Six Impactful Teaching Practices: Annotated Bibliography

The literature, two years of ongoing campus discussions, and preliminary findings from Delta’s Bridging the Achievement/Equity Gap project have pointed to the following six high potential “points of intervention” or impactful pedagogical practices for improving the academic achievement of underrepresented minority and first generation students.

Six Points of Intervention includes:
1. Integrate culturally inclusive/relevant content
2. Decrease the potential intimidation students feel toward instructors
3. Get students involved with supplemental instruction
4. Be intentional about how student groups and project teams are formed
5. Work with TA’s and other instructors in the class
6. Use inclusive teaching practices

Intervention #1: Integrating culturally inclusive content into your course


This book serves as a guide for university instructors to creating a culturally relevant curriculum in higher education classrooms. Topics covered includes “Challenges and Perspectives,” “Pedagogical Potential of Cultural Responsiveness,” “Cultural congruity in Teaching and Learning,” etc. Wlodkowski and Ginsberg’s goal is to provide college professors and instructors the tools needed to adjust to the change in the population of students they are encountering in their classrooms.

Intervention #2: Instructor accessibility - decreasing the intimidation students feel


Relationship between Faculty-student interactions and student achievement motivated this quantitative study. Anaya and Cole evaluated data from the national cross-sectional sample of over 800 Latino students from 30 different universities, all of whom attended research and doctoral granting universities. They found that positive personal interaction with faculty resulted in positive effects on student achievement.


This qualitative study sought to identify student views of office hours and course centers, which are open study centers where students can receive help from TA’s, Instructors, and other classmates. This study included interviews focused on office hours and course centers as well as surveys on student use of both office hours and course centers. Chung and Hsu found that 67% of student participants preferred course centers. In addition to the discussion around the findings of this study, Chung and Hsu also discuss the positives and the limitations of course centers.


Longwell-Grice and Longwell-Grice discussed their findings in a qualitative case study focused around four white working-class freshmen who were the first in their families to go to college. Using the Tinto theories of student retention, Longwell-Grice and Longwell-Grice sought to identify student perceptions of faculty. They found that students were intimidated by the idea of seeking help from faculty, which resulted in lack of support from faculty.

Wilson discussed the importance of a good professor-student relationship and how that may affect the achievement of students. He did this by discussing his findings from his qualitative study that consisted of interviews with sixty Alaska Native, American Indian, and Canadian Indian students. He addressed a number of different elements that affects the professor-student relationship. Some of these elements included accessibility, approachability, availability, level of care, relate ability, etc.

**Intervention #3: Supplemental instruction - getting students involved beyond the classroom**


This article looks at the use of Supplemental Instruction in two STEM courses at University of Pretoria’s, both of which were large lectures with at least one hundred students. The goal of Supplemental Instruction was to provide students with the tools needed to be successful in STEM courses at this university. This article outlines the shortcomings to their Supplemental Instruction program and gives ideas for improvements. Harding, Engelbrecht, and Verwey find that although this program had its shortcoming it was still very effective in improving the academic performance of students.


Using the Colaizzi’s phenomenological approach, this qualitative study sought to understand the experiences of Supplemental Instruction (SI) Leaders in science courses. Participants in this study included 29 SI Leaders. As a result of this study Lockie and Van Lanen found four central themes in experiences of SI Leaders. These experiences included the diversity of student learning needs, enriching academic experiences, enriching intrapersonal experiences and relationships with faculty. This article also provides a brief description of Supplemental Instruction.


The questions that this book seeks to answer include what is Supplemental Instruction? How does Supplemental Instruction work? In what ways is it used? Martin et al. argue that if students are not being successful in these courses, then colleges should change how courses are taught. In addition to defining and explaining SI, this book also looks at some of the reasons why educators decide to use SI in their classrooms.


Oja discussed the finding from her quantitative study that sought to identify the effectiveness of Supplemental Instruction (SI) programs at a community college. This study, which included 30 course sections in nine different subjects, found that although SI programs do not encourage students to stay at the college the following academic year, it is still a beneficial program that positively affects student achievement.

**Intervention #4: Student groups - creating teams and groups for more effective learning**


This study sought to identify the perceptions of freshman students participating in an introductory project based learning course in engineering, in which teams of students carried out mini-projects. This qualitative study consisted of interviews with students, teachers, and teaching assistant as well as observations in the classroom. In addition to discussing this study, Frank et al. defined project based learning, inquiry based learning and discussed the history of these pedagogical tools. Researchers found six issues that repeatedly appeared. These six issues included students’ understanding of the goal of the course, the role of the lecturer, the characteristics of the course, the advantages of the course according to the students, the learning environment, and teamwork.


This qualitative review of published articles on project-based learning sought to identify the reasons why the use of project-based learning is supported, how it is used within the Post-secondary classroom and the impact it has on student learning. Most articles on project-based learning (PBL) were course description focusing on the use of PBL in an individual course. Other research on PBL was non-existent. It was also found that PBL could include many different activities and purposes. Helle et al. encourages practitioner and curriculum developers to reflect on the purpose and the possibilities of PBL before implementing in a course.

Are mandatory study groups beneficial? In this study Kapp et al. looked at the effects of having mandatory study groups in a non-science major geology course and gave suggestions for restructuring science courses. The goal of this study was to improve student learning and to reduce faculty effort. This was done by creating required break out groups, brief lectures, online quizzes, etc. Although there were no significant improvements students found the learning in this class more meaningful.


This study looked at the effects of peer facilitated study groups in an introductory Biology course. All peer leaders received the same training that graduate assistants received and held study groups once a week. Every study group involved active learning activities around the course material. As a result of this study, there was a decrease in number of students failing and dropping the class. In addition to the decrease in failing and dropping students, students involved in the study groups scored higher on the Final exam and received higher grades in the class.

**Intervention #5: Inclusive teaching practices to aid in the success of all students**


Through observations of faculty instruction conducted at Regis University in three 8-week courses, Gupta examined the effectiveness of Wlodkowski and Ginsberg’s (1995) Culturally Responsive Teaching framework by looking at the 13 inclusive practices. The results from the observations and surveys found that the 13 inclusive practices were not being used correctly and/or fully.


With an increase of diversity in Higher Education there is a growing interest in inclusive learning and teaching in Higher Education. In this article Hocking, Brett and Terentjev discuss their attempt to develop professional values and inclusive practice creativity through classes for teachers. Included in this article is an outline of inclusive learning and teaching practices as well as discussion around Open Education Resource (OER). In addition, this article discusses how this could be adopted in distance learning and virtual contexts.

**Intervention #6: Teaching Assistants - role of the TA in addressing the Achievement Gap**


This article discusses the impact of TA’s on student achievement by discussing the finding from one portion of the Inclusion Review Group at Manchester University. Farrell, Alborz Howes, and Pearson provided evidence for future training, managing and support for TA’s. This was done by discussing student achievement and how it can significantly improve after targeted TA intervention.


Are TAs the reason why some students do not major in the sciences? This article discussed the findings from a quantitative study of TAs and students involved in the sciences. Over 2,100 students at an Midwest institution took an survey to help researchers to identify the influence TAs have on undergraduate students’ plan to major in or leave the sciences. This study found that TAs did not affect the decision of students to stay or leave a science major but they found that student retention is affected by course grades which in turn are directly affected by TAs. This article also gave recommendations for TA training, mentoring and management to positivity effect student retention.


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Penwell, Elsawa and Pitzer discussed the many changes in Florida International University's laboratory teaching program. The goal was to recreate a program that improves the amount of material received and retained by students. Findings showed that there was little progress in student improvement. Due to this finding the focus was turned to the TAs of these laboratory teaching programs. The goal was to provide TAs with the pedagogical training that would improve the amount of material received and retained. There were five constructs of cooperative learning that was found to be significant benefit to TAs and students. These constructs included positive interdependence, face to face promotive interactions among students, individual and group accountability, interpersonal and small group skills, and group processing.


Shannon et al. had three purposes in studying 129 TA's of 29 departments in a major southern research university. These purposes included determining the impact of TA training on students (including the training the TA received as an undergraduate student), the impact of TAs’ teaching experience on students, and how teaching effectiveness was influenced by academic discipline. This study found that one of the most important factors in student achievement in a course is the TA’s prior teaching experience.

**Articles Related to the Achievement Gap and Student Achievement**


In this study Harper discussed the deficit framework that many researchers take when looking at the difference in achievement between white and underrepresented students. Harper discussed his study of 219 undergraduate Black males from multiple institutions of higher learning who were within the STEM majors. In this study Harper focused on understanding why Black men excel instead of looking at why other Black males fail. Harper found that students believed that Pre-college programs, student organizations and having a community of peers of their same race were critical to their Higher Education success.


Bensimon discusses the achievement gap between White and Underrepresented students from an organizational learning perspective. She explains how looking at the Achievement Gap from this perspective can help us understand the reason for this gap. She argues that the cause for this gap in achievement is due to the institutional actors (faculty members, administrators, counselors, etc.).


Cruz and Haycock discuss the disparities in income in America. They state that education is the place where these disparities can start to diminish and that institutions of higher education should be a part of this effort to improve student success. In addition to arguing why institutions of higher education should be involved, Cruz and Haycock also give five practices and programmatic initiatives to begin to work towards equality within an institution.


The goal of this study was to provide resources to students entering an introductory Biology course to close the gap in achievement between students with and without prior knowledge. To do this a Primer Unit was created, which was a 35 PowerPoint slide presentation that covered the issues that would be discussed in the first 6 lectures of the course. Marbach-Ad et al. found that students with no prior knowledge of the course who viewed the Primer Unit before the course felt more prepared for the course and did better in the course than the other students with no prior knowledge who didn’t view the Primer Unit.


This article discusses the differences in achievement between Black and White students by looking at the cultural, communication, and the learning styles of Black student. Rovai et al. discuss the conditions of these predominantly White institutions, as well as their practices. The authors of this article also present reasons for this gap in achievement and make suggestions for future research.