

Obstacles Overcome: A Universal Guide to Active Learning

Megan Fixen
Minot State University

Nicole Wald
Minot State University

The active learning concept is increasingly attracting attention in the education environment. This paper includes information about the obstacles that instructors might face in active learning, and provides several activities to overcome obstacles. Evidence suggests that active learning increases engagement, student motivation, and comprehension of material. However, the literature revealed that several obstacles exist that may prevent the implementation of active learning strategies. Therefore, understanding how to overcome obstacles and successfully implementing active learning strategies is beneficial for both the instructor and student.

Keywords: active learning, engagement, student motivation

INTRODUCTION

While students once listened passively as their instructor doled out a lecture, more instructors are requiring participation in the learning process. The shift toward more student-centered teaching strategies is known as active learning. Bonwell (2000) defines active learning as placing an emphasis on the learner doing and thinking about what they are doing. According to Johnson and Johnson (2018), active learning techniques encourage a deeper level of learning. Research shows that active learning increases the retention of material and promotes student learning (Tharayil et al., 2018). However, implementation of active learning in the classroom has been sluggish. Deslauriers et al. (2019) found that college instructors may be hesitant to move to an active classroom. This article will explore the reasons that active learning is still not implemented in all classrooms, despite the proven benefits for students. The researchers will identify the barriers to active learning and will provide strategies for overcoming those barriers.

PURPOSE

The purpose of this article was to identify obstacles to engaging in active learning and create activities to overcome the obstacles. According to Tharayil et al. (2018), instructors may be hesitant to change teaching approaches. However, the consensus regarding the benefits of active learning pedagogies is increasing (Cavanagh et al., 2018).

Implementing active learning pedagogical activities can result in several benefits including student satisfaction and performance (Hyun et al., 2017). Therefore, understanding how instructors can overcome

obstacles to active learning and implement strategies to support the active learning concept is purposeful. This paper identifies reasons why instructors may be hesitant to engage in active learning, and provides details for several learning exercises in which students can apply course material.

OVERVIEW OF THE LITERATURE

Theoretical Foundation

The constructivist learning theory suggests that learners create knowledge and meaning on their own as they learn (Hein, 1991). Bada and Olusegun (2015) suggest that student centered learning is a main component of constructivism. The constructivist theory supports the notion that learning is an active experience (Fernando & Marikar, 2017).

Strategies that use an active learning approach promote the types of cognitive work necessary for learning with the constructivist learning theory (Brame, 2016). According to Lewis et al. (2018), constructivist based methods of instruction improves learning. Activities that promote active learning encourage students to connect new information with existing knowledge, thus increasing comprehension of material (Brame, 2016). Active learning results in higher levels of learning than passive methods of instruction (Markant et al., 2016). Therefore, Kalamas Hedden et al. (2017) recommended the use of an active learning constructivist approach to teaching in higher education.

History of Active Learning

Active learning has evolved over the years. Educational researchers began devoting attention to the theory of active learning in the late 1990s (Murphy, 2020). In the past, course content was recited to students (Baepler et al., 2016). Lectures were the traditional method for conveying information, and assessment was based on written exams (Cummings et al., 2017). As the teacher's role in active learning evolves, Page (1990) suggests that teachers should guide students rather than dispense information. According to Roberts (2019), passive learning does not align with contemporary needs.

In the current learning environment, student centered learning has begun to emerge (Baepler et al., 2016). Constructivism based strategies such as active learning are being used more frequently (Cummings et al., 2017). Kudryashova et al. (2016) identified a need to shift from teaching to learning in the educational environment. Engaging students in active learning allows the student to feel a connection to the course, rather than feeling like a passive spectator (Cummings et al., 2017). According to Yean (2019), the use of active learning will encourage participation and revolutionize the methods in which students receive information.

Obstacles to Active Learning

Bonwell and Eison (1991) detail five common barriers to the implementation of active learning including: (a) limited class time to adequately cover the course materials, (b) increased preparation time, (c) implementation in large classes can be difficult, (d) lack of material, equipment, and resources, and (e) risk involved with implementation. Of the previously listed barriers, risks associated with implementation was identified as the greatest barrier. Instructors are concerned that students will not participate, use higher-order thinking and will not learn the content sufficiently. Additionally, a risk exists that faculty member will no longer feel in control of the class, that they will be criticized and that they will not have the skills necessary to successfully implement active learning. Gleason et al. (2011) elaborated on obstacles to active learning, stating that some teachers may lack the confidence to take the risk associated with active learning.

According to Askit et al. (2018), the biggest obstacle to implementing active learning strategies is related to not having enough time to adequately cover the course materials. Feedback consistently revealed that the curriculum was overloaded, it was too time consuming for both students and educators, and the work load was too heavy with too little time to complete it. Student study participants resisted the implementation of active learning, citing some of the same discords as their instructors. Students also cited obstacles including: difficulty in navigating discussions in large classrooms, stationary desks and chairs inhibit active learning, and that too many students in the class to successfully implement active learning

strategies. According research conducted by Wang (2017), 87% of instructors struggle with having the time to implement an active learning strategy. Lack of technology available to the students was cited as another area of concern for instructors. Shadle et al. (2017) echo findings of previously listed studies, citing that 90% of instructors participating in the study noted a lack of time as a barrier to the implementation of active learning techniques.

Guidelines for Effective Active Learning

Overcoming the barriers associated with active learning can be difficult. Gleason et al. (2011) suggests starting small. Many activities need little equipment and some only require a pen and paper (Askit, et al., 2016). Having a classroom physically designed for active learning is ideal but it is not necessary for students to be satisfied with their learning process. Jung et al. (2017) states that student satisfaction is directly related to the active learning activities. According to Tharayil et al. (2018), the simple tasks of the instructor explaining course expectations, the activity, and activity expectations greatly reduced student resistance to active learning.

According to Fedoryshyn (2018), active learning should simply require critical thinking and individual responsibility. Activities should be open ended with clear organization. Johnson and Johnson (2018) suggest dividing large classrooms into smaller discussion groups, asking students to summarize, in writing, the material the students had read or to evaluate statements or assertions in pairs. Bonwell (2000) notes the following characteristics of an active learning activity to create a low risk for the instructor (a) relatively short class time required, (b) carefully planned, (c) well structured, (d) concrete subject matter, (e) less controversial subjects, (f) choosing a subject that students are well informed of, and (g) interaction between the instructor and student in addition to peer to peer interactions.

ACTIVE LEARNING STRATEGIES

Below are two activities that allow instructors to easily implement active learning into the classroom. The suggested activities overcome barriers previously identified, and create a low risk for the instructor. The active learning strategies identified below require no technology, a short amount of preparation and class time, and few resources. In addition, the following activities could be utilized for most subject matters and in both large and small classrooms.

Activity #1

Rather than asking a question and calling on someone for an answer, sticky notes with questions relating the material are stuck to a beach ball. The ball is tossed into the classroom. When someone touches or catches the ball, they must take off a sticky note and read the question out loud. The student then answers the question to the best of their ability, allowing the instructor to step in if the student is incorrect or is struggling. The ball is then tossed back to the instructor, who tosses it into another part of the classroom.

Activity #2

In this activity, students are paired. Each pair of students will then play Tic Tac Toe against each other. However, a student must earn their X or O mark by correctly answering the instructor's question. One person in each pair will be designated to answer the first question. The instructor will ask the class a question. The student designated will answer the question. If they answer it correctly, they either earn an "X" or an "O" and can then place the designated letter on the Tic Tac Toe Board. To add a twist to the traditional game, students could also be given the option of erasing an "X" or "O" on the Tic Tac Toe Board, rather than adding an X or O. The first person in each set to get three in a row wins that game. Once a winner has been declared, the students can draw another Tic Tac Toe board and play again. Instructors may award bonus points to the winner of the game.

CONCLUSION

Understanding how to overcome obstacles to active learning is essential in creating a course design meaningful to the student. According to Styers et al. (2018), higher levels of critical thinking may result from the use of active learning. The implementation of active learning strategies results in several benefits for the student including increased perception of learning experience and improved grades (Sinnayah et al., 2019). Additionally, instructors are likely to see an increase in positive student evaluations from using active learning techniques (Henderson et al., 2018). Therefore, understanding how to overcome active learning obstacles and successfully implementing active learning strategies is beneficial for both the instructor and student.

REFERENCES

- Askit, F., Niemi, H., & Nebgi, A. (2016). Why is active learning so difficult to implement: The Turkish case. *Australian Journal of Teacher Education*, 41 (4).
<http://dx.doi.org/10.14221/ajte.2016v41n4.6>
- Bada, S.O., & Olusegun, S. (2015). Constructivism learning theory: A paradigm for teaching and learning. *Journal of Research & Method in Education*, 5(6), 66-70.
- Baepler, P., Walker, J.D., Brooks, D.C., Saichaie, K., & Petersen, C.I. (2016). *A guide to teaching in the active learning classroom: History, research, and practice*. Stylus Publishing, LLC.
- Bonwell, C.C. (2000, May). *Active Learning: Creating excitement in the classroom* [Workshop]. Presented at Active Learning Workshops, Green Mountain Falls, CO. Retrieved from https://www.asec.purdue.edu/lct/HBCU/documents/Active_Learning_Creating_Excitement_in_the_Classroom.pdf
- Bonwell, C.C., & Eison, J.A. (1991). *Active learning: Creating excitement in the classroom*. 1991 ASHE-ERIC Higher Education Reports. Washington, DC: The George Washington University, School of Education and Human Development. Retrieved from <https://files.eric.ed.gov/fulltext/ED336049.pdf>
- Brame, C. (2016). *Active learning*. Vanderbilt University Center for Teaching. Retrieved from <https://cft.vanderbilt.edu/cft/guides-sub-pages/active-learning/>
- Cavanagh, A.J., Chen, X., Bathgate, M., Frederick, J., Hanauer, D.I., & Graham, M.J. (2018). Trust, growth mindset, and student commitment to active learning in a college science course. *CBE—Life Sciences Education*, 17(1), ar10. <https://doi.org/10.1187/cbe.17-06-0107>
- Cummings, C., Mason, D., Shelton, K., & Baur, K. (2017). Active learning strategies for online and blended learning environments. In *Flipped instruction: Breakthroughs in research and practice* (pp. 88-114). IGI Global.
- Deslauriers, L., McCarty, L., Miller, K., Callaghan, K., & Kestin, G. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *Proceedings of the National Academy of Sciences*, 116(39) 19251-19257.
<https://doi.org/10.1073/pnas.1821936116>
- Fedoryshyn, O.P. (2018). Active Learning Techniques in Higher Education. *Young Scientist*, 3.2(55.2), 81-86.
- Fernando, S.Y., & Marikar, F.M. (2017). Constructivist Teaching/Learning Theory and Participatory Teaching Methods. *Journal of Curriculum and Teaching*, 6(1), 110-122.
- Gleason, B.L., Peeters, M.J., Resman-Targoff, B.H., Karr, S., McBane, S., Kelley, K., . . . Denetclaw, T.H. (2011). An active-learning strategies primer for achieving ability-based educational outcomes. *American Journal of Pharmaceutical Education*, 75(9), 186.
<https://doi.org/10.5688/ajpe759186>.
- Hein, G. (1991). *Constructivist learning theory*. Institute for Inquiry. Retrieved from <http://www.exploratorium.edu/ifi/resources/constructivistlearning.html>

- Henderson, C., Khan, R., & Dancy, M. (2018). Will my student evaluations decrease if I adopt an active learning instructional strategy? *American Journal of Physics*, 86(12), 934-942. <https://doi.org/10.1119/1.5065907>
- Hyun, J., Ediger, R., & Lee, D. (2017). Students' Satisfaction on Their Learning Process in Active Learning and Traditional Classrooms. *International Journal of Teaching and Learning in Higher Education*, 29(1), 108-118.
- Johnson, D., & Johnson, R. (2018). Cooperative learning: The foundation for active learning, active learning - beyond the future. In S.M. Brito (Ed.), Students' satisfaction on their learning process in active learning and traditional classrooms. *International Journal of Teaching and Learning in Higher Education*, (108-118). IntechOpen. DOI: 10.5772/intechopen.81086
- Jung, H., Ediger, R., & Lee, D. (2017). Students' satisfaction on their learning process in active learning and traditional classrooms. *International Journal of Teaching and Learning in Higher Education*, (29), 108-118. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1135821.pdf>
- Kalamas Hedden, M., Worthy, R., Akins, E., Slinger-Friedman, V., & Paul, R.C. (2017). Teaching sustainability using an active learning constructivist approach: Discipline-specific case studies in higher education. *Sustainability*, 9(8), 1320.
- Kudryashova, A., Gorbatova, T., Rybushkina, S., & Ivanova, E. (2016). Teacher's roles to facilitate active learning. *Mediterranean Journal of Social Sciences*, 7(1), 460.
- Lewis, C.E., Chen, D.C., & Relan, A. (2018). Implementation of a flipped classroom approach to promote active learning in the third-year surgery clerkship. *The American Journal of Surgery*, 215(2), 298-303.
- Markant, D.B., Ruggeri, A., Gureckis, T.M., & Xu, F. (2016). Enhanced memory as a common effect of active learning. *Mind, Brain, and Education*, 10(3), 142-152.
- Murphy, M.P. (2020). Active learning as destituent potential: Agambenian philosophy of education and moderate steps towards the coming politics. *Educational Philosophy and Theory*, 52(1), 66-78.
- Page, M. (1990). *Active Learning: Historical and Contemporary Perspectives*.
- Roberts, D. (2019). Higher education lectures: From passive to active learning via imagery? *Active Learning in Higher Education*, 20(1), 63-77.
- Shadle, S.E., Marker, A., & Earl, B. (2017). Faculty drivers and barriers: Laying the groundwork for undergraduate STEM education reform in academic departments. *International Journal of STEM Education*, 4(8). <https://doi.org/10.1186/s40594-017-0062-7>
- Sinnayah, P., Rathner, J.A., Loton, D., Klein, R., & Hartley, P. (2019). A combination of active learning strategies improves student academic outcomes in first-year paramedic bioscience. *Advances in Physiology Education*, 43(2), 233-240.
- Styers, M.L., Van Zandt, P.A., & Hayden, K.L. (2018). Active learning in flipped life science courses promotes development of critical thinking skills. *CBE—Life Sciences Education*, 17(3), ar39.
- Tharayil, S., Borrego, M., Prince, M., Nguyen, K.A., Shekhar, P., Finelli, C.J., & Waters, C. (2018). Strategies to mitigate student resistance to active learning. *International Journal of STEM Education*, 5(1), 7.
- Wang, T. (2017). Overcoming barriers to 'flip': building teacher's capacity for the adoption of flipped classroom in Hong Kong secondary schools. *Research and Practice in Technology Enhanced Learning*, 12(6). Retrieved from <https://telrp.springeropen.com/articles/10.1186/s41039-017-0047-7>
- Yean, L.S. (2019). Promoting active learning and independent learning among primary school students using flipped classroom. *International Journal of Education*, 4(30), 324-341.