Bennett, T. (2013, November 22). Behaviour - Without a seating plan you're a sitting duck | TES New Teachers. Retrieved January 23, 2016, from <http://newteachers.tes.co.uk/content/behaviour-without-seating-plan-youre-sitting-duck>

In his opinion piece on behavior Tom Bennett draws on his experience in education to comment on the purpose and process of creating seating charts. His primary argument is that the purpose of the seating chart is to demonstrate the teacher’s dominance of the classroom environment. Bennett goes on to describe the process of creating the seating chart, breaking up social groups and using proximity to the teacher to control certain students.

While not scientific in nature or peer reviewed, the act of publishing Bennett’s statements in a trade journal lend legitimacy to them. Bennett represents one end of the seating chart discussion spectrum and helps bracket my research.

Bicard, D. F., Ervin, A., Bicard, S. C., & Baylot-Casey, L. (2012). Differential Effects Of Seating Arrangements On Disruptive Behavior Of Fifth Grade Students During Independent Seatwork. *J Appl Behav Anal Journal of Applied Behavior Analysis,* *45*(2), 407-411. Retrieved January 23, 2016.

The article empirically analyzes the behavior of students during two different seat arrangements and with two different seat selection methods. Bicard et Al. compared group seating to rows and student selected to teacher selected methods, they found row arrangements with teacher selected seats to be the most effective in preventing off task behavior.

One reason for intentional control of the classroom environment is the prevention of off-task behaviors. The article provides peer-reviewed evidence to support one seating arrangement over another.

Faize, F. A., & Dahar, M. A. (2011). The Effect of Seating Location on students’ Performance in Physics: Interactive Use of Computer Presentations. *Journal of TURKISH SCIENCE EDUCATION,* *8*(3), 30-43. Retrieved January 23, 2016.

Faize and Dahar compared the performance of students sitting in the action zone compared to those in the non-action zone, of a course taught through use of multimedia. Their hypothesis was that extensive use of multimedia and computer presentations would mitigate the effect of seating position on student performance. Students in the action zone did outperform those in the non-action zone on certain tasks.

My research is concerned with the effect seating charts and classroom environment have on student performance. Faize and Dahar demonstrate the impact of seating specifically.

Fernandes, A. C., M.Ed, Huang, J., PhD., & Rinaldo, V., PhD. (2011). Does where A student sits really matter? - the impact of seating locations on student classroom learning.*International Journal of Applied Educational Studies,10*(1), 66-77. Retrieved from <https://collegeofidaho.idm.oclc.org/docview/865932352?accountid=163019>

Fernandes et al conducted a review of research related to classroom seating position and arrangement looking for ways in which the student-teacher and student-student relationships were impacted. They conclude that student-teacher relationships effect learning and that the relationship can be effected by seating position and arrangement. Classroom seating arrangements which promote open line of site and communication are more likely to lead to the development of a positive relationship.

Classroom relationships, both the teacher-student and student-student relationship impact student learning. Management of the physical classroom environment impacts those relationships and is the domain of my action research.

Haghighi, M. M., & Jusan, M. B. (2013). The impact of classroom settings on students' seat- selection and academic performance. *Indoor and Built Environment,* *24*(2), 280-288.

The paper written by Haghighi and Jusan compared the impact on classroom environmental elements in student seat selection broken down by gender. Students were allowed to select their own seats in a math classroom and were given surveys to determine their confidence and opinions related to the classroom environment. Student seat selection was used to demonstrate student confidence in course performance. They found that aspects of the classroom environment such as lighting, temperature, smell and color effected the seat selection of male and female students differently.

The argument made by Haghaghi and Jusan addresses the discussion on classroom environmental factors a new way in that they parse out the difference between fixed and flexible factors. I fit in the discussion because my seating position research is what they would refer to as a flexible elemental analysis.

Hill, M. C., & Epps, K. K. (2010). THE IMPACT OF PHYSICAL CLASSROOM ENVIRONMENT ON STUDENT SATISFACTION AND STUDENT EVALUATION OF TEACHING IN THE UNIVERSITY ENVIRONMENT. *Academy of Educational Leadership Journal,* *14*(4), 65-79.

In this study students completed a survey regarding the classroom environment and their feelings toward the course. Two different courses, taught by two different professors were taught in two sections each. Once section of each course took place in an updated classroom while the other section took place in a smaller, older room. Students reported that they preferred to attend class, learned more often and were more confident about their grades in the updated rooms.

Type of seating available plays a large role in developing a seating arrangement. While this study was not concerned with seating arrangement it was one of the many factors present.

Ketcham, C. J., & Burgoyne, M. E. (2015). Observation of Classroom Performance Using Therapy Balls as a Substitute for Chairs in Elementary School Children. *Journal of Education and Training Studies,* *3*(4). Retrieved January 23, 2016.

Ketcham and Burgoyne studied a second grade classroom, comparing behavior of the students sitting on both chairs and exercise balls. The research compared the students physical behavior (how were they sitting and what were they doing while seated), their effort level and how on-task were they.

Type of seating available effects the available seating arrangements but also can impact the student regardless of position in the room.

Marx, A., Fuhrer, U., & Hartig, T. (1999). EFFECTS OF CLASSROOM SEATING ARRANGEMENTS ON CHILDREN’S QUESTION-ASKING. *Learning Environments Research,* *2*(3), 249-263. Retrieved January 23, 2016.

The research paper by Marx et al. measured the question asking of a 4th grade class, comparing the number and type of question asked to the seating arrangement, student seating location and subject. They compared the triangle and “T-shaped” action zones to see which could more accurately predict student engagement. They concluded that a semi-circular classroom arrangement resulted in increased student question asking.

The type and number of questions students ask relates to student learning. I will be testing a variety of desk configurations during my action research and will be able to measure student learning success.

Meeks, M., Knotts, T., James, K., Williams, F., Vassar, J., & Wren, A. (2013). The Impact of Seating Location and Seating Type on Student Performance. *Education Sciences,* *3*(4), 375-386.

The study monitored the grades of college students in a capstone course taught at two different universities and in different types of classrooms. The grades of students in classrooms with a tiered seating arrangement was compared to those in rooms that are not tiered. The study also took into account the type of seating such as, flat desks with attached chairs versus tables with disconnected chairs.

The authors concluded that the seating type and arrangement had little effect on the student grades but the study was very limited. The population they studied was far along in their education and already experienced some measure of academic success. While the population is very different from mine, I find it adequate evidence that environmental elements factor greater in mandatory courses full of younger students.

Van den Berg, Y. H., Segers, E., & Cillessen, A. H. (2011). Changing Peer Perceptions and Victimization through Classroom Arrangements: A Field Experiment. *Journal of Abnormal Child Psychology J Abnorm Child Psychol,* *40*(3), 403-412. Retrieved

 January 23, 2016.

 Van den Berg, Segers and Cillessen used a likability survey of fifth and sixth grade students to determine the effect of classroom arrangement on student’s perception of their peers. They measured the physical distance between students and moved students nearer to each other if they had provided low likability ratings in the pretest. The same likability survey was given later in the term and the change in likability was compared to students whose distances remained equal. The students in the experimental group displayed a greater change in reported likability than those in the control group.

Students must know they are safe before they can concern themselves with learning. This study shows a possible link between classroom proximity and potential for bullying. In my action-research I will be moving students into different lab groups and measuring the impact.