

**Comparing Perceived Undergraduate and Programmatic Learning Outcomes in a
Department of Community Sustainability**

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Introduction

Use of programmatic learning outcomes within undergraduate education places focus on educational objectives related to student learning (Shepard, 2008). Since 2013, use of student learning outcomes was the norm in higher education, with 84% of institutions in the U.S. having adopted some form of learning outcome-based assessments (Kuh, Jankowski, Ikenberry, & Kinzie, 2014). Having a thorough outline that includes measurable course objectives can help increase the precision of curriculum being implemented (Kuh et al., 2014). Similarly, educational experiences utilizing learning outcomes are more adaptable to meet the needs of students (Huba & Freed, 2000). Huba and Freed also indicate that instructional practices drawing from a “learner-perspective” resulted in higher efficacy of student learning (2000). The ability to analyze perceived student learning compared to anticipated programmatic outcomes helps identify appropriate revisions of curriculum and instruction. According to Nelson Laird and colleagues (2008), learning is considered a shared responsibility between instructors and students. Therefore, it is important to compare what students perceive is taking place in the classroom with educational objectives that are being taught. It is increasingly important to understand how students perceive their own learning in order to evolve teaching and curriculum that meets programmatic and workforce needs. The National Research Council (2009) has issued a call for post-secondary agricultural curricula and teaching to utilize dynamic approaches to learning. Understanding student perceptions of this learning will reinforce dynamic instructional approaches.

Conceptual Framework

According to Adam (2002), learning outcome statements support student expectations through understanding and demonstration in the educational experience. The use of learning outcomes as an educational tool is meant to increase the precision and effectiveness of curriculum. By collecting data on perceptions of student learning, comparative analyses can contribute to learner understanding in the context of programmatic outcomes (Adam, 2002). Learning outcomes in the context of this study are utilized by the Department of Community Sustainability to ensure consistent delivery of course objectives, hence providing a framework for curriculum design and development. Adam (2002) suggests that learning outcomes can be utilized to move towards more student-centered and output-focused learning. Use of quantifiable data drawn from learning outcomes can provide support to administrators in decision-making when analyzing differences between student learning (Erwin, 1991). The purpose of this study was to compare how student perceptions of learning in core undergraduate courses were related to departmental programmatic outcomes across three majors in a College of Agriculture.

Methodology

Undergraduate Michigan State University students in the Department of Community Sustainability (CSUS) were surveyed about prior courses taken within the undergraduate majors

of agriculture, food and natural resources education (AFNRE), environmental studies and sustainability (ESS) and sustainable, parks, recreation and tourism (SPRT). The Introduction to Sustainability (CSUS200) course focuses on personal sustainability while placing significant consideration on environmental factors. Theoretical Foundations of Sustainability (CSUS300) immerses students in the history and evolution of sustainability from an environmental perspective. Students were asked about learning experiences within each of the courses that they have taken in relation to the 11 programmatic learning outcomes and the level at which students perceived learning to occur (beginning = 1, developing = 2, competent = 3, and accomplished = 4). Students were asked to rank their perceived learning based on the scale. Students were surveyed using the Qualtrics survey software platform. Validity and reliability were determined through the pilot testing of the instrument using a cohort of six current student-teachers and former undergraduates from the CSUS Department. Sixty-one students responded to the survey yielding a 15.5% response rate within the three undergraduate majors of AFNRE ($n = 18$), ESS ($n = 37$), and SPRT ($n = 6$).

Results

Across all three CSUS majors, the average perceived learning score of individual undergraduate course outcomes was above the departmental anticipated outcomes (AFNRE = +0.15, ESS = +0.77, SPRT = +1.36). Data for two required core undergraduate courses (CSUS200, CSUS300) showed that SPRT majors displayed higher learning perception scores than the departmental goals in both cases (CSUS200 = +2.3, CSUS300 = +1.39), ESS majors displayed higher scores in one of the two core classes (CSUS200 = +1.66), and AFNRE students showed only a minor increase from the departmental outcomes in both core courses measured.

Conclusions

Despite students of all three majors being exposed to the same, or very similar, courses and contexts for learning to take place, the data suggests that student perceptions of what they were learning were above the departmental anticipated outcomes. It is noteworthy that AFNRE students had the lowest overall positive gain from learner perceived to departmental outcomes. These results suggest that a disparity in perceived value of core sustainability courses exists among AFNRE students in comparison to students in the other undergraduate majors. These results may be influenced by AFNRE students agriculturally focused perspectives embedded in course curriculum.

Implications/Recommendations

The results indicate a disparity between perceived learning in the three undergraduate majors with a bifurcation of agricultural and environmental themes. Results indicated that tailoring teaching strategies to address the needs of students within specific majors and students with different backgrounds may be a consideration (Carini, Kuh, & Klein, 2006). Distinct groups of students based on specific major may benefit from understanding differing perspectives toward environment and agriculture. The authors recommend further research to better understand student perceptions of learning outcomes and the potential for needed curricular changes to align with the National Research Council's (2009) recommendations.

References

- Adam, S. (2008). *Learning Outcomes Current Developments in Europe: Update on The Issues and Applications of Learning Outcomes Associated with the Bologna Process*. Bologna seminar: Learning outcomes based higher education: the Scottish experience, 21-22 February 2008, at Heriot-Watt University, Edinburgh: UK.
- Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: testing the linkages. *Research in Higher Education* (46), 1-32.
- Erwin, T. D. (1991). *Assessing Student Learning and Development: A Guide to the Principles, Goals, and Methods of Determining College Outcomes*. San Francisco, CA: Jossey-Bass Inc.
- Huba, M. E., & Freed, J. E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Needham Heights, MA: Allyn & Bacon
- Kuh, G. D., Jankowski, N., Ikenberry, S. O., & Kinzie, J. (2014). Knowing what students know and can do: The current state of student learning outcomes in U.S. colleges and universities. *National Institute for Learning Assessments*, 1-51.
- National Research Council. 2009. *Transforming agricultural education for a changing world*. Washington, DC: The National Academies Press.
- Nelson Laird, T. S., Shoup, S. Kuh, G. D., & Schwarz, M. J. (2008). The effects of discipline on deep approaches to student learning and college outcomes. *Research in Higher Education* 49(6), 469-491.
- Shephard, K. (2008). Higher education for sustainability: seeking affective learning outcomes. *International Journal of Sustainability in Higher Education* 9(1). 87-98, <https://doi.org/10.1108/14676370810842201>