The Evaluation of Experiential Learning in Undergraduate Course Syllabi within a College of Agriculture

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Introduction/ Need for Study

Agricultural education in the United States has long reflected the dynamic relationship among agriculture, education, and society. Over the past two centuries, the field has evolved in response to changes in agricultural practices, technological advancements, and globalization. As agricultural education has progressed, experiential learning has gained increasing prominence in higher education due to its potential to address complex challenges such as workforce shortages, rapid technological innovation, and sustainability concerns (Chan, 2016). Within a Scholarship of Teaching and Learning (SoTL) framework, experiential learning represents an evidence-informed pedagogical approach that emphasizes intentional course design and meaningful student engagement. By incorporating hands-on learning opportunities such as laboratory experiences, internships, and research projects. Experiential learning supports the development of technical competence, critical thinking, and adaptability necessary for professional practice.

Experiential learning serves as a cornerstone of teaching and learning in agricultural education by fostering applied knowledge and skill development among postsecondary students. Baker and Robinson (2019) demonstrated that experiential instruction, compared to direct instruction, improves student intelligence measures, reinforcing the pedagogical value of experiential approaches within agricultural curricula. However, SoTL-informed inquiry also highlights persistent challenges related to instructional implementation. Phan (2024) noted that despite widespread recognition of its benefits, experiential learning remains inconsistently integrated across higher education. Similarly, Leggette et al. (2012) found that although experiential learning is present in agricultural education, its application is often fragmented or underutilized, suggesting a misalignment between pedagogical intent and instructional practice.

Beyond agricultural education, experiential learning is increasingly examined across disciplines through a SoTL lens to better understand how teaching strategies influence student learning outcomes. Radović et al. (2021) identified authenticity, reflection, and collaboration as core design principles for high-quality experiential learning in teacher education, emphasizing the importance of intentional instructional planning. Likewise, Kong (2021) demonstrated that experiential learning enhances student motivation, engagement, and academic success, outcomes that align with SoTL’s emphasis on examining the relationship between teaching practices and student learning.

Despite extensive SoTL literature affirming experiential learning as a high-impact educational practice, few studies have systematically examined postsecondary course syllabi as instructional artifacts that communicate faculty intentions for teaching and learning. This study contributes to the scholarship of teaching and learning by analyzing how experiential learning principles are represented in course syllabi within a College of Agriculture. Syllabi serve as a critical site for examining instructional design, signaling how faculty conceptualize learning experiences and operationalize pedagogical approaches. Given higher education’s role in preparing students for complex professional environments, understanding how experiential learning is intentionally embedded at the course level can inform evidence-based improvements in curriculum and instructional practice (Estepp & Roberts, 2011; Wurdinger & Allison, 2017). By identifying patterns and gaps in syllabus-level representations, this research offers actionable insights for enhancing teaching effectiveness and advancing student learning across agricultural education curricula.

Purpose

As the agricultural industry increasingly demands innovation, sustainability, and workforce readiness, higher education must continue to evolve to prepare students with practical, applied skills developed through experiential learning. Grounded in the scholarship of teaching and learning, this study examines instructional intent and course design by analyzing undergraduate course syllabi within a College of Agriculture. Specifically, the study evaluates the extent to which experiential learning is intentionally embedded through the alignment of course objectives and assignments with Kolb's model of experiential learning. The findings will identify patterns, gaps, and opportunities in syllabi, offering evidence-informed insights to enhance instructional practice and student learning in postsecondary agricultural education.

Objectives

Four objectives were measured through this study, each based on Kolb's Experiential Learning Cycle. The following were used to guide the study:

Research Objective 1: Determine the distribution of Kolb's learning cycle stages [Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE)] within course objectives across syllabi in the College of Agriculture, Food, and Environment.
Research Objective 2: Determine the distribution of Kolb's learning cycle stages [CE, RO, AC, AE] within course objectives categorized by academic major.
Research Objective 3: Determine the distribution of Kolb's learning cycle stages [CE, RO, AC, AE] within course assignments across syllabi.
Research Objective 4: Determine the distribution of Kolb's learning cycle stages [CE, RO, AC, AE] within course assignments categorized by academic major.

Theoretical Framework

This study is grounded in the theoretical frameworks of John Dewey and David Kolb, whose work collectively informs contemporary understandings of experiential learning. Dewey's educational philosophy, rooted in pragmatism, positions learning as an active process in which knowledge is constructed through interaction with the environment. Building on Dewey's foundational ideas, Kolb (1984) articulated experiential learning theory, defining learning as the process by which knowledge is created through the transformation of experience. Within a SoTL framework, Kolb's theory provides a coherent structure for examining instructional design and pedagogical intent, particularly as it relates to experiential learning in postsecondary classrooms.

Kolb's experiential learning theory conceptualizes learning as a recursive, four-stage cycle consisting of concrete experience, reflective observation, abstract conceptualization, and active experimentation. This cycle offers a systematic framework for designing, implementing, and assessing experiential learning activities within instructional contexts. The cycle emphasizes that effective learning occurs when learners engage in all four modes in an iterative process.

Concrete experience serves as the foundation of the learning cycle, during which learners engage directly with course content through hands-on activities, demonstrations, field experiences, or practical exercises that provide immediate and tangible interactions. Reflective observation involves the intentional examination of these experiences through structured reflection, requiring learners to analyze and interpret their experiences to construct meaning. Reflection may occur through written assignments, discussions, or multimedia formats. Following reflection, abstract conceptualization enables learners to develop theories, models, or conceptual understandings that explain observed phenomena and integrate prior knowledge. The cycle culminates in active experimentation, wherein learners apply newly formed concepts to novel situations by testing ideas, implementing solutions, or transferring learning to real-world or simulated contexts.

Although Kolb's experiential learning model is widely utilized, it has been subject to scholarly critique. Bergsteiner et al. (2010) argued that the model lacks sufficient empirical grounding and oversimplifies the complexity of learning processes. Similarly, Miettinen (2000) critiqued Kolb's interpretation of Dewey, noting that the model insufficiently accounts for the social and contextual dimensions of learning. Jarvis (2012) further suggested that learning does not always follow a cyclical pattern and may occur in more complex, nonlinear ways. Despite these critiques, empirical evidence continues to support the applicability of experiential learning frameworks. Rahmi (2024) found that experiential learning models can be effectively implemented across educational levels when attention is given to contextual relevance and learning environments. Consequently, Kolb's model remains one of the most influential and frequently cited frameworks, and is often described as the "clearest expression" of experiential learning theory (Seaman, Brown, & Quay, 2017).

Methods

This study sought to examine how experiential learning is represented in undergraduate course syllabi through a content analysis guided by a pragmatic research approach. A pragmatic orientation allowed for the examination of varying degrees of experiential learning by assessing how course objectives and assignments aligned with stages of Kolb's experiential learning cycle.

A quantitative content analysis was employed to assess the extent to which experiential learning was embedded within course syllabi of undergraduate agricultural courses. Content analysis is a systematic research method used to identify patterns, frequencies, and relationships within textual data, making it well suited for examining instructional artifacts such as syllabi (Neuendorf, 2017). Using a structured coding process, the study quantified the presence of each stage of Kolb's experiential learning cycle: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE), as represented in course objectives and assignments across the College of Agriculture. Prior to initiating data collection, the research team developed an evaluation guide to support consistent coding of course objectives. To establish intrarater reliability, the researcher leading the data analysis independently coded 10 syllabi obtained from a department within the College of Education using the evaluation guide. Following the initial coding, the same syllabi were reanalyzed 14 days later to assess coding stability over time. The rubric coding reliability coefficient of .94, indicating a high level of consistency (McCarthy et al., 2021).

The sample consisted of 41 undergraduate course syllabi collected from five academic majors within the College of Agriculture, Food, and Environment at a single institution. Syllabi lacking clearly articulated learning objectives or sufficiently detailed assignment descriptions were excluded to ensure analytic consistency and reliability.

A conceptual framework, operationalized through a structured Excel-based coding instrument, served as the primary analytic tool. Course objectives were coded according to a single dominant stage of Kolb's experiential learning cycle (CE, RO, AC, or AE), reflecting the primary learning intent articulated in each objective. Course assignments were coded to allow for multiple applicable Kolb stages and were further assessed for experiential intensity. Data analysis consisted of descriptive statistical procedures to calculate and report frequencies and distributions across coding categories, enabling identification of patterns and gaps in syllabus-level representations of experiential learning.

Results/Findings

Four objectives were used to examine the integration of Kolb's Learning Cycle in undergraduate level courses. **Research Objective 1** sought to determine how each course objective aligns with Kolb's experiential learning stages. Due to the volume of courses per degree program, RO1 has been separated into multiple tables based on degree program.

Table 1 reflects the course objectives for Agricultural Economics. As shown in Table 1 below, Agricultural Economics course objectives most commonly fall under the Abstract Conceptualization. This score indicates an emphasis on understanding theories, concepts, and frameworks. Active Experimentation is the second highest projected within Agricultural Economics, suggesting that some objectives focus on applying knowledge through real-world scenario problem-solving. Reflective Observation is shown in moderation, and Concrete Experiences is the least represented of Kolb's learning cycle stages, indicating that students are given fewer opportunities to engage in direct experiences.

Table 1

Kolb Stages of Objectives in AEC

Course	CE#	RO#	AC#	AE#	Total Objectives
AEC110	0 / (0.0)	1 / (25.0)	2 / (50.0)	1 / (25.0)	4
AEC305	0 / (0.0)	2 / (25.0)	4 / (50.0)	2 / (25.0)	8
AEC306	0 / (0.0)	1 / (33.3)	1 / (33.3)	1 / (33.3)	3
AEC311	0 / (0.0)	2 / (33.3)	2 / (33.3)	2 / (33.3)	6
AEC312	2 / (40.0)	1 / (20.0)	1 / (20.0)	1 / (20.0)	5
AEC422	1 / (25.0)	0 / (0.0)	1 / (25.0)	2 / (50.0)	4
AEC423	1 / (20.0)	0 / (0.0)	3 / (60.0)	1 / (20.0)	5

Total	**4 / (11.4)**	**7 / (20.0)**	**14 / (40.0)**	**10 / (28.6)**	**35**

Note: AEC is an acronym used for major Agricultural Economics

Like Agricultural Economics, most objectives in the Agricultural Education and Advocacy degree program fall under Abstract Conceptualization. This indicates that there is a strong focus on theoretical learning and concepts within the degree. The next highest represented stage is Active Experimentation, this suggests that there is an emphasis on applying concepts to real-world situations. Reflective Observation appears moderately, while Concrete Experience falls to the bottom of the list (f=2; 4.1%). This shows that Agricultural Education and Advocacy is focused more on learning theories and concepts rather than giving students the opportunity to experience the concept in a Concrete Experience.

Table 2

Kolb Stages of Objectives in AED

Course	CE#	RO#	AC#	AE#	Total Objectives
AED110	0 / (0.0)	1 / (20.0)	2 / (40.0)	2 / (40.0)	5
AED362	0 / (0.0)	2 / (33.3)	2 / (33.3)	2 / (33.3)	6
AED371	1 / (7.14)	1 / (7.14)	11 / (78.6)	1 / (7.14)	14
AED580	1 / (14.3)	1 / (14.3)	3 / (42.9)	2 / (28.6)	7
AED583	0 / (0.0)	1 / (16.7)	3 / (50.0)	2 / (33.3)	6
AED586	0 / (0.0)	2 / (18.2)	6 / (54.5)	3 / (27.3)	11
Total	**2 / (4.1)**	**8 / (16.3)**	**27 / (55.1)**	**12 / (24.5)**	**49**

Note: AED is an acronym used for major Agricultural Education

Table 3 portrays how course objectives in the Food Biosciences program align with Kolb's experiential learning stages. Again, objectives are primarily situated in the stage of Abstract Conceptualization, indicating a strong emphasis on content mastery and theory. Active Experimentation appears in the second highest volume. Reflective Observation is less common, and no objectives fell into the stage of Concrete Experience. This lack of presentation indicates that there is an absence of objectives that are based on new or immersive experiences for the students in Food Biosciences.

Table 3

Kolb Stages of Objectives in FSC

Course	CE#	RO#	AC#	AE#	Total Objectives
FSC306	0 / (0.0)	0 / (0.0)	5 / (83.3)	1 / (16.7)	6
FSC430	0 / (0.0)	1 / (33.3)	0 / (0.0)	2 / (66.7)	3
FSC538	0 / (0.0)	1 / (20.0)	3 / (60.0)	1 / (20.0)	5
Total	**0 / (0.0)**	**2 / (14.3)**	**8 / (57.1)**	**4 / (28.6)**	**14**

Note: FSC is an acronym used for major Food Biosciences

There is a strong focus on cognitive and theoretical engagement in the Horticultural Sciences degree program as most of its objectives fall into the Abstract Conceptualization stage of Kolb's experiential learning cycle. Reflective Observation follows, indicating that the degree puts an emphasis on thoughtful reflection. Active Experimentation is moderately represented, and Concrete Experience appears the least number of times. Table 4 represents the objectives from the Horticultural Sciences degree program.

Table 4

Kolb Stages of Objectives in HRT

Course	CE#	RO#	AC#	AE#	Total Objectives
HRT100	1 / (50.0)	1 / (50.0)	0 / (0.0)	0 / (0.0)	2
HRT203	0 / (0.0)	1 / (20.0)	2 / (40.0)	2 / (40.0)	5
HRT220	0 / (0.0)	1 / (25.0)	3 / (75.0)	0 / (0.0)	4
HRT240	0 / (0.0)	3 / (30.0)	4 / (40.0)	3 / (30.0)	10
HRT320	1 / (33.3)	0 / (0.0)	1 / (33.3)	1 / (33.3)	3
HRT335	0 / (0.0)	3 / (30.0)	6 / (60.0)	1 / (10.0)	10
HRT336	0 / (0.0)	3 / (37.5)	2 / (25.0)	3 / (37.5)	8
HRT337	0 / (0.0)	4 / (36.4)	7 / (63.6)	0 / (0.0)	11
HRT340	1 / (20.0)	0 / (0.0)	2 / (40.0)	2 / (40.0)	5
HRT395	0 / (0.0)	1 / (25.0)	2 / (50.0)	1 / (25.0)	4
HRT399	0 / (0.0)	2 / (66.7)	0 / (0.0)	1 / (33.3)	3
HRT440	1 / (25.0)	1 / (25.0)	1 / (25.0)	1 / (25.0)	4
HRT490	1 / (33.3)	0 / (0.0)	1 / (33.3)	1 / (33.3)	3
HRT524	1 / (25.0)	0 / (0.0)	2 / (50.0)	1 / (25.0)	4
Total	**6 / (7.9)**	**20 / (26.3)**	**33 / (43.4)**	**17 / (22.4)**	**76**

Note: HRT is an acronym used for Horticultural Sciences

Abstract Conceptualization and Active Experimentation are both most frequently aligned with the objectives of the Retailing and Tourism Management degree program. This indicates a balanced emphasis on theoretical learning and applied- hands-on learning opportunities. Reflective Observation is also notably present, suggesting that students are actively engaged in thoughtful reflection throughout their coursework. Concrete Experience is again the least represented stage of Kolb's learning cycle but is still present in several courses which indicates that there is some incorporation of immersive experiences.

Table 5

Kolb Stages of Objectives in RTM

Course	CE#	RO#	AC#	AE#	Total Objectives
HMT210	2 / (28.6)	1 / (14.3)	2 / (28.6)	2 / (28.6)	7
HMT320	0 / (0.0)	1 / (20.0)	2 / (40.0)	2 / (40.0)	5

HMT420	3 / (33.3)	0 / (0.0)	4 / (44.4)	2 / (22.2)	9
MAT114	0 / (0.0)	2 / (50.0)	2 / (50.0)	0 / (0.0)	4
MAT237	0 / (0.0)	0 / (0.0)	0 / (0.0)	4 / (100.0)	4
MAT330	0 / (0.0)	1 / (25.0)	2 / (50.0)	1 / (25.0)	4
MAT359	0 / (0.0)	6 / (100.0)	0 / (0.0)	0 / (0.0)	6
MAT572	0 / (0.0)	1 / (25.0)	2 / (50.0)	1 / (25.0)	4
RTM359	1 / (20.0)	1 / (20.0)	2 / (40.0)	1 / (20.0)	5
RTM425	0 / (0.0)	1 / (16.7)	1 / (16.7)	4 / (66.7)	6
RTM499	1 / (20.0)	2 / (40.0)	1 / (20.0)	1 / (20.0)	5
Total	**7 / (11.9)**	**16 / (27.1)**	**18 / (30.5)**	**18 / (30.5)**	**59**

Overall, the most common Kolb stage observed in course objectives was Abstract Conceptualization, reinforcing a consistent trend of emphasis on conceptual knowledge. The least represented was Concrete Experience, suggesting that most courses do not provide students with new, firsthand experiences on which to build on the theoretical frameworks.

Research Objective 2 aimed to determine the distribution of course objectives across Kolb's Learning Cycle stages categorized by academic major rather than individual courses. Across all majors Abstract Conceptualization was most presented, indicating that majors within the College of Agriculture, Food, and Environment place a strong emphasis on theoretical learning. Active Experimentation falls into the second highest presented stage, showing that many programs incorporate applied learning opportunities into the coursework. Reflective Observation follows closely behind, which shows that academic majors moderately encourage thoughtful reflection within course objectives. Concrete Experience appears less frequently than any other learning cycle stage, suggesting that there are fewer objectives focused on providing direct experiences. Table 6 presents the instances of each learning stage for each academic major.

Table 6

Kolb Learning Stages by Major

Major	CE	RO	AC	AE	Total Objective	Courses
AEC	4 / (11.4)	7 / (20.0)	14 / (40.0)	10 / (28.5)	35	7
AED	2 / (4.1)	8 / (16.3)	27 / (55.1)	12 / (24.5)	49	6
FSC	0 / (0.0)	2 / (14.3)	8 / (57.1)	4 / (28.6)	14	3
HRT	6 / (7.9)	20 / (26.3)	33 / (43.4)	17 / (22.3)	76	14
RTM	7 / (11.9)	16 / (27.1)	18 / (30.5)	18 / (30.5)	59	11
Total	19 / (8.2)	53 / (22.7)	100/ (42.9)	61 / (26.2)	233	41

Research Objective 3 examined the distribution of Kolb's learning cycle stages across course assignments. Course objectives typically align with a single stage, but assignments can align with multiple stages. The following tables show the number of instances that each learning cycle stage occur in assignments for each course.

As shown in Table 7, assignments in Agricultural Economics courses most frequently align with Abstract Conceptualization, which indicates that assignments focus on analytical tasks. Reflective Observation reports as the second most utilized stage, while Active Experimentation is less present. Like the course objectives, the assignments for courses within the Agricultural Economics department show very little presence of Concrete Experience.

Table 7

Kolb Stages of Assignments in AEC

Course	CE#	RO#	AC#	AE#	Total Instances
AEC110	0 / (0.0)	1 / (33.3)	1 / (33.3)	1 / (33.3)	3
AEC305	0 / (0.0)	2 / (40.0)	3 / (60.0)	0 / (0.0)	5
AEC306	0 / (0.0)	4 / (40.0)	3 / (30.0)	3 / (30.0)	10
AEC311	0 / (0.0)	0 / (0.0)	3 / (75.0)	1 / (25.0)	4
AEC312	2 / (33.3)	2 / (33.3)	1 / (16.7)	1 / (16.7)	6
AEC422	3 / (23.1)	5 / (38.5)	2 / (15.4)	3 / (23.1)	13
AEC423	1 / (14.3)	1 / (14.3)	4 / (57.1)	1 / (14.3)	7
Total	**6 / (12.5)**	**15 / (31.3)**	**17 / (35.4)**	**9 / (18.8)**	**48**

Assignments in Agricultural Education and Advocacy are the most evenly distributed between Abstract Conceptualization and Active Experimentation. This suggests that assignments focus strongly on both understanding theory and applying it in practice. Reflective Observation is also very prominent in assignments, while Concrete Experience remains less frequent.

Table 8

Kolb Stages of Assignments in AED

Course	CE#	RO#	AC#	AE#	Total Instances
AED110	0 / (0.0)	3 / (33.3)	2 / (22.2)	2 / (44.4)	9
AED362	3 / (15.0)	7 / (35.0)	7 / (35.0)	3 / (15.0)	20
AED371	3 / (42.9)	1 / (7.1)	5 / (35.7)	5 / (35.7)	14
AED580	3 / (17.6)	4 / (23.5)	4 / (23.5)	6 / (35.3)	17
AED583	0 / (0.0)	2 / (22.2)	3 / (33.3)	4 / (44.4)	9
AED586	2 / (16.7)	3 / (25.0)	4 / (33.3)	3 / (25.0)	12
Total	**11 / (13.9)**	**20 / (25.3)**	**25 / (31.6)**	**25 / (31.6)**	**81**

The assignments in Food Biosciences focus an overwhelming amount on Reflective Observation, highlighting the emphasis that is put on thoughtful reflection within assignments. Concrete Experience is the next highest presented, while Active Experimentation and Abstract

Conceptualization are less common. Table 9 provides the exact number of instances for each stage.

Table 9

Kolb Stages of Assignments in FSC

Course	CE#	RO#	AC#	AE#	Total Instances
FSC306	1 / (20.0)	2 / (40.0)	1 / (20.0)	1 / (20.0)	5
FSC430	0 / (0.0)	2 / (100.0)	0 / (0.0)	0 / (0.0)	2
FSC538	2 / (33.3)	3 / (50.0)	0 / (0.0)	1 / (16.7)	6
Total	**3 / (23.1)**	**7 / (53.8)**	**1 / (7.7)**	**2 / (15.4)**	**13**

Horticulture Science assignments focus strongly on the stage of Abstract Conceptualization*,* followed closely by Reflective Observation, suggesting that the curriculum uses a balance of theoretical understanding with thoughtful reflection. Concrete Experience and Active Experimentation are less commonly present within course assignments. See Table 10 of stage instances in Horticulture Science Assignments.

Table 10

Kolb Stages of Assignments in HRT

Course	CE#	RO#	AC#	AE#	Total Instances
HRT100	1 / (20.0)	3 / (60.0)	1 / (20.0)	0 / (0.0)	5
HRT203	0 / (0.0)	1 / (25.0)	3 / (75.0)	0 / (0.0)	4
HRT220	0 / (0.0)	0 / (0.0)	3 / (100.0)	0 / (0.0)	3
HRT240	3 / (23.1)	2 / (15.4)	5 / (38.5)	3 / (23.1)	13
HRT320	0 / (0.0)	0 / (0.0)	5 / (100.0)	0 / (0.0)	5
HRT335	2 / (14.3)	3 / (21.4)	6 / (42.9)	3 / (21.4)	14
HRT336	0 / (0.0)	2 / (50.0)	2 / (50.0)	0 / (0.0)	4
HRT337	0 / (0.0)	2 / (40.0)	3 / (60.0)	0 / (0.0)	5
HRT340	3 / (33.3)	2 / (22.2)	3 / (33.3)	1 / (16.7)	9
HRT395	2 / (20.0)	3 / (30.0)	3 / (30.0)	2 / (20.0)	10
HRT399	1 / (14.3)	5 / (71.4)	1 / (14.3)	0 / (0.0)	7
HRT440	2 / (28.6)	2 / (28.6)	2 / (28.6)	1 / (14.3)	7
HRT490	1 / (20.0)	2 / (40.0)	1 / (20.0)	1 / (20.0)	5
HRT524	1 / (20.0)	1 / (20.0)	2 / (40.0)	1 / (20.0)	5
Total	**16 / (16.7)**	**28 / (29.2)**	**40 / (41.7)**	**12 / (12.5)**	**96**

Table 11 shows that Retail and Tourism Management assignments focus mostly on Reflective Observation, indicating assignments with much analysis and discussion. Abstract

Conceptualization is the second highest present followed by Active Experimentation. Concrete Experience appears the least number of times.

Table 11

Kolb Stages of Assignments in RTM

Course	CE#	RO#	AC#	AE#	Total Instances
HMT210	1 / (16.7)	1 / (16.7)	3 / (50.0)	1 / (16.7)	6
HMT320	0 / (0.0)	3 / (50.0)	1 / (16.7)	2 / (33.3)	6
HMT420	2 / (22.2)	5 / (55.6)	1 / (11.1)	1 / (11.1)	9
MAT114	1 / (14.3)	2 / (28.6)	2 / (28.6)	2 / (28.6)	7
MAT237	0 / (0.0)	0 / (0.0)	2 / (100.0)	0 / (0.0)	2
MAT330	0 / (0.0)	2 / (50.0)	2 / (50.0)	0 / (0.0)	4
MAT359	1 / (16.7)	2 / (33.3)	2 / (33.3)	1 / (16.7)	6
MAT572	1 / (16.7)	3 / (50.0)	1 / (16.7)	1 / (16.7)	6
RTM359	2 / (50.0)	1 / (25.0)	0 / (0.0)	1 / (25.0)	4
RTM425	1 / (12.5)	3 / (37.5)	3 / (37.5)	1 / (12.5)	8
RTM499	1 / (14.3)	5 / (71.4)	0 / (0.0)	1 / (14.3)	7
Total	**10 / (15.4)**	**27 / (41.5)**	**17 / (26.2)**	**11 / (16.9)**	**65**

Overall, Kolb's learning cycle stages AC and RO are most common in course assignments throughout College of Agriculture. Concrete Experience appears less often than any other experiential learning stage. This trend may suggest that many collegiate agricultural disciplines prioritize theoretical learning and reflection.

The last objective, **Research Objective 4,** focused on evaluating the distribution of Kolb's learning cycle stages in course assignments categorized by academic major. Table 12 provides the total number of assignment instances for each Kolb stage by major. Most commonly, assignments fall under Abstract Conceptualization and Reflective Observation suggesting that there is a strong emphasis on theoretical concepts and reflective practices. Active Experimentation appears less frequently, and Concrete Experience is the least represented stage overall. These trends suggest that fewer assignments engage students in new, hands-on experiences, but rather build upon conceptual frameworks.

Table 12

Kolb Stages of Assignments by Major

Major	CE	RO	AC	AE	Total Instances	Courses
AEC	6 / (12.5)	15 / (31.3)	17 / (35.4)	9 / (18.8)	48	7
AED	11 / (13.9)	20 / (25.3)	25 / (31.6)	25 / (31.6)	81	6
FSC	3 / (23.1)	7 / (53.8)	1 / (7.7)	2 / (15.4)	13	3
HRT	16 / (16.7)	28 / (29.2)	40 / (41.7)	12 / (12.5)	96	14

RTM	10 / (15.4)	27 / (41.5)	17 / (26.2)	11 / (16.9)	65	11
Total	46 / (15.2)	97 / (32.0)	100/ (33.0)	59 / (19.5)	303	41

Conclusions, Implications, and Recommendations

The results of this study should be interpreted considering several limitations. First, the findings may not be generalizable to all colleges of agriculture, as the analysis was conducted at a single institution. Second, the use of syllabi as the primary data source introduces variability, since differences in syllabus structure and level of detail can affect interpretation. Syllabi lacking clear objectives or detailed assignments were excluded, which may have limited the completeness of the dataset.

This study was developed to analyze course objectives and assignments for the presence of experiential learning opportunities, specifically through the lens of Kolb's experiential learning cycle (ELC). Findings support the theoretical value of the ELC by showing that reflective and conceptual components are central to course objectives and assignments. However, the lack of balanced inclusion of all stages suggests that the full transformative process—progressing from concrete experience through reflection, abstraction, and active experimentation—is often incomplete in formal course design.

The first and second objectives confirmed that Kolb's ELC is represented in course objectives, but stages are unevenly implemented. Abstract Conceptualization (AC) was the most frequently coded stage, appearing 100 times (43% of objectives, n=233). Concrete Experience (CE) was the least represented, appearing only 19 times (8%), followed by Reflective Observation (RO) at 53 instances (23%) and Active Experimentation (AE) at 61 instances (26%). Similarly, analysis of course assignments (objectives three and four) showed AC most common (100 instances, 33%), followed by RO (97 instances, 32%), AE (59 instances, 20%), and CE (46 instances, 15%).

These results reveal a consistent pattern across majors: a strong emphasis on reflective and conceptual learning, with limited opportunities for direct, hands-on engagement. This suggests a potential disconnect between experiential learning theory and the written outcomes of course syllabi. According to Kolb (1984), learning is most effective when students progress through all stages in a cyclical fashion, beginning with concrete experience. The underrepresentation of CE indicates that students may enter the learning cycle at later stages or rely on other instructional methods to provide initial experiential engagement.

To address these gaps, faculty development initiatives should focus on designing objectives and assignments that intentionally incorporate all stages of the ELC. Training instructors to sequence learning experiences from concrete engagement through reflection, abstraction, and active experimentation can help ensure a more balanced and effective experiential learning process. Departments may also use Kolb's model as a curriculum assessment tool to evaluate and revise syllabi for experiential alignment.

Although this study examined only a subset of departments within a single College of Agriculture, it demonstrates a novel approach for social science and STEM faculty to collaborate in improving curriculum design. Prior research suggests that when experiential learning practices are fully implemented—including all components of models such as Kolb's—student satisfaction and engagement significantly increase (Hanandeh, 2016).

Future research could expand this study by examining syllabi across multiple institutions or triangulating syllabus data with classroom observations, faculty interviews, and student perspectives. Such approaches would provide a more comprehensive understanding of how experiential learning is enacted in practice. Overall, the conclusions from this study provide evidence-informed guidance for faculty and departments in critically assessing and enhancing the integration of experiential learning in undergraduate agricultural education.

References

Baker, M. A., & Robinson, J. S. (2019). The interaction of learning style on measures of successful intelligence in secondary agriculture students exposed to experiential and direct instruction. *Journal of Agricultural Education*, *60*(3), 14-31. https://doi.org/10.5032/jae.2019.03014

Bergsteiner, H., Avery, G. C., & Neumann, R. (2010). Kolb's experiential learning model: Critique from a modelling perspective. *Studies in Continuing Education*, *32*, 29–46. doi:10.1080/01580370903534355

Biesta, M. Q. (2010). *Pragmatism and the philosophical foundations of mixed methods research.*

Campbell, J. L., Quincy, C., Osserman, J., & Pederson, O. K. (2013). Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability agreement. *Sociological Methods & Research*, *42*(3), 294-320. https://doi.org/10.1177/0049124113500475

Chan, Y. R. (2016). Understanding the purpose of higher education: An analysis of the economic and social benefits for completing a college degree. *Journal of Education Policy, Planning and Administration,* 6(5), 1-40. Retrieved from http://www.jeppa.org

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. Macmillan Publishing.

Dewey, J. (1938). *Experience and education*. Simon & Schuster.

Estepp, E. M., & Roberts, T. G. (2011). A model for transforming the undergraduate learning experience in colleges of agriculture. *North American Colleges and Teachers of Agriculture Journal, 55*(3), 28-32.

El Hanandeh, A. (2016). Can experiential learning help students' learning and improve course satisfaction?. In AAEE 2016. Southern Cross University.

Jarvis, P. (2012). *Adult learning in the social context.* London/New York: Routledge.

Kolb, A. Y. & Kolb, D. A. (2006). *Learning styles and learning spaces: A review of the multidisciplinary application of experiential learning theory in higher education* (pp. 45-91). Nova Science Publishers.

Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, *4*(2), 193-212.

Kolb, A. Y., & Kolb, D. A. (2017). Experiential learning theory as a guide for experiential educators in higher education. *Experiential Learning & Teaching in Higher Education, 1*(1), 7-44.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* (1st ed.) Prentice-Hall

Kong, Y (2021) The role of experiential learning on students' motivation and classroom engagement. *Frontiers in Psychology, 12* https://doi.org/10.3389/fpsyg.2021.771272

Leggette, H. R., Witt, C., Dooley, K. E., Murphrey, T. P., Doerfert, D., & Edgar, L. D. (2012). Experiential learning using second life: A content analysis of student reflective writing. *Journal of Agricultural Education, 53*(3), 124-136. https://doi.org/10.5032/jae.2012.03124

McCarthy, K. S., Magliano, J. P., Snyder, J. O., Kenney, E. A., Newton, N. N., Perret, C. A., ... & McNamara, D. S. (2021). Quantified Qualitative Analysis: Rubric Development and Inter-Rater Reliability as Iterative Design. Grantee Submission.

Miettinen, R. (2000). The concept of experiential learning and John Dewey's theory of reflective thought and action. *International Journal of Lifelong Education, 19*, 54–72. doi:10.1080/026013700293458

Neuendorf, K. (2017). *The content analysis guidebook*. SAGE Publications, Inc, https://doi.org/10.4135/9781071802878

Phan, N. (2024). Bridging the Gap: A Framework for Experiential Learning in Higher Education. *Business and Professional Communication Quarterly*, *0*(0). https://doi.org/10.1177/23294906241292009

Radović, S., Hummel, H. G., & Vermeulen, M. (2021). The challenge of designing 'more' experiential learning in higher education programs in the field of teacher education: A systematic review study. *International Journal of Lifelong Education*, *40*(5–6), 545–560. https://doi.org/10.1080/02601370.2021.1994664

Rahmi, W. (2024). Analytical study of experiential learning: experiential learning theory in learning activities. *EDUKASIA Jurnal Pendidikan Dan Pembelajaran*, *5*(2), 115-126. https://doi.org/10.62775/edukasia.v5i2.1113

Seaman, J., Brown, M., & Quay, J. (2017). The evolution of experiential learning theory: Tracing lines of research in the JEE. *Journal of Experiential Education*, *40*, NP1–NP21. doi:10.1177/1053825916689268

Wurdinger, Scott & Allison, Pete. (2017). Faculty perceptions and use of experiential learning in higher education. *Journal of E-Learning and Knowledge Society. 13*. 27-38. 10.20368/1971-8829/1309.