Does the homogenous classroom setting perpetuate masculine conversational participation patterns?
Aspects of gender identity examined in the homogenous classroom setting

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Abstract

Drawing on a Norwegian empirical study of girls’ and boys’ teacher-led classroom conversation participation, this paper focuses on how students attending an upper secondary school vocational programs, participate in classroom discussion when observed in homogenous groups. This quantitative study has shown that gender identities associated with heterogeneous conversational patterns as exaggerated when observing homogenous classroom participation. The discussion describes not only the influences of class and peer group pressure to explain this phenomenon, in addition clarifies the contextual difference in quality when girls take the floor in a homogenous classroom setting.

Keywords: classroom participation; homogenous setting; gender identity; peer identity; social class; masculine identity; classroom conversations

1. Introduction

There have been a number of studies which have examined the levels and specific qualities with which boys and girls participate in classroom verbal interactions. The findings consistently show that girls verbally participate to a lesser extent than boys (Aukrust 2008; Kelly 1988; Nyström 2012; Pavlidou 2003; Shaw 2000; Tannen 2002). The majority of research into this gender related subject has been conducted in the United States and England, with a significant emerging interest into this field of research from Scandinavia (Ambjörnsson 2008; Aukrust 2008; Nyström 2012).

Whilst Scandinavia’s positive gender politics has given rise to girls attaining higher grades in secondary school, it has lead to the continuing trend of girls attending and completing of higher educational courses and programs (Statistic Sweden 2011). In spite of this unambiguous difference in attainment between girls and boys, recent discourse studies show that girls in heterogeneous, i.e. mixed sex classrooms, continue to participate less than boys. So would the finding be the same in a homogenous classroom environment? Is there a difference in the quality of girls’ and boys’ interactions in a homogenous, single-sex classroom?

As an upper secondary school teacher I have a vested interest in understanding gender identity and how the consequence of this effects classroom participation and the subsequent ramifications for knowledge acquisition. This milieu is to a great extent controlled and stirred by the teacher’s pedagogue. With recognition and an awareness of what factors, including gender identity, influence classroom participation can, in my opinion, only serve to make teachers more efficient pedagogues.

Since the previous research into this field has been conducted in heterogeneous groups it is the intention of this study to examine girls’ and boys’ participation in homogenous classroom environments looking at the difference in classroom interaction between the genders and the possible repercussions this has on learning. This study examines girls’ and boys’ conversation participation in homogenous (differential) groups in a modern Swedish upper secondary school.

2. Background
Gender in this paper refers to a social category. If sex relates to a biological and general dichotomy, distinguishing male from female, then gender refers to the social behaviours, expectations and standpoints allied with being male or female.

Research results indicate that gender characteristics/identities play a major role in not only establishing male dominance but maintaining it within the classroom setting (Hsiao-Ching 2000:110). This has been suggested (Litosseliti 2006; Shaw 2000) as being detrimental to females within the realms of the public arena, as argued by Batters (1987) by boys being more verbally active generally and participating more directly with their educators, boys develop the self confidence which enables them to become competent social speakers in later life (Litosseliti 2006:83).

It is a fact that for the past two decades, the achievement of girls at upper secondary school as well as at post graduate levels is above that of their male counter parts (Swedish Statistic 2011), a phenomenon which has been recorded in other countries such as, Great Britain2. That said, at the present time one can only speculate about the significance masculine dominance has on the extended and potential performance of females should equilibrium of participation be established and maintained in the classroom. Baxter (2002) makes the case that girls are placed by discourse competition characteristics as both powerful and powerless, constructing girls as good, supportive listeners, conforming to the classroom protocols but powerless;

On one hand, girls appear to be powerfully located according to the discourse of collaboration talk because this values supportive speech and good listening skills. On the other hand, according to a discourse of gender differentiation, girls are

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2 http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/education/8085011.stm
3 http://www.earlhamsociologypages.co.uk/genddata.htm
stereotypically expected to be good listeners […], which consequently might diminish a positive assessment of their contributions. (Baxter 2002:16)
As to whether this topic is current, of social interest as well as beneficial to society one
does not have to search extensively to find the answer. Gender research is currently being
established as a profile area of research at Mid Sweden University. There can be no doubt
that this subject is one which has both academic and popular appeal. Besides the traditional
benefits to societal well being, gender studies have comprehensible implications for
professions which rely on didactical and pedagogical structures to mediate knowledge and
understanding; such as teaching.

In the culture of the classroom it is the teacher who sets the framework which limits
the appropriate behaviour and maintains these limits by showing what activities by the
students violate the classroom order (Tainio 2011). Hsiao-Ching (2000) in her study of The
interplay of a biology teacher’s beliefs, teaching practices and gender-based student-teacher
classroom interaction supports Tainio proposing that the way in which boys are allowed to
participate in a somewhat unchecked manner by shouting out in class which maintains “[...]

male-dominated classroom interaction [...] suggesting that a teacher’s beliefs concerning
gender-related characteristics reinforce and sustain gender differences when no action is taken
to control the calling out of answers by more aggressive” (2000:110). So there is a need for
teachers to understand the classroom interactions which not only fashion but continue to
sustain gender identity.

With regards to the general quality of teaching, Molin (2006) has argued that teachers
need better education in the subject of didactic and pedagogic (Molin 2006:60), she contends
that by asking and preparing answers of the didactical questions of what?, why?, and how?, in
relation to the lesson content, the reason for its inclusion, and how it is to be taught in respect
to context (Molin 2006:54). Similarly Marton (2003) has emphasised that through careful
planning and evaluation assurance, active teachers will come to understand why and how
conclusions it can be strongly argued that for their findings to be fully appreciated gender
identity must be accounted for.

To complement previous research it is necessary to consider the implications of
observing classroom participation in an environment which is homogenous. Therefore study
girls’ and boys’ discourse in differential groups independently within the classroom setting,

http://www.miun.se/en/Search-page/?quicksearchquery=research+gender&l=2
would serve to highlight significant patterns of participation and the qualities of such, outside those previous research has established to date.

3. Previous Research

3.1. Theoretical framework

This section of the paper is to bring to the forefront the theories and previous studies which will be used to explain the patterns of participation in the classrooms and how these can be related to gender identity.

Gender is defined by Ambjörnsson in her dissertation *I En Klass För Sig* as being separate from the biological differences commonly addressed and termed as ‘sex’, where one’s gender identity is a cultural perception, notion and or representation which is created and formed by an individual’s social and cultural interaction within her or his environment (2008:11). In this respect, gender is not something one is born with, but formed by a society’s power balance. One need to be part of a social group and this is something we all are exclusively placed into and categorised and which is constantly redefined and created to be convincing and sustainable (Ambjörnsson 2008:11,12).

Participation in the classroom environment has been shown to have patterns associated with gender identity as Aukrust writes “[...] the data suggest that differences between boys and girls in patterns of interaction with their teachers are due to differences in the behaviour of boys and girls themselves [...]]” (Aukrust 2008:238-9). That said, these differences in behaviour must be considered within the context of what framework the teacher constructs for the class (Tainio 2011). So one must be vigilant as to what characteristics are expected to play a part in defining gender roles in the school setting and the theories which are allied in describing these qualities in an effort to predict individual and socialised behaviour in the somewhat fluid condition of the classroom.

If one is to hold with the hypothesis that gender identity can be understood as a process of socialisation it is necessary to define, for the purpose of this study, what is meant by the term socialisation. Socialisation is a process whereby individuals assimilate and come to terms with society’s norms and values, learning what are right and wrong in varied communally restricted contextualisation, a societal process which is continuous throughout one’s life. The characteristics a person is born with are shaped and formed by the milieu which she/he lives in and interacts (Phillips 2011:68).
So if one considers identity to be formed by a series of systems which are continually interacting and interchanging, then identity cannot have a single finite meaning. To discuss one’s identity in the plural is to suggest that it is complex, dependent on context, neither singular nor fixed. Identity is who we are as a “[... professional, parent, partners, members of different groups in terms of gender, age, ethnicity, race, sexuality, and so on” (Litosseliti 2006:60). Identity is both individual and social being, defined and re-defined by the choices one makes; the groups we affiliate to, those we step- a-side from or avoid, a process of differentiation and resistance (Litosseliti 2006:60).

Considering gender as a social category, referring to the social behaviour, expectations attitude attributed to what it is to be male or female (Litosseliti 2006:1), then the identity process draws on several research fields and theoretical developments, “[s]ociology of education, gender and education, critical studies of men and masculinity, and sociological as well as social psychological identity theory” (Nyström 2012:276), which can be directly linked to the Interactionist identity theory whereby such terms as gender, class and sexuality take meaning through context and societal associated definitions. (Nyström 2012:60).

Nyström uses interactionist identity theory in her dissertation to highlight the fact that boys’ gender has been associated with an identity of underachievement, in the context that to be seen to study is looked upon as an attribute of masculinity, “What hinders the boy from succeeding in school is the traditional notions of what masculinity is” (Nyström 2012:18). When defining and considering what it is to be masculine this by virtue of polarity gives rise to what it is to be feminine, noticeably to be disciplined conquering knowledge (Nyström 2012:20), emphasizes vulnerability and responsibility (Nyström 2012:73).

The problem of under achievement in boys and its association with the male gender identity, cannot be taken for granted as a natural given phenomenon. This situation is historically constructed by societal agents whom by the use of actors in certain contexts i.e. the school environment through the effects of power, ‘systems of reason’ perpetuate values, rules and standards of thinking about the objects of education (Nyström 2012:28). The male adolescent is linked to uncontrollability and irresponsibility which in itself defines ideas about adolescence, “[w]ithin these discourses boys are usually expected to grow-up slower than girls...” who in-turn bare higher expectations of responsibility in early life (Nyström 2012:73).

Ambjörnsson is in agreement with Nyström in that gender identity is a socio-interactionist phenomenon contending that young women (girls) at secondary school acquire their gender identities through societal based interaction in a heterosexual context (2008:16).
Furthermore, Ambjörnsson focuses on the influence of social class when considering gender identity. The connection between gender and class is first and foremost tackled by her (Ambjörnsson’s) qualitative research into two separate programs, Children and Leisure (Barn och Fritid BF) which is looked upon as being associated with the working class and Social Science (Samhället S ) which is looked upon as being associated with the middleclass.

The influence of class with respect to gender identity has been minimised in this study, by taking into account this the fact that both groups observed were engaged in a vocational program, at secondary school level. That said the influence of social class cannot be neglected and must be taken into consideration as a possible explanation to behavioural patterns observed in the classroom participation.

When considering gender identity as a process of socialization and an interactional product (Jenkins 2004:176) this process must be compared to a social standard. In respect to gender Ambjörnsson takes the stand point that middleclass is considered to be the norm in society, and as such all differentiations and deviations are taken and judged from this point of view (2008:37-8). Class, (which must be considered when referring the Ambjörnsson’s study) like gender is not so easy to define. It is multi-faceted anchored in a social structure which in turn defines what the working constructions are and their constraints in society as well as how these contribute to the placing of people and or groups into a specific class and characterizes the different hierarchal levels (2008:35).

According to Nyström the construction of a masculine gender identity is a social balancing act which has to be performed correctly if a boy is to be looked upon positively by his peers; on the one hand young men must be seen in classroom interactions, in order to associate with peer members and obtain a status attributed to being “[...] well spoken, knowledgeable and reflexive” (Nyström 2012:278). However, this could have a negative effect if one was to be validated as a good student through student/teacher interaction (Nyström 2012:76-7, 278).

This maintenance of equilibrium was something which was noted in Ambjörnsson’s study of the girls in the social science program. To fit in with their peers these girls were expected to be clever, articulate, socially competent, study but not be seen to be too studious; such an overset from the norm would indicate an all too strong tendency to conformity and therefore an indication of not being self-reliant (2008: 73-4, Nyström 2012: 281).

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5 Ambjörnsson’s thesis concerns the variation of gender identity which regards to social class. Ambjörnsson studied two different secondary school programs, one considered vocational and the other a university preparatory program, considering how identity was constructed and maintained. In making this comparison class differences in the girls who participated in these programs were assumed.
There is an ever present pressure for both middle class male and female students to be seen to learn but without being be seen to learn. The effort-less academic achievement is something which has great prestige as a masculine formation quality, to possess knowledge having higher status than working to acquire it (Nyström 2012:280). However this lack of effort in the classroom when considering gender identity in lower social class had an altogether different status. It was observed that the girls in the vocational program, whom it was considered had a lower societal status than their contemporaries studying a university preparation program, considered non-conformity, a lack of tolerance and behaviour which endeavoured to go against the norms as qualities which were valued in their peer group (Ambjörnsson 2008:81-4, 86).

By dis-identification *counter school culture* (Willis 1977) argues that young working class men gained status in schools in the North of England. Instead of complying with the teachers requests to participate in lessons and complete homework there was a strong tendency of non-compliance. Since these areas labour markets are predominant with manual labour, the work force has high status and so this classroom behaviour had elevated societal position value (Ambjörnsson 2008:90). Ambjörnsson observes this type of dis-identification, in the behaviour of the girls in the BF program, as well as in the behaviour of the boys in Nyström study. They draw similar conclusions from this conduct, the ignominy of not living up to normal expectations; ‘better to not try than to try and fail’ (Ambjörnsson 2008:90, Nyström 2012:281).

By considering *Interactionist identity theory*, the importance of others for our self-understanding and our ability to emerge as those we consider ourselves to be comes into focus and highlights several qualities required if high valued gender identity is to be achieved; the importance of peer affiliation as well as differentiation, the balanced need to acquire knowledge with the minimum of effort and the requirement to associate and comply with the contextual norms of the group.

3.2. Use of linguistic patterns to define gender

If different identities are in the foreground and background at different times, then this must also be applicable to gender identities. One can then talk of feminine and masculine as being
multi-faceted, with various qualities, dependant on context being more of less salient. Our image of self as male and female is dependent on the way in which one participates or aligns oneself in relation to various subjects of discourse (Litosseliti 2006:61). Through linguistic and non-linguistic behaviour a person’s identity as a man or a woman is created rather than being predefined, in the fluid context of historical and cultural locations.

When considering discourse and the relevance it has on gender identity within the social context, linguistic research must be taken into consideration. Deborah Tannen, a professor of linguistics, defines in her book titled *You Just Don’t Understand* (Tannen 1990) the characteristics of male and female language broken down into six contrasting categories. In each case, the characteristic which is considered to be typically male is first: status vs. support, independence vs. intimacy, advice vs. understanding, information vs. feelings, orders vs. proposals, and conflicts vs. compromise (Moore 2005:8). If we look at Tanner’s explanation for the category, orders vs. proposals, she states that women often suggest things indirectly in conversation. This characteristic may go some way to explain why girls participate less in the classroom locality (Tannen 2002:27).

Tannen’s contention that different forms of linguistic patterns defining gender identity is upheld by Deborah Cameron who asserts that men and women face a form of conditioning in relation to the “appropriate mode of speech” for their gender, which she has names “face normative expectations”. In her book, published in 1995, ‘Verbal Hygiene’, she advocates that the way in which women communicate verbally is important in their culture. Cameron further claims that this conditioning of women in general, from the clothes they should wear to the make-up to be worn flows over into their style of speech which is expected to be of a proper style and therefore standard (Moore 2005:13).

If Cameron agreement is right (Moore 2005), social pressure will cause women to adopt the considered standard language and censored behaviour. Furthermore, Batters (1987) claims that this disadvantages girls, by allowing boys to build self confidence as they control the classroom rhetoric. In engaging the teacher boys become better equipped to deal with public speaking (Litosseliti 2006:83), something which Shaw (2000) highlighted when she studied the masculine strategies used by male Members of Parliament in the British House of Comments. Shaw (2000) concludes that “[...] masculine discourse styles are treated as the interactional norm in debates relates to the fact that traditionally women have not been represented in this institution, and continue to be under-represented” (Shaw 2000:416).
3.3. Patterns of participation assist in defining gender identity

Participation needs to be considered as part of establishing gender identity. This process of constructing ones identity is a two way practise; discourses represent multi-identities and these identities give rise to a particular discourse (Litosseliti 2006:62). Our identity is not simply acknowledged by what we say in a given context, in addition by what others say about us.

A number of studies have examined the participation levels of girls and boys in the classroom environment. More specifically analysts such as Aukrust (2008) and Pavlidou (2003) have specified the qualities of participation. The accumulation of the research in this field has shown that boys participate in classroom discourse more than girls (Aukrust 2008:237).

One such well documented study is Kelly’s (1988) international meta-analytical research based on 81 studies from the seventies and eighties which focused on gender participation in the classroom environment (Aukrust 2008:237). Kelly reported that the majority of these studies concluded that girls participate less in classroom discussions than boys, highlighting that these gendered patterns became more defined the higher the class grade analysed (Aukrust 2008:238). Furthermore, the related research shows that girls interact less with the teacher, received less challenging and complex interactions, whilst they receive “[...] more positive attention supporting learning” (Litosseliti 2006:75). Younger et al (1999) conclude that there is qualitative differences in the way teachers react to the pupils that is dependent on the gender of the pupil, as well as being related to the behaviour of girls and boys as a homogeneous group (Aukrust 2008:238).

Pavlidou in her studies of Patterns of Participation in Classroom Interaction in Greek high school analysed two types of initiative turns, ‘directive type’, requests for the floor and requests for re-content, other requests and ‘non-compliant type’. She categorised the directive turns as requests for the floor or other requests, and non-compliant turns as those which were in opposition to the teacher’s actions or discourse such as protesting and confronting (2003:124-5). This form of non-compliance was found to be predominant in Öhrn’s study of how girls in the ninth grade made attempts to gain influence in school. In her article Gender and Power in School (1998), she reasons that whilst girls are less inclined to resist openly, i.e. in large groups challenging authority, instead opting to take control subversively from the teacher and the classroom by skipping lessons, reading magazines in class and passing notes amongst themselves (Öhrn 1998:344). However Öhrn found that girls were more inclined to
speak their mind in relation to classroom management, stating that the girls were aware of the boys’ fear of teacher reprisal if they were to do the same (Öhrn 1998:347).

In Pavlidou’s investigation there were distinct differences in the directive turn taking and non-compliance between the girls and boys. Whilst boys requested the floor more than girls (44.4 per cent boys, 19.8 per cent girls), the distribution of the frequency for classification of content, i.e. ‘requests for re content’, was higher for girls (32.7 per cent girls, 21.9 per cent boys). Although this study showed that boys wanted to take the floor more, they did not want to participate in the classroom activities (Pavlidou 2001:128, Pavlidou 2003:137-9). With regards to non-compliant turns there is a difference in the orientation and well as the percentage difference in these types of turns. Whilst girls made more non-compliant turns than boys these were associated with classroom management and management of turn-taking (Pavlidou 2003:138).

These finding are supported by Wang (2010) in his research on gender differences in English speech styles in public places with regards to men taking more turns than women, violating the turn-taking model and taking more turns to take control of the conversation. However he notes that the amount of talk “[...] seems to produce a different result in different contexts (topics that women discuss in same-sex casual conversations are different from those of men to a large extent), where in cross-sex conversations in private contexts women are much more talkative than men are (Wang 2010:3, 4). With this in mind the way a topic is presented to a class may have specific impact on the way a particular gender participates.

Hughes (2005) is in agreement with Ambjörnsson (2008) and Nyström (2012) of the importance of peer acceptance (2005:466). Hughes, whilst studying kindergarten children’s behaviour, emphasized peer relationships as being essential for future academic success which he contends is directly related to positive classroom participation (2005:466). Those children who took part in classroom activities enjoy greater peer support, this in turn Hughes argues has been shown to “[...] forecast positive academic and social trajectories” (2005:476).

The important of a productive and supportive teacher-student relationship Hughes contends enables children to cope better with academic and social challenges in the child’s infant and primary school years. He argues that children who receive positive influence from teachers and peers alike are more likely to participate in classroom activities (Hughes 2005:467), furthermore a compliant “[...] nature of engagement and support may explain why classroom engagement is a good predictor of children’s long-term academic achievement and school completion (Hughes 2005:468-9).
As mentioned above with respect to interaction and participation in the classroom milieu boys hold the prominent position, and this differential increases the higher the year group studied (Aukrust 2008). Educational settings have been shown to be more favourable to boys with regards to the means provided with which to control this environment. That said teachers have been found to interrupt boys’ performances as much as girls, although subject content has been shown to favour boys (Aukrust 2008, Litosseliti 2006, Öhrn 1998).

In spite of these findings numerous studies have shown girls outperform boys in academic achievement\(^6\), and moreover female students represent the majority of students in higher education (Aukrust 2008), and therefore one must consider what it means to participate in the classroom setting. Davies (2003) argues that gender classroom discourse has a dichotomy, girls engage in a harmonious style of communication whereas boys are less harmonious. Furthermore, she (Davies) asserts that girls’ collaborative style of discourse with its tendency to support mutual participation enhances and creates opportunities to learn (Davies 2003:128). The situation for boys is very different as there are societal norms which control the linguistic forms and styles of interface in the classroom. Peer group pressures outweigh the situation itself, and so learning is not the priority, so for boys “[…] (the) discourse of learning is in conflict with discourses of heterosexual masculinity” (Davies 2003:128).

3.4. Summation of previous research

The dominance of classroom conversation and peer group judgement in the case of boys has been argued as having a staunch association to the forming of their masculine gender identities (Aukrust 2008; Hsiao-Ching 2000; Nyström 2012). Furthermore, by adopting the subsidiary role in verbal activities, which are maintained by the socio-interaction of the boys, it has been asserted, that girls, acquire their gender identities based on heterosexual composition in classroom participation (Ambjörnsson 2008; Hsiao-Ching 2000).

Although there is a paradox between lower levels of conversational participation and achievement, girls’ academic accomplishments at compulsory and upper secondary school levels are documented as being higher than that of boys, it has been contended that this lack of participation put girls at a disadvantage in latter life when competing in the public arena (Shaw 2000).

\(^6\) http://www.skolverket.se/statistik-och-analys/2.1862/2.4391/2.4395/betyg-och-studieresultat-i-gymnasieskolan-lasar-2010-11-1.163454
In Aukrust’s (2008) study into boys’ and girls’ conversational participation in Norwegian classrooms, comments denoted as spontaneous utterances in the classroom out of turn were correlated for statistical frequency only. In this study this procedure is extended by documenting whether such comments were related to the lesson content or not, drawing attention to the gender conversational processes at work.

4. Research Questions
The purpose of this study is to see how if gender characteristics in a homogenous classroom effect girls’ and boys’ participation in classroom interaction. This study will then conduct a comparison with established gender characteristics’ associated in the heterogeneous learning environment.

The central questions this study asks are: What effects does a homogeneous classroom environment have on the gender characteristics with regards to boys’ participation in the classroom? What gender characteristics are observed when girls participate in a homogenous classroom setting?

These questions will be examined based on the classroom conversational participation observations of homogenous groups at upper secondary school.

5. Method

5.1 Research Ethics
The collected material has to be confidential and used for research purpose only. In this study, all these research ethics have been taken into consideration. The students as well as the teacher were met two weeks prior to the study commencing and all were made aware of the purpose of the study. Due the fact that all participants were over 15 years of age it was not necessary to contact their guardians. The students have been anonymous so that there is no way for me or anyone else to find out their identity. Since there has been no recording or written documentation of verbal interaction confidentiality was not so much an issue.

5.2 Participants (ethno-graphics)
This study was conducted in an upper secondary school in central Östersund; which is a small community geographically situated in the middle of Sweden which has a population of

7 www.vr.se
approximately sixty thousand people. The nearest community Sundsvall, with a population of over one hundred thousand, is situated two hundred kilometres the East. Those students who attend upper secondary schools in Östersund therefore not only come from the town’s immediate centre, in addition students are taken in from the surrounding rural areas.

The two student groups attended the same upper secondary school attending vocational programs; The girls attended the ‘Hair Dressing program’ were observed in their natural science lesson, where they participated in discussions in relation to the environment, fossil fuels, alternative energy, and the greenhouse effect; which although can be argued to be outside their field of interest given the program they have chosen, and the boys who observed whilst attending their weekly scheduled Mekatronics lesson, where discussions were based on the topics of LED cube construction, programming and robot construction; subjects directly related to their chosen program ‘Electronics and Energy’.

The classes consisted of 19 boys and 25 girls and were chosen on the basis of two factors; firstly their homogenous composition and secondly, the lessons observed although different in content were taught by the same male teacher.

5.3 Practicalities

This study demanded the observations of two separate classes of same-sex students. In addition it was deemed essential that the same pedagogy should be at work was as well as the same pedagogue for the student groups, in order to minimise external factors which could be bias the data obtained; with the same school used for this study as well as the same teacher for each group this alleviates to some degree didactical and pedagogical influences when comparing one classes data to the other. Taking into account these factors the two groups surveyed were chosen from the same upper secondary school. The teacher is someone I have studied with and now know privately. This was not taken into consideration or in any way weighed in with regards to the carrying out of this research. Although it made access to the classrooms easier and meant that the interaction between us was unperturbed.

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8 http://www.ostersund.se/nyheterprojektstartsida/kampanj/vinterfestivalen/kampanj/befolkningenfortsatterattvaxaiostersund.5.7f28657312beeb03a0b80003676.html

9 http://www.sundsvall.se/PageFiles/42108/M%C3%A5lbild%20f%C3%B6r%20Sundsvall%20%C3%A5r%202020%20v11.1.pdf
Each student group was engaged in a vocational program which went some way in eliminating the various student characteristics and preconceptions associated between university preparatory programs and those which are vocational, the students who are engaged in the technical programs being looked upon as more studious, than those studying aesthetics.

In surveying two vocational groups this went some way to eliminate the social class facto. The participants in both programs are categorized as working class, by the fact that they both a study vocational program and not university preparatory program.

Since it has been established by previous researches that all socio-studies are in comparison to the middle classes, the societal standard, (Jenkins 2004), conversation participation between the girls’ and boys’ groups would be analysed without direct social class differences influencing the results. As stated above (Ambjörnsson 2008; Nyström 2012), working class girls and boys would be less likely to participate and so homogenous groups could shed light on participation pattern which were not expected.

Each class was to be observed on three separate occasions, once every week for a total of three weeks. It was considered necessary meet these groups on three separate occasions to acquire adequate data for this study to be credible.

5.4 Classroom environment

With regards to the classroom environment the girls were observed in the same classroom on all three occasions, where their desks are arranged in a horse shoe, projecting their focal point towards the central black. The boys on the other hand were observed once in their regular classroom and twice in the science lab, where the desks were furnished in the traditional rows. Whether this had any relevance to the results can only be speculated and outside the parameters within which this research can contribute to answering.

5.5 Theoretical consideration

Since this study purpose of this study was to compare participation interaction characteristics of boys’ and girls’ in a homogenous setting with that of the established research conducted into gender identified with heterogeneous classroom participation a quantitative methodology was preferable, this is in addition to the fact that the data collated with be employed and discussions there upon developed in relation to statistical analysis.
Aukrust’s (2008) method of collecting and categorising the data gathered was used, with the exception that only the first twenty minutes of each lesson was observed, and a tally marks system was deemed to be sufficient for obtaining data. Other methods were considered but ruled out. Video recording was ruled out for two reasons, firstly there were objections to the method by the principal of the school, and secondly with such a short time with which to carry out this research the initial intrusion of a camera could influence the data. Whilst follow-up interviews and surveys may explain the lack of participation, they are redundant as methods for virtual verbal classroom activities.

5.6 Conversation compositions

The teacher was asked to carry out the first twenty minutes of the lesson in a way which would invite students to contribute their views and opinions. The subject content was left to the discretion of the teacher. The topic of conversation/discussion was written-up on the white board, with a broad verbal description of the topic introduced additional key points noted on the white board under the main topic heading. Participation was invited by the teacher in the form of open questions.

The classroom observations were conducted by visual observations of the verbal participations, which were noted by the use of tally marks with regards to the various classification of conversation (see appendix A).

5.7 Classification of conversation

This classification is taken from Aukrust’s (2008) study entitled ‘Boys’ and girls’ conversational participation across four grade levels in Norwegian classrooms: taking the floor or being given the floor?’, with the exception of the classification of comments which in this study have an additional purpose of being analysed for their subject content i.e. are the comments related to the subject of the classroom discussion.

The conversational participation characteristics were acknowledged as (1) frequency of participation; (2) teacher turn allocations; (3) spontaneous utterances out of turn comments; and (4) overlapping utterance.
(1) The frequency of participation as part of the total number of utterances in the class conversation, and as a breadth of participation, how many pupils of each gender participated in relation to the total.

(2) Teacher turn allocations. Student’s utterances were recorded as turn allocations if the teacher named or explicitly indicated which student should take the floor.

(3) Spontaneous utterances out of turn which was noted down under the word comments. If a student made an utterance which was identified as not invited by the teacher this was tallied as a comment. Further each comment was noted as to whether it was relevant to the topic of conversation or abstract in nature. Comments in this study were used as a marker of the student taking the floor without explicit or non-verbal markers allocating the turn.

(4) Overlapping utterances. Utterances were identified as overlapping when they occurred simultaneously.

6. Results

The table below is calculated from the tally mark notations in relation to the student conversational participation observed in the first twenty minutes of six lessons.

Table 1. Conversation strategies addressed to or used by girls and boys

<table>
<thead>
<tr>
<th></th>
<th>Girls (n:60)</th>
<th>Boys (n:43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of participating students</td>
<td>43</td>
<td>21</td>
</tr>
<tr>
<td>Participation-total number of utterances</td>
<td>177</td>
<td>68</td>
</tr>
<tr>
<td>Participation-number of utterances per student</td>
<td>2.95</td>
<td>1.58</td>
</tr>
<tr>
<td>Turn allocations from teacher-total</td>
<td>97</td>
<td>46</td>
</tr>
<tr>
<td>Turn allocation from teacher-number per student</td>
<td>1.62</td>
<td>1.07</td>
</tr>
<tr>
<td>Comments-total</td>
<td>71</td>
<td>18</td>
</tr>
<tr>
<td>Comments-number per student</td>
<td>1.18</td>
<td>0.42</td>
</tr>
<tr>
<td>Comment related to conversation topic</td>
<td>64</td>
<td>11</td>
</tr>
<tr>
<td>Overlapping utterances-total</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Overlapping utterances-number per student</td>
<td>0.27</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Note: n = total number of girls and boys.
The basis for this analysis comprised of 245 student utterances. Of these 72.2 percent (177) were offered by girls and 27.8 percent (68) by boys. The girls thus had a substantially higher rate of participation than the boys. Due to the fact that there were more girls than boys in the data set utterances per student gender were calculated. The girls had 2.95 utterances, while the boys had 1.58 utterances per head. This outcome was reflected in the positive attitude that girls had towards the lesson content and each other. It was observed that those who were active in a particular conversational exchange gesticulated their interest in the girl who had the floor. However this must be taken into consideration with the fact that the subject content in the girls’ classroom was significantly easier to discuss.

The breadth of participation in the form of the number of girls and boys who participated was of interest to this study. The relative proportions of participating students showed a significant difference in the classrooms, with 71.7 percent of all girls and 37.2 percent of all boys participating. The girls show a substantial broader level of participation than the boys, and consistently in every observation dominated the interaction.

There is a clear difference in the response to teacher turn allocations by the students from each class. If teacher turn allocations are calculated as a proportion of the individual classroom total utterances, then the girls registered 54.8 percent of their responses to the teacher turn allocations while boys’ response was higher with 67.6 percent of their total utterances in response to teacher turn allocations. This again could be due to the subject content discussed was of a factual nature and was not so conducive for an open discussion. Therefore, this meant a higher proportion of teacher/student questions and answer session, which gave the impression of a lack of interest in the topics which were being discussed.

The teacher allocations are greater per student for girls than boys. The girls responded 97 times to the teacher giving a student the floor, which contributed to 1.62 responses per student, in reference to the boys responded the teacher allocating the floor to them 46 times which contributed to 1.07 responses per student.

The most significant consequence of these results is in the taking of the floor i.e. the amount of uninvited comments. Such uninvited utterances were classified as comments. Table 1 shows that girls made 71 such comments which equate to 1.18 comments per student, whereas the boys made 18 comments, which equates to 0.42 per student. What is even more informing is that of the 71 comments made by the girls 64 comments were related to the topic of the lesson which calculates to 90 percent of all the comments made by the girls, whereas 11
comments of the 18 made by the boys were topic related, which calculates to 45.8 percent of the comments being related to the content of the lesson.

The girls’ higher level of participation in overlapping utterances was a result of them more frequently interrupting the teacher. Although the overlapping utterances were low, 0.27 per student for the girls and 0.09 for the boys this does calculate to the fact that the girls interrupted three times as much as the boys did per student (Table 1).

7. Analysis
These results indicate that in a homogenous classroom setting conversational participation show different characteristics to the several international studies which have found that boys verbally participate across all school years more than girls in a heterogeneous classroom environment (Aukrust 2008; Kelly 1988; Nyström 2012; Pavlidou 2003). That said, this study does show tendencies which are concurrent with previous search, with regards to the girls responded to teacher turn allocations more frequently than the boys, this type of utterance represented 54.8 percent of the girls total utterances, whereas this represented 67.6 percent of the boys’ total utterances. In this respect this study holds with Kelly’s (1998) international meta-analysis which highlighted gender identity patterns which showed that girls interact less with the teacher (Aukrust 2008:238). Furthermore, the girls were found to be less compliant, evident in their frequency of spontaneous utterances out of turn (comments), a quality which has been evidenced by Öhrn (1998) who like Pavlidou (2003) concludes that girls were more disposed to speak their mind in relation to classroom management issues (Öhrn 1998:347, Pavlidou 2003:138).

This study has indicted that if the parameters within which a group operates are changed of reconstructed identities which are formed through a socialisation process (Phillips 2011:68), will also change. This result is not surprising as an individual’s identity is under a constant process of re-classification by the accepted social norms and values of the group he/she finds themselves in covered by a particular context (Ambjörnsson 2008:11, 12; Litosseliti 2006:60).

Taking into consideration ‘interactionist identity theory’ (Nystöm 2012) then the fact that the boys participated less in conversation can be directly related to the need to be seen to do what is right in the eyes of one’s peers and project the right type of masculinity before ones group (Nyström 2012:18). This lack of exertion may be linked to the need to obtain or at
the very least be seen to obtain academic achievement without making an effort. It has been argued that this type of achievement has high currency and great prestige as a masculine formation quality (Nyström 2012:280), something I would suggest could be exaggerated without the presences of girls to hold this occurrence in balance, due to the theory that girl/boy gender identity is it has been argued is continually being conceptualised and socialised in reference to the opposed gender (Ambjörnsson 2008; Nyström 2012).

This concise study shows that homogenous participation characteristics associated are not the same as heterogeneous classroom conversational participation found in previous studies. As pointed out above the vast majority of previous studies have shown that boys participate with greater frequency than girls in heterogeneous classrooms. However, this study has shown that in a homogenous classroom setting a different participation patterns for the girls become apparent. The girls have contributed to 72.2 percent of the total utterances a participation characteristic which is normally correlated to boys. Previous research have argued that girls obtain and maintain their gender identity through socio-interactionist phenomenon based on heterosexual construction (Ambjörnsson 2008; Nyström 2012), something which Tainio (2011) and Hsiao-Ching (2000) extend asserting that the classroom environment is somewhat unchecked allowing boys to violate classroom protocols reinforcing and sustaining gender identities.

The relative proportion of participating students was significantly higher for girls than boys and this trend was mirrored in the participation of utterances per student which was almost double for the girls compared to the boys. It has been argued that male and female language can be categorised into six differential categories (Tannen 1990). These categories, Tannen (2002) claims, can go some way in understanding gender identity differences. Furthermore, they classify the different strategies which men and women use for taking the floor and give reasons for participation differences (Moore 2005:8). This social pressure causes girls to adopt a language and behaviour that is no longer present in a homogenous setting, allowing the girls to adapt to an even greater degree of conformity and self-reliance; somewhat reinforcing feminine qualities which I would argue could explain the increase seen in their studious activities in the classroom milieu. This proliferate rise in conversation participation could in addition be seen by the girls’ peers as compliance and traditionalism in being submissive to learning, which in contrast to the boys’ construction of masculine gender identities promote the individual and group status of the girls who took part in the conversations (Ambjörnsson 2008; Nyström 2012).
This study has sought to examine the spontaneous utterances out of turn (comments) which is a development of Aukrust’s (2008) research in that the comments tallied in this investigation were analysed as to whether they were made in relation to the theme of the class discourse or not. As stated above, the girls contributed more comments than the boys, something which has been noted in previous research in the form of non-compliance in relation to classroom management Pavlidou (2003) and Öhrn (1998). However what is worthy of note is the fact that the girls supplied 79.8 percent of the comments to the boys’ 20.2 percent. What is more, 90 percent of the girls’ comments were related to the classroom topic being discussed, whereas only 61 percent of the boys’ comments were topic related. This shows a difference in the classroom participation associated with the heterogeneous classroom environment, which can give additional meaning of what it means to be masculine or feminine. Ambjörnsson noted in her study that the students thought that there was a larger difference between individuals than there was between the genders (2008:269). So given the possibility to participate it may not be that astonishing that girls are showing what is, in a mixed classroom, considered masculine gender identity.

This participation pattern stands in contrast to Ambjörnsson (2008) findings that the girls who attended the vocational program were considered to be non-conformity, have a lack of tolerance and behaviour which endeavoured to go against the norms as qualities which were valued in their peer group (Ambjörnsson 2008:86). That said there is other research (Pavlidous 2003), which can explain that behaviour as a form of classroom management, a characteristic which is associated with feminine gender identity, and whilst peer resistance is not evident, this is a characteristic which has been observed in a mixed-sex classroom.

8. Discussion

It can be reasoned that the girls investigated in this research paper have taken on the participation behaviour patterns of their masculine equivalent. It therefore can be argued that the omission of the boys from the classroom setting allows for girls to re-define their gender identity.

One of the theoretical starting points of this study was that gender can be understood as a social category, referring to the social behaviour of what it is to be male or female (Litosseliti 2006). In this respect, social class and gender are defined and linked by societal conceptualisation; and as such can be theorised by interactionist identity (Nyström 2012). For
a comparison to be made there must be a standard societal group and this is argued by Jenkins (2004) to be the middle class.

There is a definite link between the girls in the vocational program studied here and that of the class Ambjörnsson (2008) classified as being working class students. Taking both these groups at face values it could be asserted that the conversational participation in the study should follow the previous research patterns i.e. boys participating more. I suggest this with reference to the theory of dis-identification which could explain working class girls’ reluctance to participate in classroom discussions. These social expectations which lean towards their non-participation as a somewhat group acknowledgement and self-identity of what it is to be working class (Ambjörnsson 2008:90).

Willis (1977) who has coined the phrase ‘counter school culture’, a phenomenon which has been used to describe boys’ behaviour in the classrooms of the industrial north of England. These boys were of working class background, with employment expectations that rose no further than the local industry, showed contempt for the educational system and the order and structure which the school and their teachers attempted to set (Ambjörnsson 2008).

With these preconceived ideas of classroom behaviour linked to social class, one would not have been stunned to observe both groups having a low conversational participation frequency. Previous research has shown that girls from the middle classes are more likely to participate than boys from the working classes (Ambjörnsson 2008). Taking this into consideration if this group of girls attended a university preparatory curriculum, a programme which is associated with middle class identity, this result would be somewhat expected. With this in mind one can only assume what bearing social class had in the girls’ classroom participation pattern. As stated above social class has weight in defining gender identity. With this mind one can only speculate that these girls were re-defining their social class gender identity.

The boys were observed during their weekly scheduled Mekatronik lesson, a subject directly related to their chosen program Electronics and Energy. That said, Willis’s (1977) dis-identity theory could go some way to explain the boys’ low conversational participation. Ambjörnsson has used this theory to explain working class girls’ attitude and low activity in response to school culture response, something which cannot be applied here, where there appears to be no refusal to participate.

What I think is note worthy here is the frequency of utterance in respect of the singular lessons being studied within each program. The girls’ conversational participation has been
observed during Natural Science studies\textsuperscript{10} a subject which is not directly related to the chosen field of education. Nevertheless this has not influenced their participation negatively. Significant in contrast are the boys, who were observed taking part in a lesson directly related to their chosen program, and as such one may expect a higher level of activity. However one must look closely at the topics of discussion which were under observation. The girls’ lessons comprised of discussions about ‘different energy sources’, ‘fossil fuels and alternatives’ and the ‘greenhouse effect’ subjects which facilitate and encourage discussion, whilst the boys’ discussions were related to ‘LED cube construction’, ‘programming’ and ‘robot construction’, which are not as conducive for discussion, and there one could contend their content to be more instructional in nature.

Although these results on the surface do not reflect the establish gender identity participation characteristics, why should they, when all previous research into gender identity has been gathered in mixed-sex classroom environments. With regards to the boys’ inactivity, this could be due to several factors; firstly, the topics which were discussed were not general in the natural so as to allow discussion, secondly, the ethno-graphics of the area could cause the effect of counter school culture (Ambjörnsson 2008). As for the girls conversation participation these results I suggest can be to some extent explained in the light of the girls extended management of their classroom environment which without the boys present would incorporated the control of the conversation participation (Pavlidous 2003).

Whilst this girl group’s participation can be explained in by previous the importance of the teacher (although outside the scope of the study) in this setting should not be overlooked. In the situations I have observed I would make a case that the pedagogue had clear and concise lesson with didactical structures, which is argued by Molin (2006) and Marton (2003) as essential in relation to content and context if acquisition of knowledge is to take place. This I argue would only serve to support the high levels of participation seen in the girl group.

The fact that comparatively the girls conversational participation gender identity have been shown to be more in line with participation patterns more commonly associated with masculinity, must be taken into consideration with the homogenous milieu within which these observations were conducted. This result is not completely unexpected, as the removal of a gender from the classroom environment changes the conditions of classroom interaction, and

\textsuperscript{10} Not a subject directly related to their chosen profession
in addition makes direct comparisons between this heterogeneous classroom interaction and homogenous classroom participation difficult.

Due to the size of this study no generalisation and/or inference can be drawn. However, any situation which enhances student activity must be viewed positively. With regards to the above study this would benefit by further research into the participation and knowledge acquisition of homogenous groups in Sweden. In this way the gender identity differences which this concise report has indicted could be verified.

9. Conclusion
This study set out to compare the established conversational participation gender identities which are formed in the heterogeneous classroom setting, with the participation gender identity characteristics formed in a homogenous classroom environment. The results of the participation data have demonstrated an extreme difference in the conversational participation activity between girls and boys. However, these clear differences in conversational participation between the genders can be explained in the girls’ management of the classroom setting and the boys’ counter school culture. Moreover, one must take into consideration the fact that this study was conducted in a geographical area where the demographics may not be representative of the rest of the country.

Nonetheless the quality of participation with regards to girls taking the floor may go some way to explain girls’ higher achievement academically, in upper secondary school. It has been shown that girls’ participation gender identity characteristics can in the right context mirror those associated with boys. If women are marginalised as suggested by Shaw (2000) in relation to pupils speaking, then any method which can establish a balance in rhetoric in the classroom at least must be explored further.

As a teacher the implementation of flexible homogenous classrooms can be justified in the application of the didactical questions and strategies suggested my Marton (2003) and Molin (2006). Additionally, if there is to be a change in the disparity of the classroom conversation participation patterns in mixed sex classroom environments, then gender identities of girls and boys associated with such phenomenon must merge.

If this mergence is to take place girls must become autonomous, which in this context is paradoxical, “...independence is clearly conditional- how it’s easier to be perceived as independent and unique if you stick close to the norms, and far more difficult if one deviates”
(Ambjörnsson 2008:303). This study has indicated that one possible way to allow for these gender identity restrictions to be elevated is to use homogenous teaching environments.
11. References:


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www.vr.se
Appendix A

Tally mark observations of six class sessions recorded from 29th of March 2012 to the 25th of April 2012.

Gender of class: Girls (n=19); Date: 29th March 2012; Topic of Lesson: Different Energy Sources

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(52) Total number of students who participated:14</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(33)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(18) Seventeen related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(1)</td>
</tr>
</tbody>
</table>

Gender of class: Girls (n=20); Date: 5th April 2012; Topic of Lesson: Fossil fuels Vs alternatives

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(72) Total number of students who participated:15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(32)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(35) Thirty related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(5)</td>
</tr>
</tbody>
</table>

Gender of class: Girls (n=21); Date: 19th April 2012; Topic of Lesson: Greenhouse effect.

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(53) Total number of students who participated: 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(32)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(18) Seventeen related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Gender of class: Boys (n=13); Date: 4th April 2012; Topic of Lesson: LED Cube construction

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(22) Total number of students who participated:5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(13)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(7) Three related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(2)</td>
</tr>
</tbody>
</table>

Gender of class: Boys (n=15); Date: 18th April 2012; Topic of Lesson: Robot Construction

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(20) Total number of students who participated:5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(16)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(3) Three related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(1)</td>
</tr>
</tbody>
</table>
Gender of class: Boys (n=15); Date: 25th April 2012; Topic of Lesson: Programming LED Cube

<table>
<thead>
<tr>
<th>1. Participation frequency</th>
<th>(26) Total number of students who participated: 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Turn allocations</td>
<td>(17)</td>
</tr>
<tr>
<td>3. Comments</td>
<td>(8) Five related to the topic</td>
</tr>
<tr>
<td>4. Overlapping utterances</td>
<td>(1)</td>
</tr>
</tbody>
</table>