

**Teaching and Educational Commentary**

# Innovate to Lead: Curriculum Innovations to Meet Students' Needs in Applied Agricultural Economics and Agribusiness Programs

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**Abstract**

Applied Agricultural Economics and Agribusiness programs aim to equip graduates with decision-making and problem-solving skills for a globally competitive and dynamic business environment. Ensuring student success requires instructors to explore innovative curriculum formats that augment the learning of theoretical concepts, while promoting students' preparedness for future careers. In this commentary, we highlight three categories of innovative curriculum ideas and present evidence from corresponding student feedback and instructor experiences. We begin with examples of distinctively designed single-hour credit offerings that intend to enhance student learning of the subject matter and business applications while offering professional development opportunities. We further describe programs and courses constructed to enhance global awareness and exposure for students, citing experiences from study abroad programs and from courses employing the Collaborative Online International Learning (COIL) model. The third category uniquely identifies courses with opportunities for incorporating industry sponsorship in classroom projects, and ideas to shift graduate thesis projects toward writing industry-focused case studies.

## 1 Introduction and Motivation

Today's higher education institutions are tasked with meeting challenges of unprecedented demographic and enrollment cliffs. These cliffs refer to a predicted drop in the college-age population soon due to lower birth rates and other demographic shifts (Getman 2024). Finding implementable solutions to these challenges (posed by these cliffs) is key to the sustainability and growth of academic programs, colleges, and universities alike. Operating in a dynamic environment, administrators and academic programs will need to reformulate their strategic plans, while closely monitoring the shift in student expectations as they deal with impending demographic and enrollment cliffs. These strategic plans will vary based on the region, type of institution, and population they serve.

It is important to understand that these cliffs, characterized by changing demographic trends and a steep fall in college enrollments,<sup>2</sup> cannot solely be attributed to a shrinking traditional college-age population because of declining birthrates. Reduced state funding for public higher education, steeply rising tuition, immigration changes, a decline in the international student population, negative

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<sup>2</sup> Grawe (2018) presents evidence on forecasted growth and decline in college-going students for the period 2012–2029. He predicts a decrease of 11 percent nationwide, but significant variation exists among regions with Northeast and Midwest states facing higher declines, and California and Northwest states seeing an increase. Moreover, there is a distinct difference between regional and elite institutions, with the former expected to see a decline and the later an increase.

pandemic-induced economic effects, and a growing public skepticism of the net economic benefits of a college education, all significantly contribute to enrollment and demographic cliffs (Downs 2023). Moreover, we cannot discount the effect of strong labor markets with people opting to forego college for the workplace.<sup>3</sup>

The emerging buyer's market for higher education calls for a rethink and redesign of academic programs, making programs and degrees innovative, attractive, valuable, and adaptable to student needs and expectations. From a student perspective, affordability and career preparedness are the top factors influencing students' choice of a post-secondary degree (National Student Clearinghouse 2022). These factors further emphasize that future students will continue to prioritize career-specific programs that are relevant to them and that fit their personal and professional goals.

From an academic program and faculty perspective, innovation in course formats and design could help meet changing student expectations and make the college experience more meaningful, rewarding, and personalized, while enhancing student engagement and learning (Mintz 2021). Anselmo et al. (2023) summarize three innovative course designs that can be adapted to fit blended, face-to-face, or online courses: (1) backward course design, based on the premise of logically inferring courses from the learning goals, rather than the approaches or techniques that are convenient for the instructor (Bowen 2017); (2) inclusive course design, promoting a culture of global engagement, sensitivity, and awareness among students by incorporating approaches built on inclusion and understanding of diverse outlooks, individualities, and experiences of people (Richler 2015; Fuentes, Zelaya, and Madsen 2021); and (3) Learner-centered course design consisting of three sequential steps—establishing student learning outcomes, determining assessments for the learning outcomes, and developing the most effective teaching-learning methods to assist students achieve the outcomes (Huba and Freed 2000; Weimar 2013).

This commentary examines three innovative curriculum ideas within Applied Agricultural Economics and Agribusiness (AAE&A) programs based on the designs discussed above that complement and augment the learning of theoretical concepts, while promoting students' preparedness for future careers.<sup>4</sup> We first explore the effects of focused one-hour credit courses, labs, and quiz bowl practice sessions. These initiatives deepen understanding of the subject and its business applications, offering valuable professional development opportunities. We then delve into courses designed to enrich global experiences, such as a unique semester-long study abroad program and a course applying the Collaborative Online International Learning (COIL) model. The commentary further explores the use of industry sponsorship in classroom projects and ideas to shift graduate thesis projects toward writing industry-focused case studies. Finally, we conclude with a reflection on potential innovative ideas and a discussion of challenges for the future.

## 2 Adapting Single-Credit-Hour Courses

Early literature on single-credit hour courses derives primarily from STEM disciplines (Pierre et al. 2009) for laboratory-based courses or courses designed to meet program and accreditation requirements. Studies have highlighted benefits such as enhancing co-teaching experiences (Ricker 1997), providing alternatives to three-credit-hour courses (Deans 2017), introducing industry liaisons and career paths (Folsom et al. 2004; Bhandari et al. 2013; Bilder 2022), and exploring internships and professional accreditations (Bilder 2022). Moreover, single-credit hour courses can enhance upper-level

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<sup>3</sup> Yet, such change may differ as certain career paths have specific education requirements (for example licensure requirements conferred through a college degree, see certified accounting).

<sup>4</sup> This article was inspired by the discussion and feedback received by presenters at the track session "Innovative Course Formats to Enhance Student Learning in the Applied Agricultural Economics and Agribusiness (AAE&A) Programs" sponsored by the Teaching, Learning, and Communications (TLC) and Agribusiness Economics and Management (AEM) sections at the 2023 AAEA Annual Meeting.

skills through research seminars (Chiu et al. 2020) and offer training opportunities in course instruction for graduate students (Zuo, Penn, and Asgari 2018). Single-credit-hour courses in AAE&A programs aim to add value to student experiences, link curricular with hands-on experiences, and enhance soft skills. Below we present examples of single-credit-hour courses designed as stand-alone courses, and team or co-taught courses.

## 2.1 Single-Credit Stand-Alone Courses

### 2.1.1 Quiz Bowl Class

The “Competition Practicum in Ag Economics Terminology” course at Louisiana State University is designed for freshmen or transfer agribusiness students to familiarize them with the jargon of AAE&A. Each week, 30 new terms are introduced from other courses often required of agribusiness students, with a brief, non-technical review of each word. The primary innovation is its use of Jeopardy as a platform to learn and reinforce the material. Each student is expected to play in one round of Jeopardy-style trivia focused on the terms. It embraces entertainment and competition as a means of facilitating learning. While the focus of each Jeopardy round is on the 30 new terms, previous terms continue to appear, reinforcing and connecting concepts from earlier in the semester. In total, students gain exposure to 300 terms over the course of the semester. Students readily recognize and enjoy the novelty of the class format. They also appreciate its usefulness in preparing for other classes. The course is highly structured in terms of its schedule and material, reducing uncertainty for undergraduates. The class lends itself well as the first teaching experience for graduate students, giving them a more manageable first experience as an instructor of record to organize and execute the class’s weekly deliverables. Another benefit is professional development opportunities for both undergraduate and graduate students when participating in regional or national events. One potential challenge is that the class requires a working knowledge of numerous topics (microeconomics, macroeconomics, natural resources, finance, accounting, marketing, and management), which may be challenging for narrowly focused or new instructors; however, the course design can be adapted to facilitate non-subject experts. The course’s typical format restricts the class to be in-person and of limited size (<25). However, the reliability of real-time technologies enables the course to be taught online synchronously to any number of students.

### 2.1.2 Topics in Agricultural Labor Class

The “Topics in Agricultural Labor” single-credit course at Louisiana State University is an elective for students in the Agricultural Economics and Agribusiness department. The course is offered at the freshman/sophomore level and is meant to create flexibility in the curriculum, while exposing students to topics not offered traditionally as part of the undergraduate curriculum. Specifically, the course is part of a cohort of single-credit courses, which include “Competitive Practicum” (offered every fall semester), “Visual Data in Agribusiness” (offered every fall semester), “Agricultural Policy Design,” and “Topics in Agricultural Labor” (offered every other year). Taught once a week, the course has three distinct components: introduction to theory and why it matters, data analysis, and application. In each module, students are exposed to a single concept (e.g., production function, supply, demand) through a labor prism, easing students into microeconomics, a course that is offered at the junior (3000) level. Students are asked to comment on the model and its feasibility. Then, they are guided to identify data that could help test the theory related to the labor question being examined about the United States and the world. Data analysis tasks include cleansing and structuring data into a useable format and related data visualizations. Last, students are given a policy question to discuss based on the topic covered in the module. Students are evaluated on critical-thinking and information-synthesizing abilities and assessed through a term paper assignment. Throughout the course, students work on polishing their technical writing, critical thinking, and presentation skills. The course’s format lends itself to be used for

introducing students to several topic areas in AAE&A programs either as a special topics course or as a stand-alone course.

### **2.1.3 Workshop Class on Excel Applications**

The one-credit workshop course “Excel Applications for Economic Analysis” at The University of Arizona is designed to help freshman and sophomore students develop basic Excel skills to (1) present an issue with data, graphs, and charts effectively; and (2) confidently interpret and use descriptive statistics encountered everyday as well as in their upper-division classes. The instructor weaves together three design elements in the course design: (1) agricultural economics topics, such as farm incomes, food consumer behavior, and food price volatility, to provide context for data analyses; (2) descriptive statistical concepts, including measures of central tendency, shape, dispersion, distribution, and associated relations; and (3) Excel functionalities and skills practiced with authentic data sets from agencies such as the U.S. Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) and Economics Research Service (ERS), or Willingness To Pay (WTP) survey data from authentic research projects. Students meet 100 minutes per week for eight weeks in a computer lab with hands-on practices. All three design elements are developed and intertwined in the weekly Excel workbooks. For example, students explore food price volatility using the Quarterly Food-at-Home Price Database from the USDA ERS, and practice Excel functions and charts on measures of dispersion. Weekly, the class works through one Excel workbook with multiple worksheets. Throughout the semester, students also complete one individual class project consisting of a two-page fact sheet. Students decide on their specific topic, search for data, and present statistics, graphs, and charts analyzed with Excel. The course has been offered in two institutions with two modalities, in-person labs and as an asynchronous online course. Students appreciate the hands-on learning in the course and have applied the Excel skills in their internships. Students reflected “I liked that we learned how to use some of the many powerful tools and formulae that Excel has in order to analyze and synthesize data in a shorter amount of time and in a well organized format” (Student Course Survey, Spring 2022). “Going into the class, I wasn’t very excited because it was a 1-unit class that was only available on Friday morning. I also felt like I already knew enough about Excel and was honestly sad that I had to take it... In the end though, ... almost everything I did in Excel in XXX [student’s internship company] was something I learned from that class” (Student Internship Report, Fall 2023).<sup>5</sup>

## **2.2. Single-Credit Labs to Complement Core Agribusiness Courses**

### **2.2.1 Team-Taught Lab to Complement an Introductory Agribusiness Course**

A one-hour course titled “Introduction to Agricultural Business Laboratory” was developed at the University of Tennessee at Martin to improve new students’ understanding of courses taught within the agricultural business major. The major is contained within a comprehensive agricultural sciences department at the University of Tennessee at Martin, and non-majors taking the introductory agribusiness lecture have indicated their negative experience due to the quantitative components of the course. By creating a supplemental lab course, faculty could preview agribusiness mathematics and Microsoft Excel topics that are explored in future agribusiness courses, while providing a broader and more introductory-level experience for non-majors. Using a team-teaching approach, the agribusiness faculty interacted with students in their initial semesters to aid retention, while building excitement for the agribusiness major. After the first year of offering the course, faculty learned that teaching two to three weeks at a time contributed to student difficulties in getting comfortable with a particular faculty member’s teaching style. Differences in student learning styles relative to the way faculty delivered content also contributed to students’ abilities to exhibit competency in the lab content. In the initial

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<sup>5</sup>Usage of the student quote has been reviewed and approved by IRB with the Protocol Number 1904566916.



offering of the laboratory course, half the students self-identified as kinesthetic learners, 42 percent as visual learners, and the remaining as auditory learners.

The faculty waited until the second year to make significant changes to the course based on data from a full year's worth of course evaluations. Student comments were split on the effectiveness of the lab being team-taught. The difference in teaching styles by faculty resulted in some students having difficulty grasping course content, while others enjoyed the rotation of faculty and thought it kept the classroom experience interesting. To provide more kinesthetic learning opportunities in the second year, hands-on and team-based learning activities were added (e.g., the inclusion of classroom games and guided applications). Changes were also added in the costs analysis section to involve students in actual applications of those concepts in real firm-level decision-making processes. Students participated in activities that improved understanding of agribusiness supply chains, improved negotiation skills, and the economics of production. Core economic and financial management concepts such as financial calculations, elasticities, value-chain dynamics, and basic Excel skills remain in the course content; however, delivery modes have been modified to accommodate students' dominant learning styles. It is also noteworthy that team-teaching may pose challenges for class coordination, course structure, and cohesion in content delivery that would typically not be encountered in courses with a single instructor. Last, an opportunity that the lab provided was involving undergraduate teaching assistants in the lab meetings to assist with content delivery and kinesthetic activities, tracking attendance and class participation, and office hours to help with assigned homework.

### **2.2.2 One-Credit Lab as a Co-Requisite to an Upper-Level Core Agribusiness Course**

The "Advanced Farm and Ranch Management Lab" at the University of Tennessee at Martin is an additional one-credit co-requisite to the traditional three-credit "Advanced Farm and Ranch Management" course. Taught once a week, the lab complement of the course provides opportunities for practical application of learned concepts through hands-on problem solving, interactive assignments, planned farm visits, and developing simulation and linear program optimal solutions for farm management decision analysis problems. The use of Microsoft Excel to develop enterprise budgets, cash flows, financial statements, and linear programming allows an opportunity for the students to further their understanding and improve their data analysis skills. The lab exercises are structured for the students to work through a sample problem with the instructor during the first half of the lab, and then complete a practice exercise on their own during the remainder of the lab session. The instructor assists the students with the practice problem as required and ensures that they check their work for accuracy before submission. This allows for an interactive laboratory environment focused on student effort to learn the concept without the stress of a formal testing process.

The problems from the lab exercises are incorporated in the quantitative assessment of the standard three-credit-hour course; however, the lab grade is independent of the course and is derived primarily from participation and completion of the lab exercises. The farm visit assignments are intentionally designed for the students to learn the economic applications of production practices for crops and livestock at various points in a production cycle. Assessment comprises a whole-farm analysis group project involving the practical application of learned concepts and tools within a farm setting. Student feedback indicates an overall positive hands-on learning experience in the lab as an application to classroom lectures, specifically regarding the management and ownership operation of a family farm. Financial evaluation, cash flows, lease agreements, depreciation, and budgeting exercises were perceived to be the most useful by students as they worked through developing a whole-farm management plan.

### 3 Innovation with Global Experiences

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) coined the term “global citizenship education” (GCED) in 2011, aiming to enable active, well-informed, reflective, and responsible participation in global society (Global Citizenship Education 2019). With the expansion of digital technology, international travel and migration, and global economy integration, GCED entails the internationalization of higher education with the intentional process of integrating an international, intercultural, and global dimension into the teaching and learning functions of a university or college (Knight 1994; de Wit and Leask 2015). Many Higher Education Institutions (HEIs) around the world have practiced GCED to train graduates as “global-ready” with intercultural competence to address issues associated with global developments and challenges (Deardorff and Jones 2012; Van Gaalen and Gielesen 2014; de Wit and Leask 2015). The dominant strategy to support intercultural competence development is offering students the opportunity to study abroad at an international partner university or do an international internship abroad during their studies (de Wit and Hunter 2015). International travel experiences impact students in many ways, including relational, cognitive, and professional development (Tanikawa 2023). Student participants typically demonstrate better cultural understanding and willingness to move beyond their comfort zone. These can be viewed as prized traits among potential employers. A COIL model has been pioneered by the State University of New York (SUNY) and applied to universities worldwide. The COIL model fosters intercultural competence through virtually connected courses in different universities from different countries. Empirical studies on the COIL approach are scarce. Hackett et al. (2023) used a quasi-experiment of 108 undergraduate students from the Netherlands and the United States (U.S.), and showed a significant increase in intercultural competence for the U.S. treatment group but not for the Netherlands students.

#### 3.1. A Semester Abroad Program: The University of Tennessee at Martin–Agriculture Experience in Sienna, Italy

Universities can use travel experiences to help equip students with cross-cultural competencies to fill in skill gaps that can only be taught by experience. The University of Tennessee at Martin–*Agriculture Experience in Sienna, Italy*, is a semester-long agriculture study abroad program developed by the University of Tennessee at Martin in the Fall of 2021 in partnership with two international institutions. The program was built around cultural experiences, agriculture in the region, and academic courses taught by university faculty. Students were accompanied by university faculty members who taught classes and served as mentors throughout the process. Students and parents appreciated that faculty members from the university were with the students throughout the experience. Faculty also further contributed to this unique experience by modifying the coursework to more closely reflect the culture and demographics of Italy, which added an additional perk to the cross-cultural competencies of this experience. This arrangement did require increased logistical steps to cover faculty duties while faculty were abroad.

The key to any international experience is the planning and partnerships. Once an in-country partner was identified, it required developing agreements and trust among partners. This was accomplished by sending a small delegation, including the University of Tennessee at Martin’s Chancellor, to Italy and hosting Italian partners on campus. This was invaluable to the planning and success of the program and allowed for buy-in among all involved parties. After four semesters of travel, these partnerships continue to grow and expand to new opportunities for students and faculty to experience. The program has continued to grow and has expanded to include spring and summer experiences, and the faculty rotation and teaching schedule has continued to evolve to fit student and program needs.

### 3.2. An Eight-Week Collaborative Online International Learning (COIL) Module

COIL is a virtual model that fosters intercultural competency by linking university classes in different countries. Instruction design and student learning are collaborative in COIL. Instructors in two or three universities in different countries collaborate to create or redesign COIL content for the institution's curricular program. Students remain in their own university but are connected either synchronously or asynchronously online and develop international collaborative projects as part of their class learning. The term COIL was coined by SUNY in 2006 and has become a popular tool to enhance international, intercultural, and global dimensions in the curricula within universities across the world (Rubin 2017). While the high costs have limited the study abroad opportunities to only a small minority of students, for example, 10–13 percent on average in Europe and the United States (NAFSA 2018; European Commission 2020; Institute for International Education 2020), the COIL model provides an affordable way to facilitate intercultural learning and prepare students to work in a global context.

An eight-week COIL module with the theme of “Food, Business, and You” has been developed and offered at the University of Arizona in the United States and Universidad De Monterrey in Mexico since 2022. Through a selective matching process, the two instructors of two classes from the United States and Mexico were paired up in Spring 2022. In June and July 2022, the instruction team—two instructors with an educational researcher at the University of Arizona—developed the COIL module through the Program for the Internationalization of the Curricula United States-Mexico (PIC US-MX), organized by the Mexican Association for International Education (AMPEI), the Embassy of the United States in Mexico, and Banco Santander.

In the eight-week COIL module, students in both classes would connect synchronously for 75 minutes weekly via Zoom. Students were also grouped into six multicultural teams to collaborate on an infographic presentation regarding one grand food challenge picked by each team. Three of the eight synchronous sessions are instructor or speaker-led, including two co-teaching lectures offered by two instructors and one binational panel discussion with industry leaders and stakeholders on the topic of the “Post-Pandemic Food Supply Chain.” Another four COIL synchronous sessions are student-led and include a community-building session, two collaborative teamwork sessions, and team project presentations. The last week of COIL learning was delegated for reflection.

The COIL module has been offered twice in the Fall semesters of 2022 and 2023. The primary pre- and post-assessment with the Fall 2022 class showed increased knowledge, skills, and attitudes toward intercultural competency, though the differences were not statistically significant. This finding is unsurprising given eight weeks is a short period of time, especially with the virtual experience. As one student put it in the reflection:

*“It might not have been as intensive as a face-to-face exchange, had we done COIL, say as a conference or as part of a holiday program, but nevertheless, I felt like my learning in the class could be discussed, applied, and shared with our peers in Mexico. A great example of this was the infographics produced by our group.”*

In addition, COIL has provided students with opportunities to practice exchanging views on various ideas, beliefs, and knowledge with international peers, which is crucial to GCED. One student commented on the impact: “A lot of this [COIL] learning wasn't even related to food economy issues, but rather larger concepts like worldviews, beliefs and so on.”

## 4 Innovation with Industry Experiences and Sponsorships

Connections between universities and industries, and the corresponding impacts of such partnerships on innovation processes have been widely examined across disciplines and areas such as management studies, the economics of innovation, industrial organization, and the sociology of science and science

studies (Agrawal 2001; Organisation for Economic Co-operation Development 2002; Poyago-Theotoky, Beath, and Siegel 2002; McMillan and Hamilton 2003; Hall 2004). Partnership opportunities can emphasize areas of experiential learning, authentic learning, or project-based learning, and can be instrumental in filling gaps found through assessment of student learning. In applied pedagogy, particularly within the agricultural sector, fostering innovation and entrepreneurship among students presents a compelling challenge. A proactive approach to this challenge involves integrating real-world industry collaboration within academic curricula. The following section specifically discusses innovation via industry sponsorships and using a case-study-based research option for a graduate thesis.

#### **4.1 Creating Applied Classroom Projects with Industry Sponsorships**

This section describes an educational model at California Polytechnic State University that embeds industry-sponsored incentives and mentorship within a tertiary-level agricultural business course, aiming to spur entrepreneurial engagement and product innovation. Such an educational model positions students at the nexus of academia and industry, where they benefit from both theoretical knowledge and practical insights. The model comprises a triad of components: mentorship from industry practitioners, experiential learning through collaborative projects, and financial incentives for developing student-led innovations. The efficacy of this model was highlighted by the success of a student team reaching the final stage of a university-wide innovation competition, with their ongoing product development being a direct outcome of the course's structure.

The overarching goal of this teaching model is twofold: to enrich the existing literature on incentive-based learning within academia and to enhance pedagogical practices by demonstrating the value of industry collaboration. Specifically, the model aims to assess the impact of industry-sponsored incentives on student participation in innovation competitions, facilitate the transition of theoretical concepts into tangible prototypes, and generalize this teaching model for broader application within the academic institution. Central to this model is the course on "Innovation & Entrepreneurship in Agriculture," designed to serve as a bridge between students with entrepreneurial aspirations, existing university entrepreneurial programs, and industry collaborations. The course underscores the role of incentives in educational settings, drawing on previous research that establishes the efficacy of such approaches in achieving desired outcomes, notably through Deci, Koestner, and Ryan's (1999) examination of extrinsic rewards on intrinsic motivation, alongside further contributions from Vallerand et al. (1992), Amabile et al. (1994), Ryan and Deci (2000), and Pink (2009).

The process implemented within the course underscores an incentive-based learning structure. Financial incentives, furnished by industry partners, bolster the students' transition from theoretical learning to entrepreneurial praxis. In this context, a financial reward is extended for selecting the "best class project," incentivizing students to ideate and innovate with real-world applications and financial viability in mind. The incentive in question—a seed fund—covers the initial phases of product development, including formulation, marketing, and testing. This hands-on approach not only provides financial support but also incorporates the opportunity for students to present their ideas to industry leaders, thereby integrating mentorship and exposure to professional networks within the learning process.

The curricular structure is bifurcated into a dual-phase weekly format. The initial phase involves guided readings on entrepreneurial concepts, followed by interactive sessions that introduce key frameworks and discussions. The second phase is a collaborative workshop where students apply their newly acquired knowledge to their project, focusing on a specific agricultural sector. This project-based learning paradigm necessitates evidence-based decision-making, drawing on primary and secondary data to craft a comprehensive business model and value proposition. Outcomes from this educational model have been positive, with students reporting that the industry-sponsored incentives have not only enhanced their learning experience but also motivated them to further develop their classroom projects into viable entrepreneurial ventures. A particular student team exemplified this by advancing to the final



stages of a prestigious innovation competition with their new product concept. One team developed a hydrating ice cream aimed at providing seniors with a low-carb treat that also offers essential hydration. Another team created an innovative low-carb sports drink that delivers protein, catering to the needs of athletes seeking effective recovery and muscle support.

The significance of this model extends beyond the classroom; it also contributes to the broader academic community by connecting students to institutional innovation programs. This is further exemplified by ongoing research into the factors contributing to successful agricultural product innovation, a sector that presents unique challenges compared to other food industries due to its specific barriers to entry. The broader impact of this initiative has been disseminated through presentations to industry leaders to encourage the adoption of similar educational models in other institutions. These efforts create a collaborative environment that benefits local industry and has the potential to influence agricultural practices and innovation globally.

## 4.2 Questioning the One-Size-Fits-All Master's Thesis for Professional Option Students

Thesis projects represent a core component of AAE&A master's programs. When paired with effective mentoring, these projects can enhance student research capabilities, equipping them for the challenges of PhD programs or research-oriented careers. However, the issue with the prevailing one-size-fits-all approach is that significant portions of students in these programs desire careers in industry. In the industry landscape, the emphasis of problem solving often leans toward strategic thinking and breadth of knowledge rather than intricate modeling directed toward a single topic. The traditional master's thesis might not provide industry-oriented students with the optimal tools for success in their future careers. Moreover, professionally oriented students typically pursue shorter programs, rendering academic-based thesis research less likely to yield publishable outcomes for students and mentors.

A potential solution could be to redefine the concept of a thesis for master's students in agribusiness with a professional orientation. Over the past two years, instructors in the Applied Economics program at Utah State University explored transitioning toward a research model that prioritizes crafting and solving case studies as the core of the thesis, as opposed to the conventional thesis format. Not only can case studies be a valuable research tool (Boland 2020) but, creating a quality case study demands students to develop an in-depth understanding of specific markets, the operations of a particular firm, and the formulation of actionable strategies for a company grappling with real-world challenges. This reimagining of the professional option thesis entails two primary objectives: (1) equip students with a skill set that is more applicable to the industry and its associated challenges; and (2) enhance the potential for publishable output, benefiting students and their mentors. In practice, this shift requires reducing emphasis on reviewing the academic literature, while increasing research toward specific industries and companies. Additionally, there is a diminished focus on intricate modeling with an augmented emphasis on extracting strategic insights from well-executed empirical research. It also was helpful for students to leverage work from their class projects for their thesis. Specifically, this was relevant for the firm strategy course, where students are tasked with solving a problem for a local firm as part of the class. The students who do well on the project are encouraged to build upon it for their thesis. This allows them to put more research into their case-study thesis than they otherwise would. This approach has worked well with two recent graduates in the program, both of whom have successfully defended their theses and generated work suitable for publication in case study journals; two manuscripts have been accepted for publication. The conventional master's thesis may not fully cater to the needs of students pursuing careers in industry. This can be addressed by reimagining the thesis for professional-oriented agribusiness master's students and prioritizing case studies with real-world relevance and publishable output. Through this approach, the students can be equipped with the skills they need to excel in the industry while contributing valuable research.

## 5 Conclusions

Future success and sustenance of academic programs in higher education will lean heavily on the realization and acceptance of the need for an innovative environment that challenges the existing norms or views about the learning process and the instructor's role in supporting this process. This article intends to provide an overview of and discusses efforts and ideas to help foster such an innovative environment within AAE&A programs in higher education.

Among the various innovative ideas discussed in this article, creating unique course offerings with fewer credit hours or shorter terms can be leveraged to design micro-credentials. Micro-credentials are becoming increasingly popular and are gaining acceptance among organizations as a workforce skill enhancement option and as a means for improving potential employment avenues for students, while being enrolled in academic institutions.

Agribusiness courses provide an excellent opportunity for innovation design through industry partnerships and linkages. These courses can also help promote a culture of entrepreneurship by providing incentives and possibilities for capital funding when innovative ideas are generated, including graduate courses that focus on research. Innovation in the curriculum can also encourage students early on in their programs at both undergraduate and graduate levels to explore diversified career paths by acquiring information and building the necessary skill set that best fits their interests and experience.

Another unique opportunity to explore is creating short-term teaching exchange programs for faculty in AAE&A programs. These programs among collaborating institutions can provide a fresh perspective for improving or redesigning course content, enhancing faculty development opportunities, and promoting research avenues. The international teaching collaborations and exchanges could further forge partnerships and enhance innovations in GCED, leading to advanced student successes in an ever-changing work environment.

Last, it is essential to highlight that the primary intent of innovative curricula discussed in this commentary is to provide specialized focus on the learning of key concepts, which would benefit students in various ways—for instance, helping retain fundamentals through reviewing and practice sessions (e.g., Quiz Bowl Class), filling learning gaps in core concepts and skills (e.g., a “Topics in Agricultural Labor” class, a workshop class of Excel applications, single-credit lab courses, and courses on global agribusinesses and intercultural competency), learning through applications and creations (e.g., industry-sponsored student projects and ongoing research related to agricultural product innovation), and generating agribusiness scholarship by prioritizing relevant case studies over the traditional thesis option for master's students. Ultimately, the goal of these curriculum innovations is to assist students to transition from being consumers of knowledge to producers of knowledge. Future research projects (e.g., a survey for graduating seniors), beyond the scope of this commentary, could be explored to provide insight into whether such courses benefitted the students, particularly with a better understanding of core concepts, and to investigate and document the effectiveness of student learning through these teaching practices.

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