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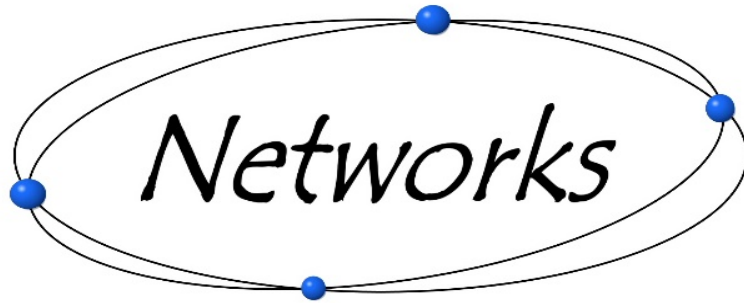


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Increasing Active Participation and Engagement of Students in Circle Formations

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Abstract

Participation and engagement are important factors in students' academic achievement and in increasing interest and motivation in the learning process. This study evaluates participation and engagement in circle formations in both outdoor and indoor education settings. Over a four-week study period, four instructors collected data on different circle formations. The four circle formations tested are: instructor and students standing (all-standing); instructor and students sitting (all-sitting); instructor standing with students sitting; instructor sitting with students standing. Results from 86 observation forms show that students had the greatest active participation and engagement in the all-sitting circle formation. The traditional learning arrangement, with teacher standing and students sitting, had the lowest level of student participation and engagement. Eye level of instructor and students was thought to be a major factor influencing participation and engagement in the learning environment. Results obtained from this study will help inform educators in both traditional classroom and outdoor learning environments on effective teaching practices for increasing student participation and engagement.

Keywords: classroom practice; teacher research; student engagement; student participation; circle formation teaching; outdoor education; classroom arrangement

Introduction

Outdoor environmental educators and traditional classroom teachers continuously search for new and innovative ways of increasing student participation and engagement. For students, participation and engagement are important because they function as a behavior pathway that contributes to increased learning and development (Reeve, Jang, Carrell, Joen, & Barch, 2004; Connell & Wellborn, 1991). Participation and engagement predict students' achievement and comprehension of educational material (Linnenbrink &

Pintrich, 2003). Many teachers overlook the importance classroom arrangements have on their students' academic success and the creation of a positive learning environment. Teachers can foster greater student participation and engagement by paying particular attention to their classroom arrangement.

Circle formations are frequently used for lectures, directions, and discussions in outdoor and indoor environmental education classroom settings. Circle formations, just like conventional classroom arrangements, can have benefits as well as detriments based on the leader or teacher's selected configuration. Various types of classroom arrangements, such as rows, U-shapes, and clusters, can influence students' classroom participation (Wasnock, 2010). Outdoor educators face additional challenges such as weather, safety, and outdoor learning settings, and barriers in creating an effective learning environment where students are actively participating and engaged (Kosseff, 2010; Outdoor Education Advisers Panel, 2005).

Forming a circle is inclusive in a way that no other formation can be, allowing each member of the group to see the faces and expressions of the other group members (Kosseff, 2010). When everyone is sitting or standing in a circle, they are at the same relative eye level. Having every member of the circle, including the teacher or leader, at the same eye level fosters a comfortable and safe learning environment that influences participation and engagement (Johnson, 1984; Kosseff, 2010). When one student shows greater participation and engagement, the learning environment significantly improves for other students (Skinner & Belmont, 1993; Smith, Sheppard, Johnson, & Johnson, 2005). Additional studies have shown that when a greater number of students are involved in listening, the classroom setting is less chaotic and more productive, facilitating student inclusion in the discussion taking place (Reeve et al., 2004). That sense of inclusion also encourages greater concentration and less inclination toward disruptive behavior (Wall, 1993).

The aim of this study was to examine students' active participation and engagement levels in a variety of circle formations. The study took place at a University-operated outdoor science school in the Pacific Northwest. Over the four-week study period, 5th and 6th grade students were evaluated on their active participation and engagement during circle formation activities. Activities included science lectures, group discussions, reflections, debriefs, and review of subject material. A total of four circle formations were tested during the study period: 1) instructor and students standing (all-standing); 2) instructor and students sitting (all-sitting); 3) instructor standing with students sitting; and 4) instructor sitting with students standing.

We hypothesized that instructors would observe the greatest student participation and engagement in the all-standing or all-sitting circle formations because every group member would be positioned at the same eye level. Although a middle school student can be up to approximately a foot shorter than the instructor, eye contact is still on a similar level. We hypothesized that in these formations, students and instructor eye contact would be direct and promote awareness and effective communication.

Methods

Data were collected at a residential outdoor science school and in an adjacent state park. Circle formation data were collected in both outside and inside classroom settings, with 12 to 15 students per group. The four predetermined circle arrangements were tested

over a four-week period. Each instructor performed and collected data on all four of the predetermined circle arrangements in order to control for the external factors associated with instructor quality, knowledge, and enthusiasm. The four instructors collected data on circle arrangements with a different group of students each week, completing a total of 86 observations. Lesson content and teaching methods when collecting data were relatively the same for each instructor, covering science topics through discussions, activities, and lectures.

An observational study was chosen for this research to directly observe students' behavior and affective responses during the learning process. Observation forms, shown in Figure 1, were designed for collecting data on students' participation and engagement in the different circle arrangements. Forms were printed to allow instructors to use them in the field and classroom during instruction. Each instructor observed and recorded student participation and engagement data during lessons. Instructor name, location, circle arrangement, activity being completed while in the circle, time of day, weather, proximity to other groups, and general observations were recorded. The centers of the forms were left blank for instructors to draw circles representing students. The instructor recorded an **X** or a **✓** for each student in the circle. An **X** represented students who did not show active participation and engagement. This was determined by eye contact not directed at the instructor or within the circle, body position facing away from the instructor and group, and no participation (verbal or non-verbal) in activity being completed in circle. A **✓** represented students who were actively participating and engaged. To determine if a student is actively engaged and participating, this study looked for direct eye contact towards either the instructor or the group, body language that is directed towards the group and the instructor, and actively participating verbally and non-verbally in the

Name _____ Location: _____

Arrangement: _____

Activity: _____

Time: _____ Weather: _____

Proximity to other groups: _____

Observations: _____

Figure 1 Observation form used to assess student participation and engagement level.

activity within circle.

Instructors met prior to collecting data to develop common procedures and definitions of engagement and participation for the study. The instructors agreed on what was considered active participation and engagement, based on research literature and teaching experience. Engagement within the context of this research study was determined and observed as a binary model that other researchers have used and defined that pays particular attention to students behavioral and emotional or affective involvement (Marks, 2000; Finn, 1989). Similarly, students’ participation was evaluated on verbal and non-verbal cues and signals. Once a common understanding was determined, an initial observation form was developed and pilot-tested by the instructors in their teaching prior to the research study. This allowed for refinement of the observation form and training experience for instructors to practice observational skills and develop a consistent observation method in determining research objectives. Prior to the research conclusion, instructors came together to discuss and debrief circle formation data collection experiences. This opportunity gave instructors the ability to discuss any important information regarding their teaching, data collection, or issues that could not be expressed or identified in the completed observation forms.

Data Analysis

Once all the data were collected, observation forms were separated into specific arrangement categories. From each individual form a percentage was calculated for the proportion of engaged students in that circle. After individual forms had a calculated percentage for students that showed engagement and for students that were not engaged, all forms were averaged in each arrangement category, giving a mean for each arrangement tested.

Circle Arrangement	# of Observation Forms Completed
All Sit	23
All Stand	23
Instructor Stand, Students Sit	21
Instructor Sit, Students Stand	19
Total	86

Table 1 Number of observation forms completed for each circle arrangement category.

Results

Results gathered from the 86 observation forms show that student participation and engagement was greatest in the all-sitting circle formation. Using the all-sitting circle formation, 88% of students observed showed active participation and engagement (Figure 2). Ten out of the 23 forms competed had a participation and engagement level of 100% when using this circle formation. Of the 189 students observed in the all-sitting circle formation, 167 students were engaged and 22 students were not engaged.

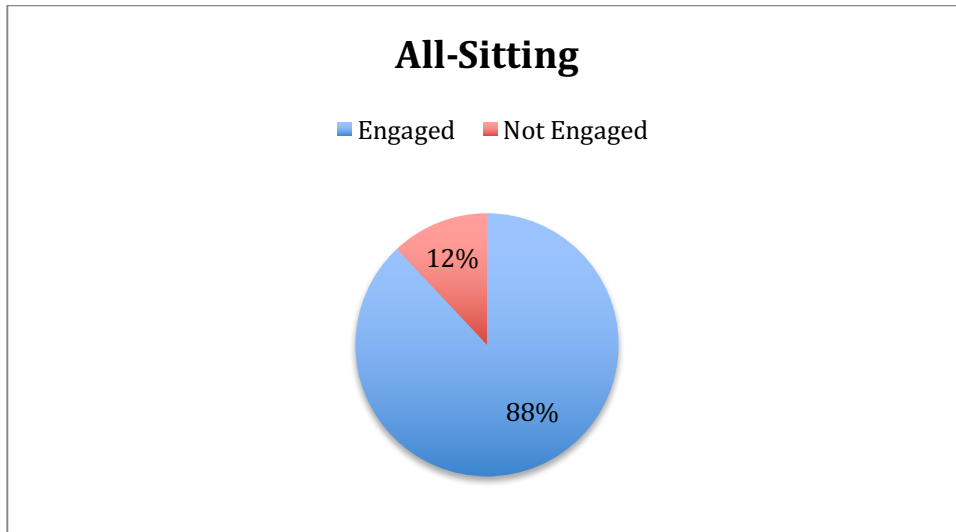


Figure 2 Percentage of students engaged and not engaged in an all-sitting circle formation.

From the 19 observation forms completed for the instructor sitting with students standing circle formation, 82% of students were engaged and participating in the circle activity (Figure 3). This circle formation is an abnormal arrangement in a teaching environment, so it was tested the least of all circle formations. Of the 162 students observed in the circle formation of instructor sitting with students standing, 133 students were engaged and 29 students were not engaged.

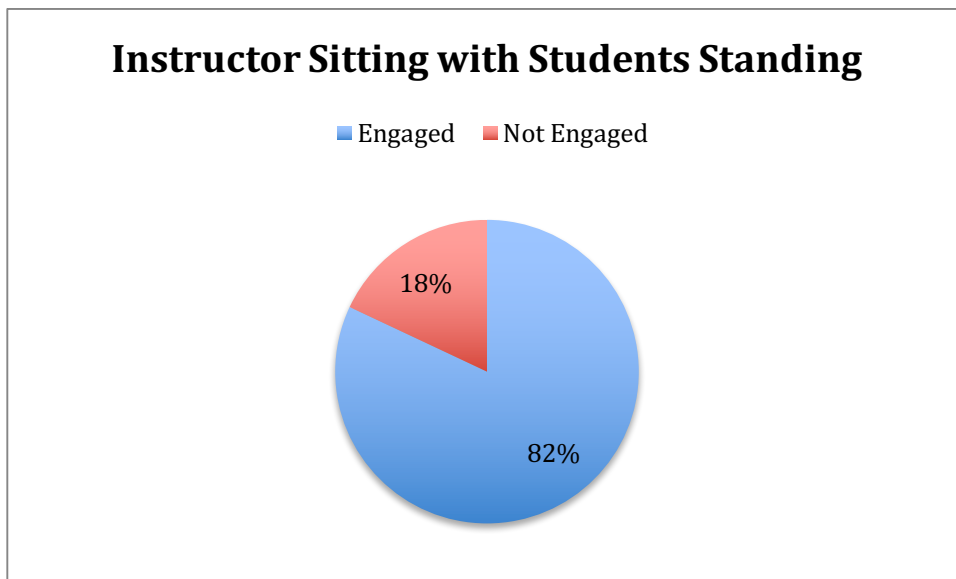


Figure 3 Percentage of students engaged and not engaged in the instructor sitting with students standing circle formation.

In the circle formations with instructor and students all standing, 74% of students were engaged and participating (Figure 4). A total of 23 observation forms were completed for this circle formation. Of the 198 students observed in the all-standing circle formation, 147 students were engaged and 51 students were not engaged.

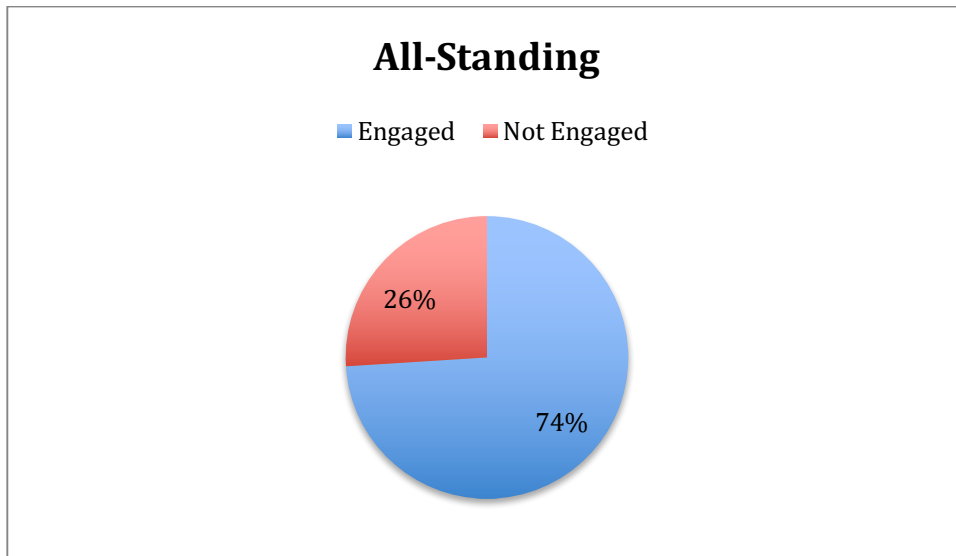


Figure 4 Percentage of students engaged and not engaged in the all-standing circle formation.

The circle formation that recorded the lowest number of engaged and participating students was when the instructor was standing with students sitting. In this circle formation, 70% of students were recorded being engaged and participating in the activity (Figure 5). Average student participation in this formation is calculated from a total of 21 observation forms. Of the 178 students observed in the instructor standing with students sitting circle formation, 125 students were engaged and 53 students were not engaged.

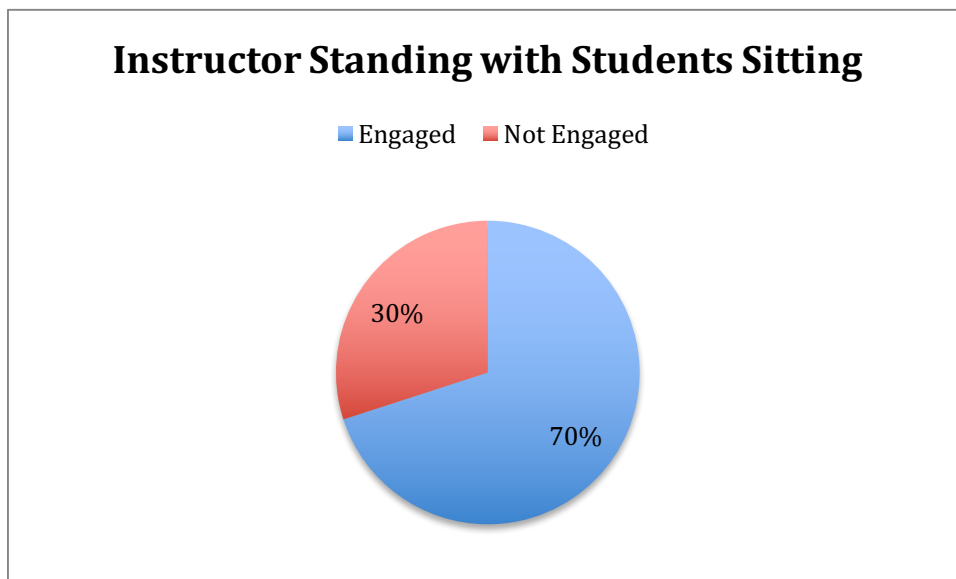


Figure 5 Percentage of students engaged and not engaged in the instructor standing with students sitting circle formation.

Average participation and engagement rate for each circle formation does not incorporate any of the secondary factors such as weather and proximity to other groups. These factors are not believed to be significant in altering students' engagement and

participation due to secondary factors being held consistent across all groups. These secondary factors were originally incorporated into the observation form in case weather conditions varied for groups or instructors felt students were disengaged due to other students or groups present in a close proximity, while collecting data. Each instructor was able to collect data on the four circle formations on the same days during the research timeframe, when weather conditions were favorable for outside teaching. Furthermore, the four instructors did not encounter any other groups or students during learning activities and data collection.

Circle Formations	Participation and Engagement Rates (%)
All-Sit	88
Instructor Sit, Students Stand	82
All-Stand	74
Instructor Stand, Students Sit	70

Table 2 Student participation and engagement rates based on circle formation.

Discussion

The circle formation with everyone sitting received the greatest participation and engagement level in students and supports our hypothesis that students would be most engaged when positioned with everyone on the same eye level. This study supports the notion that placing both the instructor and students at the same eye level fosters a more comfortable and interactive learning environment. In contrast, when the instructor and students are in a circle and some people are sitting and some standing, seeing everyone’s face becomes difficult and a different dynamic forms, making it challenging for students to receive verbal and non-verbal expressions of feelings and emotions (Johnson, 2009; Kosseff, 2010). Those standing within the circle and situated at a higher eye level will tend to be dominant. A comfortable setting in which everyone can sit is the best place for a circle formation activity (Kosseff, 2010).

Positive and comfortable learning environments have been linked to improving students’ engagement and participation (Ryan & Patrick, 2001). Our research strengthens this argument when everyone was in the all-sitting circle formation. When the teacher is situated at the same eye level as their students in the all-sitting circle formation, they may present a less dominant posture, allowing students to feel more relaxed and inclined to participate in the conversation. Additionally, the all-sitting learning environment facilitates teacher eye contact with students and allows students to feel included and part of the discussion taking place, fostering greater participation and engagement in the lesson (Ryan & Cooper, 1988). During the study, instructors felt this formation fostered a learning environment where class dialog was increased and students were more inclined to interact and participate.

Instructors noticed that students were more willing to share ideas or add to the learning activity, especially reserved students, when in this inclusive learning circle. Instructors also noted feeling more relaxed and comfortable with their students, which

fostered organic communication and made it easier to control the discussion and establish eye contact with passive students. Classroom or talking circles, which are commonly used in outdoor and classroom learning settings, help foster respect, listening, self-esteem, and increase thoughtful discussion (Wolf & Rickard, 2003). Circles, where everyone is seated and eye contact is level, creates a positive environment for both the teacher and students, cultivating relationship building and comfort (Tew, 1998). Additionally, when the teacher is positioned at an equal eye level, the students are typically closer in proximity and have to change their body position less in order to face the teacher (Mehrabian & Diamond, 1971). This circle formation allows each circle member to be close enough to each other to communicate effectively without raising their voices, see all relevant materials, and exchange ideas in a comfortable atmosphere (Johnson, 1984).

The circle formation that received the second greatest level of engagement and participation was the arrangement of instructor sitting with students standing. In this formation, the normal instructor-student positioning is reversed. We speculate that students in this formation feel they have more respect, which leads to greater involvement. Even though the students are not on the same eye level as the instructor, the instructor is no longer in a dominant position. Instructors also observed increased discussion and communication in this arrangement. However, as seen in table 1, this circle arrangement had the fewest number of observation forms completed. Instructors described forming this circle as “difficult” and “unusual” compared to normal teaching positions, but the results suggest that it fosters student engagement, with 82% of students reportedly engaged and participating in this circle arrangement.

One surprising result is the level of student participation and engagement experienced in the instructor standing with students sitting circle formation. This circle formation received the lowest student participation and engagement rate, highlighting a disconnect that can occur in the traditional classroom arrangement where the teacher serves as the dominant force in the learning environment. The traditional classroom arrangement is sometimes seen as less desirable than other arrangements and can easily be transformed to enhance class interaction and student engagement (McCorskey & McVetta, 1978). When teachers are receptive and aware of students’ actions, they can exhibit less of an assertive and commanding position in the learning environment by situating themselves at an equal eye level as their students. As shown in the research results, creating a learning environment where everyone is situated at the same eye level will promote greater student participation and engagement in the lesson taking place.

Conclusion

The results of our research show that an all-sitting circle formation fosters the greatest student participation and engagement. When the teacher and students are situated at the same eye level, an inclusive learning environment is created that facilitates class dialog and students feel more encouraged to participate. These findings will allow teachers in formal and informal settings to apply this knowledge to their teaching practices. The proper circle arrangement can create an effective and comfortable learning environment for students to achieve higher learning potential.

Teachers do not typically think about the classroom arrangement as being a critical component in their students’ academic success, but this research suggests that the selected

classroom arrangement can have a large influence on student engagement. We encourage teachers to take these results into consideration and challenge their teaching practices by incorporating new classroom arrangements. Exploring new and different classroom arrangements will allow teachers to observe which formations increase student engagement and participation, providing students the best chance of reaching their full academic potential.

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