

Does Where A Student Sits Really Matter? - The Impact of Seating Locations on Student Classroom Learning

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Abstract: *This paper examines the impact of seating locations on student classroom learning. Specifically, it examines the impact of seating locations on a) student learning motivation, b) student-student and teacher-student relationships, c) the nature of different tasks and activities performed, and d) student classroom participation. Its impact on classroom participation is carefully discussed because active engagement and participation in the learning experience positively affects students' learning while promoting the use of higher order thinking skills (Flynn, Vermette, Mesibov & Smith, 2009; McKeachie, 1990; Stronge, 2007). Student control, along with the implications related to seating locations in the classroom is also explained and discussed. Research gaps in this area are identified.*

Introduction

It seems that there is a common belief that where students decide to sit within a classroom reflects upon their motivation, engagement, and willingness to learn (Benedict & Hoag, 2004; Betoret & Artiga, 2004; Budge, 2000; Burda & Brooks, 1996; Daly & Suite, 1982; Marx, Fuhrer, & Hartig, 2000; Perkins &

Wieman, 2005; Wannarka & Ruhl, 2008). Though this belief has become an anecdotal comment, there are indicators suggesting that student location within the classroom affects academic performance (Burda & Brooks, 1996; Holliman & Anderson, 1986; Perkins & Wieman, 2005; Szejnberg & Finch, 2006). Over the past decades, research has explored whether it is the good student who selects the seat at the front of the class or if the seat at the front of the class creates the good student (Burda & Brooks, 1996).

What teachers consider to be a good student can vary. Research shows that seating locations¹ are related to academic achievement and classroom participation (Budge, 2000; Marx, Fuhrer, & Hartig, 2000; Wannarka & Ruhl, 2008; Weinstein, 1979). Seating locations concern how students are seated within the classroom environment. They can vary in size and formation; however, they affect students' learning conditions, and learning conditions impact their engagement and participation in the

¹ *Seating location depicts where a student sits within the classroom.*

classroom (Budge, 2000; Marx, Fuhrer, & Hartig, 2000; Wannarka & Ruhl, 2008).

Research has begun to show that active engagement and participation in the learning experience positively affects students' learning (Flynn, Vermette, Mesibov, & Smith, 2009; Stronge, 2007). Classroom participation is associated with the generation and promotion of higher order thinking skills, and this cognitive stimulation provides students with a different environment which promotes positive and effective learning experiences (McKeachie, 1990).

Further, a pleasant classroom learning environment helps students learn better, and different seating locations provide students with access to learning resources, such as the teacher and clear lines of sight to the board (Douglas & Gifford, 2001; Jamieson, 2003; Szejnberg & Finch, 2006). Classroom seating arrangements² also have the ability to affect the communal environment within the room (Jamieson, 2003; Szejnberg & Finch, 2006). Due to the large amount of time students and teachers spend in the classroom; overall comfort level of the environment is a factor that impacts student achievement and success. Students who find their classroom to be pleasant and comfortable generally demonstrate an increase in participation leading to higher achievement (Douglas & Gifford, 2001). Therefore, the examination of the impact

of seating locations on student classroom learning has important educational implications.

This paper examines the impact of seating locations on student classroom learning. Specifically, it examines the impact of seating locations on a) student learning motivation, b) student-student and teacher-student relationships, c) the nature of different tasks and activities performed, and d) student classroom participation. Its impact on classroom participation is carefully discussed because active engagement and participation in the learning experience positively affects students' learning and promotes students' use of higher order thinking skills (Flynn, Vermette, Mesibov & Smith, 2009; McKeachie, 1990; Stronge, 2007). Student control, along with the implications related to seating locations in the classroom is also explained and discussed. Research gaps in this area are further identified.

Impact of Seating Locations on Student Learning Motivation

Although the access to different resources and increased monitoring provided by sitting at the front of the class pose students with a different environment than those sitting near the back of the class, student learning motivation and personalities traits play a big role in achievement and involvement in the learning experience (Burda & Brooks, 1996; Edwards, 2000). It may be that students with higher motivation levels and a deeper interest in learning choose to sit near the front of the class, while those who sit farther away exhibit less motivation and interest in the learning experience. This may also be a perception that teachers hold towards their prospective students (Burda & Brooks, 1996).

² *Seating arrangements refer to the layout of desks and chairs within the classroom. This reflects both where students choose to sit and where they are assigned to sit. Seating arrangements identified in this paper include rows and columns, u-shape, semi-circle, fan-shape, and clusters, also known as small groups. Seating arrangements, seating plans, and seating layout may be used interchangeably in this paper.*

The learning experience received by students sitting near the front of the class is different than that received by students sitting farther away. A replicate study by Burda and Brooks (1996) demonstrated that students sitting near the front of the class demonstrate higher motivation and participation results on the NachNaff scale, which is a survey consisting of 30 items in which students had to choose between self-descriptive adjectives consistent with either a need for achievement or a need for affiliation (Sid & Lindgren, 1982). The study by Burda and Brooks (1996) concluded that students sitting near the front of the class received much higher achievement scores than students sitting farther away. It further concluded that pre-existing personality traits motivate students to select seats near the front of the classroom (Burda & Brooks, 1996; Edwards, 2000). This may be due to their self-assurance in their ability to maximize the learning experience provided by sitting closer to the front. This may also be due to the ability to recognize the increase in access to learning resources and a clearer line of communication between the student and the instructor. Aggressiveness and the need for success may also be motivating students to sit closer to the front of the classroom (Burda & Brooks, 1996). More passive learners may feel more comfortable farther away from the central location of the instructor. Such a seating location often guarantees less direct interaction and the ability to distance oneself (Burda & Brooks, 1996).

Directly related to motivation is student engagement in the learning process. An engaging environment provides students with an effective and enticing setting in which learning can occur (Vermette, 2009). Behavioural engagement is also directly related to students' abilities to cope and relate to the subject matter being taught (Lan, Ponitz, Miller, Li, Cortina, Perry, & Fang, 2009).

A higher engagement level thus manifests itself in students' capability to achieve much more academically. Increased involvement in learning tasks or communication with the teacher has the ability to promote learning, as greater exposure to the subject matter often increases understanding and retention (Leung & Fung, 2005; Weaver & Qi, 2005; Xia, 2006). Higher participation levels can then lead to higher academic achievement which may be interpreted by educators as being more motivated and involved in the learning process. As mentioned above, such traits are commonly represented in students who desire to sit closer to the front of the classroom. Such a trend has the ability to influence teachers' perceptions of students' motivation and learning interests.

Impact of Seating Locations on Student-Student and Teacher-Student Relationships

Different seating locations have the ability to influence teacher-student and student-student interaction (Marx, Fuhrer, & Hartig, 2000). As such, teachers are often led to have different perceptions about student locations within the classroom. Different classroom seating arrangements create various social interaction opportunities. For example, non-linear seating arrangements such as semi-circles or a u-shape increase the possibility of face-to-face communication between students and teachers (Sztejnberg & Finch, 2006). Such seating arrangements promote positive student-student and teacher-student interaction. Furthermore, non-linear seating arrangements, such as those above mentioned, often allow for students to have better access to learning resources, such as the teacher (Wannarka & Ruhl, 2008). This in itself can promote not only teacher-student interaction, but also better understanding and access to learning

experiences.

Another aspect of social relationships within the classroom is those formed between students. Student-student interaction affects classroom participation (Fassinger, 1996). The implementation of different seating arrangements either reinforces or diminishes the availability of social interaction within the classroom. Research has shown that where students are located within the classroom can influence the amount of non-academic activity, off-task behavior, and socialization they engage in (Benedict & Hoag, 2004; Budge, 2000; Davis & Fox, 1999; Edwards, 2000; Granstrom, 1996; Perkins & Wieman, 2005; Wannarka & Ruhl, 2008).

Impact of Seating Locations on the Nature of Different Tasks and Activities

Seating locations can also impact the nature of different tasks and activities used in the classroom. For example, using rows and columns greatly emphasizes the role of the individual. As such, one may conclude that using rows and columns as a seating arrangement increases on-task behavior and attention when students are to complete individual work (Betoret & Artiga, 2004; Budge, 2000; Edwards, 2000; Hastings & Schwieso, 1995; Hofkins, 1994; Wannarka & Ruhl, 2008). This provides teachers with the ability to closely monitor students individually and, therefore, disruptive, non-individual interaction can be easily identified. Keeping in mind teachers' needs, teaching styles also influence the seating arrangement provided to the students (Betoret & Artiga, 2004; Szejnberg & Finch, 2006). Therefore, though it would be beneficial for students, the type of activity often does not dictate the seating arrangement. Commonly, the instructor's teaching style dictates the classroom's seating arrangement.

If the focus of the activity is no longer individual but communal, non-

linear seating arrangements may be best. As Wannarka & Ruhl (2008) note in their summary of empirical research on seating arrangements in the classroom, communication is greatly emphasized and increased when students sit in a semi-circular seating arrangement. Though the row and column set-up is often implemented in teacher-centered classrooms, research illustrates that small group seating arrangements are often preferred when focusing on student-centered activities (Martin, 2002; Szejnberg & Finch, 2006). Small groups as a form of seating arrangement often provides the instructor and the student the ability to interact more often; this promotes working with individuals more closely when compared to row and column seating arrangements (Kaya & Burgess, 2007; Patton, Snell, Knight, & Gerken, 2001). The mere comparison of these two different seating arrangements demonstrates how different behavior and activities are emphasized through each seating plan. While a rows and columns seating plan greatly focuses on individualistic activities with minimal social interaction, small groups offer students greater interaction amongst peers while working together.

While the rows and columns set-up emphasizes individuality, semi-circular arrangements, where students are able to have clearer lines of interaction, allows for communication to flourish and be nurtured. Aside from semi-circular arrangements, small groups offer small social interaction with a set number of people (Betoret & Artiga, 2004; Patton, Snell, Knight, & Gerken, 2001). This may be more common when implementing group work activities. As such, communication increases when students are placed in seating arrangements which focus on the group (Marx et al., 2000). Promoting such interaction can be directly linked to communication between persons. The facilitation of

communication, either among students or between the student and the teacher, has the ability to further promote learning opportunities. The inability to access desirable and interactive seating locations has the potential to negatively affect student learning, as it may limit the exposure to subject matter and the expression of thoughts and knowledge.

Impact of Seating Locations on Student Classroom Participation

Seating arrangements themselves create various dynamics within the classroom. The actual seating arrangement layout can influence student control in the classroom. The impact of seating locations within the classroom and how students self-select different seating locations are also related to participation levels in the classroom. Lastly, where one sits in the classroom, the front of the class or the back of the class has the potential to affect student participation.

Student Control

Seating arrangements can help control disruptive and easily distracted students (Hastings & Schwieso, 1995; Wannarka & Ruhl, 2008). The notion of using the environment to help control or manipulate behavior is not a new concept. The creation of environmental and physical structures around humans has the potential to greatly mould one's behavior. As Foucault (1972) explored, control over others is possible without physical restraints or implications. One can further apply this concept to the use of different classroom seating plans to help prevent disruptive behavior within the classroom. The larger the class size is, the greater the need for control. As such, the size of the class and the room teachers are presented with are directly related to how the classroom is to function (Weaver & Qi, 2005). Management of such conditions will pose different conditions for both educators and students.

Aside from teacher control of space, students may also feel the need to delineate spatial constraints affecting seating selection and arrangement. Creating a sense of personal space can effectively control social interaction within the classroom setting (Kaya & Burgess, 2007). Though the goal is not to constrain students' freedom, seating plans have proven to encourage certain types of behavior, which may be best suited to the different learning experiences teachers wish to provide their students (Betoret & Artiga, 2004; Wannarka & Ruhl, 2008).

In addition to the ability to influence behavior, seating arrangements have the possibility to influence movement within the classroom. Though this is a subtle form of control, seating arrangements can be utilized to encourage desirable behavior and interaction while limiting the opportunity for misbehavior (Marx et al., 2000). Additionally, studies have demonstrated that students' location within the classroom can influence the amount of non-academic activity students engage in affecting students' social behavior and on-task engagement (Benedict & Hoag, 2004; Budge, 2000; Davis & Fox, 1999; Edwards, 2000; Granstrom, 1996; Perkins & Wieman, 2005; Wannarka & Ruhl, 2008). Non-academic peer interaction has the increased ability to negatively affect students' academic achievement as the limitation of education distracters promotes increased retention and understanding (Ahmed & Arends-Kuenning, 2006).

As mentioned above, communication is a key component to the learning experience. It becomes clear that different seating arrangements allow for increased control and restraint of student interaction and movement. One may also further analyze the ability for increased eye-contact with all students in more open, non-linear seating arrangements. An unobstructed face-to-face visual line has

the ability to further control student behavior (Marx et al., 2000). Seating arrangements which promote eye-contact, such as a semi-circle or a u-shape, will assist the instructor in being aware of student movement while still being able to promote social interaction between students (Kaya & Burgess, 2007). Therefore, not only can teachers have more awareness of student activities, perceptions about students may also be created dependent upon the seating location they choose to select. This aspect can also be included when the teacher selects the seating location for each student. Assigned seating location may also keep in mind how teachers wish to control students. Keeping a visible line of sight on students will allow for the teacher to have additional input on that student's activities and engagement level within the class. Whether the students select their classroom locations or the teacher selects the students' seats, different perceptions of student motivation, involvement, and engagement may be at play in the decision making process (Kaya & Burgess, 2007).

In addition to communication and physical restriction of student movement, teacher selected seating arrangements and classroom organization further reflect on the unspoken control educators have over their students. Seating arrangements have been directly linked to the instructors' teaching style, which is not guided by the students (Sztejnberg & Finch, 2006). As explored above, different arrangements have the ability to affect teacher-student interaction (Marx et al., 2000). Though teachers may hold different perceptions about student locations within the classroom, much of the conditions students are presented with are provided to them by the instructor.

Impact on Attendance and Grades

A recent study by Perkins and Wieman (2005) demonstrated significant results in which changing student location

within a university class established a difference in attendance, performance, and achievement. In this study the students' performance and attendance was noted and compared to where they were located within the classroom. Halfway through the course, the students were required to change seats, bringing those who sat at the back closer to the front and those who sat at the front closer to the back of the class. What was found was that the further the original seating location was to the front of the class the lower the average attendance (Perkins & Wieman, 2005). Other analyses indicated that the likelihood of achieving an *A* as a grade decreased as the distance from the front of the class increased (Perkins & Wieman, 2005).

Benedict and Hoag (2004) reported similar results. In their study, analyzing seating preferences and seating location and their relation to course performance, a preference to sit closer to the front of the class translated into a decreased likelihood of receiving a low grade. Students who preferred to sit at the front of the class demonstrated a higher likelihood of receiving a *B* or an *A* as a grade than those sitting closer to the back of the class. Additionally, students who prefer to sit closer to the back of the class had a higher likelihood of receiving a *D* or an *F* when compared to those who preferred to sit near the front of the class. In this study students were forced to change their seating location. Students were either moved closer to the front or farther back. Results show that students who are forced to the front demonstrated an increase in likelihood of receiving a higher grade in the course (Benedict & Hoag, 2004). Being forced to the sides of a fan-shape lecture hall reduced the probability that a student would receive a *B* or an *A* as a grade (Benedict & Hoag, 2004). These results suggest that moving students forward in a class may override the negative effects associated with sitting at

the back of a classroom (Benedict & Hoag, 2004). Overall, both studies demonstrate how different seating locations have the possibility to affect student attendance and grades.

Some of the factors affecting learning experiences and seating selection include student motivation levels, personality traits, the ease of communication, availability of seats, and proximity to learning resources, such as the teacher. Although these factors influence the learning experience, one's ability to recognize such factors will also affect learning success. Teachers may be aware of such conditions, but students are not always cognizant of these conditions. Whether teachers are aware of such a fact may greatly affect their subsequent perceptions of the students they teach. Seating locations are often used by teachers as an indicator of student interest and motivation (Daly & Suite, 1982), even though the students may not recognize this. Keeping with this belief, the ability to self-select seating will further grant the students the ability to demonstrate their feelings towards learning. Nevertheless, teachers often have the ability to select seating arrangements. Where students are assigned to sit may then be a revelation of the teachers' interpretations of their student, which may not necessarily be accurate.

Student Selected Seating Location

There appears to be a strong relationship between where a student selects to sit and his/her subsequent involvement in the class. Proximity of seats to the front of the class or to the source of learning, most commonly the teacher, will greatly vary on the format of seating arrangement currently being implemented. Educators must keep in mind self-selected seating locations will hold different circumstances than when teachers select students' seats. After all,

when students get to select their own seats a sense of autonomy is provided to the student. However, this freedom to select one's own seat may prove to be an indicator of the student's motivation and interest in the class (Benedict & Hoag, 2004; Marx et al., 2000).

The Front of the Class versus the Back of the Class

One may interpret a student's decision to sit near the front of the class as an indicator of deeper interest in the class and to secure that student's ability to participate in the class activities. If this is the case, then student personality is a key motivator in the selection of seating location. Earlier research has indicated that students who choose to sit near the front of the class, or in central seats, more often exhibit creative, assertive, and competitive personality traits (Totusek & Staton-Spicer, 1982). The most prevalent trend suggests that students who sit front and center within the classroom will participate more than those who sit at the back; and so, they are perceived to be better students (Benedict & Hoag, 2004; Burda & Brooks, 1996; Daly & Suite, 1982; Perkins & Wieman, 2005; Weaver & Qi, 2006). As such, student participation is related to the teacher's impressions of the student. Other studies have noted that students who self-select seats near the front of the class also exhibit a sense of increased attentiveness (Hillmann, Brooks & O'Brien, 1991). One can argue that such student traits are desirable in the educational field and later when entering the employment field. Thus one may conclude that students who select to sit near the front of the class may recognize the need to obtain learning conditions which will best allow them to achieve their desired results.

The opposite may be concluded for those sitting near the back of the class. However, other conditions will also affect the availability of such desirable seating

locations. Students who enter the classroom first may be in the position to select desirable seats first; thus, those who are unable to come first may be left with seats they do not desire but are left with no other option (Benedict & Hoag, 2004). Diminished access from desirable seats has the potential to place students in a position where they are left with undesirable seating location which increases psychological and physical pressures in the learning environment (Xia, 2006). Evidently, this is a factor to keep in mind. The availability of limited resources within the classroom, including seating location, should not be neglected. Keeping this in mind, one may wish to consider seat preference versus actual seating location. Benedict and Hoag (2004) noted that seat preference versus actual sitting location was an indicator of academic motivation and achievement. As such, seating preference may be an indicator of learning motivation and interest.

Aside from being an indicator of student motivation and interest, seat selection within the classroom can also be linked to territoriality and the desire to feel comfortable in the learning environment. A study by Kaya and Burgess (2007) examined the tendency for seat preference and territoriality within the college level classroom. Upon having labeled each respective seat with a number, a Likert scale based survey was conducted to determine which seats students preferred and what their feelings were about seat territoriality within their classrooms. Student seating preference was also noted within this survey. The results of this study demonstrated how exterior seats are more desirable due to commonly being more spacious (Kaya & Burgess, 2007). The more items a student may need to have present during class can influence his/her subsequent seating location decision. Sitting in the front and center may now pose difficulties and

discomfort which can also detract from the learning experience. This study is significant as it exposes another factor driving student seat selection.

The study conducted by Ruoff and Schneider (2006) illustrates yet another aspect of seating location within the classroom. This study focuses more on the personal and social reasoning behind seat selection versus the accessibility to learning resources or the students' motivation to learn. The peer conditions presented within the classroom influence not only seating selection but also the amount of interaction and participation elicited by students, all factors which affect teachers' perceptions of students (Weaver & Qi, 2005). Seat selection is seen in this study as a result of social and repetitive actions. Seating is seen as an interactive process, where the decisions of the individual are influenced by the decision of those before him or her (Ruoff & Schneider, 2006). Social pressures may in fact influence students' seat selection. There may be a fear to be perceived as anti-social or pressure may be felt to join the larger group (Ruoff & Schneider, 2006). Again, the topic of convenience and comfort becomes a factor in this study. Individuals who have access to seats closer to the exit often select these seats. Such seats often offer the student more comfort and less constriction when attempting to leave the class. Nevertheless, such a location can also be interpreted as giving the student an easy way out of the class due to his/her disengagement and disinterest in attending the full class period.

The process of selecting seats within the classroom poses an interesting situation in itself. Teacher perspectives towards students and where they select to sit may also pose an interesting dynamic in the learning environment. The availability of resources, in this case the information the teacher offers students, becomes very important for the success

and growth of students. The main way to convey this information is through communication. Communication occurs in many forms; some of the most prevalent include verbal, written, and illustrated. Nevertheless, the most common within the classroom is still verbal communication.

Identified Research Gaps

Thus far research on the topic of seating arrangements appears to provide educators and researchers alike with a gap of studies. In more recent years there appears to be a resurgence of focus on the topic of seating arrangements and how they affect students' learning outcomes. Research most often explores what type of student chooses to sit in different locations within the classroom (Benedict & Hoag, 2004; Daly & Suite, 1982). Other common topics of research discuss the conditions surrounding students which impact student academic achievement, including seating location within the classroom (Burda & Brooks, 1996; Lan et al., 2009; Stronge, 2007). Though not abundant, there are studies exploring the direct impact of seating locations and the consequential impact such a change has on academic achievement and grades (Perkins & Wieman, 2005).

Although there are some studies directly related to seating arrangements, educational research regarding seating arrangements is not abundant. A direct connection between seating arrangements and student participation is very scarce. Identified research gaps include topics such as an in depth analysis of different seating arrangements and how they are most effective, how teacher perspective of students differs depending on where students choose to sit, who makes the decision as to where students sit: teachers or students; and how such a decision affects student participation and academic achievement. The majority of the studies discussed within this paper focus on

seating arrangements within the post-secondary and secondary educational level, thus leading one to question how these topics affect students at the elementary level.

In addition to the above mentioned research gaps, there is a profound scarcity of studies exploring the impact of cultural factors on seating arrangements and subsequent student participation and academic achievement. With the increase of internationalization of education (Bond, Jun, & Huang, 2003, 2006), the field of education needs to continuously expand its understanding and implementation of different learning environments. Different cultures are increasingly interacting thus the need to better understand and interpret the value of education for the different parties involved becomes imperative. Therefore, future studies need to provide researchers, educators, and other alike with an insight into how different cultural backgrounds may differ in regards to the implementation and reaction to different seating arrangements within the classroom.

Conclusion

The classroom environment is a very diverse and highly dynamic setting. Teacher perceptions about students are often influenced by the conditions which are presented to them. One of the most obvious and constant factors is that of seating location. In turn, students' seating locations are greatly affected by the seating arrangements provided to them.

Different seating conditions also present themselves in different countries. Though seating arrangements such as rows and columns, small groups, u-shape, and semi-circles are often used throughout the world, pedagogical beliefs tend to influence and dictate the most commonly used seating plan. For example, North America is moving towards the promotion of small groups within the classroom (Lan

et al., 2009). This may be easily attained due to smaller class sizes and larger classroom areas. In Asian countries like China, the prominent seating arrangement is still that of rows and columns, with all students facing forward towards the teacher (Xia, 2006). As one can imagine, the subsequent teaching methods implemented within each classroom setting will have to be different. Another factor influencing the seating arrangement is the nature of the task at hand and the teacher's instructional style. Depending on what management style the instructor focuses on very different seating arrangements will be considered.

In more traditional settings, where rows and columns are emphasized, control and individualistic traits are customary. Non-linear seating arrangements, such as a u-shape and semi-circle will tend to promote communication and social cohesion. Regardless of which arrangement is present in the classroom, where a student sits will affect the resources and the learning experience the student is exposed to, such as being able to see and hear the teacher (Benedict & Hoag, 2004).

Teacher perceptions of student learning and academic involvement can be greatly affected by where a student decides to sit. It may be ill advised to rely on such first impressions to influence the teacher-student relationship. After all, learning is a covert action which needs overt evidence for others to recognize it (Hastings & Schwieso, 1995; Vermette, personal communication). Therefore, even though a student may sit in a front and center location, appearing to be motivated and engaged, the student may still not learn. The conditions within the classroom are diverse and unique. As such, it is important to analyze and explore which perceptions teachers may have about how classroom seating arrangements will impact students' classroom learning.

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