SEATING PATTERNS AND OTHER INFLUENCES ON CLASSROOM INTERACTION AND PARTICIPATION

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Abstract

Research was conducted to find a link between student seating patterns and levels of classroom interaction and participation. Two classrooms were observed in the Fairbanks North Star Borough School District over ten days of the spring semester of 2007. Observations were conducted in two English classes at Lathrop High School. A total of 53 students and two teachers took part in the study. The primary research question centered on the relationship between seating location and classroom interaction and/or participation. Further questions dealt with student grouping according to race, gender, academic ability and age as well as other factors that may influence student interaction and participation. The teacher’s role in encouraging interaction and participation through changing the seating arrangement was also analyzed.

Results indicate that while seating location played a role in classroom interaction and participation, it may be more important to look at who a student is sitting next to as a predictor of the level of interaction and participation. Grouping patterns exist to some extent for gender, race, academic ability and age. Other factors that can influence student behavior included the absence or tardiness of students. Teachers were also shown to play a role in influencing behavior.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature Page</td>
<td>i</td>
</tr>
<tr>
<td>Title Page</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>iii</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>iv</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>vii</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>viii</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Rationale</td>
<td>3</td>
</tr>
<tr>
<td>Literature Review</td>
<td>7</td>
</tr>
<tr>
<td>Seating Locations and Effect on Interaction</td>
<td>11</td>
</tr>
<tr>
<td>Grouping According to Gender, Race, or Academic Ability</td>
<td>17</td>
</tr>
<tr>
<td>Other Factors that Influence Participation and/or Interaction</td>
<td>18</td>
</tr>
<tr>
<td>Gender of the Teacher</td>
<td>19</td>
</tr>
<tr>
<td>Teacher Expectations &amp; Biases</td>
<td>20</td>
</tr>
<tr>
<td>Classroom/School Climate</td>
<td>21</td>
</tr>
<tr>
<td>Influence of Classroom Subject, Parent Involvement and Student Confidence</td>
<td>22</td>
</tr>
<tr>
<td>Teacher’s Ability to Change/Encourage Interaction</td>
<td>23</td>
</tr>
<tr>
<td>Gender, Race, and Academic Ability as Predictors of Interaction/Participation</td>
<td>24</td>
</tr>
<tr>
<td>Conclusion</td>
<td>25</td>
</tr>
<tr>
<td>Methodology</td>
<td>27</td>
</tr>
</tbody>
</table>
Third Research Question: Other Factors .................................................................72

*Interview Responses on “Other” Influences* ..................................................81

Implications for Field of Education .............................................................84

Fourth Research Question: Teacher-Initiated Change ............................................85

*Interview Responses on Teacher-Initiated Changes* ...................................87

Implications for Field of Education .............................................................89

Surprising Findings .................................................................................................90

New and Important Findings ...............................................................................97

Discussion .................................................................................................................100

New Questions and the Need for Further Research ..............................................105

Conclusion ................................................................................................................110

References ...............................................................................................................111

Appendices .............................................................................................................117
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Summary Map of Classroom #1</td>
<td>117</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Summary Map of Classroom #2</td>
<td>118</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Interview Questions</td>
<td>119</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Informed Consent Form</td>
<td>120</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Parental Consent &amp; Student Assent Form</td>
<td>122</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Observation Description 1</td>
<td>124</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Observation Description 2</td>
<td>125</td>
</tr>
</tbody>
</table>
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Introduction

Education and schools have always been an integral part of my life. I have always been the kind of person who really likes school, likes classes, and likes to be around friends. It only made sense, then, for me to become an educator. I was born and raised in Fairbanks, Alaska and hope someday soon to have my very own classroom here in my hometown, maybe even at my former high school. I have always been a "people watcher" and therefore a natural observer. I obtained my Bachelor of Science degree in English from Southern Oregon University, and then came back to Fairbanks to get my teaching certificate through the University of Alaska Fairbanks. I am certified to teach English, Art, and Psychology at the secondary level. My student teaching took place locally at Lathrop High School. It was during my time at this school where many of my ideas for this research first took root. It is also, curiously enough, the same school I returned to in order to complete my research for this study.

As both a researcher and an educator it was important to be aware of my own biases when I entered another teacher's classroom. I was aware of more than just the topics I was researching; I also had a critical eye when it came to the function of the classroom as a whole. There are always any number of significant events happening at the same time. As an educator, student, and researcher I felt pulled in many different directions while trying to remain a passive observer. This may have led me to miss certain details relevant to the study because I focused on something else. It may also mean that I over-thought the reasons for a student’s behavior instead of looking for the simplest answer.
There were also more specific biases concerned with the first classroom in this study. I knew a few of the students in the classroom already. One was very well known to me through my work with a local organization, the other I did not personally know but knew of her through other people. Another student in the classroom was actually a former student of mine from two years ago at a different high school. I do not believe that this posed a problem for anyone involved, but it could certainly, again, change my focus from day-to-day. I also had a different perspective on these three students, which in some cases helped me to understand their behavior and in other cases only seemed to make me question it more. Of course, it should be mentioned that I am also a white, female English teacher, just like the instructors in the classrooms I observed. This may alter my perception and diminish my criticisms of anything that goes on in the classroom. On the other hand, I can very easily relate to many of the daily frustrations and concerns that the teachers experience.
Rationale

The focus of this study was to determine what some of the possible influences are on student participation and interaction within the classroom. Specifically, I sought the correspondence between students’ seating location and their level of interaction and participation. I was also curious about patterns and groupings that would appear in the students’ seating arrangements. Ultimately, I endeavored to find a link between seating and student behavior. My study looked at both the form and amount of certain behaviors. Specifically I paid attention to the influences on on-task behaviors such as on-task talking to determine if there was a connection to students’ seating. I also looked at other behaviors, both on- and off-task, to determine their impact on the classroom and on student interaction and participation. These behaviors were primarily limited to those that were easily observed, such as audible forms of talking or obvious non-verbal interactions between students. The information I gathered on this topic could then possibly inform teachers who want to manipulate the classroom environment to best suit their students and increase learning and comprehension.

The research questions that were ultimately developed include the following: To what extent does a student’s seating location affect their amount of classroom interaction and/or participation? To what extent do students tend to seat themselves in groups according to gender, race, age, or academic ability? What other factors seem to influence the amount of classroom participation and interaction? Can teachers manipulate (change) the seating arrangement to influence interaction and participation levels? The first question is the primary question and is one of the initial questions that I asked when I
first began envisioning this research. The other questions are secondary to the original question.

My impressions, opinions, and beliefs about the classroom and education have directed this research. One of these impressions is that teachers have often felt the need to control where their students sit within the classroom. Sometimes, this is not necessary and students choose their own seats and there are few behavior problems. However, the more likely scenario, based on my own experience, is that if students are allowed to choose their own seats, classroom disturbances such as off-task talking will increase. Those teachers who take it upon themselves to create a seating chart assume that students are less likely to chat and more likely to pay attention if they are not seated among their close friends and are towards the front of the classroom, not seated in a back corner. In my experience, some seating charts work, some do not. In any case, teachers, both inexperienced and experienced, will note that where students sit often impacts their performance in the classroom. Those who sit in the front, whether by choice or placement, are more likely to pay attention, answer questions, take notes, and not talk off task. On the other hand, students who are seated towards the back of the room and/or next to their friends are more likely to be distracted, off task, and so on. The seating arrangement may also play a role in student interaction, as I hope to examine more closely in my research. There will likely be a difference between the social dynamics in a classroom organized in traditional rows versus a classroom organized in pods or in a circle, for example. These are the beliefs and assumptions that I have, and that many teachers seem to stand behind.
What if teachers could find a way to increase their students’ active participation in the classroom simply by creating a seating chart or adjusting the seating arrangement? This is only the beginning of a series of questions and curiosities I have thought of after completing a great deal of classroom observations while working as a student teacher. I noticed that there were definite groups of students in one classroom in particular and that each had different levels of participation and interaction within the classroom. This seemed to depend on who the students sat next to, as well as where in the classroom they sat. Students also seemed to group themselves according to gender, race, and even ability level. My research questions then expanded to decipher just how important each of these criteria are in a student’s choice of seat and, ultimately, in their classroom behavior. This was only a cursory observation of one group of students, so I continued to observe other classes, other classrooms, and other age groups. There seemed to be an emerging pattern out there that needed further analysis.

As a teacher, this is a potentially very important area of research. If it is as simple as moving students to a different seat to increase their participation in the classroom, this could be an essential tool for any teacher and/or parent who wants to see every student reach their full potential. Student interaction and participation are also important topics in many research projects. Various studies have focused, to some extent, on student interaction in the classroom, or the school as a whole. Most studies have focused on influences on interaction that are outside of the student’s, and often the teacher’s, control. These include: student gender, student age, class subject, teacher gender, teacher expectations, time of day, and so on. Very few mention a student’s seating preference as
a studied influence, thus demonstrating that more research needs to be done. In her study on “t-zones” Jones suggests the need for further research into “the role of classroom interactions on student achievement. It would be interesting to know why silent students fail to participate, and how the lack of participation influences learning” (1989, p.5). My study looks more closely at a factor of interaction that can be easily controlled — seating location. Any clear patterns that become apparent from this study or any other on the topic would, at the very least, allow teachers to understand the influence of seating patterns on their classroom. Then, teachers can choose to experiment with seating patterns to find the right fit based on the patterns, or they can watch for patterns unique to their classes and make adjustments as necessary to make the classroom more efficient and successful for everyone.
Literature Review

As I reviewed literature my focus for this research began to take shape. I knew from the beginning that I wanted to look at seating in the classroom and at the groups that students place themselves in. My original goal in researching this topic was to find ways to increase how much students interacted in the classroom. I am greatly interested, as a future teacher, in finding ways to improve how my classroom functions. I developed my research questions based on my goals as well as on what I found or did not find in the literature I reviewed. I found that a great deal of studies addressed influences on student interaction and participation. However, I felt that the research that was out there did not adequately address the influence that student seating played. While some studies did address student seating, they did not go into the detail that I sought. Many also looked at seating, but not in the classroom, or they did not look at seating patterns in general, but rather looked for only a specific type of pattern. I was curious about the link between the two, if there was one. I wanted to know if students acted differently in class because of where they sat. Did students who sit in the front participate and interact more than those in the back? If so, why? These questions and the gaps in the research that I found led to my first question: To what extent does a student’s seating location affect their amount of classroom interaction and/or participation?

I also noticed during my student teaching that students grouped themselves in certain ways. While some studies addressed grouping according to gender and race, these studies either took place outside of the classroom or the expected results were not found. This led to my second research question: To what extent do students tend to seat
themselves according to gender, race, age, or academic ability? These were factors I had observed and also factors that some researchers had studied but were unable to prove their existence in classrooms. My third research question was developed as a direct result of the literature itself. While trying to find studies on seating patterns, I came across studies that addressed many possible influences on interaction and participation. While they did not always address seating as an influence, the “other” factors were interesting. I felt it was necessary to include a category for any other possible influences on interaction and participation so that my study could be more inclusive and I could look at the classroom as a whole. My third research question was: What other factors seem to influence the amount of classroom participation and interaction?

Finally, my fourth research question came about because, as a teacher, I wanted to know how I could influence student interaction and participation in the classroom. There was some discussion in previous research on this subject, but the change initiated by the teachers was more likely to be minimal, negative, or not related directly to seating. One study that furthered my interest in this topic was conducted by a teacher who actually changed the seating in his own classroom many times throughout the school year to see how it impacted student interaction and participation. This is the kind of research that would be very interesting to conduct when I have my own classroom. Since I do not, I felt it was necessary to collect data relating to the question: Can teachers manipulate (change) the seating arrangements to influence interaction and participation levels?

In the context of my study, participation and interaction can be defined separately. A student would be participating in classroom activities if they are taking part in the
lesson at hand. This means that they are following directions and doing what is asked of
them by the teacher. Participation can be audible/verbal or it can be silent/non-verbal. A
student can participate by answering questions, writing notes, making eye contact, or
simply by listening to the teacher and class discussions. Those who are verbally
responding to questions and involving themselves in a discussion would be considered
“active” or “visible” participators. That is, they are obvious to an observer and they are
very clearly taking an active, verbal role in the class, not just taking notes, which could
be difficult for an observer to determine. The term “participation” implies that the student
is playing a positive, on-task role in the classroom. If they were not participating, it can
only be assumed that they are off-task in some way. There does not appear to be a
negative way to participate, as again, participation implies that the student is doing
something correct. The term interaction can be used to refer to a student who interacts in
the classroom by communicating with another student and/or the teacher. Interaction, like
participation can be verbal or non-verbal, it can be conversation, hand gestures, laughter,
facial expressions, and so on. Interaction can be off-task or on-task. This will most likely
be in the form of talk where students’ talking is referred to as either an on-task or off-task
form of interaction. The form of talk can also be divided into “academic” talk and
“social” talk. Just as interaction can be on- or off-task, it can also be positive or negative
depending on how it affects the student and the class as a whole.

The literature I found covers a broad range of specific research into the larger
topic of classroom interaction and participation. Much of this research looks at the impact
of student factors, such as gender (Duffy et al., 2001; Einarsson & Granstrom, 2002;
Fassinger, 1995; French & French, 1984; Howard & Henney, 1998; Ilatov et al., 1998; Jones, 1989; Myhill, 2002; Okpala, 1996; Younger et al., 1999) academic ability, or both (Jones, 1989; Myhill, 2002), on the level of interaction and participation. A selection of research looks directly at some form of seating patterns or locations such as groupings or areas of concentrated interaction in the classroom and their influence on interaction, participation and/or achievement (Adams & Biddle, 1970; Bates, 1973; Becker et al., 1973; Benedict & Hoag, 2004; Delefes & Jackson, 1972; Holliman & Anderson, 1986; Jones, 1989; Koneya, 1976; Marx et al., 1999; Okpala, 1996; Philpott, 1993; Schofield & Sagar, 1976; Wulf, 1977). A few others look at how students tend to group themselves according to gender, race, or academic ability (Jones, 1989; Schofield & Sagar, 1976).

Much of the literature falls under the categories included in my third research question regarding “other factors” that influence participation and interaction. This topic has many subtopics that fall under the “other” category. These topics are mostly non-student factors. A large subtopic examines the influence of the gender of the teacher on classroom interactions and participation (Duffy et al., 2001; Einarsson & Granstrom, 2002; Fassinger, 1995; Howard & Henney, 1998; Jaasma, 1997). Teachers can also influence classroom participation and interaction through their expectations (Jordan et al., 1997; Younger et al., 1999) and through the atmosphere or “climate” of their classroom (Fassinger, 1995; Jaasma, 1997; McEvoy & Welker, 2000). Still other influences on interaction and participation have been discussed, though not as extensively, as being due to parent involvement in the schools (Feuerstein, 2000), student confidence (Fassinger, 1995) and even the subject being taught in the classroom (Duffy et al., 2001).
Finally, some authors make suggestions or actively seek to change the interaction and participation levels in classrooms. This addresses my fourth research question, perhaps the most important, that asks what teachers can do to implement change. Some (Okpala, 1996; Fassinger, 1995; Feuerstein, 2000) simply make suggestions or raise our awareness about influences on classroom participation and interaction. Others, (Philpott, 1993) seek to use their research in a beneficial and immediate way by changing how a classroom operates.

*Seating Locations and Effect on Interaction*

The first research question dealt with the effect of seating locations on student interaction and participation. A selection of studies dealt with the topic of seating locations and/or seating patterns (Adams & Biddle, 1970; Bates, 1973; Becker et al., 1973; Benedict & Hoag, 2004; Delefes & Jackson, 1972; Holliman & Anderson, 1986; Jones, 1989; Koneya, 1976; Marx et al., 2000; Okpala, 1996; Philpott, 1993; Schofield & Sagar, 1976; Wulf, 1977). Schofield and Sagar (1976) conducted their observations in a newly-opened magnet middle school. This school was considered unique at the time because 48 percent of the population was African-American. The research questions for this study focused on the following: the significance of race on student interaction; the influence of grade level or gender on interracial interaction; the comparison of sex and race as a grouping criterion; and the possibility of an increase in interracial interaction over time. The cafeteria was the focus of the observations. It was here that observers
mapped out the seating using a numerical code to note the race and gender of each student in each seat.

The results for this study showed that race was a powerful factor in determining where students chose to sit in the cafeteria. This was true of all three grade levels, sixth to eighth, and both genders. However, gender was found to be more significant in determining seating, especially for the younger students in sixth grade. Gender also played a role in determining if interaction patterns would change over time. For example, it was found that males tended to branch out and make new friends (of different races) more often than females. As students got older, they also changed their level of interaction with other racial groups.

This study makes it clear that age and gender are also important factors in the seating patterns of students and that race is not the only determining factor. This study looked at some of the factors that I initially witnessed as contributing to student interaction, including the tendency for students to group themselves according to certain criteria (race, gender, etc.). More could be done on this study to update it, expand the number of participants and increase the number of grouping criteria that were examined. This study also needs to be conducted in classrooms to see the effects on interaction and participation. However, despite its faults, it is still an excellent piece of research that I consider to be seminal in its field because of the ideas it provides for future research.

Adams and Biddle (1970) observed 32 classes and found that verbal interaction was most likely to occur along the front of the classroom and down the center. These unexpected findings led them to refer to this area of interaction as an “action zone”. Since
this study, many (Bates, 1973; Delefes & Jackson, 1972; Jones, 1989; Koneya, 1976; Marx et al., 2000; Wulf, 1977) have continued to look for the “action zone.” Koneya (1976), Marx et al. (2000) and Wulf (1977) were successful at finding “action zones” within the classrooms they observed. Koneya found evidence of an “action zone”, but it was not in a “T” shape across the front and down the center as Adam and Biddle found, it was in the shape of a triangle. The triangle extended across the front row and came to a point at the middle desk in the middle row. The study by Marx, Fuhrer and Hartig examined the relationship between seating arrangements and how often fourth graders asked questions over an eight week period. Students were rotated through different seat locations and the seating arrangement was changed from traditional rows to two semicircles. The findings indicated that students asked more questions within the semicircles arrangement than in the rows. The “action zone” was evident within the row seating, but not in the semicircles.

Bates (1973), Delefes and Jackson (1972) and Jones (1989) did not find evidence of the action zones. Jones was searching for “t-zones,” based on the “action zones” found in the research of Adams and Biddle (1970), which describe the seating patterns of “target” students — the ones most likely to interact with the teacher and participate in class — who usually sit in the front and down the center, creating a t-shaped area of interaction. The goals of this study included determining if target students were, in fact, seated in this t-shaped area, and if there were any gender differences in target students. Jones did not find that target students were seated in a “t-zone” in any of the sixty-five classes observed. Gender differences were noted. Male students had more interactions
than female students in general. There were more male target students; however, it was the female target students who had more interaction. This study was important because it looked for the relationship between seating patterns, gender, and classroom interaction and participation. This is something that can be studied further, along with seating patterns in general. Although this was a relatively large study, no significant conclusions were found. More effort should have been made to find some sort of seating pattern, whether it was a “t-zone” or not.

Additional research (Becker et al., 1973; Benedict & Hoag, 2004; Holliman & Anderson, 1986; Wulf, 1977) set out to determine if there was a link between seating location and academic grade. Benedict and Hoag conducted their research in large lecture halls of college-level economics classes. They found that students who prefer to sit towards the front of the class are more likely to receive an “A” grade, while those who prefer to sit towards the back of the room are more likely to receive a “D” or an “F” for the course. Another interesting finding was that if students were not able to sit in their preferred seat, and were forced to sit closer to the front, they still received higher grades even though they did not want to sit up front. Becker et al. surveyed three classes and found that the further away students were from the instructor, the lower their grade. Wulf examined two classes of the same course taught by the same instructor in two consecutive semesters. One semester students had assigned seating, the next students could choose their seats. In addition to finding evidence of an “action zone,” as described previously, in the class with unassigned seats, she made the general conclusion that the higher achieving students would be more likely to sit towards the front of the class. Holliman
and Anderson looked for a link between test scores and the distance between students and the teachers’ lectern in an introductory psychology course. There was evidence of an inverse relationship between the distance from the lectern and the student’s test score. Further analysis revealed that students with an “A” were significantly closer to the lectern than other students. Results also suggested that students sitting in the first two rows had higher grades on the test than students seated further back.

Okpala (1996) set out to study gender differences in a classroom, but while conducting the study, it became clear that the seating in the classroom also influenced interaction. The teacher in the classroom seemed to unknowingly separate her classroom according to gender. Seating patterns in the classroom began to influence the levels of interaction. Students were separated by gender, moved around often, and isolated from others as punishment. By separating disruptive students, the teacher created the problem of seating all the boys next to each other and causing more disruption. This study is important because it shows that what we set out to study may lead to another discovery. The search for gender differences led Okpala to witness what can happen when a teacher changes the seating arrangement in a classroom. Teachers can influence interaction both positively, and negatively, by simply moving students around.

Perhaps the most interesting and important study on this topic, because of the parallels with my own ideas, was conducted by Philpott (1993), who was both a researcher and a classroom teacher. This was a five-part study conducted over the course of one year in an English as a foreign language school in southern Spain. Each class consisted of 13 members ranging in age from 7 years old to young adults (most were
about 16 years of age). A total of 123 students finished out the study, which began with 140 – a few dropped out along the way. Philpott sought to find a relationship between the seating patterns of his students and their attitudes towards class activities. He also looked at how the layout of the room and the teacher’s behavior affected the attitudes of students. The purpose of the study was to see if there was a correlation between seating and levels of interaction, and then to change seating patterns in order to improve student interaction and participation. Philpott’s goal was to have all students take part in class without either dominant or silent students.

Philpott (1993) relied strongly on analyzing the seating patterns according to maps he made of the classroom and noting where students sat. He used an attitudinal rating scale to grade his students’ attitudes on a five-part scale ranging from most active to most passive. He then determined how “active” each seat was, and then he would switch the students around and see if that seat remained as “active” and if the interaction changed as positions in the room changed. He found that seats closest to the teacher were most active and those in the corners were most passive. In his second stage he altered the seating arrangement by changing where he sat in the classroom. The active students still remained closest to the teacher, the more passive shied away. As a result of the movement, some of the more passive students became more active and many made new friends. In stage three, he “reserved” seats and made more abrupt changes. Students did not shy away as much as he expected and many sat in a manner reflecting the original seating pattern. In stage four, he let the classroom return to its original order and allowed students to choose their seats. A few went back to their original seats, but most chose
different ones. In the last stage he distributed a questionnaire to determine if the student’s least/most favorite seats corresponded to their actual choices. Most choices did tend to correspond with the seating observed.

This study is an excellent example of applied research. A teacher took the time to conduct observations in his own classroom in order to find ways to improve the way his classroom operated. He was successful in this attempt and, as a result, interaction and participation were improved and some students even made new friends. This shows how teachers can influence the participation and interaction of their students, often by simply changing a few things, like seating locations — this relates to my fourth research question as well. This was a well-conducted study especially since it was carried out over the course of a full year with the same set of students. The only limitations are that it was conducted in only one classroom, with a limited number of students, and the same teacher. More research would need to be conducted by other teachers in the same manner to see if the same theories hold.

**Grouping According to Gender, Race, or Academic Ability**

Very few studies (Jones, 1989; Schofield & Sagar, 1976) have examined the grouping of students according to factors such as gender, race, or academic ability. Both of these studies were discussed earlier according to their examination of seating patterns. Schofield and Sagar observed clusters of students according to age, gender, and race in a middle school cafeteria while Jones searched for evidence of a “t-zone” and grouping according to academic ability, and the influence of factors such as gender. Schofield and
Sagar were successful at finding groupings of age, race, and gender in the school cafeteria. The only question remaining is whether their results can be generalized to classrooms as well. Jones does not find evidence of a “t-zone” but does not mention if any other seating patterns or grouping of students were evident. The studies are both well-designed, but fail to be completely generalizable. They both contribute to my research questions because they look for ways that students tend to group themselves both inside and outside the classroom. The ideas that Schofield and Sagar and Jones discussed helped form the basis for my research.

*Other Factors that Influence Participation and/or Interaction*

There are many studies that fall under this broad category of “other factors.” I created this category when I began finding useful and interesting information about influences on student participation and interaction that did not directly fall under my other research questions. Under this large category there are six subtopics that have been discovered in the literature. Some of these include multiple sources, while others are only expressed in one study. The subtopics include studies that look at the following influences on student interaction and participation: the gender of the teacher (Duffy et al., 2001; Einarsson & Granstrom, 2002; Fassinger, 1995; Howard & Henney, 1998; Jaasma, 1997; Klein, 2004), teacher expectations (Jordan et al., 1997), classroom climate (Fassinger, 1995; Jaasma, 1997; McEvoy & Welker, 2000), classroom subject (Duffy et al., 2001), parent involvement (Feuerstein, 2000), and student confidence (Fassinger, 1995).
Gender of the Teacher

Many studies (Duffy et al., 2001; Einarsson & Granstrom, 2002; Fassinger, 1995; Howard & Henney, 1998; Jaasma, 1997; Klein, 2004) have been conducted that look at the affect of the teacher’s gender on classroom interaction and participation. Duffy, Warren and Walsh studied the affect that various factors had on student interaction and this included the affect of teacher gender. Interactions between students and teachers were coded and analyzed. The teacher’s gender did influence the extent to which they interacted with male students. For example, male math teachers interacted equally with both genders; however, female math teachers, male literature/language and female literature/language teachers all interacted significantly more with their male students. Einarsson & Granstrom had slightly different results and found that male teachers increased the amount of interaction with females as the students got older, while the female teachers always interacted more with male students. Howard and Henney continued a similar line of research by also examining the influence of instructor gender on student participation in college classrooms. Howard and Henney found that instructor gender produced smaller differences in student participation than did student gender and age. Male instructors were observed to have more interactions with students than female instructors.

Jaasma (1997) approached her study from a different perspective. She considered how the gender of the teacher may influence the level of classroom communication apprehension (CCA) that students experienced in the observed college classrooms. CCA is defined as “apprehension associated with the specific context of the classroom” (p.
Jaasma hypothesized that students would experience less CCA with female instructors. However, this hypothesis was not supported by the research; the gender of the instructor did not appear to significantly affect the CCA of the students. Fassinger (1995) also investigated how much influence the instructor’s gender had on student participation in a college setting. She studied class traits, student traits, and professor traits with the hope of showing that students were more responsible for their own amount of interaction than the professors were. In this case, professor’s gender did play a role in the interaction. Male students were more likely to understand the material if the professor was female. Female students were more confident, comprehended more, showed more interest and participated more when their instructors were also female. Finally, Klein (2004) studied the affect of student and teacher gender on student academic achievement. In this study, teacher gender was more of a factor than student gender in the students’ academic achievement.

Teacher Expectations & Biases

Jordan et al. (1997) conducted a study on the influence of teacher expectations and perspectives about their students on the interaction level of the students. They sought to establish whether or not differences in teacher’s perspectives about students who were at risk, exceptional, and typically achieving were reflected in their teaching interactions in the classroom. This study showed that teachers treated these groups of students differently based on a set of beliefs and perspectives that varied among the teachers. As a result, some students received more interaction, and others received less simply because
of their classification (at risk, exceptional, typically achieving) and the beliefs of the teacher.

Classroom/School Climate

Fassinger (1995), Jaasma (1997), and McEvoy and Welker (2000) examined the influence of the classroom climate on the interaction and participation level of students. Fassinger looked at class traits and other influences on student participation in a college setting. The "emotional atmosphere" of the classroom was one of the factors found to play a key role in classroom participation. This classroom climate is created not only by instructors, according to Fassinger, but by students as well. For example, often students complain about peers who dominate classroom discussions. Fassinger found that four classroom traits significantly influenced student interaction and participation. These traits included class size, student-to-student interactions, emotional climate, and whether participation positively affects students’ grades. Jaasma discussed the classroom communication apprehension (CCA) of students, which explained most of the reasons why students did not participate — these were student traits, not classroom traits. Jaasma found that student traits accounted for the lack of interaction and participation instead of other traits such as classroom climate that could include peers, instructor gender, and so on.

McEvoy and Welker (2000) examined the influence of school climate on academic failure and antisocial behavior. They suggested improving school climate to reduce academic failure in a manner consistent with research on school climate and
effective schools. According to McEvoy and Welker, the climate of a school “helps to shape the interactions between and among students, teachers, administrators, parents and the community. School climate consists of the attitudes, beliefs, values, and norms that underlie the instructional practices, the level of academic achievement and the operation of a school” (p.7). By improving the school climate, and therefore the classroom climate, interaction and participation of students in classroom activities will improve as well.

Influence of Classroom Subject, Parent Involvement, and Student Confidence

The last three influences on classroom interaction and participation that fall under the “other” category include studies on classroom subject (Duffy et al., 2001), parent involvement (Feuerstein, 2000), and student confidence (Fassinger, 1995). Duffy et al. discussed the impact of the class subject on student-teacher interaction patterns. The tendency for teachers to interact more with male students depended, in part, on the subject being taught. For example, male math teachers interacted equally with both genders, but male literature/language teachers interacted more with their male students. Another important influence on student interaction and participation is parental involvement in education according to Feuerstein. The more parents are involved, he argued, the more likely students will believe in the need to participate and interact more fully in their classes. Students are pressured from their parents, and often from themselves as well, to perform well in class. Those students with more confidence in their abilities are more apt to participate in class. According to Fassinger, confidence, a student
trait in her study, showed the highest correlation to influencing interaction and participation.

Teacher’s Ability to Change/Encourage Interaction

Philpott (1993), Okpala (1996), Fassinger, (1995) and Feuerstein (2000) discussed ways that teachers can either encourage students to interact and participate more, or actually change something about their classroom to make necessary improvements. Philpott observed and interacted with his own class as part of his study. He implemented changes in the seating patterns to physically change the way students chose to seat themselves and, therefore, to improve their individual levels of interaction and participation. This step went beyond simply studying his students, and into an improvement of his classroom. Any teacher can take the lead from Philpott and find ways to adjust the seating to improve student activity. Fassinger suggests that a good first step for any teacher to promote class participation would be to develop student confidence. Feuerstein suggested that the teacher involve parents as much as possible in what their children are doing at school to increase student productiveness and participation. Teachers can also negatively influence student participation and interaction as evidenced in Okpala’s study wherein the teacher she observed unknowingly separated students according to gender, creating a larger discipline problem than she had tried to alleviate.
Gender, Race, and Academic Ability as Predictors of Interaction/Participation

Multiple studies (Duffy et al., 2001; Einarsson & Granstrom, 2002; Fassinger, 1995; French & French, 1984; Howard & Henney, 1998; Ilatov et al., 1998; Jones, 1989; Myhill, 2002; Okpala, 1996; Younger et al., 1999) deal, at least in part, with how interaction and participation in the classroom can be predicted based on gender, race, or academic ability. Myhill discusses how underachievers, of either gender, are the least likely to participate and interact positively in the classroom. Underachievement and interaction vary depending on gender according to Myhill’s study. Some of the issues raised by the study discuss the early emergence of the underachieving male, the changes in interaction patterns evident in the older high-achieving boy, and the consistent interaction pattern of the high-achieving female. The studies by Duffy et al., French and French, Okpala, and Younger et al. looked at gender differences in student-teacher interaction. Their results show that it was usually males who dominated classroom interactions, and males who received most of the negative interactions and reprimanding because of discipline problems. French and French along with Jones also found that male students had significantly more interactions than female students. Younger et al. conducted both interviews and observations of students, teachers, and staff in eight secondary schools in Great Britain. According to the interviews, teachers did not believe that they treated girls and boys differently. However, instructors did appear to treat students differently, according to gender, during observation periods. Teacher expectations appeared to influence how much students and teachers interacted and whether that interaction was positive or negative. Teachers interacted more with male
students, and they interacted with them in a more negative way than with female students. In the interviews, teachers did not seem to recognize their own expectations and biases that were carried over into the classroom. However, when students were interviewed, they pointed out the discrepancy in the way genders were treated. This study shows how important it is for teachers to be aware of their influences on how much their students interact.

Einarsson & Granstrom (2002) found slightly different results that show that male teachers increase the attention paid to female students as the students get older, while female teachers always give more attention to males. Howard and Henney (1998) studied mixed-age college classrooms and determined that a greater percentage of females than males participated in class discussion. Fassinger (1995) found no indication of gender influencing interaction. Ilatov et al. (1998) determined that gender and the academic composition of the class were important factors in teacher-student interactions. In this study, however, the two teachers observed talked more with females than with males. One of the teachers did interact more with males in disciplinary situations, as in the studies previously discussed. Females academically dominated one class observed, which influenced teacher behavior and indicates that class composition is an important factor in teacher-student interaction.

Conclusion

Many of the studies conducted over the past thirty years have contributed greatly to this field. Researchers from many countries have conducted similar observations,
interviews, and surveys to determine what the greatest influences are on student interaction and participation. The most significant studies have shown clear connections between these influences and the level of interaction and participation. Philpott (1993) clearly showed that seating can affect student participation and interaction. He went a step further and changed the way his classroom functioned. Other studies, such as those of Jaasma (1997) and Fassinger (1995), examine other factors that influence interaction. Both gender of student and gender of instructor, for example, appear to be important factors, though their importance varies depending on which study is reviewed. Most researchers seem to agree that males dominate classroom interaction, but much of this interaction may be due in part to more disciplinary interactions. Studies such as those of Schofield and Sagar (1976) and Jones (1989) may not have yielded generalizable results, but their methods of coding and analysis can be quite useful in future research.
Methodology

*Researcher Assumptions*

Every researcher, and every teacher for that matter, has a set of assumptions when walking into any classroom. As a researcher I come with my own ideas, my own preconceived notions of what a classroom should look like, what it should feel like, and how it should function. Each classroom functions as its own small, unique culture (Dyson, 1984) and as a complex social space (Hammersley, 1999), making it that much more interesting as well as difficult for both teachers and researchers. Many of these assumptions are buried within my own past experiences as a teacher, a student, and a researcher. I have thought specifically about my assumptions within the context of this study. There are topics within this study that I do have some preconceived ideas about. They include such elements as: the impact of interaction and participation on learning; the relative value of on-task versus off-task talk; and the difference between positive and negative behavior within the classroom.

To begin, I would like to address my assumptions regarding interaction and participation. It is my belief as a teacher, and as a student, that the more students interact and participate in class, the more likely they are to learn. This is assuming that the participation and interaction are positive and that the student is actively engaged in the classroom and not interacting with friends in an off-task manner only. The students who sit in the back corner and remain quiet and do not interact positively would, in my opinion, be less likely to succeed than students who sit closer to the teacher and ask and answer questions in addition to actively participating in group activities, and so on. This
does not mean that there are not exceptions to this scenario; however, most teachers and parents would prefer that a student was interacting and participating positively in class than not. Interaction and participation are also seen as a sign that the student is learning and is actively involved in the learning process. Some students learn very well independently, but many do not. There is the case of learning styles as well to contend with, as some students are more verbal and need to talk things out, while others are successful by writing and reflecting on paper. The more active, verbal, and positive that the participation and interaction are, the more the student is likely to gain. As an English teacher, it is important that students share their thoughts and opinions about a text. Social interaction in the classroom is just one of many tools teachers can use to encourage students to make connections with a topic or text (Gallas et al., 1996). I do not believe that interaction and participation in the classroom could have negative consequences unless there is an extreme circumstance where a student is made fun of by a teacher or student for sharing an opinion, for example. Overall, participation and interaction in the classroom is something to be encouraged. Some students will, of course, get more out of it than others, but it will be a positive influence on any who do use it. When students actively participate in class, whether it is a group project or a class discussion, it helps them to learn. Social interaction within the classroom and in society is an important element in encouraging learning and growth among students (Heath, 1983; Pinnell, 1985; Vygotsky, 1978). Positive interaction has been linked to academic success as well (Myhill, 2002; Younger & Warrington, 1996). It helps students to think critically and to analyze and process what they have read or studied in the class. If they do not interact
and participate positively in the class they are likely missing connections and the larger “picture” that the teacher is attempting to get across to them.

Another assumption that I bring with me into the classroom are my views on on-task and off-task talking. First, I should mention that often there is a very fine line between what is considered on-task and off-task talking (Dyson, 1987). It can be difficult to determine if a student’s comment is meant to facilitate a discussion or to distract from it by making a crude or comical remark, for example. Also, when two students are talking quietly, who knows if what they are saying is on topic or not? The teacher’s definition of on-task talk is likely to differ from the student’s definition; a topic may appear to be off-task to the teacher, but to the class, it is connected and on-task (Cazden, 1988; Goffman, 1976; Newkirk & McLure, 1992). In my opinion there is value in both types of talk (Newkirk & McLure, 1992). Only one of them has a recognized value within the classroom, however. Many teachers despise off-task talk and have no tolerance for it at all. Others can deal with talking up to a certain volume level. Academically, on-task talking would be considered the one with true value in the classroom; however, off-task or “social” talking can have value as well (Dyson, 1987). As long as students are talking in a positive manner and not making fun of others or being rude for example, they can still be learning with off-task talk. They are learning about their classmates, they are learning proper manners, they are learning a social skill (Goffman, 1976; Pinnell, 1985). If a student did not participate in off-task talk at all during the school day, they would likely have a very difficult time adjusting to the real world. They would be very inept when it came to social situations. So, while off-task talk may not have the academic value
of on-task talk, it can certainly help to educate students in other areas. On-task talk, on the other hand, includes talk that is associated with the day’s lesson or the overall unit. In an English classroom these could include questions about the reading homework, answers to the teacher’s questions about the reading, class discussions on an essay topic or a poem, or discussions within a small group working on a poster project. Many teachers have strict rules about when talking can and cannot occur, and this differs from class to class (Gallas et al., 1996). These rules should not be so strict that they inhibit the social growth of the student (Lambirth, 2006). The on-task talk is the talk most teachers want to hear in the classroom. However, there will always be some degree of off-task talk and, while it should not necessary be encouraged, it should be tolerated to a certain extent. Each teacher’s tolerance level is different, but there is some value to off-task talk as long as it does not get in the way of the learning process and, instead, may actually add to it.

I also have assumptions about what constitutes a positive versus a negative behavior within the classroom. To begin, on-task talking would be considered a positive. Off-task talking could be considered a negative, but I would only include it if it affected the learning process or went against the specific rules of a teacher such as no talking during a test. Examples of “mild misbehaviors” from a textbook for teachers includes minor, everyday behaviors such as: “acting out, talking back, talking without raising hand, disrupting others, tardiness” with the rank continuing to “moderate” and “severe” misbehaviors that become as serious as assault (Parkay & Stanford, 2001). Other positive behaviors would include issues such as attendance and coming to class on time, anything opposite of the above “misbehaviors” would likely fit in this category. Students who are
in class more often and who are on time will learn more and will be less of a disruption than a student who displays negative behaviors of tardiness and repeated absences from school. Students who are kind, courteous, respectful, and helpful to others would be displaying positive behaviors in my opinion. Those who are rude to the teacher or to other students would be showing a negative behavior. Positive behaviors can also include students who help out in the classroom, who help clean up the room, who help others with their work, and so on. Students who do not show these behaviors but instead impede those who are trying to help would be seen as displaying a negative behavior. Ultimately, a student’s behavior is positive if it allows the day’s lesson to be carried out without difficulty. In the same sense, a student’s behavior would be considered negative if it delayed the progress of the lesson and decreased the learning for the class. These behaviors, both positive and negative, can be controlled to some extent by the teacher. Teachers can encourage positive behaviors by being a role model and rewarding good behavior. I assume that to exert any control over their classrooms, teachers must establish their authority through any number of ways (Pace, 2003) and discourage negative behavior with discipline such as verbal warnings, speaking to the student, or lunch detentions. Behavior in the classroom should be controlled as necessary to increase learning. Discipline, however, should not get in the way of learning. It should not be the main focus of the teacher; instead it should just be another tool to increase the success of the classroom.

Overall, I assume that classrooms operate in similar ways to the classrooms I have entered in the past as either a student or a teacher. I assume that, for the most part, the
lesson is going to be covered by the teacher, the students are going to ask and answer questions and most will follow along. I realize there are always students who do not participate or interact, or who do not appear to be. No classroom is perfect, no teacher is perfect, and no lesson is perfect. In a typical classroom most students will learn and the day will go fairly smoothly with a few disruptions and discipline issues here and there. There are a lot of things going on within a classroom that are not related to the lesson of the day. A classroom is a social environment for anyone, but especially for teenagers! Their relationships with one another will affect the day-to-day operation of the classroom and therefore the amount of learning that takes place. I believe teachers can make an impact on this day-to-day operation and make changes that can affect the success of their classrooms. They cannot fix every problem within their classroom, but they can change things for the better by being observers within their own space.

*Research Paradigm*

I chose to conduct my research within classrooms in my own community. These classrooms were observed as they were, during normal classroom lessons. This study was done in this naturalistic setting to get the most accurate data regarding how a real classroom functions. I did not participate in the class and remained as unobtrusive as possible while I observed. It was important to me to impact the class as little as possible so that the data I gathered was more accurate and representative of a regular class day. Researchers who want to observe what actually happens in the classroom should make every attempt to lessen their impact on the classroom or their results will be impacted.
While I did have a focus for the study, I also felt that it was important to observe the classroom as a whole. To do this I recorded my initial observations using field notes as well as using a video camera during some of the sessions. In this way I could catch most of what was going on in the classroom and not just what was related to the study. I felt that this was important because the classroom is impacted by so many small events and details that may be missed or overlooked in a more narrow study. There could be events in the classroom that played a role in influencing student interaction and participation that I had not even thought about. By keeping an open mind and observing the classroom as a whole I was better prepared to understand the classroom as a whole unit. In addition to the note taking, I also interviewed students and teachers toward the end of the study to get a more complete picture of the classroom culture. These interviews were structured around specific questions, but the questions were open ended and participants were encouraged to give complete responses. This was done to gather as much information as possible, and again to gather the unexpected data in addition to the data related specifically to my research questions.

This study is within the category of qualitative research. According to Robert C. Bogdan and Sari Knopp Biklen who wrote *Qualitative Research for Education: An Introduction to Theories and Methods* (2003), qualitative research is characterized by the fact that collected data is “rich in description of people, places, and conversations, and not easily handled by statistical procedures” (p. 2). This type of research is normally conducted in the typical settings of the participants such as classrooms. Some specific characteristics of qualitative research that I implement in my study include “participant
observation” and “in-depth interviewing.” The definition of participant observation, according to Bogdan and Biklen is “an approach to qualitative research where the researcher spends prolonged periods of time in the subject’s natural environment, unobtrusively collecting data” (p. 261). In-depth interviews are usually less structured than a typical interview, and incorporate open-ended questions that encourage the participant to open up and provide more than a “yes” or “no” response. It is also a naturalistic study due to the fact that I observed the participants (students and teachers) in their natural environment. According to Bogdan and Biklen, a qualitative study is often referred to as naturalistic as well because the researcher is observing participants in places where the events of interest would naturally occur (p. 3).

Research is generally described as either qualitative or quantitative. Qualitative research quite literally deals with the quality of the data gathered and is not as concerned with the quantity of data that quantitative research hopes to compile. Qualitative research is the best option for this study. Bogdan and Biklen (2003) discuss five characteristics of qualitative research. A study does not have to have all of these traits to fit into the category of qualitative research, but it is likely to have most of them to some degree. These categories are that the study is naturalistic, includes descriptive data, is concerned with process, is inductive, and that it seeks meaning. It is not as concerned with numbers and figures and statistics, but instead with a more in-depth view from the perspective of an observer. My research is qualitative due to the fact that it takes place in the naturalistic setting of a classroom and not in an artificial or atypical environment. My data was primarily in the form of descriptions and maps as opposed to numbers. As Bogdan &
Biklen state, "the data collected take the form of words or pictures rather than numbers" (p.5) to fit the characteristic of descriptive data. This type of data collection allows for a more complete understanding of the classroom and the events within it; everything is important. More information can be gathered in this manner than through simple tabulation of numbers.

My research is also concerned with process and how and why things happen in the classroom. If I did not ask myself questions about why things occurred in the classroom I could not understand the overall function or the influences on the students and teachers. Though I already had a set of questions, my research did utilize some inductive reasoning as I still observed everything that went on and did not limit myself completely to my research questions. The fifth characteristic of meaning can definitely be seen in my research since I would like to learn as much as possible from the students and teachers to answer my questions and to maybe develop more questions as well. Overall, the research I conducted can be categorized as qualitative because I am not limited in what I can observe; I am free to record and analyze any interaction or event that interests me and I am constantly searching for meaning.

Research Method

Throughout my study I gathered information primarily through ethnographic field study. An ethnographic study requires that I pay attention to details and describe everything in what is known as "thick description" (Geertz, 1973) in order to better understand how each individual classroom functions as a unique culture. The function of
each classroom would, therefore, include details about seating patterns and classroom interaction, which was the focus of my study. The field in which I perform this study is, of course, the classroom.

My study took place in two classrooms within the Fairbanks North Star Borough School District in Fairbanks, Alaska. The first steps in this process required that I obtain permission from both the school district and the Institutional Review Board. Once permission was received, I was able to begin the recruitment process. I chose the classrooms by asking for teachers to volunteer at the school I wanted to observe, Lathrop High School. After obtaining permission from the school principal, I sent her an email that was then forwarded to the department heads. I received a few responses primarily from teachers in special education classrooms. While these would be of interest, they were not what I wanted to focus on for this study. I had hoped to have a selection of volunteers from which to choose. Instead, I focused on recruiting people myself, especially those who were within the English department, as that is my main area of teacher certification. My committee and I decided it would be beneficial to observe a subject that I was already familiar with, and that both classrooms should be of the same subject to have fewer variables.

After talking to many of the teachers within the department, I had two volunteers who had classes and classrooms that would fit with the criteria of the study. Primarily this meant that they had more traditional seating such as rows rather than circles, pods, or horseshoe arrangements. Secondly, I preferred that the classes had “open” seating rather than assigned seats as I wanted students to be free to choose their seating as one of my
primary criteria. Also, I wanted to observe classes that were of a core content area and that were not an elective class. This was due to the fact that the structure of the daily class activities could be very different in an elective class like journalism or creative writing. I wanted to observe more “typical” classes to get clearer results and to compare the two classrooms more easily.

The classes I observed were both within the English department. The first class was regular-level British Literature, a year-long senior level class that fulfills the twelfth grade English requirement. The second class was College Preparatory Composition (CPC), a semester-long class that fulfills one semester of the tenth grade English requirement. It is considered an honors level course for sophomores and recommended for college-bound juniors and seniors. It is writing intensive, with a focus on college-level writing. The British Literature class consisted of 23 students, all of whom were seniors. Most of these students were 17 years of age, while some were 18. The CPC class consisted of 32 students on the roster, though during the course of the study, one student never showed up to class and eventually was dropped from the course. The CPC students ranged in grade level from sophomore to senior, and were as old as 18. There was one junior, three seniors, and the rest were sophomores. Both instructors were female, and both have teaching experience within our school district. The British Literature teacher taught only English classes, while the CPC teacher was also a drama teacher.

Once I had the teachers and classrooms chosen, we had to select the class periods. I chose to observe the first period of British Literature, which always met in the mornings, and the fourth period of CPC, which always met right after lunch. Both first
and fourth period always met on the same day due to the rotating schedule at Lathrop High School. This made it easier to conduct observations of both classes. My next task was to pass out and then collect consent/assent forms (see Appendixes D and E) to the teachers and students. The actual observations were delayed slightly due to a slow return of the forms. Students attributed this simply to their forgetfulness.

These observations were during the second semester/fourth quarter of the school year. The school year ended on May 18, and these observations carried me through the last weeks of school. I began my observations of the British Literature class, or “Classroom #1”, on April 6, 2007. I began my observations of the CPC class, “Classroom #2”, on April 18, 2007. The schedule of the CPC was such that the optimal classes to observe would begin later in the month as the students were in the process of wrapping up their research papers. I observed each class a total of ten times. The first four times I simply recorded my observations with field notes. The last six times I used both my field notes and videotaped each class.

I observed from a front corner in each classroom as both classrooms were rather short in length from front to back and there was no extra room behind the students. This was perhaps not an ideal location as I was more prominent in the classroom than I would have preferred. Regardless, I did my best to remain a non-participant. My goal was to observe each classroom and the patterns that existed within them without deliberately influencing or interacting with either the students or teachers. I also did not want to impact the outcome of the study by outwardly telling students that I was observing their choice of seats. I eventually did provide the teachers with more information, but did not
want to affect the choices of the students during the course of the study. Thus, they simply knew that I was observing the influences on interaction and participation, not specifically the influence of seating choice.

I observed each class in its entirety and made notes regarding where students sat and the groups they appeared to place themselves in. I did this by taking careful field notes of what was going on in the classroom. I recorded information about the lesson, the talk in the class, students who arrived late, interruptions, and who asked and answered teacher questions. I noted some of the teacher’s comments and directions, and kept track of who appeared to be paying attention and who was not. This often was indicated by students who were turned around in their chairs, had their heads on the desk, or who were reminded by the teacher to pay attention.

In addition to field notes I also filled out a map of the classroom which noted the locations of each student. I kept track of their on-task talking and also noted who talked to whom both on- and off-task to determine groupings of students. If I could not hear student’s talk, I also looked for non-verbal interactions to help me determine groupings. I was not concerned with the amount of off-task talk. On the map of the classroom, I also indicated the gender and race (according to the teacher) of the student to look for patterns in their grouping. I indicated with arrows who was talking to whom and if the talk went in one direction or back and forth between students. If students moved around that day I noted the changes. I also noted if they were in a different seat than in previous classes. Other details I would add is whether the student had their head down, and for how long, if they were late to class, if they were turned around, and so on. I also indicated grade
levels within the CPC class due to the variety of grade levels within the class. Later on, I asked the teachers to also group the students academically into three groups: high, medium (average), and low. The “high” groups included students with “As” and high “Bs.” The middle group consisted of the average student who centered around a “C,” low “B,” or high “D.” The low group consisted of students who were in danger of failing. These groups were then coded onto the maps of the classroom to look for further groupings according to academic ability.

It was important to see how the seating choices seemed to affect each student’s interaction with the teacher and peers, especially if something occurred to change the typical seating choices, such as assigned groups for an activity. To narrow this potentially vast amount of observed interaction down further, I chose to focus on verbal interaction (as opposed to non-verbal signals and body language) that is related to the task at hand and is not off-task chatting or unrelated to the lesson. At the end of each observation session I completed three documents to guide my analysis and interpretation of each class. The first was the map (see Appendixes A and B), which included information about the individual students and their locations. Second, I completed an observation protocol (see Appendix F) with a description of the class details for that day. This included the date, time of the class, number of students present, number absent, and number tardy. I also noted the total number of each gender and race, as identified by the teacher, present each day. A brief note on the lesson plans was also included. Finally, I answered a series of questions related to my research questions on another observation protocol sheet (see Appendix G). These dealt with the observed opportunities for interaction and
participation as well as noting the most active students and locations within the room. I also addressed any patterns or groupings noticed that day along with any other factors that seemed to influence classroom interaction and participation.

When the observations were complete, I conducted a series of interviews. I interviewed both students and teachers in each class. For the students, I asked for volunteers from each class to sign up if they wished to be interviewed. The British Literature class interviews were conducted during their review day for their final exam. Each student came out into the hall to complete the interview then asked the next student on the list to come out. A total of eight students from the first class were interviewed along with their teacher. Only two students showed up for interviews from the second class although more had originally signed up. The questions that I asked the teachers were slightly different. I asked the teachers nine questions that centered more on their perspective of how influential student seating was to classroom interaction and participation. For a complete list of interview questions please refer to Appendix C.

Limitations of Research

This study was limited primarily by its small size. Only two classes and two teachers were observed. While there were many similarities between the two classes, it is difficult to tell if the results would apply to other classes. Classes were also observed at the very end of the semester, which may have impacted student behavior and provided very different results than the same study conducted at the beginning of a term, for example. I only observed one subject, English, specifically to avoid the variable of class subject as an influence on student interaction and participation. Therefore, these findings
could vary according to class subject. I was able to observe and record notes in addition to videotaping most of the classes; however, even with a video camera plus my own eyes, I could not possibly catch and record everything that occurred within the classroom. Due to the small size of the room, the camera angle could never be wide enough to capture all students. In addition, two students did not want to be videotaped, so one corner of the room was never videotaped in the second classroom, providing less detail about those students.

My location also limited the effectiveness of the study. Both classrooms were relatively small, and were especially short in length from front to back. This meant that there was not room in the back of the room for me to observe from. In both classes I sat up front, in full view of most students. While I do not think this posed any major problems, I do feel that I was too obvious to the students and would have liked to have been more unobtrusive in my location.

Since my study was focused more on students and their seating and interactions, I was not focused on the teacher as much. I did not record much of what the teacher said or who she called upon, talked to, etc. I only noted when students spoke and whether it was on- or off-task. The only behaviors that were closely recorded according to amount were the on-task talking of student interactions. I did not record the frequency or origin of off-task talk or non-verbal interactions.
Findings and Analysis

The analysis of this data is presented in many sections and sub-sections to better address the large amount of data that was collected and analyzed. To begin, I readdress my research questions, followed by an explanation of the analysis process itself. As an overview of my findings, I will then present a summary of what I found in the two classrooms I observed, both their similarities and their differences. I will then go into more detail and specifically address and then answer as best I can each one of my research questions from first to last. I discuss what I found, what I did not find and present the most important findings related to that question. After I have answered each question I will then address the meaning of the data I found especially as it applies to teachers and to the education system as a whole. Towards the end of the analysis section I will also address some of the most surprising findings from the research along with any new questions that have arisen now that the research is completed.

The Research Questions

I conducted this research to answer a specific set of questions centered on classroom seating and the affect on participation and interaction. These questions are: To what extent does a student’s seating location affect their amount of classroom interaction and/or participation? To what extent do students tend to seat themselves in groups according to gender, race, age, or academic ability? What other factors seem to influence the amount of classroom participation and interaction? Can teachers manipulate (change) the seating arrangement to influence interaction and participation levels? In order to
address these questions and their subsequent answers, I will examine the findings in both classes and how they were similar and different.

The Process of Analysis

When my research was complete I had twelve videotapes and an audiotape of twelve interviews. My first step was to review the videotapes to see if I had missed anything. I went through each one and again recorded the number of on-task interactions, specifically talking on-task, for each student to make sure my original observations were correct. To simplify my analysis, I summarized the total interactions as well as the typical seating patterns of students onto one “summary map” for each class (see Appendixes A and B). Each map showed the total number of recorded on-task verbal interactions, the typical location of each student, their gender, race, and academic ability. I then looked for any new information that was not in my field notes already such as the specific forms of interaction and participation. While this process did not yield much in the way of new information, it did allow me to reflect on the research and to think about the connections and the themes that were evident. As I watched the videos I also recorded my thoughts about these possible themes or other important information. These themes and patterns later helped me with the coding of the data, and this was the basis for much of my later writing. I now had enough to start the writing process and to discuss the analysis and findings. However, I had to pause to go through the interviews in case there was something there that did not fit with the observations themselves. I transcribed all of the student and teacher interviews and went through them looking for any key words,
themes, or surprises. I then coded the transcripts to mark the key or important
words/phrases in addition to marking the words/phrases that were in direct response to
the question. I also later went through them to code additional categories of information
connected to my research questions. Once this process was done I continued writing
about my findings. I kept returning to my field notes, my “summary map,” my
observation protocols, and my interviews as necessary to pull out information and to
reassess what was important in the study.

Summary of Classroom Findings

Overall, these two classes were very similar. They were both English classes,
though different subjects were taught in each class. Both classes were taught by
experienced female instructors. Both classrooms were organized in some form of rows as
opposed to circles or groups. Each class also began the semester with assigned seats, but
students were later able to move around. In each class, even though they could move
around, many of the students stayed in the original seats they were assigned, and most
stayed in the same seat from day-to-day. The classes each required similar levels of
interaction and participation to complete the daily lessons. Each class required some
reading, some group work, and some group presentations, for example. During group
work, both teachers often chose groups and had the students move around in the
classroom, thus creating new groups and new patterns in seating. The classes each had
students who dominated talking, both on- and off-task. I noted, but did not count, the off-
task talking that occurred. There were also students in each class who were very quiet or
who were even isolated in some way. There was evidence of grouping patterns according to gender, race, and academic ability in both classes.

There are also some differences between these two classes. Class #1 was composed of only twelfth grade students while Class #2 consisted of tenth through twelfth grade students. This meant that there were no obvious groupings by age in the twelfth grade class, as they were all approximately the same age. There were, however, a few older students in the second class who did, in fact, sit near each other in the far right corner. Two of the three seniors and the one junior in the class sat together. The seating arrangements were also somewhat different in that one class had “split” rows and one had traditional rows. The “split” rows consisted of three or four desks right next to each other on one side of the room and three or four desks across from the first set, separated by an “aisle” in the center, such that it was not a continuous row of desks, but it was split down the middle (see Appendix A) The first class was smaller, with 23 students, while the second class had 30. They both had similar numbers of desks, Class #1 with 32, and Class #2 with 34. This meant that students in the first class had more opportunity to move around and occupy a normally empty seat, whereas students in Class #2 would most likely have to take someone else’s seat to sit somewhere new. In fact, students in the first class were, therefore, more likely to move around on their own than those in the second class. The second class was much more locked into their seating arrangement. Students who showed up late in the second class often did not get their seat, whereas if someone was in your seat in the first class and you came in late, they would likely move for you. The slight seating differences may account for some of the other noted differences.
First Research Question: Effect of Seating Location on Interaction and Participation

There were many discoveries along the way that were both major and minor in their relationship to my research questions. Some findings were not directly related to a research question, but to the concept as a whole. The first research question is: To what extent does a student's seating location affect their amount of classroom interaction and/or participation? This is probably the most difficult of my questions to answer. This was really the core question that has guided the research. Ultimately, after thinking through the observations, interviews, and notes that I have completed in the course of this research, the answer is quite opposite of what I would have expected. Instead of the physical location in which the student sits impacting the amount they interact or participate, it is instead who they sit next to that is the more important determining factor. Simply put, it is not where you physically sit, but who you sit next to. This seems to be the more accurate interpretation of the data. However, there is still some evidence that seating location may play a role in how much a student interacts. For example, there are a few instances where a student moved further forward and/or closer to other talkative students and was more interactive and participated more that day compared to others when they were in their usual seat.

In general, though, the expected patterns of classroom interaction and participation were not seen. I anticipated that the front of the classroom would be more on-task and productive than the back of the classroom. This is a common belief among students and teachers, I would say, that if you sit up front you are more likely to pay attention and do well. In addition, multiple studies (Becker et al., 1973; Benedict &
Hoag, 2004; Holliman & Anderson, 1986; Wulf, 1977) found that students who sat in the front were more likely to interact, participate, and/or achieve higher grades. For the most part, however, this was not true in either class. In the first classroom, it could even be said that it was opposite of this expected pattern. Students in the front row often had their heads down on the desk, were off-task, tardy, and easily distracted. Instead, it was the students in the middle, closer to the back than the front, of the classroom who actively participated and positively interacted overall. Some of the highest achieving students in the class even sat in the very back row, contradicting the results of many studies as well as my own assumptions. Although they rarely interacted verbally or actively participated in class, they worked very well on their own and were successful academically according to their teacher. While they were not off-task, it was not clear how they were participating since they were obscured from my view as an observer. I would assume they were participating by listening and/or taking notes, but cannot confirm that assumption. In this class, a student sitting in the front row would not be likely to succeed. Only two out of six students who typically sat up front were high-achievers. The others were middle or low, some very low. One would also expect that a student who talks a lot off-task would do poorly in class. Classroom #1 showed that this is not always true. Those who talked the most off-task also talked the most on-task and were all, with the exception of one, in the middle range academically meaning that they had a “B” or “C.” The main reason that the remaining student did not have a higher grade, according to both the student and the teacher, was that the student had been absent for large portions of the
first semester and had fallen significantly behind. This group would probably have behaved the same regardless of their location in the room.

The second classroom was similar, but did have a slightly more traditional pattern of interaction and participation. It was usually the front three rows and some of the right rear corner who were most active. Students who were closer to the front were a little more likely to participate and interact, but again, that was clearly not the only predictor. Some students who were in the three front rows did not have any recorded on-task talk, while one had as much as 58 recorded responses. It should be noted that while this is closer to an expected pattern of interaction and participation, there was no evidence of anything resembling a “T” shaped “action zone” (Adams & Biddle, 1970; Marx, et al., 2000; Wulf, 1977) or of a triangular-shaped “action zone” either (Koneya, 1976). In these two classrooms there was no evidence to suggest a t-zone existed, just as some previous research (Bates, 1973; Delefes & Jackson, 1972; Jones, 1989) failed to find such zones. In my study this is true because in each class either the top or middle of the “T” shape was effectively missing. Students either talked across the front or down the middle, but not both. Interactions did not fit within a triangle shape either, because the triangle would include all of those in the front row and exclude many along the back corners. In the classes I observed, those in the front did not always interact, and those along the sides and corners often did. The interactions simply did not fit within either shape of action zone.

As with the first classroom, this class seemed to have groups of talkers. One of these groups centered around #25 (with 58 responses) who was in the second seat back
from the front. He sparked a lot of conversation and those around him were often
talkative as well. This could be because they were friends and of similar personality and
therefore interacted similarly, or because one touched off a conversation that the rest
wanted to join in. It is difficult to say. Sometimes the teacher moved a student or two
around due to disruptions, or students did not get their usual seat due to being tardy.
Occasionally this impacted the student and made them talk less. This was likely due to a
couple of reasons such as being moved away from friends, or being moved back away
from the front and feeling less involved. Other times, a student was moved and it had no
effect, they talked as much as before. I believe, as with the first class, that if students
moved around but stayed with the same group that there would be little or no change in
their interaction and participation. In the second class, the surest way to change a
student’s behavior would appear to be to both move them away from friends and to place
them in an unfamiliar location of the room. This is based on observing students who were
moved by the teacher as well as those who moved themselves due to tardies or absences.
However, this seemed to have a negative impact and they interacted and participated less.

*Interview Responses on Influence of Seating on Interaction and Participation*

Student responses during the interview process also showed similar conclusions
about the impact of student seating on interaction and participation. Students recognized
that if they were separated it would not change anything except that they would likely
talk less if not attached to the group. They were asked, “In this class, if your seat were
changed to a very different location, how do you think it would affect you?” Of the ten
students who were interviewed, six responded that it would have little or no effect on them. If anything, student responses indicated that a change in seating, not of their choosing, would have negative results. One student in the first class relied on his friends to help him focus and stay awake, so if he was moved, he said, “I’d probably be asleep half the time.” A student in the second class said that if he was moved and was “around the same people I think I’d do worse. But... if I was by myself in the back then I think I’d probably be able to work the same.” A classmate of his had a more negative view: “depending on if I knew anybody, I’d probably be scared or I’d probably feel awkward.” The only positive comments that students made were that they would talk less and pay attention more. Only three of the ten students made such a comment. Some students outright said that the physical location in the room was not a factor. A female student who was in both classes stated, “a room’s a room” and added, “It’s just like moving a bed around, it doesn’t really matter...”

The teacher interviews did not yield any of the expected results either. There was little if any effect on student interaction and participation based on seating location, in the opinion of the teachers. According to teacher responses, it is, in fact, the groups the students sit in and not the location that determines how they will act. The most likely effect that seating has on students, according to teachers, is that those in the back are more likely to chat simply because they are further away from the teacher. There was some evidence of this, especially in Class #2 where the students in the very back could be seen leaning over to chat with each other on occasion. Overall, a student’s location in this class was not a good predictor of their interaction and participation.
Implications for Field of Education

First of all, these results show that the belief that where a student sits may not be as important as educators once thought. It is important that teachers realize this and understand that it may instead be crucial to look at the groups that students place themselves in as a factor in the amount they interact and participate in class. Teachers should become familiar with the groups that develop in their classroom and ensure that they are more of a positive rather than a negative influence on each student. If necessary, teachers can then “regroup” students in a way that would appear to work based on what they have observed. If in doubt of how a student or group will react, teachers could ask individual students how they feel in the group and if they feel they should be moved or not. There is evidence that the students are aware of how their seating choice affects them, so ask them what works and what does not. It would be interesting for teachers to periodically monitor the groups and to even randomly survey the students to determine how well they are functioning with those around them. This may not be possible due to the workloads and time constraints of the teacher, but the more aware the teacher is of the groupings in the classroom the better. Teachers can play a crucial role in how much their students interact and participate by how they allow the students to seat themselves. This can be as simple as assigned versus unassigned seating. Allowing some student choice in seating appears to have positive results, but teachers should be aware that some negative situations can occur when there is no control over the seating. Each class is going to be different in their seating, their groups, and how they choose to interact and participate so teachers should simply get to know their students and their class as a whole.
Second Research Question:

Grouping According to Gender, Race, Age, or Academic Ability

The second question that I sought an answer to was: To what extent do students tend to seat themselves in groups according to gender, race, age, or academic ability? The results for this category are a little more conclusive than those for the previous research question. I felt like what I found during this research closely matched what I had observed many years before, which prompted this additional research. There was in fact evidence of grouping according to all four of these factors. The strongest groupings were of gender and race, where they occurred in both classes. There was only one grouping of age in the second class, and only minor evidence of grouping according to academic ability. While all four of these factors may occur simultaneously in a classroom and may overlap and influence one another, for this study they were examined as independent factors and will be discussed as such except where overlap was noted.

Grouping by Gender

Students grouped themselves according to gender in both classes. I will begin with the first classroom where there were a total of 23 students, 14 female, 9 male, keeping in mind that there were usually students who were absent. The patterns I will discuss are related to the typical seats that the students chose. This often changed due to tardies, absences, or because of group work. To simplify the layout of students I will look at their preferred seats. There was a large group of seven females in the back left of the classroom, which could then be broken down further into a back row of three, and
another row of four. Each of these groups was very cohesive and similar in many respects, so they would definitely be considered true "groups" rather than as a coincidence. Ahead of them were two males sitting next to each other, but rarely interacting, so not as much of a "group." Up in the front row on this side were two males of different races, one Alaska Native, one African-American. On the right side of the classroom, which was not as heavily populated, were two males who always sat together. Otherwise, there was grouping according to race and with mixed gender, or students isolated themselves.

In the second classroom there were many more students, as many as 30 if all were present. There were a total of 18 females and 12 males. It should be noted that both this class and the previous class are pretty typical, in my experience, for English classes as far as the majority of students being female. In the second class it was often more difficult to determine grouping because the desks were not as close to each other so just because someone was sitting next to someone else, it did not mean they wanted anything to do with each other. I had to watch for some form of interaction between students to determine if they were in fact friends and wanted to interact with each other. If it was clear that students who sat close together interacted in a positive, friendly way, whether on-task or off-task, verbal or non-verbal, they were then labeled as a group. A good example of this is the fact that the entire back row was all female, but there was only very rare verbal/non-verbal interaction between the middle three, so I would not consider all five as one group. It is interesting to note, though, that the back row was taken over by all
females. Why this is the case is interesting to consider. One possibility is simply that there are more females than males, and it may be just a factor of more numbers.

It should also be mentioned that this class is much more jumbled than the first classroom and there are not as many available desks, therefore a lot of the groups are very small, and are usually just pairs. There were two African-American females who formed a group with an African-American male. The two females together formed a gender group. Two males next to them were always talking to one another and were another obvious gender group or pair. There were two female friends who sat in the front, one behind the other. They were a gender pair, as one was Alaska Native and the other Filipino, and could be considered a race pairing as well since they were both students of color. In the front of the classroom there is a group of four white males who interact a lot with each other and in the class itself. They are in #19, 25, 26, and 31. Behind this group to the right is a pair of females who are regularly talking with one another. They are in #20 and 21. The female in #21 is part of another gender pair with #27. I would not consider all three females to be a group, however, because #20 does not interact with #27. It is only #21 who interacts with both of them to form two separate gender pairs. Other groups of the same gender that are in the class do not interact with each other to the point that I would call a group. It seems that if there is a pair of students sitting together in this class, and to some extent in Class #1, that pair is more likely to be of the same gender than to be mixed.

One difference between the two classes was the amount of interaction between male/female pairs of students. It was not as evident in Class #1, but in Class #2 there
were multiple interactions on a daily basis. This related most to off-task social talking and not to on-task interactions. Many of the students were sitting next to a friend of the same gender, but were also near members of the opposite gender as well. For example, the layout of Class #2 quite literally had a male, then female, then male, then female, and so on, in a few of the rows, both right to left and front to back. So, if two females were next to one another, there was likely a male in front of and behind them as well. Also, if two females were sitting one in front of the other, they likely had males on both sides of them or at least in close proximity. This layout meant that there was a lot of opportunity to talk to someone of the opposite gender. This was most evident with the White students, primarily because there was a large cluster of White students that made up the alternating pattern of male/female/male. While it is curious to note the pairings of opposite genders, in a high school it is not difficult to think about why this is the case. Either students were simply acting as friends, or there were more flirtatious intentions behind the chatter. As most of this was quiet, off-task talk, it was not possible to determine the content of these conversations, knowing that would yield much more conclusive results about the reasons behind these specific types of interaction.

*Grouping by Race*

The grouping of students according to race was most evident with the African-American students. In the first class, there were five African-American students. At the beginning of the observations these students were sitting in two pairs, with one other student not close to either pair. As the observations continued, the student who was not
grouped according to race moved to sit behind one pair. Now, the class consisted of one pair of female African-American students towards the back of the classroom, and a pair of male and female students in the front row with another male directly behind to form a group of three. This seating arrangement became typical for both groups of students in this class.

In the second classroom there was an even more obvious grouping that the teacher even commented on during the interview process. In this class there were only three African-American students. They always sat in approximately the same seats and the same proximity to one another. There was one male, and two female students. The two females usually sat in front of the other and the male sat to their right directly next to them.

Within two of the three groups of African-American students, there was not a lot of talking, on- or off-task that went on. African-American students appear to be less likely to talk within these groups. This is opposite of the White students who are much more likely to talk, either on-task or off-task within their groups. This is not to say that the African-American students do not talk at all, because they do, they just seemed less likely to do so. The other group, the two females in the first class, were also a part of a larger group, that of the most talkative (on- and off-task) students, so they did talk a lot, but not as much on-task as off-task.

It is important to note that all three of these groups of African-American students were not isolated from other students or other groups, and they were often either part of another nearby gender or academic group. Their preference in who they sat next to
seemed to be primarily determined by race, and this is who they were most likely to interact with in addition to less likely interactions with others around them. I consider these three sets of students to be grouped according to race because there were obvious interactions between members of the group to indicate friendship in addition to the observation that they apparently prefer to sit next to people of the same race rather than to spread out as there were no African-American students who were isolated from others of their race.

Another observation regarding seating and race was that Alaska Native students in both classes showed a degree of self-imposed isolation. The best example of this was in the first class. A Native female, #20, sat completely by herself. She was at the end of a “split” row, with no one behind her, in front of her, or next to her in that row. She was free to move about the classroom, but instead seemed to prefer this seat. She rarely talked to anyone other than in some of the small group work they were assigned. She did not participate in class or ask or answer questions. The most she did to participate was to read aloud from “Pygmalion” in class. However, this isolation did not hinder her academically, as her teacher ranked her as among the highest academic achievers in the class. This is, again, another observation that is in opposition to my initial assumptions about the possible links between seating, interaction, and academic achievement. Her seat was also in the row just in front of the last row in class, she sat much closer to the back than the front. Her achievement level is unexpected according to research on seating location and academic achievement (Becker et al., 1973; Benedict & Hoag, 2004; Holliman & Anderson, 1986; Wulf, 1977).
The student in #20 was the most extreme example; however, another Alaska Native student in the same class is evidence of this same trend. He sat in #8 right next to the most talkative student in class, #9. The only time I saw him talk was when #9 would occasionally instigate a conversation or make a comment and #8 would laugh. Like #20, #8 also volunteered to read at one point, but that was the only time I heard his voice. He had no recorded on-task talk. While he was not physically isolated in his usual seat, he isolated himself by not becoming involved. Also, at one point when the class was split up into small groups by the teacher #8 sat near his group, but not with them. Instead he sat directly behind them and out of the small circle they had made. This was one day that his physical isolation matched his lack of interaction and participation. There was one other Alaska Native student in Class #1 that sat up front, and like #8, this student, #14, never talked on-task and rarely interacted. He was also often absent or when he was there had his head face down on the desk, often for long periods of time. #8 was also known to be tardy and put his head down for large portions of the class. #20 was also often tardy, but did not put her head down as much as the others. These three were the only Native students in this class.

In the second class there were four students identified by the teacher as Alaska Native. None of them sat within proximity to the other Native students, just as in the previous class where they were spread out. In the second class, only two of the Native students showed a great degree of attempted isolation. The other two, #14 (male) and #24 (male) each had an obvious friend or two that they were often talking with. Also, #14 was very talkative, mostly off-task. The two who were more isolated were two females who
sat in the very back row, though not next to each other. The student who sat in #1 appeared most isolated. She did not talk to anyone around her and only had a couple of on-task responses on one day in class. She was not just in the back row, but in the corner, nearly out of sight. She spent most of her time playing with her hair instead of visibly participating in class. She must have been paying some attention though, because she was ranked in the middle category academically. The other female in #3 did talk to those around her on occasion but she was never engaged in the class. She often had her head down, had food out, or was even once on her cell phone in class. The teacher did not normally say anything to this student when she was off-task, but she and most of the class confronted the student when she was talking on the cell phone. She had no recorded on-task talk. Her academic level was in the low range for this class according to the teacher. This student displayed behavior that would be more expected from a student in the very back row.

It is important to think about why these students are isolated within the classroom. Since this seems to be a pattern among students of Alaska Native backgrounds, I would assume that their cultural background plays a role in their isolation due to the Western culture of the classroom. Research clearly indicates that Alaska Native values and social behavior differ from the values and behaviors of the predominantly White society and schools (Kawagley, 1995; Lipka & Mohatt, 1998; Pewewardy, 2002). As a teacher, and just as an Alaska resident, I know that there are many cultural differences between White mainstream culture and the traditional Alaska Native culture. Many of these differences carry over into the classroom. I recall some of these differences in my own classrooms.
Typically the Alaska Native student is very quiet and does work independently for the most part. Many students of Alaska Native descent appear very shy or uninterested in school. This is not necessarily the case. Instead, they have a different way of learning and a different way of interacting. One possible reason for this is due to Alaska Natives being "field-dependent" (Pewewardy, 2002). This means that they are very focused on their surroundings, their field, and often see the whole picture, and only later on do they establish meaning and see the details. This can also be referred to as "whole-to-part" learning (Starnes, 2006). Students who learn in this way are best taught by presenting the whole concept then any additional details or parts (Cajete, 1999). White students, on the other hand, are quite the opposite and are "field-independent" and more able to look at details and sequencing, for example (Pewewardy, 2002). The Native student may then take time to process out the details and listen to what is happening before responding, while the White student has a more immediate response. Since society is centered on the White culture, Native students are at a disadvantage.

Another element of Native culture and learning that often makes Native students appear disinterested or off-task is the concept of "reflectivity" (Pewewardy, 2002; Starnes, 2006). A reflective student in the class is going to stop and think about what the teacher just said before responding to a discussion or question so that they are more likely to have a correct answer (Hollins, 1999). This leads to Native students spending more time waiting, listening, and thinking about an answer than the White students in the class (Gilliland, 1999). This habit of extended waiting may be one reason why these students so often appear very quiet and disinterested. They could be, in fact, deep in thought. In
the classes I observed, if they waited too long to speak up, it is very likely that one of the
more vocal White students would take over discussion and not allow them an opportunity
to speak. In many classes I have taught, I noticed that a Native student will not respond to
questions posed to the general class. They will instead be most likely to respond if the
teacher asks them quietly and not in front of the class. Many are reluctant to share
responses, especially if they may be personal in nature. One reason Native students may
not speak up was discussed by Hillard (2001) who states that their hesitation in answering
a question may also be linked to the fear of shame if they do not get the right answer.
Again, this can be misinterpreted by teachers as a lack of interest or motivation to
participate.

Native students may also be at a disadvantage because they are more visual
learners than most White students, and most classes do not integrate enough visual
material to help them learn (Pewewardy, 2002; Starnes, 2006). The learning differences
also include the fact that Native children grow up learning by closely watching and
listening, then imitating a skill (Pewewardy, 2002; Kawagley, 1995). There is not always
the opportunity to actively practice and perform a skill in traditional classrooms. In the
English classroom, skills such as writing a five-paragraph essay are rarely explicitly
detailed for these students. The teacher does not go through the entire process of writing,
but rather a succinct set of steps. For Native students and for many others as well, it may
be helpful to go through the entire process from start to finish so that it is clearly
understood.
Overall, Native students are more likely to learn by listening, by observing, and by actively doing something than through a discussion they participate in. The research on Alaska Native students helps to explain the behavior of those who sit near others but do not appear to interact or participate much if at all. It also explains why some more completely isolate themselves from their peers and sit further from the teacher, so that they can more easily observe and also be less likely to be put on the spot. So, while they are isolated in many ways, most are still learning, as is clearly the case with the high achieving female in the first class. This is all important information for teachers to be aware of, especially if others have noticed similar patterns in the behavior of Native students. Teachers need to be conscious of where these students are sitting and why. They should also check in with them to make sure they are not having difficulty on an assignment and to ask them questions one-on-one. Most importantly, every teacher who works with Alaska Native or Native American students should be familiar with what the research says about the differences to expect from these students. Teachers can make an immense difference in these students’ education with only a few minor changes to their classroom and an awareness of their own misperceptions.

Grouping by Race and Gender

While observing the classes, it became clear that there was another interesting point regarding how students group themselves, in this case according to both race and gender. While most students seemed to group themselves, at least at some point, according to gender, it was more evident with the white students. White students were
more likely to sit next to a friend of the same gender than were students of other races. The most notable difference was between African-American and White students, due in part to the fact that they were the largest racial groups in each class. African-American students were more likely to sit near others of the same race without regard for gender. They would later break down further into gender groupings when possible, but their numbers were fairly small in both classes. In essence, gender grouping was most evident in white students. Other students, especially African-Americans group themselves according to race first, then by gender. It is difficult to tell if this observation would be applicable to a larger classroom. It would be interesting to see a college classroom, for example, where there were large numbers of many racial groups to see how the seating would really fall when there weren’t any restricting factors like a low number of African-American students.

Grouping by Age

There was not as much evidence regarding grouping according to age or academic ability. The only evidence of grouping according to age was in fact in one group in the second classroom. The first classroom was all of the same grade level, so there was really no difference in age. The second class did have a concentration of older students in one area. There were mostly sophomores in this tenth grade level class, but there were also three seniors and one junior. Two of the three seniors and one junior sat in the right rear of the classroom, all three in a row, with the junior in #11, and two seniors in front in #17 and 23. The other senior was close to this group, but he was separated by another desk, so
he did not interact noticeably with them. The two students towards the back interacted the most, but I would still say that the other senior was a part of their group since it was such an obvious age grouping and she did not interact with any other students around her.

**Grouping by Academic Ability**

As for grouping according to academic ability, the best example is in the first classroom. There were three females who always sat together in the very back row of the classroom. All three are among the highest achieving students in the classroom. In the row in front of them, the students in the group of four females are all average as far as academic ability — they all have a “B” or a “C” in the class. Both of these groups are very obvious groups who interact with one another and help each other out. The rest of the class is fairly mixed as far as academic ability and a “high” achiever can be right next to a “low” achiever. In the second classroom there are two females in the front, one behind the other, who are both high-achievers. They are obvious friends and seem to help each other out a lot. Two of the more off-task and habitually tardy females in the back that talk to one another are both very low academically. The two males in front of them who talk a lot to each other are both of an average level. Another pair of high-achievers is the two females towards the center, #20, and 21 who are chatting on a daily basis with each other. The final pair are also high-achievers, #28 and 33 who are in the front of the class and are always talking to each other, yet very active in class.

**Grouping Evidence from Interviews**
Many of these same themes about grouping played out in the student and teacher interviews as well. The most interesting and surprising of these themes was the use of the word “comfort” throughout the interviews. Out of ten student interviews, four students used the word “comfortable” at one point. Both teachers also used the word within their interviews. The term was used a total of ten times within these six interviews. The use of this term did not emerge as a theme until after I transcribed the interviews; therefore, I was not able to ask the participants about the use of the term. Within the context of the interviews, students primarily used the term to refer to the reasons they sat next to friends. When asked, “Why do you choose to sit in one seat as opposed to others?” one male student from the first class responded by saying, “Because that’s where all my friends are and that’s where I’m most comfortable.” A female in the same class responded to the question, “Do you do better in classes where you sit near friends?” by saying, “...when you’re with friends you just feel more comfortable.” Another student who does not use the word “comfort” alluded to the idea of it by saying, “...it helps to have people who you can relate to and discuss with that aren’t going to judge you and make you feel bad for what you think and stuff.” In other words, it is important to feel comfortable discussing your opinion around them. The same male student who discussed comfort in regards to the question about his seating choice also used the term when asked, “How important is it to you to sit next to certain people?” He stated, “It’s not really important. I don’t mind sitting next to someone I don’t know because then it means I can make them feel comfortable about being in school...” He takes not just his comfort
into consideration, but thinks about the comfort level of his classmates, especially someone new to the class or school.

The teachers recognized the importance of comfort as a determining factor in seating choice as well. The teacher of Classroom #1 uses “comfort” to describe the three high-achieving white female students who sit in the back row in response to a question about student behavior based on seating location. She said, “…everybody wants to sit in the back….If I have my better students working together in the back sometimes they’re more comfortable, in this class that’s definitely the case.” Again, I can only guess as to the exact meaning of the term “comfortable” as this similarity in responses did not stand out until the data was analyzed. She also responds to a question about why she chooses to assign or not assign seats. In the beginning of the semester she has assigned seating, because she says, “there is a degree of anxiety when you start any class and so having an assigned seat tells them immediately where they’re going to be…I find it just settles my classes much more immediately.” By giving students a “place” in their classroom she increases their comfort level. Later in the semester students are free to move around and the comfort that their friends provide takes over as the determining factor in their seating choice. She also uses the word to describe those students who sit alone in the classroom and are not part of a group. She states, “as seniors they’re able to sit on their own and be comfortable with that.” As older students they do not feel as much social pressure to sit next to another group, they simply do what is comfortable for them. For some students this means sitting with their friends, for others this means working independently.
The teacher of the second class uses the term as well. She discusses her reasons for often allowing students to choose their seats, rather than assign them, when she states: “...I do like them to be able to choose their seat because they feel more comfortable with the people around them and it allows them to make connections...” There are very positive side affects to sitting in a comfortable location. Students are more likely to connect to the lesson. They are also more likely to talk constructively to one another as the teacher of Class #2 discusses in response to another question regarding student interaction and participation when they are allowed to choose their seats. She states, “...I think there’s a lot more students who ask each other questions and feel comfortable about asking about assignments, they feel more comfortable asking their neighbor...and they’re much more likely to turn to their neighbor if they’ve chosen that person they’re sitting next to than if they don’t know that person at all.” Students and teachers seem to use the term in the same way, to refer to both students and locations in the room that are a preferred choice because students feel like they belong, can pay attention, and/or are near people they get along with. So, students are also grouping themselves according to factors such as friendship groups that provide them with comfort and make them feel like a part of the group. These types of groupings are bound to have positive impacts on interaction and participation despite the likely negative affects of increased off-task talking and distraction.

The students were asked the question: When given the choice, do you feel like you sit next to people who are somehow similar to you? Eight out of ten students responded that they did. The similarities mentioned included gender; one female student
said she usually sat next to other girls. One said she sat next to others of similar academic ability. Most students were more general in their responses and said they sat next to people they knew (2 responses), people who were friends (2 responses), people they had something in common with (1 response), or someone who had a similar personality (1 response). Those who said they did not sit near people who were similar to them said that they sat next to people who were different from them. Two students even used the same term, "eclectic" to describe their different taste in friends and group members. Overall, students were more likely to sit near people that were similar to them. This may be related to the idea of "comfort" as well.

*Implications for Field of Education*

Students seem to group themselves in many different ways, but it is important to understand why this grouping takes place in classrooms. Grouping according to gender and race likely occur for similar reasons. These would primarily be because students want to sit near someone who is similar to them in some way. The most obvious place to start is to interact with someone of the same gender and the same race. On the outside they are similar to you. You share similar life experiences because you are both female African-Americans, for example. You are probably also the same age. You are part of the same group of friends, perhaps one of the "friendship groups" that the teacher of Classroom #2 mentioned in her interview. Many students have known each other since middle school or earlier and had, essentially, come through the ranks together. As a result they would be very close friends and would likely sit next to each other if given the option.
Those who have gone to school together for many years would most likely be restricted in their choice of friends by the school district boundaries. Students on one side of town go to one school, while students on the other side go to another school. Boundaries often separate low-income areas from higher-income areas of town, as is mostly the case in Fairbanks where Lathrop High School is more ethnically diverse due to its student population, which is drawn primarily from low-income areas of South Fairbanks. The low-income families are much more likely to be a racial minority and the high-income families are more likely to be White, as is the case throughout the nation. For this reason it is more likely that White students are friends with White students and African-American students are friends with others of the same race. Students are therefore more likely to sit with others of the same gender and/or race because it is familiar, it is comfortable, and it is easy.

It would be interesting to determine if the students who grouped themselves in one way or another showed signs of any change in learning. It is difficult to tell, as an observer, whether there was any impact on the learning environment. I primarily saw these students while they were in groups that they chose. They were never completely pulled away from familiar people since even small group work usually involved people who sat near each other and appeared to be friends. It would be interesting to entirely break apart the groupings to see the affect on the students. My guess, however, would be that it would have a negative affect on their learning and on their overall interaction and participation in the class. Many of the reasons students cited for choosing a specific seat had to do with who they sat next to and how comfortable they felt. If a student is
uncomfortable because they are moved around, they are probably less likely to act like a part of the class and more likely to isolate themselves and feel uninvolved. When the students choose who they sit next to they are comfortable whether that person is the same race, the same gender, the same age, or all of the above. Sitting by people who are similar to them means that they will have similar experiences and can make similar connections to lesson plans. They can build off of one another’s comments and opinions and feel free to discuss anything with one another due to their comfort level.

The only possible detriment I can see to sitting next to someone similar is that while you have someone to share your opinion or you point of view, you may be missing out on the opposite side of an issue. For example, if two White males are sitting near each other and interact primarily with one another and not many other students, they will have a limited point of view. They may not be able to easily understand the point of view of an African-American female in a book they are reading, for example. They would be better served in this case to have a nearby friend or group member who was female and/or African-American. It would be a similar situation if we consider what happens when three high-achieving students sit near each other to form a group versus a group composed of high, middle, and low-achievers. The high-achievers are likely to help each other and work independently as well, they will learn from one another but they will also do a lot on their own because they already have the skill. On the other hand, the three who vary in academic ability are likely to learn more from each other. The high and middle achievers will have to help the low achiever more to get them to succeed. They will also see different points of view since they each have a different skill level. A more
diverse group of students would, in theory, have a varied set of opinions, backgrounds, and beliefs. There would likely be students of many races, of both genders, from different countries, different social groups, and different socioeconomic backgrounds. This would be a group that could truly learn a lot from one another.

In my experience, the most interesting people are those who are very different from me. I recently took a few road trips with a group of men and women, some I had met previously, some I had not. In total, we represented six different countries. We learned a lot from one another about the country we grew up in, its culture, its people, etc. I could not have learned so many unique and interesting things about different cultures from a group of young, white females from America. So, in my opinion, while students may learn more about the lesson at hand by sitting near people who are similar to them, they will likely learn more about other perspectives from people who are very different from them.

**Third Research Question: Other Factors**

Throughout my literature review there were many “other” influences on class participation and interaction that were discussed by other researchers. These included: teacher gender (Duffy et al., 2001; Einarsson & Granstrom, 2002; Fassinger, 1995; Howard & Henney, 1998; Jaasma, 1997; Klein, 2004), class subject (Duffy et al., 2001), parent involvement (Feuerstein, 2000), and student confidence (Fassinger, 1995) to name a few. There are many more possible influences that are out there, and a few that I have had the opportunity to observe. The first category of “other” influences includes tardies
and absences. While it does not directly affect whether students interact or participate, when students are tardy or absent it can upset the seating arrangement of the classroom. I have noticed in both classes that when students arrive late, they may have lost their favorite seat. The student who took their seat chose to do so, for one reason or another. Perhaps they actually preferred that seat but did not usually get to class early enough to get it and this was their chance. Some students may have also sought a change in their seating, perhaps to move closer to another friend. Especially in the larger class there was some shifting that occurred on a regular basis, though students tended to stay in one seat as opposed to others. There were some students in both classes that were gone for long periods of time due to illnesses or extended vacations, this likely caused some changes in the seating as students filled in the empty seat, then had to move away from it when students returned.

When students lost their preferred seat this meant that they may end up in a seat and a location that is very different from their usual seat. This can influence how much they take part in class in either a negative or a positive way. Sometimes I witnessed students in a different seat due to their preferred seat being taken, who did not interact as much, and other times they interacted more. It seemed to depend on the student, the location, and who they ended up sitting next to. If there are absences from day-to-day the same thing can occur. New seats are available and sometimes students decide to try something different and sit there. Again, this can have positive or negative consequences. One of the most notable observations was during “senior skip day” where the majority of seniors will actually skip classes that day. On this day most of the students were absent,
as expected. There were only 11 of 23 students. Most sat in the same or similar location, but others moved around. Students sat next to people they didn’t normally sit near. Some even volunteered to read aloud, whereas they had not before. There was also a substitute teacher that day, so that may have influenced their interaction and participation as well since there were new volunteers to read and the class was organized differently. There were really too many unusual occurrences that day to say which was more of an influence on changing student behavior, the substitute or the absences.

Another factor that can impact classroom interaction and participation is the length of the classes. Many of my observations were on days where there was an assembly or a short day, so the class was closer to an hour in length instead of an hour and twenty minutes. While it is not a huge difference in time, the students know it is a “special” day of some sort and this often makes them more anxious and hyper as a group. This makes it difficult to get things done in the classroom and impacts how much a student is on-task.

One factor that could also influence students is what I term “normalization.” The dictionary defines this term as “to make normal or regular” and I use it in much the same way (Costello, 1994, p. 568). Normalization would occur in a group of students if, for example, a group with mixed academic ability effectively balance out and became similar in their ability. The higher achieving students would be a positive influence and would regulate the group to the extent that they would be normalized and there would no longer be a distinct difference between the ability of the students. This could also happen with outward behaviors such as on-task and off-task talk. Students who were normally quiet
that moved and sat near the talkative groups would likely be affected and this talkativeness would “rub off” on them and their behavior would become more regulated and normalized. If a student was affected by this they could increase their level of interaction and participation. This could also work in just the opposite way and a student who was very active could sit next to very quiet students and reduce their active role in the classroom. “Normalization” was observed, but was not conclusive. There were a few instances where students did sit next to others of mixed ability levels and this did cause some change. There were other times when less active students did sit next to the main talkers in the classroom and there was notable change in the amount they participated.

For example, one day the female who usually pulled her chair up to the #5 seat in Classroom #1, moved to sit in #8, right next to the very talkative #9. She had a total of seven recorded on-task incidences of talk that day, whereas there were none observed while she was in her typical seat. However, I did not see enough examples where this “normalization” actually worked, however, even though the situation was usually optimal to witness such an occurrence. More research would need to be conducted on a larger scale to see if further examples of “normalization” could be found.

Researchers (Duffy et al., 2001) and teachers alike recognize that the subject of a class is going to play a role in how much a student interacts and participates in class. Students discussed in their interviews the difference between an English class and other classes. Some simply did not do well in English, some talked too much because of the more open format of the class. Still others did not keep up with the outside reading and homework. Both classes I observed were of the same subject. However, even though each
teacher taught the same subject each class discussed many different topics and had a handful of lessons and units that they covered during the course of my observations. The topic became apparent as an influence when the second classroom began studying the Holocaust in preparation to read the book Night by Ellie Wiesel. Prior to this they were working on research papers and completed presentations on their research topics. The mood in the classroom drastically changed when this new, serious and somber topic was introduced. The students were markedly quieter, there was less off-task talking, and there were more questions and comments from a broader range of students. I can not say for sure that the topic caused this reaction, but it seems highly likely. The Holocaust is one of the most serious topics addressed in an English classroom, or any classroom for that matter. So, it would only be natural for students to show that topic and that unit the respect it deserves.

The gender of the student also appears to play a role in interaction and participation. Some previous research (French & French, 1984; Jones, 1989) on this topic found that male students had more interactions than female students. This study had comparable results. The total number of interactions for male students was 254, with a total of 21 males combined from both classes. For females, the total interaction was 207, with 32 females total. This averages out to 12 interactions for each male student and nearly half that, 6.5, for each female student. The breakdown per class is very close for males, with an average of 12.3 for Class #1 and 11.9 for Class #2. For females, Class #1 had an average of 10.9 responses per female, but only 3 per female in Class #2. The discrepancy in gender interactions appears to be connected to the difference in female
interaction in Class #1 versus Class #2. The first class had two students, a male and female, who had very high recorded on-task responses, 76 and 78 responses respectively. The second class only had a highly active male, with 58 recorded responses. It would appear that these highly active students throw off the averages quite a bit, and since the second class does not have a very active female member, their average is much lower. Eliminating the three highest talkers, two from Class #1 and one from Class #2, provides different results. The overall average, combined for both classes, is now 5.7 interactions for males, and 4 interactions for females. While these are much closer, the results still seem to indicate a higher number of interactions for male students.

It is also interesting to note the amount of each gender that did or did not interact in the class. Overall the total percentage of males who had a recordable on-task instance of talk at least once was 85.7% (66.6% in Class #1, 100% in Class #2), compared to 65.6% of females (78.5% in Class #1, 55.5% in Class #2). Of those who never had a recorded instance of on-task talk, 21.4% were male (3 in Class #1, 0 in Class #2) and the rest, 78.6% were female (3 in Class #1, 8 in Class #2). Again, it would appear that gender does play a role in interaction and males are more likely than females to take part in on-task verbal interactions. It is difficult to tell if these results would be generalizable due to the small size of this study and the impact that one or two very vocal students can have on the class.

There was also an unexpected lack of connection between students’ academic achievement and the level of on-task interaction and verbal participation — in other words, as an observer, there were no visible or audible signs of interaction or
participation in the class lessons. Those students with the most on-task verbal interactions were more likely to be in the low or average academic category, not in the highest. My assumptions were that a student who interacted and participated in class activities would be more likely to have higher academic achievement. That is also what previous research (Myhill, 2002) found. Once again, my assumptions were observed to be nearly opposite of what actually took place in the classroom. There are many students who were ranked in the top academic achievement category by their teacher, but they showed little or no recorded on-task verbal interaction and little or no visible participation. The best examples of this are students in the first class. As previously mentioned there was a group of three White females in the very back row who were all very high academic achievers. They were generally observed as being quiet, and on-task, but they did not speak up much in class. The most recorded responses for any of them were nine responses for student #2. The other students had either one or two recorded on-task verbal interactions over the course of my observations. I would expect that the highest achievers would be some of the most obviously engaged students, not the very quiet ones in the back of the room. The Native female in #20 is also an example of this pattern because she had no recorded on-task verbal interactions and was also very quiet and isolated. She was also ranked among the highest in the class academically. Another female in the same row as #20, #22, exhibited the same behavior. Again, she had no recorded on-task verbal interactions but was in the top of the class academically. Both #20 and #22 were near the back of the class, just like the three high-achieving females in the back row. The only other high-achieving students in this class were an African-American female in the front
row, #16, and a White male in the front in seat #30. Again, not very many recorded on-task verbal interactions. There were only three recorded for #16 and six recorded for #30. These two were slightly different from the other high-achievers because they were up front. However, #16 was still very quiet, and was one of the students who often appeared disengaged with her head face down on the desk. The male student, #30, was a little more interactive with other students, mostly off-task, so was not as quiet and isolated as the others. It should also be pointed out that six of the seven high-achievers in this class were female. The reasons for this were not covered by my study.

The second class also had many students who were very quiet or who had no recorded on-task verbal interactions, but were within the top of their class academically. The high-achieving students in the second class included those in seats #7, 11, 15, 21, 20, 18, 24, 28, 29, and 33. Three were male, seven were female. Of these ten students four had no interactions, two had just one interaction, and the rest had between three and twenty-six interactions, with all but one student having less than eight total on-task verbal interactions. This was overall a more talkative group, so although they did not have a lot of on-task interactions, there were more instances of off-task talk to their neighbors.

Overall, the average number of interactions for high-achieving students in both classes combined was below that of the low and average students. Specifically, the average number of on-task verbal interactions for low-achievers was 10.75 interactions, while the middle level of academic achievers averaged 8.2 interactions, and the high-achieving students had the lowest number with just 2.6 interactions when averaged out. Now, there were a number of students who had far beyond the average number of
interactions and who had upwards of fifty interactions. I refigured the averages after eliminating these students from the equation to get a better picture of an average number of interactions. The averages without those students are as follows: 3.6 for low, 4.4 for middle, and 2.6 for the high-achieving students. With or without the inclusion of the very talkative students, the averages for the high-achieving students do stay lower than the rest of the class, especially when all students are considered and the low-achievers have four times the number of on-task verbal interactions as the high-achievers. If all students are considered, the connection between academic achievement and interaction is the reverse of what would be expected. As interactions go up, academic achievement actually goes down in these two classes.

There were also a few miscellaneous categories of “other” influences that I recorded within my daily protocols. These included tiredness, alertness/energy level, boredom, confusion, assigned groups (willingness to work in them or not), failure to complete assigned homework/reading and so on. The physical state of the student, such as whether they were awake or tired seemed to affect how much they were able to focus. There were many days that the seniors appeared especially tired or bored and often had their heads down for periods of time. Those who were more alert and awake were more likely to be fully engaged in class discussions. When teachers assigned students to groups this also impacted how much they interacted. Sometimes students were willing to function as a group and did well, other times they were not willing to work as a group and did not interact with each other. Sometimes the individual students interacted more within the small group than in the class, sometimes less. It seemed to depend on the
makeup of the group, the topic, and so on. Also, if students had failed to do their homework, like reading up to a certain page in their book, they would not be as likely to interact in class discussion because they simply could not follow along with a lot of the topics.

Interview Responses on “Other” Influences

The interviews also describe other possible influences on student interaction and participation. This includes the influence of friends, so that the behavior within a group tends to be similar. This usually amounted to talkative students sitting together and becoming that much more talkative, both on- and off-task. The comfort level of the students, as repeatedly mentioned in the interviews, could also be seen as an influence on how much they interact and participate in the class. If they are very comfortable they are more likely to participate. Students who do not feel comfortable in their surroundings are unlikely to answer a great deal of questions or to make connections to what the teacher is teaching. They are less likely to open up on any personal level.

The two teachers in the study were asked, “What factors seem to influence how much a student interacts and participates in class?” The teachers stated many possible influences, some already observed, others observed in previous studies, and some that were altogether new. The teacher in the first classroom had this to say:

Some of it is subject, some of it is expectations. My expectations. You know and that’s one of the things I have to be very clear about in the first four weeks. The first four weeks for me are the hardest weeks because it means I have to stay on
top of work, get it back almost immediately and let students know when it’s not in. And then when they realize that I realize it’s not in and I’m able to show them how it’s affecting their grade that tends to help some. So, that can be a major influence.

She brought up two common factors that previous research has also cited as possible influences on student interaction and/or participation in the classroom. One study (Duffy et al., 2001) linked the subject of the classroom to student interaction and participation, while many others address the influence of teacher expectations. An example of such a study was conducted by Jordan et al. (1997). Subject and teacher expectations likely play a role in student interaction and participation, but there was not enough evidence in the study to say for certain. Only one teacher mentioned it as a factor, and only one student mentioned that they did not do well with English as a subject, though there was no direct question to elicit a response on class subject as a factor. More research would have to be done looking at class subject to get a better idea of its effects.

In addition to class subject and teacher expectations, the teacher in the second classroom had a few other factors in mind that seem to influence student interaction and participation. In response to the interview question she stated:

Confidence in their answers makes a huge difference if they feel like they have something to say or know the subject. Personality I think is a huge factor in how much they participate and [inaudible] that the whole being successful in academics. And then if they’re outgoing …I’ve got a couple students that are very very bright and they’re communicative they like to have the answers they can see
things and respond to them verbally but not so much written and so that makes a huge difference 'cause that's how they show me that they know something is by talking and giving the answers that way rather than writing things down. Then there's another group that prefers to write things down. You can tell that they're more written word that way. And so I think that makes a huge difference part of personality, part of learning style I think that makes a difference and I think also the groups they're in. Their friends can you know say "you know, hey, say that" encourage them, and if their friends talk they're more likely to talk as well.

The first factor that this teacher mentions is confidence. This factor was evident in a study (Fassinger, 1995) that found a link between student confidence and interaction and participation. As might be expected, Fassinger found that the higher a students’ confidence level, the more likely they were to participate in the class. This makes sense because students are not going to talk openly unless they feel confident in their answer. This relates very closely with the feeling of comfort that many students in my study also discussed. It seems that students who are both confident and comfortable would be more willing to participate and interact in class activities.

The second factor she discusses is personality. While this did not show up in any of my literature, personality is a reason why students interact with one another and it is a possible reason for friendship groups and therefore overall grouping patterns. A student with a very outgoing personality would seem to be more likely to participate and interact than a student who is by nature more introverted. So, personality could easily play a factor in classroom interaction.
The teacher also discusses the difference between students who communicate verbally as opposed to those who write everything down. I have not encountered a similar factor within the literature, nor did I make note of it during my observations. However, this comment makes sense because a verbal student is more likely to talk in the classroom. This may also be connected back to the factor of personality. There are so many minute differences from student to student that likely play a role in their amount of interaction and participation, but it would be impossible to categorize them all. The teacher mentions learning styles as well. This is closely related to the comparison between students who are verbal and those who prefer to write. These are also elements of learning styles. Finally, she mentions friends as influencing one another. This was clear in student interviews and observations as well. Students often said they chose to sit near friends for the purpose of getting help on assignments or simply being encouraged to stay focused and awake. Both teachers also recognized that in the best of situations students would help each other out and help each other succeed. Students can strongly influence one another in both positive and negative ways. In my opinion, friends are a very powerful factor on student interaction and participation.

*Implications for Field of Education*

Teachers should be aware of all of these potential influences on student behavior. Some of these factors could be developed by the teacher to increase interaction and participation. For example teachers could encourage the positive influence of friends and even move students around so that they can get help if needed from other students who
would be a good match. Teachers can also help to make students feel comfortable and confident in themselves. As addressed previously, the teacher in the first class already has a method for increasing student comfort. She assigns seats at the beginning of the semester so that each student has their own place. The second teacher also wants to make students comfortable and allows them to choose seats most of the time so that they are around people who make them feel comfortable and who encourage them. Both teachers have valid opinions that should be taken into consideration.

Based on what they had to say, teachers may consider assigning seats at the beginning until everyone is familiar with each other and the teacher knows all the names, then allowing students to move about. In her final comments the teacher in the second class also recognized that she wished she could move the students around more so that they could interact with other people. This would be something teachers could implement after the students begin to move around on their own.

To influence interaction and participation overall, teachers need to be aware of personalities and learning styles as well. Students with different learning styles may work well together, but personalities can easily clash. The best thing that teachers can do is get to know their students as soon as possible to help them succeed.

*Fourth Research Question: Teacher-Initiated Change*

The final question that I posed was whether teachers can manipulate the seating arrangement to influence interaction and participation. The simple answer is yes, they can. There are small things that teachers can do, like move a student around, which can
change how that student and others participate in class. As previously mentioned, when students end up in an unfamiliar seat it can change their behavior either negatively or positively. Usually, the students were moved to decrease their off-task behavior, not to necessarily increase the on-task talk. Sometimes this worked, and sometimes the student kept talking off-task, it depended on the student and who they ended up sitting next to.

A more major change that teachers can make is to place students into small groups for different activities. This definitely changes things up. Students have to work with new people and sit in new areas of the classroom. They often have to do something in the group they do not normally do, and may even have to present in front of the class. There were many instances where students interacted with new people or simply interacted more with those they often sit near. The exact dynamics of the group seemed to depend, naturally, on who was in the group. If there were pairs or small groups of students within the group who usually sat together, they would likely do so. If not, students still grouped themselves in some way. Often this appeared to be in the typical gender and race groupings that I observed on a regular basis. If work was supposed to be done, sometimes the students grouped themselves according to what level of work they were going to put into the task at hand. Sometimes this meant they sat together, other times they simply talked to each other from across a group. Students who seemed disinterested would sit off to the side and those who were more interested in completing the task worked together to do so. Those who were usually isolated, especially the Alaska Native students, continued their isolation behaviors. Even if students sat next to each other in small groups, there was evidence that they would not interact with one another,
especially if they did not normally sit near or talk to one another. Overall, when teachers moved students either individually for discipline reasons or into groups for group work, the results were unpredictable and could be either positive or negative depending on the dynamics of the individual group.

*Interview Responses on Teacher-Initiated Changes*

In the teacher interviews, each teacher was asked “Do you ever move a student to a different seat to change their behavior? Does this work? Why or why not?” The first teacher said that she had and that it did usually work. She responded as to why this worked:

You know, part of it is just the fact that I don’t do if very often. And so it calls attention to it and they realize that [they] need it. Oftentimes too when I’m moving a student its not just for punishment but it really is to put them in with a group that may help them to focus more. Because particularly with ADD students they’re more scattered so if you put them up front then they’re able to focus a little bit better. But if you’re using it just as a punishment it doesn’t work.

Although my question focuses on “behavior” and not specifically interaction and participation in this case, the teacher addresses how moving a student can increase their involvement in the class. This teacher moves students around primarily to put them with a group that will be helpful to them. If they are placed with a group that is a positive influence on them, they are likely to show positive results such as increased interaction and participation in the class. She also uses it as a tool to help students who are more
easily distracted, such as those with ADD/ADHD. By moving them up front these students will stay more connected to the class and will retain more information. Often students know they need to be moved and the teacher just needs to initiate the task so the student feels comfortable in making that adjustment. Two of the students from this class (Classroom #1) expressed their belief that they should have been moved long ago. They were both in the most talkative group in the class, and while their grades were okay (middle level), they were often off-task and disruptive to others. As the teacher says in the interview, sometimes the students “realize that [they] need it” and accept that they should be moved.

The second teacher also commented on the same question about whether she moves students and stated: “I do. I do, especially with overly chatty groups and for the most part it works especially to separate students that might have gotten overly friendly. I usually allow them...give them a chance to go back to their original seating if they can show if they can show me they’ve improved.” This teacher addresses this question by looking at the term “behavior” from a more negative, disciplinary point of view. She moves students due to their off-task talking in an effort to lessen that specific behavior. While she may do this during one day of class, she said she would usually allow them the opportunity to move back to their original seats. This was evident during my observations. She did move a few students in an overly chatty group, but on this day it did little to change the amount of talking since the students simply talked to “new” people around them. It was, unfortunately, a tight classroom with many students and not a lot of open desks, so moving a student around did not result in much isolation, but
instead it just put them next to different people. With more available seats, she could have moved students around with a little more freedom and been able to impact their off-task behavior more. One teacher used physical movement as a punishment; one used it primarily to help students. Both teachers did recognize the need for students to be around others who would help them, but only one teacher stated that she changed the classroom to increase that factor.

**Implications for Field of Education**

Since this research question is focused on what teachers can do to influence their students, it definitely has implications for current and future teachers. Teachers can change the seating to increase positive behaviors and to decrease the negative ones as well. In my own teaching experience and work in other classrooms, it is quite common to move students around who are talkative. Sometimes this worked, and sometimes it did not. It depended on the teacher, the student, and the layout of the classroom. The second classroom did not have a lot of open desks to move students into, so that played a role in the success of those moves. In classes I have taught there are many open seats in the front and I would often move students closer to me that were becoming too talkative. This usually worked, but they did have to be separated from most, if not all, possible students to talk to or they would continue talking regardless of who was next to them. Teachers should, again, get to know their students to see what works for them. Some students just need to be reminded not to talk; others need more serious consequences such as moving seats or a visit to the principal’s office.
Ultimately, it would be even better to use seating as a tool to increase the on-task talk and interaction, not just as a way to decrease the off-task talk. As the first teacher suggested, it may be beneficial to place students in groups that are helpful to them. It is also always important to know which students need to be up front to pay attention. These are often the students with ADD/ADHD or who are in special education. Some students may have poor vision and may need to see the board, as I often did myself. Teachers should also do a lot of small group work to encourage interaction and participation. Since there is the possibility that this will influence students negatively, teachers should monitor the groups and select the groups carefully and avoid random grouping unless it fits the assignment better. As mentioned previously, the better that teachers know their students, the more likely they are to influence their behavior in a positive way and to make changes in the classroom that will help students learn.

Surprising Findings

The classroom is not a new environment for me and as such I felt like I knew what to expect from the observations and the research that I conducted. There were, however, a few notable surprises along the way that I was not expecting and that do not seem to fit into any categories of research that I have reviewed. Each day, in addition to my field notes, I answered a set of questions on my observation protocol that connected to my research questions. The final question I answered each day was, “Were there any surprising observations?” Sometimes there was not much going on, other times there
were interesting patterns or events that sparked my interest. I will discuss briefly here those that I still find interesting. Others will be described later on in more detail.

On my fifth day observing the first classrooms, one of the most surprising things jumped right out at me: the most active students were not in the front of the classroom, they were closer to the back! Not only that, but the front row rarely participated at all. Going into the study I had assumed, based on my experience and the results of previous research (Adams & Biddle, 1970; Koneya, 1976; Marx et al., 2000; Wulf, 1977), that those in front would be more active than those in back. This in fact appeared to be just the opposite.

Just as I would expect students in the front to being most interactive, I would also expect them to be the least likely to put their heads down and fall asleep. However, this also seemed to occur in an opposite fashion of what was expected. Students in the front row were often the first to put their heads down, especially in this first class. This behavior then spread from one student in the front, to others in the same row, and then it continued, in domino-effect style, from front to back. So, what started out as one student, became sometimes as many as five or six spread out throughout the classroom, beginning with those towards the front. What was also surprising was simply the number of students who put their heads down on a regular basis and that the teacher rarely asked them to sit up, wake up, or pay attention.

Another surprising thing about this class that I noticed early on was that there was one group of between five and six students who accounted for most of the on-task talk as well as most of the off-task talk. This was less surprising when I saw similar evidence in
the second class as well. There was also a small group of students in the second class who behaved in much the same way. Usually I would expect that one group of students would have most of the on-task talk, and another different group would have the most off-task talk. I did not expect them to overlap as much as they did.

As briefly mentioned earlier, when students were assigned to groups, sometimes little changed in their interaction patterns. On the sixth day of observations in the first class students were assigned to groups and I noted that students actually tended to seat themselves even more according to gender and race. There were two groups of five that showed this quite well. Each was completely separated by gender. One consisted of a pair of females side by side behind a row of three males. The other group of five had a row of three females behind a row of two males. It was surprising not just that they grouped themselves but that the new group did not seem to change the behavior very much.

There was also the interesting factor of isolation and independence in both classrooms. This was primarily evident with the Alaska Native students, as discussed earlier, but other students showed evidence of working alone when they did not have to. On the day of the fourth observation of the first classroom there were six students absent and 17 present. Of those 17, nine were working alone instead of together like they could have done. This could be due to the fact that they are seniors and are more independent. If they do not have questions on an assignment they may prefer to get it done on their own. Another question I had on that same day was why one of the students, #15, sat in front. He rarely participated and was often off-task or half-asleep. He was in the very front row, and according to his behavior I would have expected him in the back row
where he was less visible. I believe I got my answer to this question when I interviewed him. His primary reason for sitting where he did was so he could be near his friend, whom he later said he needed to be next to so he could get help on his work and so she could help him to stay focused. He probably would have sat in any location as long as he was next to her for support.

One interesting observation on the third day of note taking in the first class was a very quiet “fight” over a seat. There are two female African-American students who rotate in and out of seat #5 depending on who is there that day. When they are both there student “A” sits in #5 and student “B” pulls up a chair next to her. On this day, however, they were both there at different times. Student “B” arrived on time and took the seat. She got up a half hour later to leave the room and student “A” showed up very tardy to class and took the seat. Student “B” came back, saw her seat was now taken and moved to seat #1 in the very back. A few minutes later she pulled her chair up to the #5 desk and assumed the more usual seating arrangement that these two had. What was interesting was that this was all done silently, there was no obvious discussion either out loud or by gestures about what was going to happen; it just happened.

One similar surprise in each class was that each class had a student who would ask the most random questions at very random times. In the first class this was the student in the front row, in #15, who was rarely active in class. In the second class it was a female student in the very back row, #2, who also rarely talked on-task. There were two or three instances where #15 would ask bizarre questions and #2 did the same thing at least twice. These outbursts would occur in the middle of a lesson, usually while the
teacher was talking or even while a presentation was taking place. They often had nothing to do with the content and were instead a request to use the restroom or such. #15 also made it a point to latch onto the most obscure detail that a teacher said and ask many questions about it. For example, when the class was learning about the Victorian Era the teacher made a side comment connected to her lecture that the word “bloody” in England was similar to an American curse word. #15 asked more questions that day than on all other observed days combined. He wanted to know everything about this word and where it came from.

Another unique event occurred in the second class on the sixth day of observations. The students were reading from a packet with information on the Holocaust that would introduce them to the book Night by Ellie Wiesel. The students took turns reading aloud from the text. While that is not surprising, I was surprised by the way in which this activity was carried out. The teacher asked for one volunteer to begin, but after that students selected themselves. As soon as the first student stopped reading, a second student picked up, then a third, and so on. This had obviously happened before and they were well accustomed to this procedure. It worked very well and I was impressed by how smooth this made the reading. This is something I would like to try to incorporate as a teacher because it made everything so simple and everything flowed very well instead of stopping all the time to ask for another volunteer, students kept going.

The responses in the interviews were also surprising in a number of ways. As discussed earlier, there was the interesting theme of “comfort” that appeared in many of the interviews. I did not expect this term to come up so often, nor did I think of it as an
influence on interaction. There was also the fact that two students used the term "eclectic" to refer to their set of friends. This is a rather obscure term I think, especially for teenagers, and it was very random that two students used the same word in the same way. These students were primarily friends with people who were quite different from them; however, eight out of the ten students said their friends were more similar to them in some way. There was an interesting dividing line within the interviews of people they knew and people they didn't know. They used the phrase "people I know" to refer to friends and people they liked, they used the phrase "people I don't know" to refer to those who were not their friends or to those they apparently did not wish to know. This usually had a negative connotation to it except for one instance where a student said he liked to sit near people he didn't know, especially those new to the class or the school, so he could make them feel comfortable in class.

Finally, one of the most surprising elements was that both classes had what I would refer to as a "hub" or instigator of classroom talk. This student, who in both cases was a heavyset white male, seemed to start most conversations, on- or off-task, within the classroom. Previous research (Duffy et al., 2001; French & French, 1984; Okpala, 1996; Younger et al., 1999) has noted that males tend to dominate classroom interactions. In Classroom #1 this student was #9, in Classroom #2, he was student #25. This was the student who talked the most within each classroom. There was however, a white female, #10, in Class #2 who spoke approximately an equal amount of time, though this was only for on-task talking. The white male in her class definitely talked more off-task than anyone else. These were the students who seemed to never stop talking. If the class was
silent, it lasted for only a moment or two and these students were the likely culprits to break that silence. It is interesting to note that they were both the highest for on-task and off-task talk in their classrooms. They simply talked a lot, whether it was on topic or not.

Another interesting point about these two students is that, even though they were in two different classrooms, they sat in approximately the same area of the classroom. In the first class, #9 sat in the third split row from the front, and in the middle of three desks on the left side of the room. In the second class, #25 did not sit directly in front, but sat in the second seat from the front, on the left side of the classroom, also in the same approximate position from left to right. Each class had six desks going across from left to right, and in each class the “hub” sat in the second row of desks from the left.

These students are similar to the “target” students that Jones discusses in her study on classroom interactions (1989). She tried to identify “t-zones” by noting where the target students sat. She defined target students as those who “dominated classroom interactions and received a disproportionate amount of the teacher’s attention” (p.4). The male “hubs” do appear to fall within these criteria as they definitely dominated classroom talk; however, Jones understood there to be multiple target students in a class, not just one. Also, she did not address the difference between the on-task and off-task talk of these students. In her study, target students were believed to be high-achievers, which was not the case in this study — one was very low, one was average. Also, her idea of a target student was one who kept the class moving ahead with a topic. This was not always the case with the “hubs” as approximately half of their talk was off-task and/or not directly related to the topic. Instead of being a high-achieving student with a wealth
of knowledge to share, like the target students, the “hubs” appear to just like to talk more than anything else. While this is not conclusive in any way, it is one more interesting connection between these two students and their apparent function in the class environment.

New and Important Findings

While a great deal of research has been done in this field, there were many gaps in the research that I noted early on. Many of these studies were very narrow in their research goals and the researcher only looked for one or two factors, often ignoring whatever else was going on in the classroom. Some of the researchers did not find what they were looking for, and because their focus was so narrow, had no notable results, regardless of whether it fit with the intent of the study or not. I set out to find information on interaction and participation. I was guided but not restricted by my research questions. I focused on certain elements of the class, while remaining open to any unique events that may be of interest beyond my research scope. Some of the most interesting things I found were not what I was looking for, they just happened and I made note of them. This is all possible because of my research methodology. I chose to conduct a qualitative study instead of a quantitative study so that I was not restricted in my approach or in my analysis of the data. Qualitative research allowed me to look at the classroom as a whole and to examine how it functioned, by asking deeper questions such as why something was happening or what it all meant.
My study showed that the physical location of a student’s seat is not as important as who they sit next to. Previous studies looked primarily at the physical location of the students and at patterns in who they sat next to but did not look at the impact that student’s group members could have on their interaction and participation. Though this was an unexpected finding, I was able to observe and analyze it due to the qualitative nature of my study. I also found what appears to be a new role within the classroom, the “hub” or initiator of conversation. While this is very similar at first to the target students in the study by Jones (1989), there are enough differences that it seems to be an altogether unique observation. Again, this was not something I sought in my research questions or my observations specifically, but nonetheless I was able to record and observe this activity because my focus was not too narrow.

Previous research (Myhill, 2002) found that the high-achieving students also had the most on-task verbal interactions, and the low-achieving students had less. I would also assume that this would be true and that those students who are most involved will do better academically. However, the results of my study, once more, indicate just the opposite of the expected result. Instead, the level of interaction actually was smallest for the student’s with the highest academic achievement. This was determined by looking at the overall interactions for the low, middle, and high-achievers and then breaking it down into averages. Even without the inclusion of the very active talkers, who were of low or middle level academically, the high-achievers still had the least number of interactions.

Research found a link between factors such as gender, race, and age on student seating (Jones, 1989; Schofield & Sagar, 1976). The study by Schofield and Sagar was
not conducted in a classroom and instead took place in the cafeteria of a middle school. Although Jones understood that race and gender may play a role in student interaction and participation, she did not record any observations about how students actually grouped themselves, she was only concerned with finding the pattern of the "t-zone." My research looked for patterns similar to the study in the cafeteria, this time within the context of a classroom. I found evidence suggesting that students do group themselves according to gender, race, age, and even sometimes according to academic ability.

Another finding regarding the influence of student race was the isolation of the Alaska Native student. I have not encountered a similar discussion in any of the reviewed research. It is an interesting occurrence that would need to be examined more closely to see how it affected performance overall and to see how it was connected to the culture of the Alaska Native student. I found many "other" factors that appeared to play a role in student interaction and participation. Those that I have not seen addressed in other research are the role of tardies and absences on student performance. It is an indirect influence, as this changes the seating pattern, which in turn changes who students sit near and how they will act. Since it is a more indirect influence, it may not have been considered in previous studies.
Discussion

There is a great deal of information left to learn about this topic. It is obvious to me that the questions I posed at the beginning of this research are really only the tip of the iceberg in terms of what should be asked of students and teachers alike. I also realize that my first question is likely too broad to obtain a more exact answer. The question was: To what extent does a student’s seating location affect their amount of classroom interaction and/or participation? I feel that my study was on too small of a scale to adequately answer this question. I think it would be necessary to perhaps observe the same classroom with different classes of students and then to compare their behaviors. If there were some similarities between how each class behaved due to their seating, there might be some more conclusive results to this question. For now, I must be satisfied with the fact that this question did not really get answered, but instead it seemed to be the overwhelming opinion of students that it is not the seat that matters, but who you sit next to. This was found to be true based on the observations as well. This does not match what I occasionally see in classrooms, but this new theory does seem to hold true for these classes.

My second research question on grouping according to gender, race, age or academic ability has been answered for the most part. I feel like the results regarding gender and race were most clear. There was evidence of these patterns in both classes that matched what I have observed in previous classes. I do believe it would be interesting, as previously mentioned, to explore the race and gender grouping on a larger scale where many racial groups had more freedom to spread out and sit where they wanted.
The findings for the third research question revealed many possible “other” influences on classroom interaction and participation. Many of these were new and had not been discussed in the literature I reviewed. I had not thought about many of them as factors, especially the idea of “comfort”, but they appear to play at least a small role in the classroom environment. These factors are all important for teachers to be aware of, as they can make changes in the classroom to encourage interaction, which addresses the fourth research question. Teachers can make small changes such as moving students around or regrouping them to influence their interaction. Teachers need to be aware that their changes can have negative outcomes as well as positive.

Despite the fact that there are still many questions left to be answered, I believe that this study has addressed, at least in part, many of my original theories about seating patterns and classroom interaction and participation. It is clear that there is some connection between student seating (whether it is the location or the people they sit next to is now arguable) and student behavior in class. There is also a great deal of evidence to show that students do group themselves in certain ways. Some of my assumptions were shown to be inaccurate in the context of this study. I was especially fascinated by the fact that my assumptions about achievement’s connection to interaction and seating location’s connection to interaction were quite opposite of the actual result. These findings were also different from a lot of research and from my own personal experiences in previous classrooms.

There were many interesting and compelling themes and patterns that emerged from this study. The first really is that it may be more important who students sit next to
than where they sit. It is not something that is truly surprising to me, but was very surprising to hear so many of the students point this out during the interview process. They seem fully aware of their surroundings and behavior and understand what will influence change and what will not. Many interesting and surprising findings arose from the interviews. The ideas of "comfort" and the positive and negative influences of friends were helpful in understanding the dynamics of the classroom. Also, I was surprised that students separated other students into the categories of "people I don’t know" and "people I know." The one finding that I am really intrigued by is the "hub" in each classroom. This is an interesting concept that must be explored further to determine if it really exists outside of these two classrooms. The similarities in the "hubs" themselves was also very bizarre. The fact that they were both white males, who were heavier set than most was interesting. It was also surprising to find out that they sat in almost the exact same location in each classroom. It is difficult to determine how much of what I observed was just a strange coincidence and how much was actually a pattern or trend in classrooms as a whole.

As an educator there were many things that I learned from this study. In addition to learning whether my previous assumptions were correct, I learned that there are many things going on within the classroom that are not always evident to the teacher. There are a lot of side conversations and behaviors that are counterproductive to the functioning of the classroom that should be attended to before they get out of hand. A few of the students in the first classroom responded in their interviews, for example, that they should have been moved previously because of their talking and distraction. They did get
their work done, which may be why they were allowed to stay together, but there were many days when they were an obvious distraction to the rest of the class. Often they were so loud no one could appear to concentrate for very long especially if they needed to be working quietly on reading or answering questions in writing. These students knew they should have been moved and probably would not have put up much of a fight if they were asked to split up a little bit. It would have eased the volume level, in theory, and also allowed others to participate more because they would be able to get a word in on discussions.

In general, it would seem to be a good practice as an educator to routinely move students around, at least in small groups, to encourage people to interact with new members of the class and to challenge more quiet students to become engaged. However, the teacher of the second classroom recognized that it was ideal to let the students sit next to people they knew to accommodate their comfort level. Students would be more apt to get help from the person next to them and interact positively and on-task if the person was someone they knew. So, there are definitely positives and negatives to moving students around, and each class will be very different in how they react to changes. Teachers should be aware of this and do what "feels right" in their classes. It would be healthy to get students moving around and interacting with new people, but not to the detriment of their comfort level.

I also learned that there are many things that can influence student interaction and participation. A lot of it, unfortunately, is not obvious; it is subtle or completely invisible. These factors are things like the comfort of students, how they feel about "people they
don’t know” in class, what keeps them interested and awake? Teachers must learn to look for signals to indicate if their students are comfortable or not in the classroom. Academic success and active interaction is not always the key to this, as this study suggests. To be a true participant in the class students need to be encouraged to speak up, to interact, and to ask and answer questions. Even if they have a high grade in the class, I believe they may be missing out on some important social interaction as well as some important connections if they are not actively involved in the class.

Every educator should be a researcher. Perhaps it is more than that, and every educator is a researcher by definition of being involved in a classroom. Every teacher in a classroom is an informal researcher at the very least. They subconsciously take in everything around them and analyze it, always looking for ways to improve their classrooms and their teaching. I learned many things as an educator and as a researcher, though there is a great deal of overlap. The role of researcher is a difficult one, especially in a classroom that comes to feel familiar. It is difficult not to answer questions that students have or to jump up and help explain a topic that the teacher and students are discussing. It is difficult to maintain the role of an observer and not be a participant. It is, however, crucial to stick to this role as much as possible so as not to influence the behavior of the class.

I have many recommendations for current and future teachers. First of all, I believe that every educator needs to be a researcher at least to some extent. Most teachers will have to complete some observations and maybe some research in order to get their certification. If they are not required to observe and study classrooms, they need to
pursue this on their own. Those who are already teaching should be willing to let others observe them. This would serve the purpose of both the teacher and the observer. The observer can learn from the teacher, whether the observer is another teacher, a researcher, or a future teacher. The teacher can also learn from the observer things that they did not know about their classes, their students, and about themselves. Teachers should listen to what the observers have to say and make changes or adjustments if necessary. Any teacher, new or experienced, could benefit from the perspective of another pair of eyes in the classroom.

In general, teachers need to pay careful attention to what goes on in their classrooms in order to make changes to improve the learning of their students. They must then be willing to make those changes to benefit their students. Teachers should be in the habit of monitoring their students to look for signs of behavior problems, learning disabilities, lack of understanding, and anything else that would need to be discussed with the student or parent to improve both the learning of the student and the function of the class as a whole. They should watch for the positive behavior too and see what encourages students to interact and participate positively and what motivates them to achieve.

*New Questions and the Need for Further Research*

If I continued to conduct any research in the future as an observer, I believe I would make a more conscious effort to be less visible in the classroom. This could not have been accomplished in these classes due to their small size. I would look for larger
classrooms where I could sit in the back of the room and not be directly in front of the students while making my notes and recording video. It would seem best to get a more authentic view as a “fly on the wall” that was not as obvious to the students.

As I should have anticipated, my study left me with many more questions than answers. These questions cannot be easily answered and many would require additional observations or even entirely new studies. Later research could look into the idea of age grouping as I did not have enough of a multi-age sample of students to adequately search for patterns in age grouping. I also feel like there needs to be a little more research done to determine if patterns in academic ability exist elsewhere and are more widespread. Those patterns are probably the most difficult to see in classes because students may be on the same intellectual level but may not all like the subject as well. Also, their interaction and behavior in class does not always reflect their grade. In addition, a student in the low end of a “high” academic category may be sitting next to someone on the high end of the “middle” or average category and therefore be only a few percentage points apart, grade wise, but they would be placed in two separate groups by the teacher. In a future study it may be necessary to obtain actual grades and to get updates on the progress of students throughout the study to more accurately determine their academic ability. It may also be important to look at their overall GPA and grades in certain subjects over the years to have a better sense of how they compare to their classmates and those they sit next to in certain classes. This way the researcher could more accurately categorize a student as an “A” student or a “C” student for example, if that was their typical grade in English.
One of the interesting details of this study is the term “comfort”. Since this was not an evident theme until the interviews and observations were completed, it would be interesting to further research the concept of comfort. Specifically, I would like to know if students and teachers used the word in the same way and meant the same thing. I would also like to know if other students thought that this was a factor in classroom interaction. Also, how much does comfort affect the seating choice and therefore the interaction level of students? How can teachers increase the comfort level of students? A study could more closely examine student’s comfort and other similar variables.

While there has already been research (Duffy et al., 2001) on the influence of class subject on student performance, more needs to be done, especially at the high school level to see if there are similarities in interaction in classes of the same subject, and also how classes differ according to subject. As an English teacher I would be most interested in a large study focusing on the subject of English compared to others. Every student has favorite and least favorite subjects, but perhaps there is a way to encourage those who do not like the subject to become more involved. How could teachers make their subject appealing to a broader range of students? How could they encourage interaction from students who do not like the subject?

Ultimately, I would prefer not to be the observer only, but to conduct a form of action research in my own future classroom. As a teacher I like the idea of conducting a study similar to the one Philpott (1993) conducted in his own classroom. He was able to get some very interesting results about seating, interaction, and about his students. His classes were very small and were unique in that they were for students learning English
as a second language. Researching this topic in more traditional classrooms to see the
effect would likely provide a great deal of information and insight for teachers, and it
would allow for many changes and redirection of the study along the way. This would be
especially useful when conducted by many teachers at the same time to see if they got
similar results. It could potentially yield very useful results for the teacher, the students,
and the educational system. The only reason I have not pursued this line of research is
that I have not had my own classroom to research.

Much of the data I gathered that was linked to achievement was opposite of what
would be expected. High-achieving students were less likely to interact than their less
academically successful classmates. This is not replicated in any studies I have found, so
I would be curious to see if anyone else came up with similar findings in future studies. A
larger study may give a more conclusive finding as well. How can the high-achieving
student accomplish so much without visibly interacting? Why are some of the more
active students not high-achievers? What would these students have to say about the
connection between interaction and achievement?

Finally, I am interested to learn more about the apparent isolation of the Alaska
Native student. I want to know if the behavior of these students is really connected to
what the research says about their learning style and cultural background or if there are
other factors at work. Why do some of these students succeed in isolation and others do
not? How much of a barrier is the Western culture to these students today in 2007? Is it
better or worse than it was ten years ago? Twenty years ago? I am very interested in
Alaska Native culture, especially as a teacher. There are many lessons that focus on the
culture of Alaska Natives, their stories, myths, legends, and so on. It is important to understand as much about their culture as possible, and it is also crucial to understand the reasons for their failure to interact in the classroom.
Conclusion

The field of education is so varied and complicated that there is always new research to be done. Each classroom is unique and each teacher has their own style. Research can never completely capture the atmosphere of the “average” classroom. There is no such thing. Researchers must instead be content with making generalizations based on what they have seen and hope that their results can be duplicated by others. This study takes a very small picture of a very large educational system. It is a very small piece of the school and the school district in which the research took place. Since things are constantly changing in our city, our school district, and our nation, these results may never be duplicated.

Regardless of the outcome of a study, there is a great deal of information that is learned by the researcher, the participants, and by those who review the study later on. Teachers can learn to encourage the interaction and participation of their students. They can now be aware of just how many minute factors are a part of classroom dynamics. The one thing that teachers can take away from this study is that they need to get to know their students and how they interact with one another. They need to know what encourages students to act positively, and what brings about negative behavior. Only when the teacher becomes a researcher can they truly hope to bring success to all of their students.
References


Appendix A
Summary Map of Classroom #1

Key for Classroom #1 & Classroom #2:

- Seat # located in upper left corner
- Student Gender, Male (M) or Female (F)
- Student Race (as identified by Teacher)
  - W = White/Caucasian
  - B = Black/African-American
  - N = Alaska Native
  - H = Hispanic
  - F = Filipino
  - A = Asian
- Achievement level (according to teacher), High, Medium, or Low labeled as “H”, “M” or “L” in upper right corner
- # of recorded on-task verbal interactions, shown in bold in lower right corner
- Grade-level of student if different from rest of class. Only indicated in Class #2 as Class #1 was all 12th grade.
Appendix B
Summary Map of Classroom #2

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FRONT
Appendix C
Interview Questions

For Students:
1. Name? Age? Grade level?
2. Why do you choose to sit in one seat as opposed to others?
3. Do you think your choice in seating affects your behavior in class?
4. What is your current grade?
5. What do you expect for a semester grade?
6. Is this grade better/worse/same as other classes?
7. Do you think your seating choice affects your grade?
8. Do you generally do better academically in classes where you get to choose your seat or in classes where seats are assigned?
9. Do you do better in classes where you sit near friends? Why or why not?
10. How important is it to you to sit next to certain people?
11. Are they a positive or negative influence on you? Why?
12. In this class, if your seat were changed to a very different location (from front to back, vice versa), how do you think it would affect you?
13. When given the choice, do you feel like you sit next to people who are similar to you? (academic ability, gender, race, age, etc.)
14. If changing your seat in this classroom, and in others, would improve your grade, would you change who you sit next to? Why or why not?
15. Finally, what else would you like to add about classroom seating?

For Teachers:
1. What reasons do you have for assigning/not assigning seats in your class?
2. What influences the layout of your classroom, especially student seating?
3. Do you notice a difference in student’s behavior based on where they sit in the classroom?
4. Do you ever move a student to a different seat to change their behavior? Does this work? Why or why not?
5. What patterns in interaction and participation do you notice when students are allowed to choose their seats?
6. In this class, are there obvious groups of students? How are they grouped?
7. Do you think these groups influence their behavior? If so, how?
8. What factors seem to influence how much a student interacts and participates in class?
9. What else have you noticed about classroom seating?
Appendix D

**Informed Consent Form**

*To be completed by participating classroom teachers*

**Research Study Title:** Influences on Classroom Interaction and Participation

IRB #07-06  Date Approved: February 22, 2007

**Description of the Study:**
You are being asked to take part in a research study about student interaction and participation in the classroom. This study is part of my Master’s in Education program. The goal of this study is to learn what influences positive student behavior in the classroom. You are one of the volunteers who agreed to take part in this study. You were selected because your classroom best fits the classroom environment that I would like to observe. Please read this form and ask any questions you may have before you agree to be in the study.

If you decide to take part, your class will be one of two classes that I observe over a nine week period. These observations will allow me to research the influences on student interaction and participation in the classroom. I will observe your classroom once or twice a week and record my observations by using both field notes and videotapes.

**Risks and Benefits of Being in the Study:**
The risks to you if you take part in this study may include a small amount of discomfort. This is likely to be a result of feeling as though you are being judged. Please be aware that it is the classroom and the interactions that are being observed and not you or your teaching style. There will also be an inconvenience due to the amount of time necessary for you to volunteer. Some time must be set aside for the consent process, for the study to be explained, and for interviews.

I do not guarantee that you will benefit from taking part in this study. The results of my research can be shared with you. As a teacher, these results may help you to encourage the participation and interaction of your students. It may give you additional tools to help students succeed.

**Confidentiality:**
There will be no record in my field notes that specifically identifies any member of this study. Videotapes will be used to record classroom sessions. Audio-tapes will be used for interviews. Videotapes will provide a secondary observation of the classroom from which I record data and observations without specifically identifying any students. Audio-tape sessions will later be transcribed without identifying participants. Both audio and video
tapes will later be destroyed and resulting data will not be identifiable. Research data can be accessed only by me and my committee. All data will be stored at UAF at the end of the study until it is destroyed after a five year period. Any information with your name attached, such as this form, will not be shared with anyone outside the committee. The data from this study could be used in reports, presentations, and publications but you will not be individually identified.

Voluntary Nature of the Study:
Your decision to take part in the study is voluntary. You are free to choose not to take part in the study or to stop taking part at any time without any penalty to you.

Contacts and Questions:
If you have questions now, feel free to ask me. If you have questions later, you may contact me, Michele Scouten, at home at (907) 479-5434 or via email at ftmms@uaf.edu. You may also contact my faculty sponsor, Maureen Hogan at (907) 474-6474 or via email at ffmph@uaf.edu.

If you have questions or concerns about your rights as a research subject, please contact the Research Coordinator in the Office of Research Integrity at 474-7800 (Fairbanks area) or 1-866-876-7800 (outside the Fairbanks area) or fyirb@uaf.edu.

Statement of Consent:
I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been provided a copy of this form.

________________________________________________________________________
Printed Name of Subject

________________________________________________________________________
Signature of Subject Date

________________________________________________________________________
Signature of Researcher Date
Appendix E

Parental Consent & Student Assent Form
To be completed by participating students and their parent or guardian.

Research Study Title: Influences on Classroom Interaction and Participation

IRB #07-06 Date Approved: February 22, 2007

Description of the Study:
Your child is being asked to take part in a research study about the influences on student interaction and participation in the classroom. This study is part of my Master’s in Education program. The goal is to learn what affects student behavior in the classroom. Your child is being asked to take part because his/her teacher volunteered for the study. Please read this form and ask any questions before you allow your child to be in the study.

If your child decides to take part, his/her classroom will be one of two classrooms observed over a nine week period. These observations will allow me to research influences on student interaction and participation. I will observe the class once or twice a week. I will record sessions using notes and video. Interviews may be done at the end of the study. Your child may be asked to participate in an interview.

Risks and Benefits of Being in the Study:
The risks to your child may include a small amount of discomfort. This may happen because the classroom is being observed and your child may feel judged. Please be aware that it is the classroom and the interactions that are being observed and not your child specifically. There will also be an inconvenience due to the time for your child to volunteer. Some time must be set aside for the consent and assent process. Time will be needed for the study to be explained. Some time may also be needed for interviews.

I do not guarantee that you or your child will benefit from this study. My findings can be shared with your child’s class. These results may help teachers encourage the participation and interaction of your child and other members of the class. It may give the teacher and students tools to help achieve school success.

Confidentiality:
There will be no record in my field notes that specifically identifies any member of this study. Videotapes will be used to record classes. Audio-tapes will be used for interviews. Videotapes will provide a secondary observation of the classroom from which I record data and observations without specifically identifying any students. Audio-tape sessions will later be transcribed without identifying participants. Both audio and video tapes will later be destroyed and resulting data will not be identifiable. Data can be accessed only by my committee. All data will be stored at UAF at the end of the study until it is destroyed after a five year period. Any data with your name attached, such as this form, will not be shared.
with anyone outside the committee. The data from this study could be used in reports, presentations, and publications but your child will not be individually identified.

Voluntary Nature of the Study:
Your child’s decision to take part in the study is voluntary. You and your child are free to choose not to take part in the study or to stop taking part at any time without any penalty to you. Any information already collected with you or your child’s name, such as this form, will be destroyed.

Contacts and Questions:
If you or your child have questions now, feel free to ask me. If you have questions later, you may contact me, Michele Scouten, at home at (907) 479-5434 or via email at ftmms@uaf.edu. You may also contact my faculty sponsor, Maureen Hogan at (907) 474-6474 or via email at ffmph@uaf.edu.

If you or your child have questions or concerns about your rights as a research subject, please contact the Research Coordinator in the Office of Research Integrity at 474-7800 (Fairbanks area) or 1-866-876-7800 (outside the Fairbanks area) or fyirb@uaf.edu.

Statement of Parental Consent:
I understand the procedures described above. My questions have been answered to my satisfaction. I agree to allow my child to participate in this study. I have been provided a copy of this form.

______________________________  ________________________________  Please check the boxes that apply:
Printed Name of Parent  My child can be tape recorded

______________________________
Signature of Parent & Date  My child cannot be tape recorded

My child can be video taped

My child cannot be video taped

Statement of Child’s Assent:
I know what this study is about and I have had my questions answered. I would like to be a part of this study.

______________________________
Printed Name of Child

______________________________  ________________
Signature of Child  Date

______________________________  ________________
Signature of Researcher  Date
Observation Description 1

Pre-Observation/Field Notes: Daily Observation Form

Observation # ______

Today’s Date: ________________ Class Period: ______ Time Block: _____________

Observer Name: _______________________ Class Subject: _______________________

Grade Level(s): ______ # of Students ____________

Present | Absent | Tardy

Student Gender: _______   Teacher Gender: Male Female

#Male   #Female

Student Ethnicity #:__________

| AK Native | Caucasian | African-Am. | Hispanic | Asian | Other |

Any students identified as requiring Special Education, ESL services, etc.? Yes No
Describe: ___________________________________________________________________

Any Aides or other adults present? Yes No Describe: ____________________________

Lessons/Activities Scheduled:
____________________________________________________________________________

Session Videotaped? Yes No Videotape Label: ________________________________

Seating Arrangement Type: ___________________________ # of Student Desks: ______

Classroom Layout: Attach photo of empty classroom and/or drawing of classroom
Appendix G

Observation Description 2

Post – Observation: Questions to answer after recording field notes and reviewing videotape.

1. Are students free to choose their seating today?

2. What opportunities for interaction are there? (student to student)

3. What opportunities for participation in class activities are there? (student to student and/or teacher)

4. What did the teacher expect the students to do today?

5. Did any students or groups stand out? Why?

6. Which area of the classroom was most involved today?

7. What groupings were noticed today? (gender, academic ability, race, age, etc.)

8. If groupings were present, what influence did the groups have on student behavior? (normalization)

9. Were there any other factors, besides seating, that seemed to influence interaction and participation?

10. Did the teacher attempt to change the seating arrangement in any way? If so, what was the result?

11. Any surprising observations?