

***A STUDY OF PRIMARY CLASSROOM INTERACTIONS: IS THERE STILL
GENDER IMBALANCE IN THE PRIMARY CLASSROOM?***

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Abstract

This study investigates the current situation of some gender issues in primary (key stage one) education, such as gender imbalance of classroom interaction and pupils' concentration levels at different stages of class. The present study is based on the observation of the classroom interactions of a carefully selected primary class in Northeast England. Throughout the observation which lasted two months, a modified version of INTERSECT was adopted to record the classroom interactions among teacher and pupils of different genders. Three findings became apparent after the study: there was no statistically significant gender imbalance in term of attention allocation from the teacher in the classroom; however girls tend to receive more positive responses from the teacher than boys do; boys tend to be more active in the early period of class while, in contrast, girls are getting more attention from their teacher in the later period of class. Above findings could have significant psychological and pedagogical implications although require further studies.

Key words: *gender, classroom interactions, attention allocation, interaction types, concentration*

1. Introduction

The present study aims to examine the classroom interaction, particularly the attention allocation of primary teacher and the different concentration periods of pupils in mixed – sex classroom. Based on the observation, the implications of classroom interactions for the construction of pupils’ gender identities are also to be discussed.

1.1 Teachers’ attention allocation in mixed – sex classes

The tendency of boys receiving more attentions from teachers in mixed – sex classroom has been widely accepted and proved by many scholars. Brophy and Good (1970) argued that boys tend to attract more attention from teachers and ‘appear to be generally more salient in the teacher’s perceptual field’; French and French (1984), after their observation of primary school lessons, worked out the conclusion that male pupils did get more attentions from teachers due to a small group of active boys. Also in their study, French and French pointed out that a small group of active male pupils who successfully attracted significant amount of attentions from their teacher was the main explanation for the imbalanced attention allocation of the teachers. In contrast Duffy et al (2002) argued that apart from the gender of student, gender of teacher and ‘gender’ of classroom subject can also influence the way teachers allocate their attention to boys and girls. They pointed out that although boys tend to have more interactions with teachers, ‘this tendency

was not the result of male students having initiated more direct verbal interactions with teachers’.

In short, the idea of boys receiving more attentions and, therefore, are more valued by educators has been proved again and again by a great number of scholars. Those mentioned previously are just some representatives of them. However, some noticeable changes have occurred in the education world during the past decade. Reasons behind these changes are complicated: social changes, economical changes, political changes are all important factors that are constantly pushing education into new situations.

Here in the UK, one of the major changes in education in the past decade is that girls have narrowed the gap with boys, and even over performed boys in many subjects, including some subjects traditionally considered as male’s subjects. Noble and Bradford (2000) describe what is happening as ‘a crisis’ (however I suggests this is inappropriate as it is gender biased to put it this way) for boys. According to their study, at key stage 1 level, girls perform better than boys do in literally all subjects, including English, Mathematics, and Science (1998). In the same year, 51.3% of girls gained five or more GCSE grade A* - C, that is 10.2% more than the boys’ figure. In fact, Gorard (2002) pointed out that ‘in examinations at all key stages, General Certificate of Secondary Education (GCSE), and A level, there was no gender gap’. Recent study of Younger et al (1999) even revealed that more classroom interactions are initiated by girls nowadays: 70% questions and requests

in classrooms are from girls. However in their study the idea that boys receive more attention from teachers remained unchallenged.

Since the balance of performances of boys and girls has shifted to a different direction in the UK, I believe there is a need to review the traditional belief of unequal attention allocation in classroom, which was frequently used to explain the success of boys in education in the past.

1.2 Education and the construction of pupils' gender identities

A major task of this study is to examine the role of classroom interactions, particularly the way teachers' attention is distributed, in the construction of pupils' gender identities. It is believed that the construction of gender identities is an extremely complicated process which combines both biological and social components. Here I have no intention to join the debate between biological determinists and social determinists. But I do believe that pupils' gender identities are both shaping and shaped by the education they go through. This view is supported by a school of scholars. For example, Walker and Milton (2006) suggested that teachers play key roles 'as sexuality educators of primary – school – age children' in the UK and Australia. Murphy and Gipps (1996) also, in their book, highlighted the importance of school education in shaping children's gender identities.

Anthropologists believe the forming of gender identities of children is actually part of the socialization process. School education is, without a doubt, one of the

important venues where children are socialised. It is generally believed that children, under normal circumstances, acquire their gender identities and recognize gender constancy before the age of seven, which is the end of key stage one education (Gorard, 2002; Kohlberg, 1966; Measor and Sikes, 1992; Nicolaisen, 1988). Therefore the present study focuses on the classroom interaction of key stage one, with the hope to identify the trace of the influence of the classroom interaction on children's' gender identities.

1.3 Pupils' concentration allocation

In the present study an interesting phenomenon is discovered: boys and girls seem to have different concentration levels at different stages of a teaching session. In short, boys tend to be involved in classroom discussion in a quicker way but also withdraw their interests quickly and easily; meanwhile, girls need more time to be fully involved, and they will dominate the classroom interactions of the second half of the teaching session. This is a message sent out by almost all observed teaching sessions of the present study. Detailed discussion will be provided in the following chapters.

2. The database

The observation took place in a primary state school in the north east of England between January 2007 and March 2007. The class observed is one of the year one classes in the school. The majority of the class pupils are five years old, a

small number of them (3 out of 27) are six this year. Throughout the two months period 11 primary sciences teaching sessions were observed. Each observation lasts 30 minutes. In fact each class last approximately 45 minutes, but the teacher normally leaves the last 10 to 15 minutes for group activities in which the interactions between teacher and pupils are minimized. Therefore the observation only focuses on the first 30 minutes which promise continuous and sufficient classroom interactions.

2.1 The school and class choice

There are some reasons why the author to chose this school and this class.

Firstly this school is a typical British state school located in an area where the majority of local residents are working class. Compared with those private schools, I suggest it is a better representative of the sort of education that most pupils in Britain go through at primary level.

Secondly, year one is the first year of formal education for pupils. What they see and learn in this year is apparently different from what they got from nursery level. Therefore the author suggests year one is a vital year for pupils to adapt themselves in formal educational environment and reposition themselves, consciously or unconsciously. It is also at this stage their gender identities start to show. As Nicolaisen (1998) pointed out that the differentiation of children's gender roles is 'traceable to age two and pronounced about age five or six'. This is the time when boys and girls are about to pronounce their gender identities. The author,

therefore, believes that the education they get from school at this stage is influential in the forming of their gender identities because school is one of the major venues for children of this age to socialise themselves.

Apart from the above reasons, there are some other points that help the author to make this choice. The size of this class is reasonable and manageable given the purpose of the observation. There are 27 pupils in this class; among them are 15 boys and 12 girls. This ensures that neither gender can dominate the classroom simply because there is a greater number of it. Another plus point of this class is the way they arrange the seats in classroom: there is no seats arrangement at all. Actually during the class pupils sit on the floor mat instead of on fixed chairs and desks. This means that pupils are free to choose where they want to sit, who to sit next to, as well as how close to be from the teacher in the class. They are even free to move to a more preferable place throughout the class. Normally the teacher will not intervene unless some extra 'naughty' pupils sit too close to each other. From time to time, the teacher may ask pupils who are not behaving in the front rows to move to the back rows as a sort of punishment. But this rarely happens. This provides the author with an opportunity to observe the way pupils arrange seats for themselves and leads to some interesting findings.

2.2 INTERSECT

In their study, Sadker et al (1984) developed the so called INTERSECT (Interactions for Sex Equity in Classroom Teaching) as a tailor made instrument for

classroom interaction observations with the purpose of detecting gender differentiated attention allocations. Duffy et al (2002) suggested that INTERSECT ‘aids in the conversion of general classroom interactions into organized, measurable elements’.

The present study adopts a modified version of INTERSECT given the fact that although it is designed for similar purpose of this study, Sadker aimed to use it at high school and college level. Before the actual observation started, the author conducted several piloting observations which indicated that the original INTERSECT is not 100% fit for observations at the primary stage, year one level. Throughout the observation, some characteristics of the teaching at year one level became clearer. Firstly the interactions between teacher and pupils are mostly verbally initiated by the teacher; secondly the interactions at this level tend to be short and simple due to pupils’ lack of abilities of understanding and communicating; thirdly most children take being selected for individual interactions by the teacher as a praise, therefore they will put their hands up whenever the teacher ask questions, even when they have no idea about the answer at all.

Given the above characters, the author modifies the INTERSECT into a simpler version. Two major changes have been made here: (1) remove the element of the initiation of interactions from the original INTERSECTS; (2) in term of the interactions type, combine Praise and Accept to form a new type: *positive interaction*, which refers to teacher being positive towards pupils. On the other hand,

Remediate and Criticise are also combined together to form *negative interaction*, which means the teacher holds a negative attitude in the interaction.

3. Analysis

Throughout the observation, the author noticed that some common features are shared by those teaching sessions. First of all, neither gender showed any statistically significant tendency to dominate classroom interactions with the teacher. However boys and girls do tend to receive different treatments in term of types of interactions. One interesting finding of the observation is that boys and girls demonstrated different cognitive style by showing different concentration levels at different teaching periods. In this chapter above findings will be elaborated and discussed by providing detailed analysis of one randomly selected teaching session.

3.1 Distribution of Interactions

27 pupils were sitting in the classroom in the selected session, among them there are 15 boys and 12 girls. A female teacher was in charge of the science class. The teaching topic of the session is ‘to tell the differences of young and adult animals’.

A SPSS frequencies analysis reveals that during the 30 minutes, 86 one to one interactions took place between teacher and pupils. In average, each child had 3.19 one to one interactions with their teacher. However the author noticed that 5 pupils have had only one interaction with the teacher. Another 5 pupils did not participate

into any sort of individual interactions at all. Among them there are 3 boys and 2 girls. On the other end, there are extremely active pupils. One boy had 10 individual interactions. Two girls each had 9 and 7 interactions with the teacher which are both way above the average level. In other words, 10% of the population had 30% of the interactions. In their study, French and French (1984) claimed that ‘the distributional imbalance between boys and girls is manifestly due to a particular, small subset of boys taking a disproportionately high number of turns’. In contrast, the present study demonstrates that there are both boys and girls in the classroom that take high number of turns. This new situation, in theory, should lead to some noticeable change to the traditional way of distributional imbalance.

Indeed the analysis shows that the direction of the imbalance has been shifted in the classroom. A One way ANOVA analysis reveals that the average number of turns taken by girls is 3.58, in contrast, the figure for boys is only 2.87. Apparently girls are, in average, receiving more attention than boys do in the classroom, but a high decile range (7.40 in this case) indicates it is dangerous to make any conclusion base on those figures. In fact, given that $p=0.513$, it lacks any statistical significance to make a conclusion about any association between pupils’ genders and amount of attentions received.

After the above analysis, the author suggests that in the present study, gender inequity in term of number of turn takings has not been detected in the selected classroom. A study did by French and French (1984) 20 years ago proved the existence of classroom inequity and pointed out a small number of extremely active

boys is the reason of the imbalance. In the present study, a small number of equally active girls are identified and changed the situation. In fact, although no statistically significant conclusion can be drawn in the present study, throughout the observation the author failed to sense any disadvantages upon girls in term of attention allocation from the teacher.

3.2 Types of interactions

American researchers Sadker et al. (1984) suggested that classroom interactions can be put into different categories. In their study, four major types of interactions were identified: praise, accept, remediate, and criticise. However, given the much simpler structure of the conversations that occur in the early stage of key stage one classroom, the present study uses a modified model for analysis purpose. Throughout the observation, message from teacher are categorized into positive and negative message. A positive message could be anything that makes pupils feel good. In the piloting observation, the author noticed that at this age pupils are easily impressed. In fact, receiving messages from the teacher itself could be a positive message for most pupils unless the message is negative in obvious ways.

In the selected teaching session, there were 86 interactions between teachers and pupils recorded within the 30 minutes. Among them 43 messages were sent to boys by the teacher and the other 43 messages were for girls. The observation reveals that among the 43 messages for boys, 18 were categorized as positive messages. In those messages, boys' behaviours (intellectual performances or non –

intellectual conducts) was praised or accepted by the teacher. The remaining 25 messages were pretty negative. In those messages boys were either criticized or their behaviours were rejected and corrected by the teacher. On the other hand, girls received 33 positive messages and only 10 negative ones.

Based on the above data, girls seem to receive more positive responses from their teacher than boys do. A One way ANOVA test proves the statistical significance of this trend. The result shows that each boy, in average, received 1.13 positive responses in the 30 minutes, in contrast, each girl managed to receive 2.75 positive messages. $P = 0.026$, which promises the feasibility of making a conclusion that the gender of pupils is a factor that influences the amount of positive and negative responses they receive from their teacher in classroom interaction. Further analysis indicates that Pearson Correlation score of it is 0.427. Therefore the author suggests that the gender of pupils is playing a pretty heavy role in teachers selecting of positive or negative evaluations in the classroom.

In the present study, the attention allocation to each gender seems to be irrelevant with the gender factor. However, in term of interaction types, boys and girls are apparently receiving different treatments. Girls are receiving more positive responses than boys do in the observed classes. This did not only happen in the single teaching session that is being discussed here, it is a common feature demonstrated by all 11 observed teaching sessions. This phenomenon could be explained by that girls simply perform better than boys do in the classroom, or teacher's perception that girls are more fragile and sensitive than boys are. But it

still lacks of tangible evidences for making any conclusion, and the author is aware that this is not the place to pursue the causes further because it is not the aim of the present study.

According to Delamont (1990), schools ‘develop and reinforce sex segregations, stereotypes and even discriminations which exaggerate the negative aspect of sex roles in the outside world’. Howe (1997) also suggested that ‘regardless of the implications for academic achievement, classroom interaction may effect perceptions of occupational suitability by making pupils of one sex or the other feel uncomfortable with certain occupations and/or associated subjected. The author suggests that what was going on in the observed class surely reminded the pupils of the differences between each gender. The unequal allocation of positive and negative responses could also easily lead to pupils’ different perceptions of their future development. In this case, positive responses are likely to inject more confidence and interests about primary science into girls. More positive responses from the teacher could also be seen as extra protection from the teacher. Different treatment like this could contribute to children’s awareness and acceptance of differences between the two genders, either consciously or unconsciously. This, in a long run, could lead to further narrowing down of the gender gap in terms of academic performance (or even create a reversed gap), and widening the gender gap in term of children’s gender identities as a result of socialization. This implication will be further elaborated in the following chapter.

3.3 Change of pupils' concentration level

According to French and French (1984), pupils are actually in the driver's seat in classroom interaction. Throughout the present observation, one trend has become apparent: boys tend to be more active in the early period of class while, in contrast, girls are getting more attention from their teacher in the late period of class. The author suggests that it is the change of pupils' concentration level in the classroom that changed the balance in it.

In the present study, in order to observe the trend, each teaching session was divided in to three 10 minutes periods. In the first 10 minutes of the selected teaching session, boys had been involved in a total of 18 one – on – one conversation with the teacher, while girls only had 11. Move to the second period, girls started picking up speed from here. Throughout the 10 minutes, girls had 16 turns to take, while boys had 15. In the last 10 minutes, 15 turns were directed to boys and another 16 to girls. Given the above observation, the author suggests that boys receive more attention from the teacher at the early stage of a teaching session while girls have more attention from their teacher in the later period of the class.

But, is this situation simply a result of the change of teachers' perception, or it is, as suggested by French and French (1984), a result of the change of the pupils' attitude? The author believes that by having a look at the change of the seating arrangement of the classroom the truth can be revealed. As mentioned previously, pupils are free to choose and change their seat throughout the teaching session in the selected class. Therefore the picture of the classroom is constantly changing.

Three pictures are used here to demonstrate what was going on in the classroom. Picture 1 shows the scene of the classroom at the beginning of the class. At that point, boys (shown as small squares) were occupying the centre of the room and generally closer to the teacher. It is also in this period that more of the teacher's attention was allocated to boys. Picture 2 is the scene at the beginning of the second period. Some changes can be seen here: boys started to withdraw from the teacher and the centre of the room, while more girls were getting closer to the teacher. In picture 3 which was taken in period 3 we can see an obvious contrast with picture 1 of period 1. In it girls were surrounding the teacher while more boys moved to the far end of the classroom. However some boys reoccupied the centre of the room (See picture 1, 2, and 3 in Appendix).

In fact it is not only the seating that reveals the change of concentration of pupils. As the observer sitting in the classroom, the author could sense the change of the atmosphere. In the earlier stage of the class, boys are more active and tend to give quality answers towards teacher's questions. However in the later stage, girls took over and gained more positive responses from the teacher. The pedagogical implications of this trend are to be further discussed in the next chapter.

4. Discussion and conclusion

By observing classroom interactions in a class of a local primary school in England, the present study demonstrates some interesting findings. Firstly the traditional view of gender inequity in classroom has been challenged in the present study. A

modified observational framework was adopted and the result revealed that in the selected classroom, male students are no longer, as traditionally suggested by a school of scholars, the group that enjoys privileges in classroom. Analysis points out that there is no statistically significant imbalance in the classroom interaction between teacher and pupils. In fact, girls were actually receiving slightly more attention from their teacher in the selected class.

However, by having a close look at the types of interactions, the author suggests that a different mode of gender imbalance occurred in this case. It is suggested in the present study that girls tend to receive more positive responses from their teacher than boys do. This trend is proved to be statistically significant.

The above findings can be used to provide some explanations to some changes that are currently happening in education. As Noble and Bradford (2000) suggested in their book that the traditional gender gap in education (which refers to boys over performing girls in school) is quickly disappearing, a new reversed gap in favour of girls has started to show in the past decade. The immediate implication of this change could be that boys' lack abilities needed to compete in the job market in the near future. In fact this is already happening in UK as suggested by Noble and Bradford. A long term implication of this change is to the construction of pupils' gender identity. As mentioned previously, key stage one is a vital stage where pupils' gender identities are formed. It is at this stage that most pupils start to realise and show their gender identities. In the present study it was suggested that boys receive less privilege than they used to do in the

past. This is an indication of the increased confidence in girls. On the other hand, it could also be a signal of frustration for boys. In fact throughout the observation, the author noticed that girls were normally in command in mixed – sex group during group activity time. Noble and Bradford (2000) pointed out that an ‘anti – swot culture’ is dominating boys nowadays: boys are generally more rebellious. They do not want to cooperate with school and parents, and refuse to work hard. In contrast more girls are willing to work hard and behave in school. Many teachers believe this is part of the nature of boys and girls. However the author suggests that receiving more critiques in the classroom could be playing a role in pushing boys into the state of rebellion. In contrast, more praises encourage girls to perform well and boost their confidence in classroom.

Another finding of the present study is that boys and girls tend to vary their concentration levels at different stage of class. Generally speaking boys are more likely to kick an early start and also give up quickly. Girls take over the classroom at the second half of the class and gain more attention (mostly positive responses) from their teacher. I believe this finding has got long term pedagogical implication once being confirmed at a wider scale. For instance, teachers could use a teaching plan to attract girls’ attention at the early stage of a class to help them to make an early start as well. Things like arranging more boy – friendly topics in the later stage of a class could also be done to boost boys’ attention level. However given the limited scale of the present study, the author suggests that further studies are needed before any of the potential implications could become a reality.

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Appendix

Pictures 1, 2, and 3 show the seating arrangements of the classroom at different stages of a teaching session.

Picture 1 is the scene of the first 10 minutes.

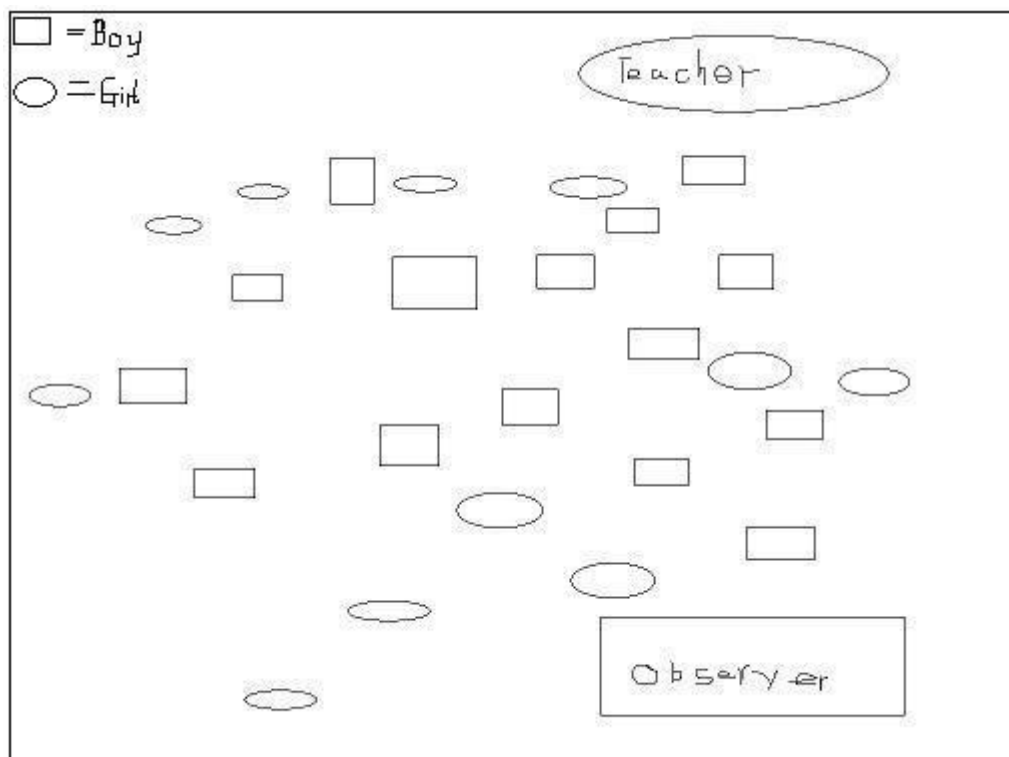
Picture 2 is taken at the beginning of the second 10 minutes.

Picture 3 is for the last 10 minutes.

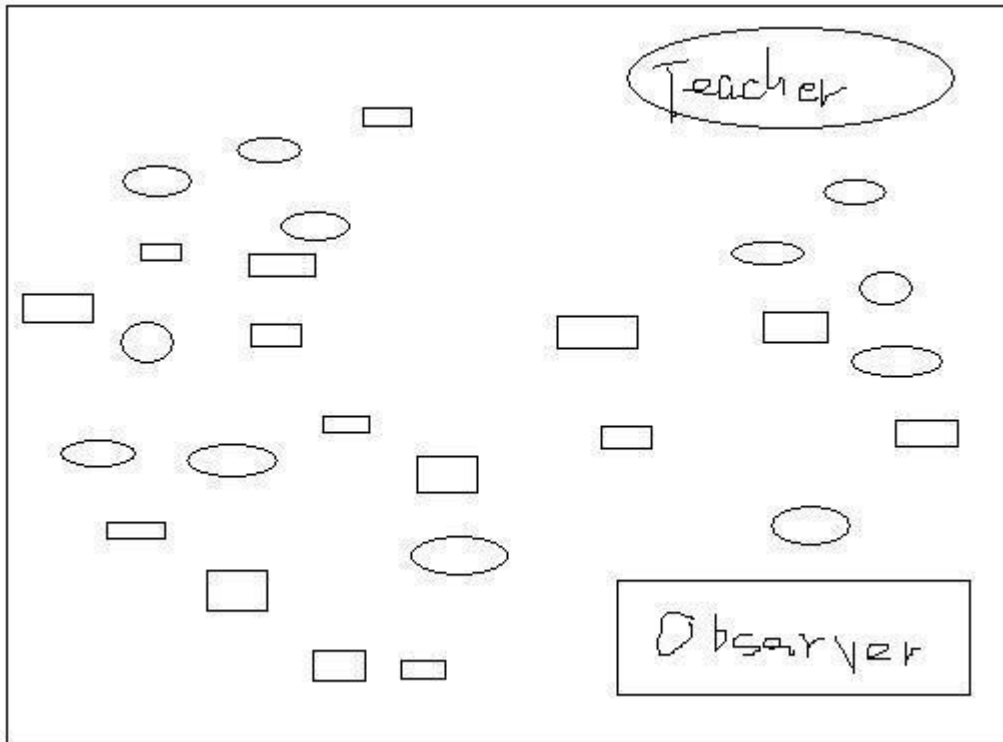
□ = boys

○ = girls

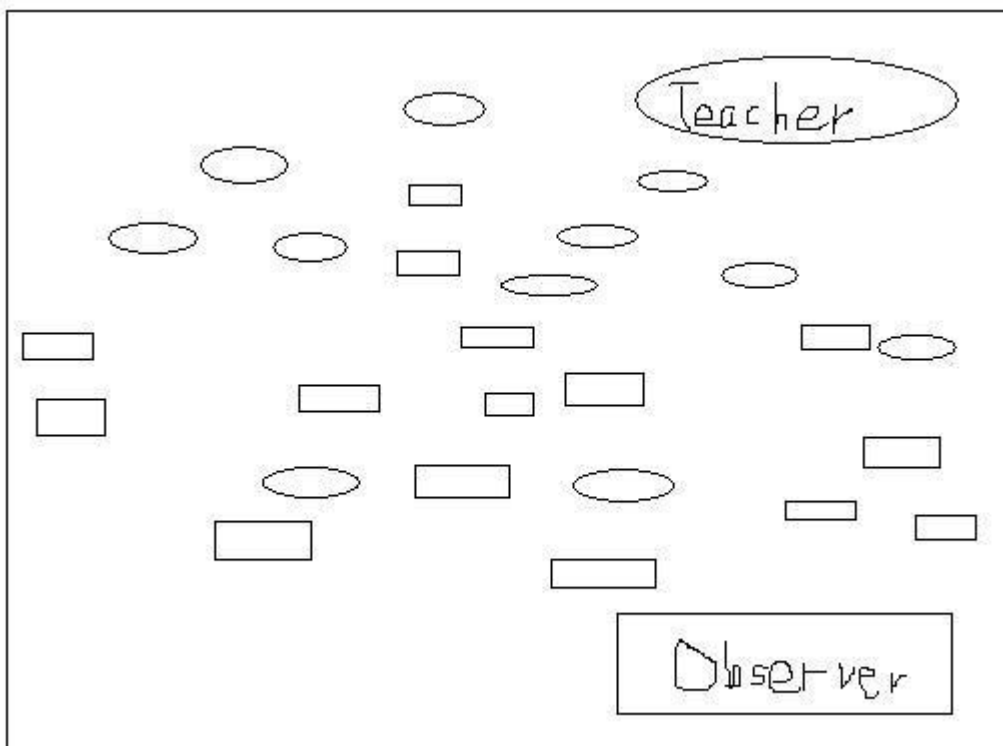
Picture 1



Picture 2



Picture 3



About the author:

Ke Chen is currently a first year IPHD student in the school of Education Communication and Language Sciences. Currently his research focuses on gender issues in early stage education, such as gender equity in classroom and gender related pedagogical issues.