

Using the Gregorc Style Delineator to demonstrate students learning style

Kathryn L. Teixeira
University of California, Davis

Emily O. Manuel
Oklahoma State University

Emily A. Sewell
Oklahoma State University

Kristopher R. L. Rankin III
Oklahoma State University

Robert Terry, Jr.
Oklahoma State University

Dr. Kathryn L. Teixeira
2139 Meyer Hall
One Shields Avenue
Davis, CA 95616
(805) 264-5204
kteixeira@ucdavis.edu

Using the Gregorc Style Delineator to demonstrate students learning style

Introduction and Theoretical Framework

Teachers can provide effective learning strategies when they understand the learning style preference of their students (Lohri-Posey, 2003). Learning styles include the behaviors that characterize how a student learns from and adapts to their environment (Gregorc, 1979). Following their review of six learning style indicators, Hawk and Shah (2007) suggested using learning style instruments to seek activities that are more conducive to effective student learning. The use of learning styles to curate instruction based on individual learners is also evidenced through Rosenshine and Furst's (1971) characteristics of effective teaching where they named variability as one of the top five characteristics of effective teachers.

As part of the curriculum for preservice school-based agricultural education (SBAE) teachers at Oklahoma State University students in the Foundations and Philosophies of Teaching Agricultural Education course complete the Gregorc Style Delineator (GSD). The completion of the GSD serves multiple purposes, most importantly it shows the preservice teachers how they can inventory student learning styles, but it also provides insight to the university instructors to the learning styles of our preservice teachers. The Gregorc Style Delineator (GSD) ask the respondent to order ten sets of four words and uses the ordering within each set of words to determine a mind style of Concrete Sequential (CS), Abstract Sequential (AS), Abstract Random (AR), or Concrete Random (CR) or a combination of these styles (Gregorc, 2006). According to Seidel & England (1999), the most common style reported by Gregorc was Concrete Sequential (37%), followed by Abstract Random (34%) and Concrete Random (19%), with only a small portion of the population scoring in the Abstract Sequential style (10%). The purpose of this exploratory study was to use the Gregorc Style Delineator to identify the dominant learning style of students enrolled in the Foundations and Philosophies of Teaching Agricultural Education at Oklahoma State University.

Methodology

The GSD (Gregorc, 2006) was administered to students at the beginning of the lab session during focused on learning styles. Respondents submitted their results to be used as classroom discussion about learning styles and different learning preferences. To determine students' dominant learning styles, we used Gregorc's (1982) score ranges; 10 to 15 points in any of the four learning styles indicates a "low" (non-preferred) learning style; 16 to 26 points indicates an "intermediate" (preferred) learning style, and 27 to 40 points is a "dominant" (highly preferred) learning style.

Findings

A total of 77 complete responses (54 female; 23 male) were collected across three years of the Foundations and Philosophies of Teaching Agricultural Education course. More than one-half of respondents ($n = 44$; 57.14%) of respondents recorded one dominant learning style, and 42.56% of respondents ($n = 32$) reported two dominant learning styles. The most chosen dominant style was Concrete Sequential ($n = 49$), followed by Abstract Sequential ($n = 25$), Abstract Random ($n = 19$), and Concrete Random ($n = 15$).

All of the respondents ($n = 77$) recorded at least an intermediate (preferred) style of Concrete Sequential and Abstract Sequential. The frequency of each of the score ranges for the four learning styles are shown in Table 1.

Table 1

Distribution of Gregorc Style Delineator Learning Style Dominance Among Students in Foundations and Philosophies of Teaching Agricultural Education course (N = 77)

	Most Dominant	Highly Preferred Dominant	Preferred Intermediate	Non-preferred Low	Range
Concrete Sequential	42	49	28	0	16-40
Abstract Sequential	9	28	52	0	17-36
Abstract Random	18	19	72	5	13-37
Concrete Random	13	15	60	2	15-35
Total	82 ^a				

^a Five of 77 respondents had more than one *most dominant* style.

Of the 32 respondents with two dominant learning styles 50% ($n = 16$) reported CS and AS as their dominant styles. Other notable combinations included CS-AR ($n = 5$, 15.62%) and CS-CR ($n = 4$, 12.5%).

Conclusions and Recommendations

Nearly all of the students enrolled in the Foundations and Philosophies of Teaching Agricultural Education exhibited dominance in at least one learning style ($n = 76$; 98.70%). Our findings support those of Gregorc (1982) as well as Gould and Caswell (2006) with the CS mind style as the most commonly preferred. While CS is the most commonly preferred style, our findings suggest a higher concentration of highly preferred CS learning style ($n = 49$, 63.64%) than Gregorc (1982) suggested within general population (37%). This higher concentration of CS also supports conclusions from O'Brien (1991) and Seidel and England (1999) who found science-based majors were more likely to be CS. Perhaps this increase in CS learning style is an indication of the technical aspect of agricultural education and the application in scientific principles. Results from this exploratory study can be used to better inform teacher educators on their methods for teaching, and for state staff to use in teacher workshop programming and teacher retention efforts.

It is recommended to continue the collection of student learning styles in the Foundations and Philosophies of Teaching Agricultural Education course and compare them longitudinally. Is the trend of CS as the most commonly preferred GSD learning style consistent from year to year in the agricultural education major? What about the comparison of students by gender? Are females more inclined to be AR-AS inclined as concluded by Seidel and England (1999)?

Furthermore, 50% of respondents exhibited dominance in more than one learning style which is in concert with findings from Watson and Thompson (2001). who concluded a bimodal response was unique among their comparison with other studies. Similar to Watson and Thompson's conclusions about students of interior design, the education of preservice school based agricultural teachers also demands a wide range of knowledge and skills. It is recommended the GSD instrument be distributed, to students in other agricultural education programs throughout the country to better understand the audience of preservice teachers as a whole.

References

- Gould, T. E., & Caswell, S. V. (2006). Stylistic learning differences between undergraduate athletic training students and educators: Gregorc mind styles. *Journal of athletic training*, 41(1), 109–116. <https://pubmed.ncbi.nlm.nih.gov/16619103/>
- Gregorc, A. F. (1982). *An adult's guide to style*. Columbia, CT: Author.
- Gregorc, A. F. (1979). EDITORIAL / Learning/Teaching Styles: Potent Forces Behind Them. *Educational Leadership*, 36(4), 234–236.
- Gregorc, A. F. (2006). *Gregorc Style Delineator: A self-assessment instrument for adults*. (3rd ed.). Gregorc Associate.
- Hawk, T. F., & Shah, A. J. (2007). Using learning style instruments to enhance student learning. *Decision Sciences Journal of Innovative Education*, 5(1), 1–19. <https://doi.org/10.1111/j.1540-4609.2007.00125.x>
- Lohri-Posey, B. (2003). Determining Learning Style Preferences of Students. *Nurse Educator*, 28(2), 54. <https://doi.org/10.1097/00006223-200303000-00002>
- O'Brien, T. P. (1991). Relationships among selected characteristics of college students and cognitive style preferences. *College Student Journal*, 25(1), 492–500. <https://psycnet.apa.org/record/1991-22794-001>
- Rosenshine, B., & Furst, N. (1971). Research on teacher performance criteria. In B.O. Smith (Ed.), *Research in Teacher Education* (pp. 37–72). Prentice Hall.
- Seidel, L. E., & England, E. M. (1999). Gregorc's Cognitive Styles: College Students' Preferences for Teaching Methods and Testing Techniques. *Perceptual and Motor Skills*, 88(3), 859–875. <https://doi.org/10.2466/pms.1999.88.3.859>
- Watson, S. A., & Thompson, C. (2001). Learning Styles of Interior Design Students as Assessed by the Gregorc Style Delineator. *Journal of Interior Design*, 27(1), 12–19. <https://doi.org/10.1111/j.1939-1668.2001.tb00362.x>