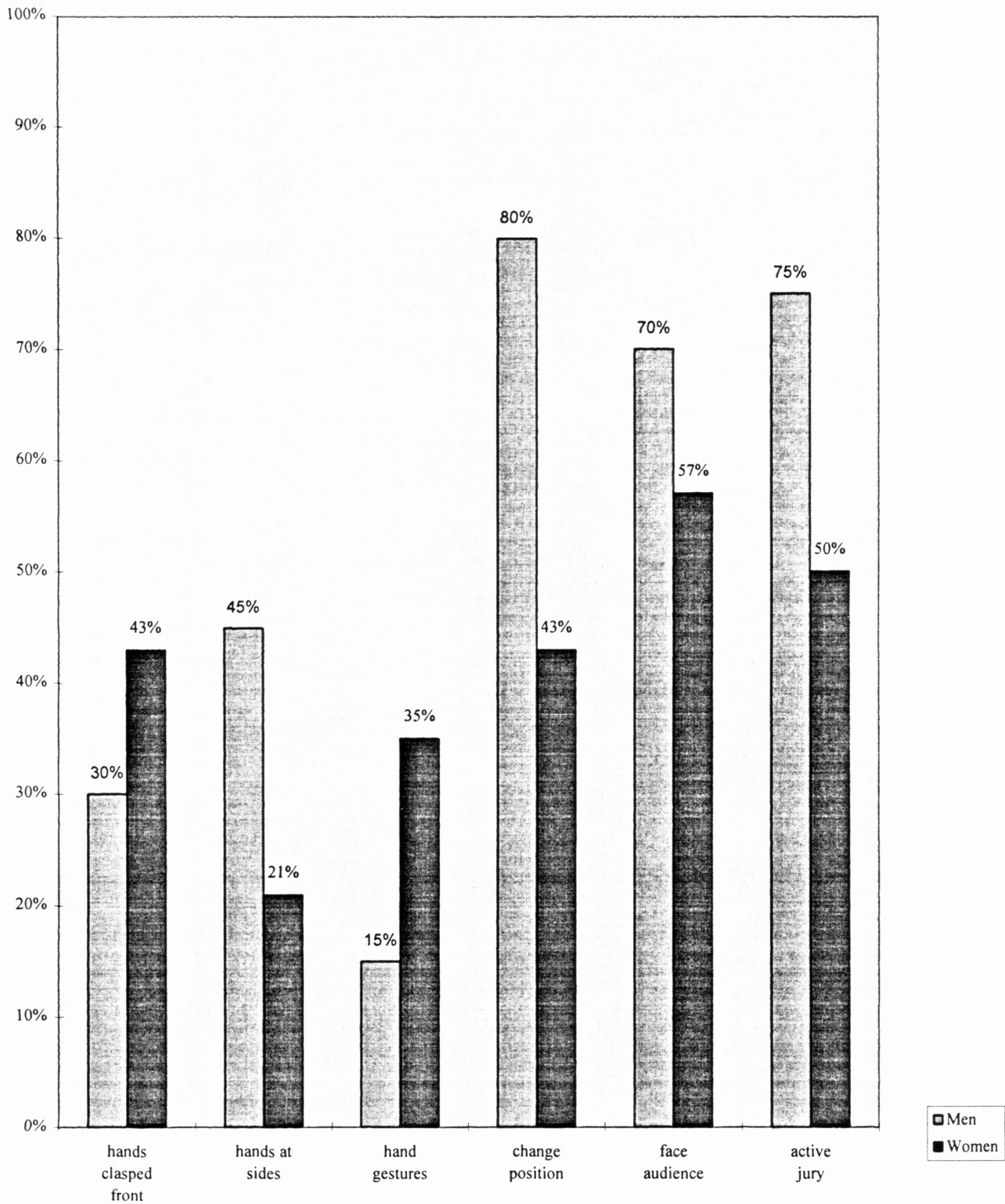
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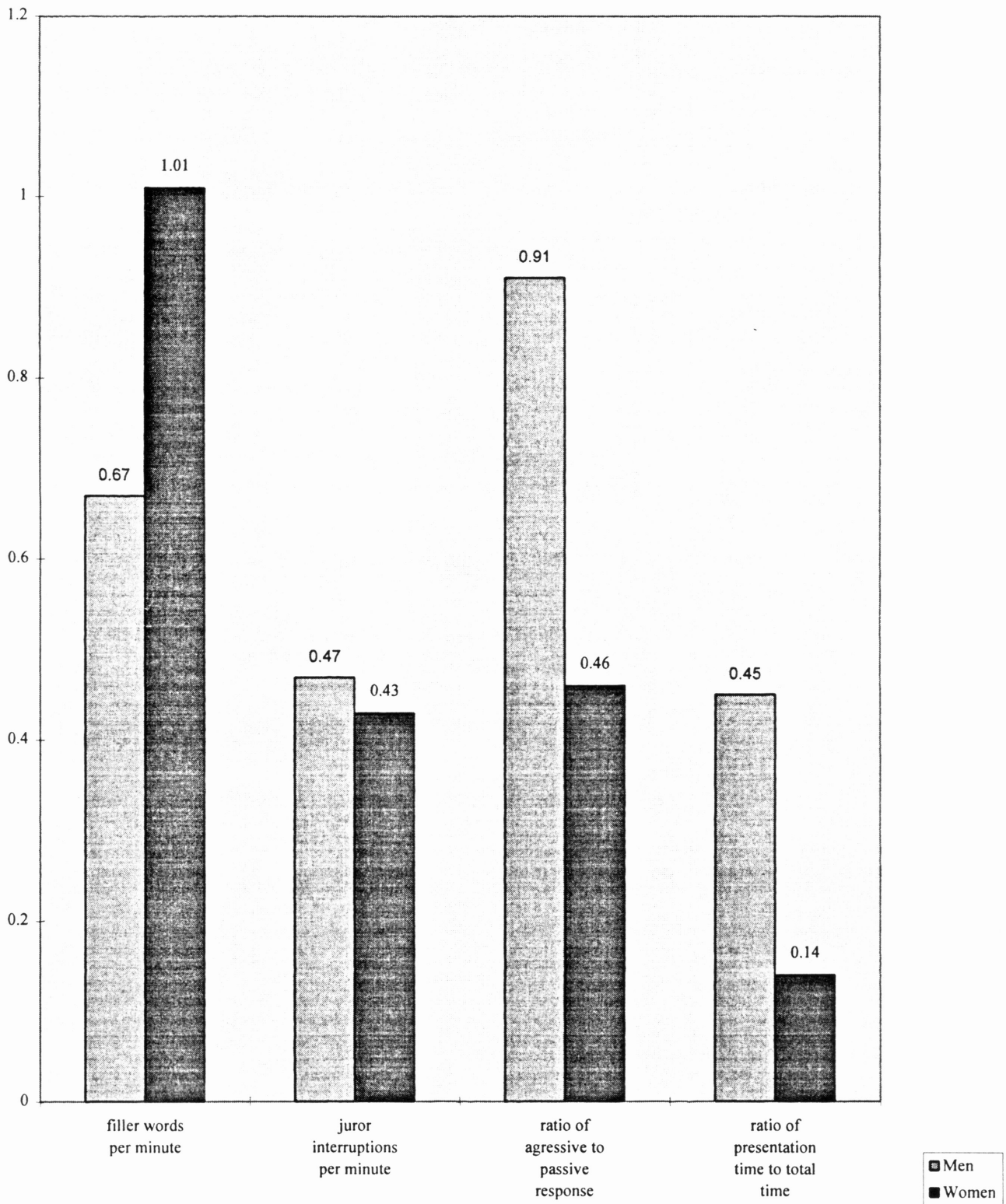
Questionnaire Results



Behavior Mapping Results



Content Analysis Results



Appendix A: Questionnaire

This questionnaire is to supplement my research for my Honors Undergraduate Research project. It is designed to survey students' reactions to their architectural education and their experience at the university. Please fill it out as completely as possible and return it to the box located in the architecture building. I need as many responses as I can get in order to get an accurate sample of students' attitudes. If you have any questions or comments on the questionnaire, or would like the results of the research when it is completed, please put your name and a way to reach you in this box and I will get back to you. Thank you.

1. What year did you begin the environmental design program at A&M? _____

2. What year do you expect to graduate from the program? _____

3. Did you start out in the design program when you entered college? ___Y ___N
If not, what was your original major or field of study? _____

4. Why did you decide to study environmental design? (check all that apply)

- Parent / relative in the field
 - Parent / relative's wishes
 - Interested in architecture as a career
 - Interested in architecture without an intention to practice
 - Interested in a related field
 - Interested as a stepping stone to another career
 - Other (please explain) : _____
-

5. What do you plan to do after you graduate from A&M?

- Pursue a professional architecture degree
 - Go to graduate school for an architecturally-related degree
 - Go to graduate school for a non-architecturally-related degree
 - Pursue a job working in an architect's firm
 - Pursue an architecturally-related job
 - Pursue a job in an entirely different field
 - Travel
 - Marry
 - Other (please explain) : _____
-

6. Do you work in the studio? ___Y ___N
If no, why not? (check all that apply)

- Space to work at home
 - Space to work elsewhere
 - Work better alone
 - Not enough space at the building
 - Don't feel safe leaving building at night
 - Don't feel safe in building at night
 - Transportation difficulties
 - Other (please explain) : _____
-

7. Have you ever had a professor or member of the faculty at A&M in the architecture department that you would consider a mentor? Y N If so, was the professor male or female ?

Please describe the incident: _____

8. Have you ever felt that you were treated inappropriately by a faculty member? Y N
By another student? Y N
On what grounds do you believe the treatment took place?

- Discrimination based on race
- Discrimination based on religion
- Discrimination based on gender
- Discrimination based on sexual orientation
- Unfair grade
- Other

Please describe the incident: _____

9. Overall, how would you rate your architectural education, on a scale of 1 to 5, where 1 is very satisfied and 5 is very dissatisfied?

1	2	3	4	5
V.S.				V. DS.

10. Sex: F M Race: _____ Age: _____
Marital Status: _____ Children?: Y N Number: _____

11. How do you think that the dedicated practice of architecture influences opportunities for significant relationships or marriage?

- Does not have any bearing
- Reduces opportunities only slightly
- Reduces opportunities somewhat
- Reduces opportunities a great deal
- Makes significant relationships/marriage impossible

12. How do you think the dedicated practice of architecture affects an individual with respect to parenthood?

- Does not make any negative bearing on successful parenting
- Makes being a successful parent slightly difficult
- Makes being a successful parent somewhat difficult
- Makes being a successful parent very difficult
- Makes being a successful parent impossible

13. Please add any comments you would like to make.
Please give your name if you would like to be contacted for a follow-up interview.

Appendix B: Survey results

Total number of male respondents: **20**
 Total number of female respondents: **10**

M	%	F	%	
2	10	0		Began the Environmental design program before 1991
11	55	3	30	Began the Environmental design program at A&M in 1991
6	30	5	50	Began the Environmental design program at A&M in 1992
1	5	2	20	Began the Environmental design program at A&M in 1993
16	80	9	90	Expect to graduate from the program in 1995
4	20	1	10	Expect to graduate from the program in 1996
13	65	6	60	Started in design program when entered college
7	35	4	40	Started in a different field of study

Reasons for studying environmental design:

M	%	F	%	
0		0		Parent / relative in the field
1	5	0		Parent / relative's wishes
15	75	6	60	Interested in architecture as a career
3	15	2	20	Interested in architecture without an intention to practice
4	20	1	10	Interested in a related field
3	15	2	20	Interested as a stepping stone to another career
3	15	2	20	Other

Plans after graduation:

M	%	F	%	
7	35	4	40	Pursue a professional architecture degree
8	40	3	30	Go to graduate school for an architecturally-related degree
1	5	1	10	Go to graduate school for a non-architecturally-related degree
9	45	2	20	Pursue a job working in an architect's firm
8	40	4	40	Pursue an architecturally-related job
1	5	0		Pursue a job in an entirely different field
2	10	2	20	Travel
3	15	3	30	Marry
4	20	0		Other

M % F %

16 **80** 6 **60** Work in the studio

Do not work in the studio because:

7 **35** 5 **50** Space to work at home
 1 **5** 0 Space to work elsewhere
 3 **15** 3 **30** Work better alone
 2 **10** 1 **10** Not enough space at the building
 0 1 **10** Don't feel safe leaving building at night
 0 0 Don't feel safe in building at night
 0 1 **10** Transportation difficulties
 5 **25** 3 **30** Other

M % F %

14 **70** 8 **80** Has had a mentor-type relationship with a male professor
 2 **10** 0 Has had a mentor-type relationship with a female professor

M % F %

11 **55** 7 **70** Has felt inappropriate treatment from a faculty member
 2 **10** 1 **10** Has felt inappropriate treatment from another student

Believed treatment was:

0 0 Discrimination based on race
 1 **5** 0 Discrimination based on religion
 2 **10** 3 **30** Discrimination based on gender
 0 0 Discrimination based on sexual orientation
 8 **40** 2 **20** Unfair grade
 7 **35** 2 **20** Other

Overall rating of architectural education:

M % F %

3 **15** 1 **10** 1 (very satisfied)
 11 **55** 7 **70** 2 (moderately satisfied)
 4 **20** 1 **10** 3
 1 **5** 0 4 (moderately dissatisfied)
 1 **5** 0 5 (very dissatisfied)

Opinions on how practice of architecture affects opportunities for significant relationships:

M	%	F	%	
8	40	3	30	Does not have any bearing
2	10	2	20	Reduces opportunities only slightly
5	25	3	30	Reduces opportunities somewhat
4	20	2	20	Reduces opportunities a great deal
1	5	0		Makes significant relationships/marriage impossible

Opinions on how practice of architecture affects parenthood:

M	%	F	%	
6	30	3	30	Does not make any negative bearing on successful parenting
6	30	2	20	Makes being a successful parent slightly difficult
4	20	2	20	Makes being a successful parent somewhat difficult
4	20	2	20	Makes being a successful parent very difficult
1	5	0		Makes being a successful parent impossible

Race of respondents:

M	%	F	%	
17	85	10	100	White
2	10	0		Hispanic
1	5	0		Indian

Age of respondents:

M	%	F	%	
1	5	0	20	
7	35	7	70	21
8	40	3	30	22
1	5	0		23
3	15	0		over 23

Marital status of respondents:

M	%	F	%	
3	15			Married
17	85	10	100	Single

Number of respondents with children:

M	%	F	%
1	5	0	

Appendix C: Tally Sheet for Behavior Mapping

Critique #____ Student: M F Number of jurors:_____
Sex: _____

Student behavior

Posture:

Speaks to wall
Speaks to audience

Location Map:

Juror Behavior:

Initial position: Standing Sitting

Posture:

Describe movement briefly:

Appendix D: Content Analysis Tally Sheet

Critique #___ Student: M F Number of jurors:_____

Time spent on presentation:_____

Time spent on jurors' comments:_____

Sex: _____

Number of females in studio:_____ Number of males:_____

Student behavior

Interruptions by student:

Neutral/female gender reference:

Male gender reference:

Pause:

“Um”/filler:

Change in voice volume(describe):

Agressive response:

Concedes to juror:

Male Juror(s) behavior

Interruptions by juror(s):

Neutral/female gender reference:

Male gender reference:

Female Juror(s) behavior

Interruptions by juror(s):

Neutral/female gender reference:

Male gender reference:

Appendix E: Behavior-Mapping Results

Total from all groups

M	%	F	%	
20		14		Total number in group
6	30	6	43	Hands clasped front
9	45	3	21	hands at sides
2	10	1	7	hands clasped back
3	15	5	35	hand gestures (many)
16	80	6	43	moves position one or more times
14	70	8	57	speaks primarily to audience
6	30	6	43	speaks away from audience
15	75	7	50	jurors move or respond during presentation

Group 1: all male jurors, male prof

M	%	F	%	
8		2		Total number in group
2	25	0		Hands clasped front
4	50	0		hands at sides
1	12	0		hands clasped back
1	12	2	100	hand gestures (many)
8	100	1	50	moves position one or more times
7	88	1	50	speaks primarily to audience
1	12	1	50	speaks away from audience
8	100	2	100	jurors move or respond during presentation

Group 2: laypeople (1 male, 3 female) as jurors, male prof

M	%	F	%	
5		6		Total number in group
1	20	1	17	Hands clasped front

4	80	2	33	hands at sides
0		0		hands clasped back
0		4	66	holding notes
1	20	3	50	hand gestures (many)
4	80	3	50	moves position one or more times
4	80	4	66	speaks primarily to audience
1	20	2	33	speaks away from audience
2	40	0		jurors move or respond during presentation

Group 3: 1 female, 3 male jurors, female prof

M	%	F	%	
7		6		Total number in group
3	43	5	83	Hands clasped front
1	14	1	17	hands at sides
0		0		hands clasped back
3	43	0		hand gestures (many)
4	57	2	33	moves position one or more times
3	43	2	33	speaks primarily to audience
4	57	4	66	speaks away from audience
5	71	5	83	jurors move or respond during presentation

Projects presented on a group site model. Jurors were attentive and interested, gave feedback, discussion.

Appendix F: Results for Content Analysis

All measured in ratios.

M	F	
.67	1.01	Average number of "um's" per minute
.91	.46	Ratio of aggressive to passive responses
.47	.43	Juror interruptions per minute
13	7	Total