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Gender and higher education: Analysis of verbal interactions between male or female students and trainers of both genders in adult training.

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Abstract

This paper presents our exploratory study results about the role of gender in verbal interactions between students and trainers (of both genders) in higher education in France. In France, there are a lot of studies regarding the interactions in the classroom according to gender in primary and secondary schools, but little concerning higher education. That's why we became interested in training staff practices with adults and we began an 'experimental' study by observing verbal interactions according to gender in the classroom with the trainers and students at the University of Montpellier III.

Educational sociologists and psychologists have highlighted the existence of a 'hidden curriculum' in schools (M.Duru-Bellat, 1998; A.Jarlégan, 1999; C.Zaidman, 1996), a basis of gender-based differences. According to M.Duru-Bellat (1998) it consists of 'various attitudes and values, varying from basic intellectual automatisms to the idea that one creates of one's self, according confrontations with others.' Involuntarily, teachers develop expectations and send an implicit message to students: disobedience by boys is tolerated but not that of girls, girls' performances result from work and boys' from their abilities. Consequently, girls and boys develop a different relationship with knowledge, associate attitudes and abilities with gender and most importantly acquire a gender-based perception of their own abilities.

Daily classroom activities, small gestures and even testing are all influenced by the pupils' gender. A. Jarlégan's study on interactions during maths class has shown that boys received more individual interactions, more information, open questions, and feedback and girls received less cognitive remarks (answers). In general, and not only in maths, it seems that teachers have more interaction with boys (N.Mosconi, 2004).

We started from this established fact from previous studies of different teaching practices according to pupil gender in primary and secondary schools in France. That is to say that unconsciously and through the influence of gender stereotypes, teachers develop expectations towards girls and boys that are expressed in their teaching attitudes and interactions in the classroom (Duru-Bellat, 1998; Baudoux and Noircent, 1995, Jarlégan, 1999).

So with this exploratory study we have tried to find out if these phenomena exist also with adults and in higher education. And we have raised these questions: If today's adult learners have acquired this 'hidden curriculum', is their behavior in the classroom the same as that which is observed in children? Do the training staff develop the same

gender-based behavior as that which has been observed in primary and secondary schools? Are women and men quantitatively and qualitatively called upon in the same way? Do men and women interact the same way with the training staff?

We feel it is important for trainers in higher education as well as for future trainers to show the importance of the gender variable in adult learning. Being an exploratory study our initial aim was to observe and analyze the verbal interactions between adults and the training staff in higher education according to gender in order to reveal initial quantitative information and instigate future research. We hypothesize that the training staff, in France, not having been trained regarding gender-based adult learning, will develop the same behavior as that observed in primary and secondary teachers.

Methodology

Our sample is made up of two coed groups of students at the University of Montpellier III, as well as two male trainers and a female trainer. The first group, a second-year Master's Degree program, 'Counseling, Training, Education', is composed of sixteen women and three men aged from twenty-five to fifty (some of students have chosen the teacher training). The second student group consists of trainees studying in order to get a University degree ('Preparation in Trainer Functions') which will allow them to become adult trainers, this second group is made up of eleven women and nine men aged from twenty-five to fifty-five.

From January to April 2009, we observed them in the classroom, with an average length of three hours per session. In all, this amounts to ten observations with thirty-eight students, or twenty-six women and twelve men. Each sample group was observed the same number of times (five) with a male trainer and a female trainer. We specify that it is the same female trainer that taught both the Master's and professional training group, however each class had a different male trainer, one for the Master's and another for the professional training students. This sample is not completely representative of a coed class, the group of students in the Master's had more women and this is why we preferred the academic degree 'Preparation in Trainer Functions' for our observations (where six observations were carried out instead of four in the Master's).

Our observation table was created after observations. We have realized a first observation, a sort of 'spotting' in order to regroup the different communications observed in verbal interactions in the classroom. After this 'spotting', we have created categories in order to regroup the communication observed between the training staff and the students (for example exchanges, answers, spontaneous answers...). So, during the ten classroom observations we took notes and taped audio recordings, we then classified the data according to the categories defined, we will present these further on in the discussion. Our aim, here, is to reveal the different forms of verbal interactions according to gender between an adult group and the trainers.

Results

While presenting our results, we will refer to the study of C.Baudoux and A.Noircent (1995). The observed group was made up of students between the ages of seventeen and twenty. In France, there are few studies about the interactions in the classroom according to gender concerning higher education. That's why we have chosen this study, the sample age is closer to our sample. The authors studied the interactions between the students and teachers in a 'college preparatory school' in Quebec, that is to say students aged from seventeen to twenty, more precisely after secondary school and before university. The authors have observed different expectations and teaching practices according to student gender. We will base our study on this one and we will observe if their results are also found in the classroom with adults in training.

1.Training staff communication towards adults.

1. *The totality of trainer communication (gender not considered) towards students (gender not considered).*

Gender not considered	Communication towards students (individually)	Part of communication towards students	Communication towards the whole group	Part of communication towards the whole group	Total
Trainers	474	41%	679	59%	1153 (100%)

Trainers have more group interactions: we have recorded more than a thousand contacts (1153) from three trainers. The majority (nearly 60%) of these are directed towards the whole group.

2. *The distribution of trainer communication towards students (gender not considered) according to student gender.*

Gender	Communication towards women	Communication towards men	Part of communication towards women	Total	Part of total
Female trainer	154	132	54%	286	60%
Male trainers	130	58	69%	188	40%
Total	284	190	60%	474	100%

If we observe the distribution: the majority (60%) of individual communication is directed towards female students, versus 40% towards male students. For our study, the training staff communicates more with female students (however we've taken into account the higher percentage of females in our sample).

3. *The distribution of the totality of trainer communication towards students according to gender.*

We then looked more closely to distinguish the distribution of the trainers' verbal interactions according to gender: our results show a high percentage (60%) of female trainer interactions with adults. However, it's important to note that for the female trainer the distribution of interactions are more equally distributed between female and male students (54% with women and 46% with men) compared to the interactions with male trainers, which are mainly with female students (70%). To conclude, in the observed classes, this female trainer communicates more with adults and there are more verbal interactions with women whatever the gender of the trainer may be.

4. *Categories of trainer communication.*

We've regrouped trainer communication into the categories:

- Exchanges (1)
- the trainer answering a student after being questioned or after a comment by a student (2)
- asking the students questions (3)
- spontaneous contact with a student (4)
- when the trainer allows the students to speak (5)
- a request for the student to develop their answer (6)
- a request for a student to give an answer to the group (7)

Gender	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Other	Total	Part of total
Female trainer	105 (66%)	48 (34%)	44 (75%)	43 (86%)	19 (80%)	8 (57%)	8 (100%)	11 (61%)	286	60%
Male trainers	53 (34%)	95 (66%)	15 (25%)	7 (14%)	5 (20%)	6 (43%)	/	7 (39%)	188	40%
Total	158	143	59	50	24	14	8	18	474	100%

When observing each category, the percentage of female trainer contact is always greater except for one category "answering a student after being questioned or after a comment by a student". Regarding this category, the male trainers have the most verbal interactions with the adults.

5. *The distribution of trainer communication according to the category, student gender and trainer gender.*

Categories of trainer communication	Communication with women	Communication with men	Total	Part of communication with women
Female trainer				
(1)	60	45	105	57%
(2)	37	11	48	77%
(3)	17	27	44	39%
(4)	18	25	43	42%
(5)	10	9	19	53%
(6)	4	4	8	50%
(7)	4	4	8	50%
Other	4	7	11	36%
Male trainer				
(1)	38	15	53	72%
(2)	67	28	95	71%
(3)	13	2	15	87%
(4)	6	1	7	86%
(5)	2	3	5	40%
(6)	1	5	6	17%
(7)	/	/	/	/
Other	3	4	7	43%
Total	284	190	474	60%

- (1) Exchanges;
- (2) the trainer answering a student after being questioned or after a comment by a student;
- (3) asking the students questions;
- (4) spontaneous contact with a student;
- (5) when the trainer allows the students to speak;
- (6) a request for the student to develop their answer;
- (7) a request for a student to give an answer to the group

If we analyse the verbal interactions according to trainer and student gender: Concerning the female trainer, she asks male students more questions and interacts more with them (roughly 60% of these interactions are directed towards men). We have observed an equal distribution for 'a request for the student to develop their answer' and 'a request for a student to give an answer to the group', a female trainer addresses women and men equally in these two situations.

Regarding the two male trainers, the majority of their interactions are with women, except in the category 'a request for the student to develop their answer' in which 80% are directed towards men.

The main bias of our research, the high percentage of women in our sample, takes on a special meaning: men are the minority and despite this the verbal interactions between training staff and men are very significant: the male trainers interact more with them (80%) when requesting a more developed answer; and the female trainer also asks men more questions (roughly 60%).

According to our study, men in the sample are more often the subject of cognitive interactions with the training staff. Based on this point, our results agree with the study by C. Baudoux and A.Noircent (1995) which shows that boys' answers were examined more by trainers in order to detect any learning disabilities. These interactions lead to the development of the expression of their ideas, their difficulties, and allow for the necessary feedback in acquiring new skills and developing autonomy.

In summary, quantitatively, the training staff interacts more with women. However, qualitatively, trainers of both genders have more interaction with men, which encourages the feedback necessary for learners.

II. Adult communication directed towards the training staff.

1. The number of communicative contacts from students (gender not considered) towards trainers (gender not considered).

Gender not considered	Communication towards trainers (individually)	Part of communication towards trainers	Communication between students - towards the group	Part of communication between students - towards the group	Total
Students	892	73%	334	27%	1226 100%

Here too, we have recorded more than a thousand contacts (1226) originating from students.

The majority of them (73%) are directed towards trainers.

2. The distribution of communication from students towards trainers (gender not considered) according to trainer gender.

Gender	Communication with female trainer	Communication with male trainer	Part of communication with female trainer	Total	Part of total
Women	393	220	64%	613	69%
Men	183	96	66%	279	31%
Total	576	316	65%	892	100%

For this sample the majority of verbal interactions, that is to say 65%, were recorded in the classroom with a female trainer and only 35% with a male trainer.

The information obtained allows us to say that students communicate more when they are in a classroom environment with this female trainer. However, these results depend also on the context, the type of class: whether it encourages participation or on the contrary if it is during a lecture course.

3. The distribution of total communication from students towards trainers according to gender.

In the next step we crossed the gender variables of the students and those of the trainers. In other words, our aim was to see which group of students, women or men, communicates more in a given situation, that being with a female or male trainer.

Out of the thirty-eight students (male and female), our results show a strong trend of participation (roughly 70%) of female student communication (once again this result depends on the high part of women in our sample)

Then we have tried to determine the average number of verbal interactions for each woman and each man. And we have observed that this number of verbal interactions is proportional to the number of men and women present (we recorded 23 interactions on average for the men and the women), so quantitatively there is an equal number of female and male communicative contacts with the training staff.

When looking more closely, we can see that female students, as well as male students in the observed classes, communicate more with this female trainer.

During their study, C.Baudoux and A.Noircent (1995), observed that girls were 'less active', that is to say made less spontaneous comments, and spoke less in class if they weren't called on. According to the authors, girls develop their own retreat strategy which is to keep quiet. Our observations for the sample concerned are different, it appears that women learners develop a different position than that observed by C. Baudoux and A.Noircent (1995). Firstly, our sample is older than the group from Quebec and in turn is more confident when speaking to the training staff. Moreover, we are not ignoring the bias of our sample, there are more women. However, as we have indicated, we have privileged our observations with the coed professional training program group, and have observed that the number of verbal interactions is proportional to the number of men and women present.

Thus, it is possible to assume that once adult, women develop a more 'active' role in learning. We can also consider that the context of professional training and going back to school instigate a personal commitment from the students (with a strong desire for professional insertion).

4. Categories of student communication.

We've organized adult communication towards the training staff into the following categories:

- Spontaneous participation (1)
- Spontaneous answers (2)
- Exchanges (3)
- Spontaneous questions (4)
- Answers to questions addressed personally (5)
- Answers after the trainer allowed students to speak (6)

Gender	(1)	(2)	(3)	(4)	(5)	(6)	Other	Total	Part of total
Women	300	127	96	62	19	8	1	613	69%
Men	130	46	54	14	28	7	/	279	31%
Total	430	173	150	76	47	15	1	892	100%

The situations are proportional in the number of women and men present except for two categories. When observing closely, women ask twice as many questions (more than 60 recorded that is to say an average of 2.4 questions for women) as men (only 14 so an average of 1,2 question). But they are individually questioned three times less by the training staff (there is an average of 0,7 answer for women and an average of 2,3 answers for men).

With spontaneous questions by women being superior to those of men, we can validate our previous observation of the 'active' role of women in the classroom.

5. *Distribution of student communication according to the category of student gender and trainer gender.*

Categories of student communication	Communication with female trainer	Communication with male trainers	Total	Part of communication with female trainer
Women				
(1)	208	92	300	69%
(2)	85	42	127	67%
(3)	61	35	96	64%
(4)	20	42	62	32%
(5)	11	8	19	58%
(6)	8	/	8	100%
Other	/	1	1	0%
Men				
(1)	69	61	130	53%
(2)	37	9	46	80%
(3)	44	10	54	81%
(4)	5	9	14	36%
(5)	22	6	28	79%
(6)	6	1	7	86%
Other	/	/	/	/
Total	576	316	892	65%

- (1) Spontaneous participation;
- (2) Spontaneous answers;
- (3) Exchanges;
- (4) Spontaneous questions;
- (5) Answers to questions addressed personally;
- (6) Answers after the trainer allowed students to speak;

If we analyze the distribution of the verbal interactions according to trainer gender and the categories of communication:

Concerning the female students, the majority of communication is directed towards this female trainer. Except for one category: it is very interesting to observe that women ask more spontaneous questions when they are with a male trainer (68% of questions asked by female students were with male trainers compared to only 32% with the female trainer).

Concerning the male students, we've made the same observations: a strong trend of participation in communication towards the female trainer except in the category of 'spontaneous questions' where 65% of the questions asked by male students were recorded with male trainers.

To conclude, both women and men ask more spontaneous questions when with a male trainer. This result agrees with our previous observation: trainers have the most verbal interactions with adults in one category 'the trainer answering a student after being questioned or after a comment by a student'.

6. Communication between students in a group according to the gender of the students.

In their study, C. Baudoux and A.Noircent (1995), have proven that girls play a more subordinate role to boys and give boys the leadership roles.

Our information for this sample is different: according to our observations women have a very active role in the verbal interactions with men. Female students question men more (we recorded questions 17 times) than the contrary (only one question asked by a man). It is mainly women that react or intervene spontaneously with men (we recorded 45 repeated occasions) than the contrary (only 12 occasions for men).

Women really have an 'active role' (opposed to the 'subordinate role' developed by C. Baudoux et A.Noircent (1995)) in their verbal interactions in classroom with the training staff and also with other students.

Conclusion

To conclude this paper, we will summarize our results in two points:

- It appears that women have an active role in their verbal interactions with the trainers but also with other students. The retreat strategies of silence shown in girls in the study by C. Baudoux and A.Noircent (1995) turn out to be nonexistent in adults in our sample.
- Trainers encourage cognitive interactions with men, both male and female trainers recreate some practices observed in primary and secondary schools. It is possible to assume, even when trainers in higher education are aware of

gender stereotypes, they continue to play a role in their verbal interactions with adults and in their expectations of men.

With this experimental study, our first aim is to reveal quantitative information about verbal interactions in the classroom according to gender with an adult sample in order to reveal initial information and instigate future research. That's why we chose not to go further into the analysis of the roles of psychological and ethnic factors. It is obvious that the verbal interactions that we have observed depend on the educational style of the trainers and the type of class; however, it appears imperative to increase future adult trainers' awareness of these gender stereotypes and phenomena of different expectations.

With this exploratory study we've strived to show the importance of the gender variable in adult learning, and the existing differences between male and female students by observing their verbal interactions with the training staff.

Education for citizenship is also education for male and female equality. Coeducation does not necessarily result in equality between group members. If there isn't the same 'treatment' from their female and male trainers, there can't be equality between male and female pupils and also between students. So with this study we want to show the importance of gender teacher training in primary schools as well as in Universities.

As for primary schools, we think that it is essential to develop the consideration of coeducation and the differences between both genders in higher education. But also develop a practice time analysis about learning with the gender topic, for trainers in higher education and future trainers and in particular for training teachers. The stakes are great: the development of the potential of adult female and male learners, independent of gender stereotypes, and even more importantly the professional insertion of these men and women depend on the trainers' practices.

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