

Hands-On Activities and Engagement in Kindergarten Students

Abstract- The purpose of this action research study is to investigate the effectiveness of implementing hands-on activities for increasing the engagement of kindergarten students.

Participants will be the teacher/researcher's 18 kindergarten students in a charter school. It is hypothesized that hands-on activities will increase students' engagement in the class.

Statement of the Problem- The problem in this classroom is that the students are not engaged in the activities that the teacher gives them. Too often activities involve filling out worksheets. In this case, while students are doing their work in the classroom they complain of being bored and do not want to do the activity. Others finish their work rapidly and, with nothing else to do for the rest of the class time, distract others or walk around the room copying from other students, because they do not know what to do.

Purpose and/or Research Question(s)- The purpose of this study is to investigate the effectiveness of implementing hands-on activities for increasing the engagement of kindergarten students. Is there a difference in engagement between a group of kindergarten students, when using hand-on activities and when there is not? It is hypothesized that kindergarten students' engagement will increase when using hand-on activities.

Literature Review- The field of education struggles to engage students' interest in their school work. Projects that emphasize hands-on learning have shown success with a large number of science and engineering students and also thousands of students in grade K-12 (Furlan, 2007). Hands-on activities have been defined as building or assembling something as well as working manually with tools (Sianez, Fugere, & Lennon, 2010). This often requires that a teacher take a traditional lesson and modify it to fit the criteria of hands-on engagement. If the students are having problems with the lesson, the teacher should change it so that it could meet the students'

specific needs (Lustick, 1997). The present study will investigate the relationship between hands-on activities and engagement in a kindergarten class. Hands-on activities will be developed by the researcher based on the students' needs on the specific lesson and reports of previous research. For example, a hands-on activity that could help students retain the information for a long time is theater (Scherr et al., 2014). Some hands-on activities that I will introduce to the class will include doing projects such as decorating puppets of a main character of a book that we read in class that would be expected to help the student in recognizing the main characters of a story. It is expected that this will help to engage the students more since they have to use their imagination and be creative. It is hypothesized that students' engagement/ behavior will improve when they are engaged in exercises that include hands-on activities.

Research Methodology- The intervention – a hands-on activity - will take place for three days (Monday, Wednesday, and Friday) of one week. For the other two days (Tuesday and Thursday), students will have regular work. The Hands-on activities could be making puppets about the main characters of the story, making a group project and presenting to the class, using counters, etc. A checklist will be used to gather behavior data for one week prior to the implementation of the intervention. During the intervention week, data will be gathered when the students are doing hand-on activities and when they are doing regular work, like filling out worksheets. I will use the same checklist three times per day for each day of the intervention week. For each different lesson that they have per day in the classroom I will record for 5 minutes during the lesson to record how they are behaving in the classroom. This will tell me if they engage more when having to do projects, puppets, using manipulatives, or doing group activities to do rather than just doing a worksheet.

Expected Findings or Results- It is hypothesized that the students will take more time on the hands on activities, so they will be less likely to finish quickly and disturb others in the classroom. Also by giving them the opportunity to be creative they will be less likely to copy from their peers since they have to be creative and then present to the class.

Implications for the Field- If the students are more engaged and their behavior improves in the class by doing hands-on activities, then this research can suggest to other teachers ways to incorporate hands-on activities in their class in order to increase student engagement. Also it would help to improve the behavior of the classroom because students can have fun doing their work since they have something interesting to do. The study checklist might also provide a tool for others to use to record their data in their own classrooms.

References

- Devlin, T. J., Feldhaus, C. R., & Bentrem, K. M. (2014). The Evolving Classroom: A Study of Traditional and Technology-Based Instruction in a STEM Classroom. *Journal of Technology Education*, 21.
- Furlan, P. Y. (2007). Engaging Students in Early Exploration of Nanoscience Topics Using Hands-On Activities and Scanning Tunneling Microscopy. *Journal of Chemical Education*, 7.
- Lustick, D. (1997). The Numbers Game. *Science Teacher*, 16-18.
- Scherr, R. E., Close, H. G., Close, E. W., Flood, V. J., McKagan, S. B., Robertson, A. D., . . . Vokos, S. (2014). Negotiating Energy Dynamics through Embodied Action in a Materially Structured Environment. *Physical Review Special Topics - Physics Education Research*, 18.
- Sianez, D. M., Fugere, M. A., & Lennon, C. A. (2010). Technology and Engineering Education Students' Perceptions of Hands-On and Hands-Off Activities. *Research in Science & Technological Education*, 9.
- Statistics, N. C. (2012). The Nation's Report Card: Science in Action--Hands-On and Interactive Computer Tasks from the 2009 Science Assessment. NCES 2012-468. *National Center for Education Statistics*, 24.

