



## **Flexible Seating in Conventional Elementary-Level Science Classrooms: What are the Benefits and Concerns?**

### **Disclaimer Statement:**

*The National Science Teaching Association (NSTA) or the NSTA Safety Advisory Board (SAB) does not endorse the use of flexible seating in learning environments where science investigations are being conducted when a formal laboratory setting is available, or when hazardous materials with a safety rating of a Level 1 or higher is used. This paper merely presents the safety concerns and learning benefits that Conventional Elementary-Level classrooms must consider before implementing flexible seating in their classrooms. Better legal safety standards and better professional safety practices are expected to be followed in all circumstances. Each educational institution may have its own policies which must be followed from the respective school, district, local municipality, state and federal governments, and professional associations.*

**\*Note:** For the purpose of this document, the term investigation refers to science activities which could encompass but is not limited to: hands-on activities, explorations, demonstrations, and/or field activities.

### **What is Flexible Seating in Conventional Elementary Classrooms?**

Flexible seating is a way for students to have a voice and a choice in their classroom environment. Flexible seating has taken on many forms that can depend and vary upon the classroom, the level of funding supplied by the school district, and furnishings that teachers have provided themselves. Situations include but is not limited to:

- Soft seating such as couches, bean bag chairs, recliners
- Cafe tables
- Stadium seating
- Tables and chairs on casters
- Hydraulic tables that can be raised or lowered

### **Why Flexible Seating in Elementary Classrooms Could Work?**

- Flexible seating may be appropriate when multiple disciplines are taught in a single elementary classroom. When science topics are taught and students are conducting investigations, they need a stable and science activity appropriate space to work on. The classroom should be configured to provide students with space to spread out as they

conduct their investigations but could allow a more comfortable and collaborative learning environment.

### **What are the Benefits of Flexible Seating?**

- Students may feel more comfortable in the classroom.
- Promotes collaboration and a feeling of community.
  - The more actively involved the students are in the lesson the better they behave.
- Potentially less stressful for students, especially for those from chaotic homes.
- The teacher has more freedom of movement to position themselves closer to the students.
  - A closer proximity allows the teacher to actively involve the students in the lesson.
- It is optimal for increasing activity and movement which stimulates metabolism and blood flow to the brain and which stimulates learning and engagement.
- Flexible seating, when implemented appropriately, has been shown to increase student engagement, time on task, motivation, and quality of work (Cliff et al., 2017, Metz & Seifert, 2017; Stapp, 2018).

### **What are the Concerns about Flexible Seating?**

- It can present an issue for student discipline.
- Students may feel anxious if they do not have a dedicated space that is their own in the classroom and know where they are going to sit everyday.
  - If you are having your students sit on the floor, consider having them bring in a towel or yoga mat so that they are not sitting directly on a surface that others have walked on. Remember that those same shoes that are walking across your classroom floor, have also walked across the restroom floor. How this is approached will depend upon the age group of your students and the frequency that the classroom floor is washed.
- Students need to be taught what the expectations are for each type of seating that is introduced into the classroom.
- Testing can be difficult, so an alternative location may be necessary to ensure test security.
- New seating may not be impactful unless teachers include new ways of teaching.
- Attempts to standardize flexible seating can be difficult because of varying room layouts and the personality of the teacher.
- If there are different teachers using a classroom, they might need to reconfigure the space to suit their needs during each class period.
- Teachers should consult with their administrator prior to making changes to the classroom furniture. It is possible that funding may be available to support a change in classroom layout, either the entire room or a few pieces to see how impactful the new seating might be.

- Teachers should consult the fire marshal or fire code to make sure that any items they are bringing into the school meet their state- and district-level standards. These include standards regarding flammability (especially for soft upholstered items) and to be sure that adding the furniture will not surpass the free space requirements for the room. Also, consider any liability issues that may present themselves if a student or staff member is hurt while using a furniture item that was brought in by a teacher and that was not purchased through district funds.
- Teachers should consult with the custodial staff so that the classroom arrangement they are planning does not create a problem for cleaning.
- Teachers need to consider how easily students can enter and exit the classroom. The furniture needs to be arranged so that the fire exit is not obstructed.
- If soft seating surfaces are going to be used, teachers should encourage students not to eat on these surfaces.
  - Food crumbs and spills may increase the likelihood of mold growth and/or insect and rodent infestation. While eating is prohibited in secondary science classrooms and labs, it is not uncommon for students to eat in elementary classrooms.
  - Soft seating surfaces should be assessed by the fire marshal to determine any flammability concerns. These surfaces need to be kept clean, teachers need to find out how to clean them properly and if the cleaning agents conform to district, local and state regulations. Regular vacuuming of the items is needed to reduce dust and other irritants.
  - Teachers need to be aware that surface agents that repel stains may contain allergens and that some materials used to make the item may cause allergic reactions as well.
  - If teachers plan to bring these soft seating surfaces into the classroom, as opposed to having the items purchased by the district; it should be determined who is responsible for keeping these surfaces clean before they enter the school building.
  - Any furniture being brought into the school by a teacher should first be inspected and approved by the designated school safety officer. Consider including students in cleaning their furniture as part of their science learning component, if permissible in your school district.
- Teachers need to closely monitor students so that they do not move any fabric-based furniture near a lab set-up where open flames are in use.

**What Type of Seating in Elementary Science Laboratories Designated Locations is Best?**

*It is recommended that any science investigation performed is conducted at an approved and designated lab table and any trip or fire hazards are removed and all safety considerations are made prior to beginning.*

*Better legal safety standards and better professional safety practices are expected to be followed in all circumstances.*

- Laboratory furniture needs to allow students a stable surface that is resistant to acid and heat to work on, such as phenolic table tops. (Flexible seating in science labs is not appropriate and potentially unsafe, given the potential hazards and resulting risks.)
- Lab tables with phenolic tops should be kept in the classroom for lab work, other seating arrangements can be used for collaborative activities, small group work and direct instruction. It is recommended that students stand at lab tables. Stools and chairs represent a tripping hazard and their use should be avoided if possible.
- Hydraulic tables on casters can provide teachers with an ability to easily change the arrangement of their furniture while still providing a safe and stable work surface for investigations if wheels can be securely locked to ensure a stable table position.

### **References**

- Cliff, D. P., Ellis, Y. G., Kariippanon, K., Okely, A. D., Parrish, A. M., & Ucci, M. (2021). School flexible learning spaces, student movement behavior and educational outcomes among adolescents: A mixed-methods systematic review. *Journal of School Health, 91*(2), 133-145. <https://10.1111/josh.12984>
- Metz, A. E., & Seifert, A. M. (2017). The effects of inflated seating cushions on engagement in preschool circle time. *Early Childhood Education Journal, 45*, 411-418. <https://doi.org/10.1007/s10643-016-0797-7>
- Stapp, A. (2018). Alternative seating and students' perceptions: implications for the learning environment. *Georgia Educational Researcher, 14*(2), 36-50. <https://doi.org/10.20429/ger.2018.140204>