**Active Learning: Research Paper**

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**Introduction**

The main purpose of education is not just helping students recall information at a later point of time in life but to prepare them for their life outside the educational environment (Vinay, 2018, p. 1). Vinay (2018) suggests that it becomes absolutely essential for students to learn when, where and how to use their knowledge outside the classroom (p. 1). This requires the student to ingest the ability to evaluate and apply their learning in order to choose the relevant information or strategy from the vast amount of knowledge they have for a particular situation they may encounter in their future endeavors (Vinay, 2018, p. 1).

Over the past 20 years, interest in the impact of space on teaching and learning has grown, and higher education institutions have responded by creating Active Learning Classroom (ALCs) —spaces designed to promote active, student-centered learning (Phillipson & Leger, 2018, p. 14). Respondents agreed that the kinds of teaching appropriate to the ALCs have to be “lived” and they discussed how training of educators in the ALCs ought to build on this insight (Phillipson & Leger, 2018, p. 14).

**Active Learning Theory**

Most educators would agree that the ideal educational experience is one in which students come to lectures and tutorials prepared to actively engage in the learning process, rather than passively absorbing information and this approach is generally described as “active learning” (Cook & Babon, 2017, p. 24). Active learning is a process whereby students are given an opportunity to engage in the learning process (Vinay, 2018, p. 1). According to Bonwell & Eisen, there are 5 elements in active learning. 1) student involvement beyond mere listening; 2) more emphasis on the development of skills and less of a transmission of information; 3) student in higher order thinking skills; 4) student involvement in activities, such as reading, discussing, writing; and 5) an emphasis on student’s exploration of values and attitudes (Vinay, 2018,p. 2). Approaches that promote active learning focus more on developing student’s skills than on transmitting information and require that students do something - read, discuss, write - that requires higher-order thinking and they also tend to place some emphasis on student’s explorations of their own attitudes and values (Brame, 2016, p. 1). Wang (2020) defined active learning as an instructional method which emphasizes that learners should do and think about meaningful learning activities (p. 3).

**Historical Background**

Shortly after Bonwell and Eisen (1991) pioneered the term “active learning” in the early 1990s, North Carolina State University (NCSU) BEGAN CREATING classrooms specifically designed to engage students and promote active learning pedagogies. (Phillipson & Leger, 2018, p. 1). Classrooms constructed in the Student-Centered Active Learning Environment with the Upside-down Pedagogies (known as SCALE-UP) project were equipped with round tables, computer outlets, large screens, and white boards around the walls. (Phillipson & Leger, 2018, p. 1). A key feature of SCALE-UP classrooms is the loss of central focal point as the instructor podium is located in the midst of the tables rather than at the front of the room (Phillipson & Leger, 2018, p. 1).

**Associated Seminal Leaders**

In their seminal work *Active Learning: Creating Excitement in the Classroom*, compiled in 1991 for the Association for the Study of Higher Education and the ERIC Clearinghouse on Higher Education, Bonwell and Eison defined strategies that promote active learning as “instructional activities involving students in doing things and thinking about what they are doing” (Brame, 2016, p. 1). According to John Dewey, learning should engage and expand the experiences of learners and he believed that students should learn by co-operating with each other and by doing things and not just learning facts and information (Vinay, 2018, p. 3). According to Silberman (1996) learning should be active because to learn something well, students need to see it hear it, ask questions about it, discuss it and most importantly do it (Vinay, 2018, p. 3).

**Active Learning in the Role of the Instructor and the Learner**

For students to get the most out of active learning, it is important for them to view the classroom as a welcoming space where they can reveal their confusion, make mistakes, and try out new approaches to learning (Center for Teaching Vanderbilt University (Brame, 2016, p. 1). Brame (2016) suggests that instructors can foster this kind of environment by emphasizing the role of active learning as an effective tool, the value of hearing different voices and trying new approaches, and the role that mistakes play in learning (p. 1) As Brame suggests, set a goal for each activity, choose the right activity, identify preparation for the exercise, consider links to other class elements, plan how you will introduce the activity and the logistics, and finally, consider how you will judge success.

As an implementation of active learning in my classroom, I would identify the learning objective that relates to the goal of the activity and provide the students with the understanding that this experience will provide them simulated real-world situations in the field of dental hygiene. After considering the student population, the material that students are challenged by, and the time restraints, I would use the suggestions of Brame by asking my students to work in groups and complete case studies that I will provide. After providing students with their case study I will provide them with one hour to prepare their case presentation which will be assessed by participation and their attitude working in teams. Students sometimes fail; it is okay. Learn from the experience (Brame, 2016, p. 1). Another example would provide students with something interesting to investigate and while they work in teams, the instructor is free to roam around the classroom—asking questions, sending one team to help another, or asking why someone else got a different answer (Phillipson & Leger, 2018, p. 1). Incorporating role-playing in my classroom will provide the active learning strategy of collaborative learning to increase the application and evaluation skills among students. Increasing confidence, clarity, performance and the improvement of application and evaluation skill in students post the role playing activity will be the learning outcome that I am expecting with this activity.

Many exercises for individual students can provide teachers with feedback regarding the understanding of students (affective responses) by asking questions in a way that would increase the involvement of students and their comprehension of information provided by the teacher. (Fish bowl) Immediate feedback can be ascertained by using formative assessment techniques that allow the teacher to gauge the level of understanding of the taught material among students in the lecture itself (flash cards). Students can learn from critical thinking motivators where the strategies encourage the discussion of or thinking about the course material before presenting the theory or after presenting many conflicting theories (case studies, puzzles). This share/pair for ensuring participation of all students allows them to put forth their views and simultaneously hear the other student’s point of view too (discussion, note comparison/sharing). Co-operative learning exercises help develop problem solving skills among students and allow students to learn the skills they have not mastered with the help of other students and teachers (role-playing) (Vinay, 2018, p. 2). Wang (2020) mentioned that an active learner would take a minute to ponder learned content, share feedback with peers or instructors, and discuss the ideas from the course outside of the class (p. 3).

The peer assessment is an important element of designing learning interaction because it triggers students’ participation during the course, and hence, it is an effective way to promote active learning (Wang, 2020, p. 3). Freeman & Wash (2013) suggest that experiential lessons help students to remember the information and makes learning more “exciting” (p. 108). College students should be active and involved in experiential learning activities and assignments should integrate the arts, technology, movement, and group work (Freeman & Wash, 2013, p. 108). Students could visit a nursing home where they visit the residents, share lunch and converse about their health with the residents and conduct discussions about their learning experience from their visit to the nursing home (Freeman & Wash, 2013, p. 108). Dramatic participation helps to experience events that one cannot directly experience, therefore avoiding distraction and focusing on what matters. This helps learning relevant things which aids in creating, analyzing, defining, evaluating and applying concepts (Vinay, 2018, p. 2).

**Advantages of Active Learning**

Active learning requires that students do more than passively listen and promotes the practice of higher order thinking (Phillipson & Leger, 2018, p. 1). Active learning centers students at the heart of teaching and learning with student’s independently exploring, generating, and applying ideas in the classroom. Research has consistently shown that such instructional methods improve students conceptual understanding (Phillipson & Leger, 2018, p. 1). The spaces created while actively learning supports student-driven activity.

Findings demonstrate benefits for students, such as improved problem solving and attitudes and conceptual understanding as determined by grade improvement, students self-reports, or instructors perceptions of student learning (Phillipson & Leger, 2018, p. 1-2). ALCs free instructors to consider new ways of approaching course material and allow creativity in the spaces they will create (Phillipson & Leger, 2018, p. 7). While there are many complications and challenges for researchers studying the impact of active learning, most of the studies clearly show that active learning does positively impact students’ ability to retain and understand new material (Hyun, Ediger & Lee, 2017, p. 108).

**Disadvantages of Active Learning**

While such literature detailing preparatory techniques is crucial for educational developers supporting instructors as they enter active learning spaces, an underexplored but important line of inquiry concerns what happens to teachers during and after their time in ALCs (Phillipson & Leger, 2018, p. 2). The fundamental shift might seem frightening and risky with not enough educational development support (Phillipson & Leger, 2018, p. 13). In higher education classes, many teachers are resistant to incorporating active learning because it is expensive and inconvenient (Wang, 2020, p. 3). Teachers should notice several issues when integrating peer assessment activities into courses, such as students being reluctant to give grades to their peers, scoring their peers’ performance unfairly, and the issues of reliability, perceived expertise, power relations and time available for completing peer assessments (Wang, 2020, p. 4). Wang (2020) mentioned that it is challenging to apply the teaching theory with learning technology tools to the practical classroom scenario because the classroom environment is dynamic and the interaction between students and instructors is changing constantly (p. 15). Remodeling all traditional classrooms to ALCs entails substantial financial burdens (Hyun, Ediger & Lee, 2017, p. 108).

**Conclusion**

Reducing stress for university students should begin with strategies for lowering stress. (Freeman & Wash, 2013, p. 114). A brain-based teaching and learning environment should be one that is safe, relevant, enjoyable, and active, all the while meeting the needs of the variety of intelligences presented by the students (Freeman & Wash, 2013, p. 114). Professors who refuse to utilize experiential learning opportunities and cooperative grouping and who seldom or never integrate the arts and technology into their courses and potentially missing out on the opportunity for successful, enjoyable teaching experiences (Freeman & Wash, 2013, p. 116).

Using game-based learning strategies, such as quiz-style PowerPoint games as an e-learning and teaching pedagogy can make an impact on how students learn, how they process and retain information, and how they interact with digital media (Squire, 2019, p. 44). However, more research is necessary so that we can gain a better understanding about their impact on students’ information literacy development (Squire, 2019, p. 44). “Educators are learners” and research indicates that it is not only the students engagement that can be enhanced by experiences in these classrooms, but also educators (Phillipson & Leger, 2018, p. 16).

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