



## **Chaos Makes The Muse: Embracing the 21st Century in Today's College Classrooms**

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We are 18 years in to the 21st century and still talking about this century as if it is the future. It only takes a brief literature review and visit to a current college class to uncover that researchers and teaching practitioners have not fully embraced the demands for connected learning and more dynamic expectations of college students.

Inspired by the likes of Ernest Boyer (*Scholarship Reconsidered*), Michael Welsch, and my own experiences as a college professor, I ventured into the uncomfortable waters of transdisciplinary learning environments. According to Choi and Pak, transdisciplinary education is an integrative approach to curriculum between conventional disciplines with a framework of real-world themes (2006). As a responsible (try to be anyway) faculty member for the past decade in the School of Hospitality and Tourism Management at Oklahoma State University, I was driven by the mission to both guide my students to an acquisition of content knowledge as well as skill development for the current century. Based on the work of others (see list below), I learned of Project Based Learning (PjBL) and began networking to find fellow adventurous faculty members. According to the Buck Institute for Education, PjBL is described as an active approach to education in which students explore real-world challenges and acquire a deeper knowledge and skill (n.d.). A transdisciplinary PjBL environment seemed to be a possible answer to the challenge I perceived that higher education had not fully embraced the 21st century.

Dr. Blayne Mayfield (Computer Science – Mobile App. Development Course) and I (Hospitality Management – Lodging Property Management Course) began #OKSTATEHASANAPP4THAT in the Spring and Fall of 2012. Both courses had a similar objective to give students practical application within their disciplines to strengthen management and/or technical abilities. Our aims were simple; 1) start the bus rolling down the hill with all students inside, 2) buckle up and attempt to stay on course, and finally 3) come out the other end of the road with five mobile apps

designed to survey guests of hospitality businesses. We were successful in surviving and achieving the five apps, but were tested and refined along the journey in ways we did not imagine. This was thanks in part to the chaos one must embrace throughout such an endeavor. We had students bursting with pride at the end and some in tears. Similarly, we had confusion and doubts, arguments and compromise, miscommunications and reconciliation. In spite of ourselves and our ambition, the students reported higher levels of motivation, joy (through pain sometimes) in school work, and a self-perceived improved ability to work with others. We had enough energy to try it again the next year with modifications.

We continued to modify the structure of our learning experience over the next two years. Additionally, we paid attention to cues and sometimes not so subtle suggestions from our students. Students did not like ambiguity and they were hesitant to work with students from other programs. Nevertheless, we were not deterred based on our commitment as educators to make students just uncomfortable enough to nurture the growth we knew they were capable of. Throughout these first couple of years, our work was featured at numerous academic conferences in various formats (see reference list below). The interest and feedback we received was constructive, affirming, and rewarding (bringing home a few awards to boot!). However, the greatest thing we gained from the past to this point was confidence to continue and strengthen our drive to help students grow and learn.

Our most ambitious iteration of #OKSTATEHASANAPP4THAT came in the Fall of 2014. As a result of presenting our findings on campus and networking with likeminded instructors, we decided to invite more chaos by including another class (Graphic Art Design – Graphic User Interface Course) and instructors Patrick Finley (Graphic Art Design) and Dar Yasseri (Hospitality Management). Also, for the first time our classes would all work together collaboratively in the same semester (previous iterations had the classwork from one semester continue to the next semester). In addition, we welcomed education researchers, Dr. Penny Thompson (Education Technology) and Dr. Jane Vogler (Education Psychology), into our group to deepen our awareness of what was going on in this learning environment, and investigate and disseminate the results.

It is safe to say we learned more from the Fall of 2014 than we had the previous two years combined. The findings from the mixed methods research completed informed us that our chaos was working, but student experience and growth could continue to be improved with some thoughtful adjustments. Some of the more notable suggestions and results of the changes were published in the journal, *Instructional Science*, in June 2018. In addition, the quantitative results of examining the effects of PjBL on students 21st century skill development and intrinsic motivation orientation are viewable through ProQuest Dissertations & Theses Global.

Working with people of diverse backgrounds and disciplines can be difficult, but it also can be rich with growth from the experience. Through this transdisciplinary adventure, several notable takeaways emerged.

- This type of learning is best when students can connect inside and outside of formal class time. Therefore, attempt to align or overlap your scheduled class times with the other disciplines.
- Agree to a consistent weight of grade from this experience in your class. You will have different outcomes you measure based on unique content, but having similar weighting can help students work equitably to achieve the final result. Our group hovered around 27% of total grade for the course.
- Don't be afraid to invite other classes, so long as it makes sense for the project at hand. Colleagues need to have alignment on expectations and connectedness on the overall aims.
- Collect data! There are so many rich data points to gather in any class, and transdisciplinary learning environments provide new and intriguing layers of psychology, teamwork, human capital, and more.
- Connect the output to a student's area of interest. Listen to the students. Giving autonomy in the process and eventual outcome can generate increased levels of motivation.
- Authentic activities that align with possible work students will do in their post-college careers helps them develop in-demand soft and hard skills that may strengthen their employability.

## LIST OF INFLUENCERS

- Barr, R. B., & Tagg, J. (1995). From teaching to learning—A new paradigm for undergraduate education. *Change: The Magazine of Higher Learning*, 27(6), 12-26.
- Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Lawrenceville, NJ: Princeton University Press.
- Casner-Lotto, J., & Barrington, L. (2006). Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st Century US Workforce. Washington, DC: ERIC.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE bulletin*, 3, 7.
- Choi, B. C., & Pak, A. W. (2006). Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. *Clinical and investigative medicine*, 29(6), 351.
- Crawford, P., Lang, S., Fink, W., Dalton, R., & Fielitz, L. (2011). *Comparative analysis of soft skills: What is important for new graduates*. Washington, DC: Association of Public and Land-grant Universities.
- Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109-134.
- Does PBL Work? (n.d.). Retrieved from [http://bie.org/object/document/does\\_pbl\\_work](http://bie.org/object/document/does_pbl_work)
- Keniston, H. (1960). The goals of higher education. *Proceedings of the American Philosophical Society*, 104(6), 565-569. doi:10.2307/985532
- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter?* Washington, DC: Association of American Colleges and Universities.
- Taylor, M. (2010). Teaching generation next: A pedagogy for today's learners. A collection of papers on self-study and institutional improvement, 3, 192-196.

## **#OKSTATEHASANAPP4THAT CONFERENCE PROCEEDINGS**

- Davis, D. W. (2015). Examining the effects of project-based learning on students rankings of which 21st century skills are important to career success. Big XII Teaching and Learning Conference, July 28-30, Stillwater, OK U.S.A.
- Davis, D. W. (2015). Tips on creating a real-to-life learning environment using project-based learning. Big XII Teaching and Learning Conference, July 28-30, Stillwater, OK U.S.A.
- Davis, D. W. (2015). Examining the effects of project-based learning on students rankings of which 21st century skills are important to career success. The International Conference for College Teaching and Learning, March 30-April 2, 2015, Ponte Vedra, FL.
- Davis, D. W. (2015). Examining the effects of project-based learning on students rankings of which 21st century skills are important to career success. The 20th Annual Graduate Student Research Conference in Hospitality and Tourism, January 8-11, 2015, Tampa, FL.
- Davis, D. W. (2014). #OKSTATEHASANAPP4THAT: Engaging, students, community, and enterprise: An update. Inaugural Big XII Teaching and Learning Conference, August 4-5, 2014, Stillwater, OK.
- Davis, D. W., Curtis, C., & Ryan, W. E. (2017). Examining the effects of interdisciplinary project-based learning on students' intrinsic motivation orientation. 2017 Annual ICHRIE Summer Conference and Marketplace, July 26 – July 29, 2017, Baltimore, MD.
- Davis, D. W., & Curtis, C. (2016). Interdisciplinary project-based learning to promote 21st century workplace skills and intrinsic motivation. The 21st Annual Graduate Student Research Conference in Hospitality and Tourism, January 5-8, 2016, Philadelphia, PA.
- Vogler, J. S., Thompson, P., & Davis, D. W. (2017). Real-world roles for real-world skills: Negotiation and growth through interdisciplinary project-based learning. American Education Research Association 2017 World Conference, April 27-May 1, 2017, San Antonio, TX.

## **#OKSTATEHASANAPP4THAT PUBLICATIONS**

- Davis, D. W., Mayfield, B., Thompson, P., Ruby, S., & Cho, Y. (2014).  
#OKSTATEHASANAPP4THAT: Engaging students, community, and enterprise.  
Journal of Higher Education Outreach and Engagement, 18(3), 163-166.
- Davis, D. W. (2016). Examining the effects of interdisciplinary project-based learning on students' twenty-first century skill development awareness and intrinsic motivation orientation (Doctoral dissertation, Oklahoma State University).
- Vogler, J. S., Thompson, P., Davis, D. W., Mayfield, B. E., Finley, P. M., & Yasseri, D. (2018).  
The hard work of soft skills: Augmenting the project-based learning experience with interdisciplinary teamwork. Instructional Science, 46(3), 457-488.

