

The Donut Model for Agriculture Teacher Success: A Model for Theory and Practice

Aaron J. McKim¹
Catlin M. Goodwin²
Becky Haddad³
Tyson J. Sorensen⁴
Haley Q. Traini⁵
Tiffany A. Marzolino⁶

Abstract

This theoretical manuscript acknowledges the three-circle model for agricultural education as an enduring guide for student success. To complement the three-circle model, authors adapted “donut economics” to craft the donut model for agriculture teacher success. Within the proposed model, teacher success is defined as a level of productivity which exists between teacher-identified lower bounds (i.e., levels of productivity which minimally meet their definition of “success”) and upper bounds (i.e., levels of productivity exceeding limits created by other work and life responsibilities). Furthermore, teacher success includes having ample margin between lower and upper bounds, affording flexible and intentional allocation of time, energy, and emotion across work and life dimensions for the betterment of self, students, and society. Linkages between the proposed model, teacher satisfaction, teacher retention, and teacher attrition are also explored, suggesting the model may inform ongoing efforts to address the sustained agriculture teacher shortage. The manuscript concludes by exploring the practical utility of the donut model for agriculture teacher success, foregrounding how agriculture teachers can develop, evaluate, and communicate their own donut model.

Keywords: boundaries; donut model for agriculture teacher success; teacher attrition; teacher shortage; three-circle model of agricultural education; work-life balance

¹Aaron J. McKim is an Associate Professor in the Department of Community Sustainability at Michigan State University, 480 Wilson Rd., East Lansing, MI 48824, amckim@msu.edu. <https://orcid.org/0000-0002-0600-3611>

²Catlin M. Goodwin is a Doctoral Student in the Department of Community Sustainability at Michigan State University, 480 Wilson Rd., East Lansing, MI 48824, cmg@msu.edu. <https://orcid.org/0000-0003-0312-8504>

³Becky Haddad is an Assistant Professor of Agricultural Education in the Department of Agricultural Leadership, Education, and Communication at the University of Nebraska-Lincoln, 143 Filley Hall, Lincoln, NE 68568-0947, haddad@unl.edu. <https://orcid.org/0000-0001-9153-2253>

⁴Tyson J. Sorensen is an Associate Professor in the Department of Applied Sciences, Technology and Education at Utah State University, 2300 Old Main Hill, Logan, UT 84322, tyson.sorensen@usu.edu. <https://orcid.org/0000-0003-2103-1669>

⁵Haley Q. Traini is an Assistant Professor of Leadership Education in the Department of Agricultural Education and Agricultural Sciences at Oregon State University, 108 Strand Agriculture Hall., Corvallis, OR 97331, haley.traini@oregonstate.edu. <https://orcid.org/0000-0002-9275-3231>

⁶Tiffany A. Marzolino is a Doctoral Student in Agriculture, Food, and Natural Resources Education in the Department of Community Sustainability at Michigan State University, 480 Wilson Road, East Lansing, MI 48824, marzo@msu.edu. <https://orcid.org/0000-0003-0478-4626>

Introduction

Agricultural education is commonly represented as a Venn diagram of three overlapping circles: (a) classroom and laboratory instruction, (b) supervised agricultural experience (SAE), and (c) leadership development through participation in the National FFA Organization (Talbert et al., 2022). This diagram has been dubbed the “three-circle model.” Scholars have described the role of the three-circle model as the “conceptual underpinning,” (Jenkins III, 2008, p. 4), “guide” (Croom, 2008, p. 117), and “one of the universally recognized foundations” (Shoulders & Toland, 2017, p. 85) of agricultural education. Regardless of word choice, consensus suggests the past, present, and future of agricultural education has, is, and will be shaped by the three-circle model. Given the centrality of the three-circle model to the discipline, frequent analyses of the model itself alongside the implications of its interpretation are warranted (Croom, 2008; Hughes & Barrick, 1993; Rayfield et al., 2012; Shoulders & Toland, 2017; Swafford, 2018). In this philosophical manuscript, we introduce a complementary model to the three-circle model which addresses *teacher success*, an element outside the focus of the three-circle model.

This analysis is informed by the historical emergence and current utilization of the three-circle model. The conceptual origins of the three-circle model predate its first visual representation. Acknowledging the educational utility of the home-project method, federal legislation as early as the 1917 Smith-Hughes Act supported the overlap between classroom instruction and supervised agricultural experiences (Croom, 2008). The inclusion of student participation in the FFA as a central tenet of an agricultural education program, however, was not introduced until 1947. The George-Barden Act of 1947 provided funding for educators to attend student organization meetings, like the FFA (Croom, 2008). Also in 1947, the Cook’s Handbook on Teaching Vocational Agriculture included FFA activities as one of the major phases of agricultural education (Croom, 2008). Reinforcing the salience of FFA within an agricultural education program, the 1975 FFA Advisors Handbook provided the first visual representation of the three-circle model now ubiquitous within the discipline (Croom, 2008).

The three-circle model includes equally sized circles, suggesting resources and experiences should be uniformly distributed across each component of an agricultural education program (Croom, 2008; Hughes & Barrick, 1993; Moore, 2006; Shoulders & Toland, 2017; Talbert et al., 2022). This “balanced” approach is reinforced through teacher education, legislation, and tradition, with many teachers identifying the equal-circle model as the ideal execution of an agricultural education program (Shoulders & Toland, 2017). Consistently, however, research conducted in agricultural education has identified an unequal emphasis on instruction with FFA and SAE receiving less attention (Croom, 2008; Shoulders & Toland, 2017; Torres et al., 2008). The discrepancy between the perceived “ideal model” and its operationalization is a source of potential concern; in response, scholars have reinforced the appropriateness of model adaptation to fit local contexts (Rayfield et al., 2012; Yopp et al., 2018).

As we considered the historical emergence of the three-circle model alongside its current operationalization, we uncovered an opportunity to create a complementary model. Namely, a model which provides a representation of teacher success. A hallmark of the three-circle model is the student-centered approach (Baker et al., 2012; Talbert et al., 2022). In fact, many representations of the three-circle model place the student at the center of the Venn diagram, illustrating their engagement exists at the nexus of instruction, FFA, and SAE. Teachers certainly play a pivotal role in facilitating the three-circle model within programs (Talbert et al, 2022); however, we contend teacher success extends beyond facilitating the three-circle model. Thus, we introduce a model detailing agriculture teacher success to complement the three-circle model.

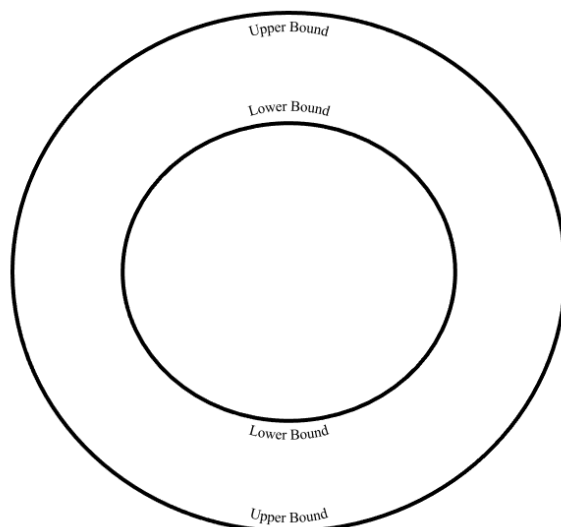
The need for a model foregrounding agriculture teacher success is further compelled by two factors, (a) the teacher shortage and (b) teacher workload concerns. Throughout the education system, a continual shortage of teachers exists (Nguyen et al., 2022; Ingersoll et al., 2014; Ingersoll & Tran, 2023; Sutchter et al., 2019). Within the agricultural education discipline, this phenomenon is evaluated annually via the National Agricultural Education Supply and Demand Study. Consistently, the supply and demand study has identified a nationwide shortage of agricultural educators (Eck & Edwards, 2019; Smith et al., 2022). The ramifications of the continued shortage are expansive, including programs closing, teacher turnover, and increased reliance on alternatively certified teachers (Offerman et al., 2024). Given the salience of agriculture teacher attrition, scholarship within the discipline has sought answers to why teachers leave the profession. Scholars have identified the workload demands of the job, which create personal (e.g., boundaries, burnout, unmet expectations) and social (e.g., work-life balance) strains, as a contributing factor to teacher attrition and the teacher shortage (Haddad et al., 2023; Murray et al., 2011; Smith & Smalley, 2018; Solomonson et al., 2018; Solomonson et al., 2019; Sorensen et al., 2016; Sorensen & McKim, 2014; Traini et al., 2019; Traini et al., 2021). Therefore, the proposed model affords a new way to conceptualize workload demands and teacher success.

Conceptual Foundation

The proposed model emerged, in part, from scholarship outside agricultural education. The emergence of “doughnut economics” (i.e., spelled *donut* economics hereafter) was in direct response to an outdated economic philosophy suggesting continually increasing Gross Domestic Product (GDP) should be the only policy goal (Raworth, 2017; Wahlund & Hansen, 2022). Without boundaries, this approach led to “economies that are degenerative, running down the living world on which human wellbeing fundamentally depends” (Raworth, 2017, p. 217). As an alternative approach, donut economics introduced a lower bound of economic activity wherein a society provides basic human needs (e.g., water, food, social equity) and an upper bound (i.e., an environmental ceiling) of economic production within a society which leads to climate change, biodiversity loss, ocean acidification, and other wicked socio-ecological problems (Raworth, 2017; Waddock, 2020; Wahlund & Hansen, 2022). Graphically, this makes a donut representing the range of economic production a society should operate within (see Figure 1).

Figure 1

Visual Representation of a Donut Model



Within donut economics, the goal of economic policy is to develop communities that exist between the lower and upper bounds. Donut economics was an innovative approach to address a failure to establish boundaries by a fundamental economic philosophy (Wahlund & Hansen, 2022). We contend traditional thinking within educational systems operates like traditional thinking within economics. The things agricultural educators can do are all, typically, regarded as good for students and communities; therefore, an unbounded expansion of tasks for agricultural educators can occur. This ever-growing task list, and the associated strain, is untenable for teachers (Haddad et al., 2023; Thieman et al., 2012; Traini et al., 2022). To combat this, we developed the *donut model for agriculture teacher success*.

Assumptions

Before sharing the model, we introduce four assumptions influencing its development. First, we assume the agricultural education system (i.e., broad collection of individuals, organizations, and processes which influence agricultural education at local, state, and national levels) explicitly and implicitly exerts pressure on teachers to continually do more within their work role. Second, we assume teachers internalize that pressure throughout their engagement with the agricultural education system. Third, we assume a tool to help teachers identify and communicate their bounds will aid them in strategically responding to internal and external pressures to continually do more. Fourth, we assume the tool is unlikely to cause significant reductions to the external pressures exerted upon agriculture teachers to do more.

Findings and Discussion: The Donut Model for Agriculture Teacher Success

Adapting donut economics, we propose the donut model for agriculture teacher success as a complement to the three-circle model of agricultural education. To explore the proposed model, we introduce four components: (a) lower bound, (b) upper bound, (c) boundary shifts, and (d) boundary margin.

Lower Bound

As represented in Figure 1, the lower bound is the interior circle of a donut model. Within donut economics, the lower bound details levels of production within a multitude of social sectors (e.g., water purification, manufacturing, food production) which sustain the basic needs of all people within a society (Raworth, 2017; Wahlund & Hansen, 2022). In this way, the lower bound details a baseline for sustaining society.

Within the donut model for agriculture teacher success, we define the lower bound as the *levels of productivity within work and life dimensions required to satisfy an agriculture teacher’s self-definition of success*. As an example, an agricultural educator may identify they need to spend a minimum of three hours developing new and creative lesson plans each week to achieve their definition of success. Therefore, within the dimension of lesson planning, this teacher’s lower bound would be “three hours a week developing new and creative lesson plans.” Additionally, the teacher’s lower bound would include a unique level of productivity across the multitude of relevant dimensions within the profession and other life roles (see Figure 2 for example dimensions).

Figure 2

Example Work and Life Dimensions within the Donut Model of Agriculture Teacher Success

Classroom			
<ul style="list-style-type: none"> Lesson Planning Mentoring Other Teachers Lesson Creativity Agriculture Content Scope 	<ul style="list-style-type: none"> Grading Community Connections Classroom Management Core Academic Integration 	<ul style="list-style-type: none"> Gathering and Preparing Lesson Materials Program Diversity, Equity, and Inclusion 	<ul style="list-style-type: none"> Course Offerings Lab Offerings Technology Use Facilities and Facility Management
FFA			
<ul style="list-style-type: none"> Contest Participation Alumni and Friends Chapter 	<ul style="list-style-type: none"> Events (e.g., National Convention, State Convention) 	<ul style="list-style-type: none"> Membership Working with FFA Officers Contest Practices 	<ul style="list-style-type: none"> Chapter Meetings Budget and Fundraising
SAE			
<ul style="list-style-type: none"> SAE Place Visits School-Based SAE Projects 	<ul style="list-style-type: none"> Student Participation in SAEs 	<ul style="list-style-type: none"> Recordkeeping Proficiency Awards 	<ul style="list-style-type: none"> Community Locations for SAEs
Other Roles			
<ul style="list-style-type: none"> Unplanned Time at Work School Engagement (e.g., coach, committees) 	<ul style="list-style-type: none"> Teacher Professional Engagement and Service Spirituality Friends 	<ul style="list-style-type: none"> Continuing Education Time Spent on Email Hobbies 	<ul style="list-style-type: none"> Personal Reflection Exercise Family Time Sleep

Upper Bound

The upper bound comprises the exterior circle within a donut model. In donut economics, the upper bound details the level of production within a multitude of sectors which results in

ecological degradation (Raworth, 2017; Wahlund & Hansen, 2022). In this way, the upper bound serves as a ceiling for production given the constraints of the environment.

Within the donut model for agriculture teacher success, we define the upper bound as the *levels of productivity identified by an agriculture teacher within work and life dimensions exceeding limits created by other work and life responsibilities*. For example, an agricultural educator may evaluate their cumulative responsibilities and determine their maximum capacity is seven FFA contest teams during a year. Therefore, within the contest participation dimension of their donut model, the upper bound would be “seven FFA contest teams.” Similarly, the teacher’s upper bound would include a unique level of maximum productivity across the multitude of relevant work and life dimensions (reference Figure 2) which comprise their individualized donut.

The objective of donut economics is to redefine the goal of economic productivity from ever-increasing GDP to existence between the lower and upper bounds of the model (Raworth, 2017; Wahlund & Hansen, 2022). Within the donut model for agriculture teacher success, the goal for an educator within each dimension of work and life roles is to exist between their individualized lower and upper bounds. By existing between these bounds, the teacher’s productivity meets their minimum standard for success without exceeding their capacity given other work and life responsibilities. In this way, the donut model redefines teacher success from ever-increasing productivity to a level of productivity existing between their lower and upper bounds.

Boundary Shifts

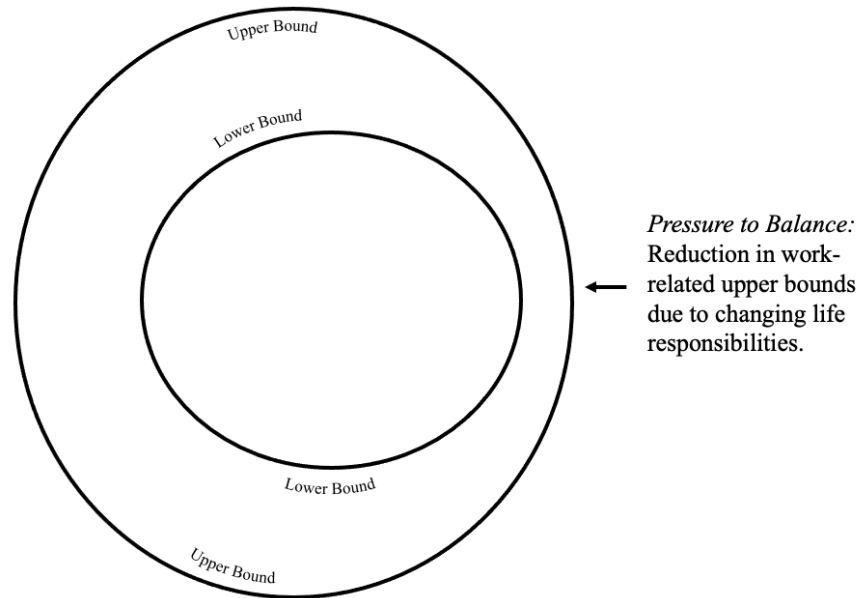
Within the donut model for agriculture teacher success, the lower and upper bounds are not static. In fact, the lower and upper bounds differ between teachers and likely change for individual teachers throughout their careers. In this section, we explore these differences.

First, we explore differences from one teacher to the next regarding their lower and upper bounds. Because the lower bound is comprised of a teacher’s self-definition of success, one must acknowledge their definition is both individually and socially constructed (Haddad et al., 2023; Traini et al., 2021). Research suggests one of the most influential factors for agriculture teacher’s definition of success is the system of agricultural education itself, which exerts pressure on teachers to define success as program productivity and external recognition (Haddad et al., 2023; Traini et al., 2019; Traini et al., 2020; Traini et al., 2021). Thus, an agriculture teacher’s exposure to the system (e.g., as a high school student, during a teacher education program, while student teaching, during a teacher mentorship program, through industry involvement) will likely influence the lower bound within their individualized model. In addition to variability within lower bounds, there is also upper bound variability between teachers. A variety of demographic factors (e.g., gender identity, marital status, parental status, socioeconomics, age, ability level) influence work and life responsibilities and, thus, capacity for productivity within work and life dimensions (McKim & McKim, 2023; Murray et al., 2011; Sorensen et al., 2017).

There are also probable shifts to lower and upper bounds throughout an individual’s career in agricultural education. The first potential shift explored in this theoretical manuscript occurs within the upper bound. The *pressure to balance* shift suggests as teachers continue their careers, life responsibilities often change (McKim & McKim, 2023; Murray et al., 2011; Sorensen et al., 2017) resulting in a reduction of their work-related upper bounds as more time, energy, and emotion are prioritized for non-work dimensions. As an example, a teacher may not be able to commit the same amount of time doing FFA contests after becoming a parent (i.e., or spouse, caretaker, homeowner, community leader, etc.) as they did before holding one or more of these different life roles (see Figure 3).

Figure 3

Visual Representation of the “Pressure to Balance” Shift

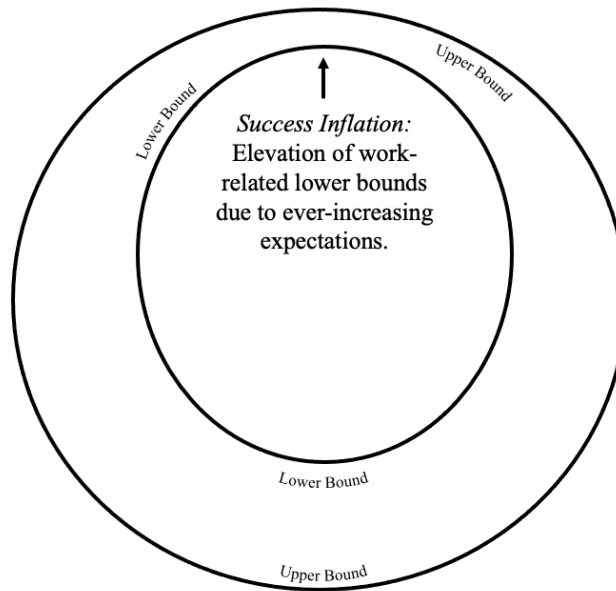


For some, the *pressure to balance* shift may be offset by the increased efficiency and knowledge that comes with teaching experience; however, the impact of this interplay on teacher’s upper bounds likely varies from teacher to teacher. Some evidence suggests, however, any reduction in workload associated with experience and efficiency is replaced with additional (e.g., new FFA and SAE experiences) work (Lambert et al., 2011; Sorensen et al., 2017); thus, eliminating any workload reduction stemming from experience and efficiency.

The second potential shift occurring during an agriculture teacher’s career is *success inflation*, which impacts lower bounds. This shift suggests as teachers continue their careers, there is an ever-increasing accumulation of expectations (i.e., from themselves, administrators, community members, etc.), elevating their work-related lower bounds. This notion is supported by existing scholarship noting the system of agricultural education expects seemingly exponential growth within productivity and recognition (Disberger et al., 2023; Haddad et al., 2023; McKim & McKim, 2023; Thieman et al., 2012; Traini et al., 2019; Traini et al., 2020; Traini et al., 2021). In Traini et al. (2020), they describe this phenomenon as the “success trap,” suggesting it becomes the “master narrative” for agriculture teachers (p. 181).

Figure 4

Visual Representation of the “Success Inflation” Shift



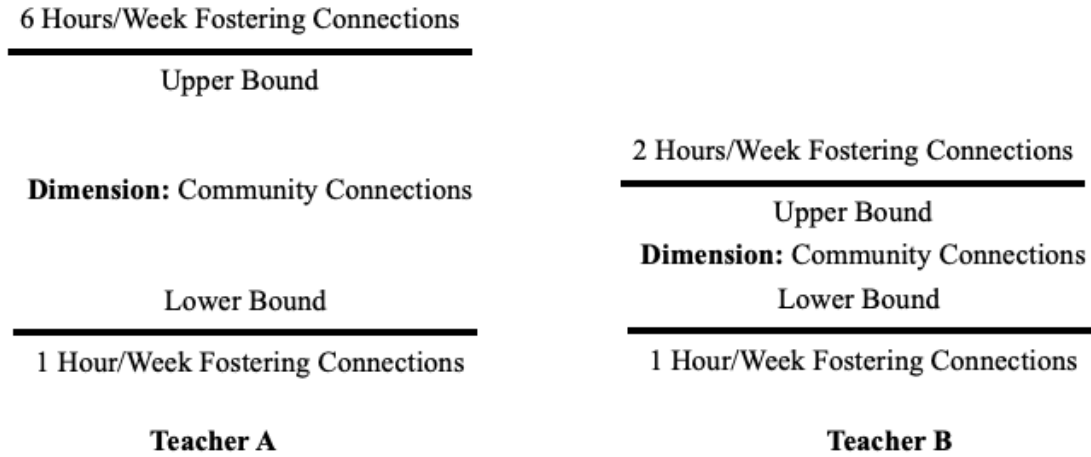
Boundary shifts like the *pressure to balance* and *success inflation* are essential to monitor because they influence the margin teachers have available between their lower and upper bounds. In the next section, we explore the consequential nature of boundary margin.

Boundary Margin

As identified, the initial goal of the donut model for agriculture teacher success is teacher existence between their lower and upper bounds. In concert, another goal is to maximize the margin between a teacher’s lower and upper bounds. Increasing the margin between lower and upper bounds provides the teacher flexibility to intentionally allocate energy amongst their work and life dimensions to address emerging student interests, shifting community dynamics, and evolving personal interests (McKim & McKim, 2023). As an example (see Figure 5), let’s imagine having access to the donut model for both Teacher A and Teacher B as we focus on the dimension of community connections (i.e., the agriculture teacher making connections with community partners to support student learning and program success).

Figure 5

Comparing Boundary Margin



The boundary margin available for Teacher A allows more options between their lower and upper bounds. For example, if opportunities emerged in other life roles or in other dimensions of the job, Teacher A could reduce their time investment building community connections to one hour per week and still be within their bounds. If, instead, a new and potentially beneficial community connection emerged, Teacher A would have the margin to allocate up to six hours per week within the community connection dimension, still within their bounds. Alternatively, Teacher B lacks the margin between their lower and upper bounds to intentionally allocate resources to seize new and rewarding opportunities in their life and work roles.

This example reinforces teacher success is not just existence between lower and upper bounds; agriculture teacher success is having ample margin between their lower and upper bounds. This boundary margin affords teachers the opportunity to customize their time allocation to seize opportunities throughout work and life roles (McKim & McKim, 2023). Expanding the margin between upper and lower bounds, however, is challenging as it requires either reducing lower bounds or increasing upper bounds. In the following table, we explore example strategies individual teachers, or the system of agricultural education, can enact to expand the margin between lower and upper bounds and, thus, increase the probability of agriculture teacher success (see Table 1).

Table 1

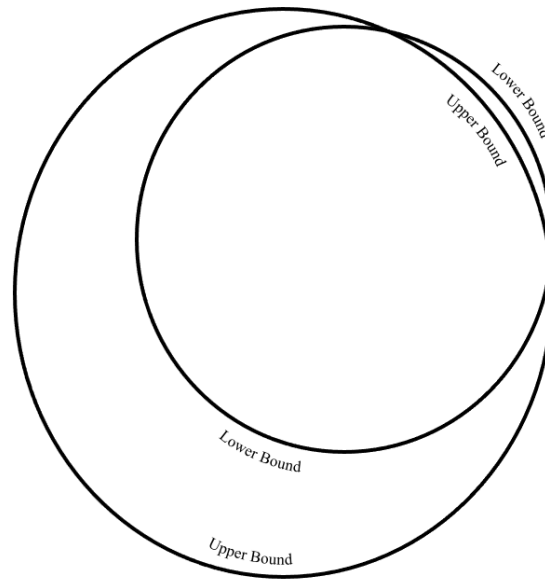
Example Strategies for Expanding Margin between Lower and Upper Bounds

Strategy	Impact	Level	Description
Redefine Success	Reduce Lower Bound	Individual and System	Actively challenge structures which reinforce agricultural educator success is ever-increasing productivity and external recognition.
Balance System Additions	Maintains Lower Bound	System	Refrain from additional expectations for teachers (e.g., paperwork) or new program opportunities (e.g., events, contests) without commiseratively reducing other teacher obligations.
Balance Success Inflation	Maintains Lower Bound	Individual	Only add a new program component if something requiring equal time, energy, and emotion is removed.
Effective Professional Development	Increase Upper Bound	System	Invest in teacher professional development which results in teachers obtaining skills, knowledge, or resources that directly increase their ability to successfully do the job (i.e., see McKendree & McKim, 2021 for an example).
Utilize Networks	Increase Upper Bound	Individual	Cultivate relationships with program supporters able to independently lead (or support) dimensions of the agriculture program.
Automate Roles	Increase Upper Bound	Individual	Utilize innovations which increase efficiency (e.g., automatic watering systems, auto-graded exams, online recordkeeping systems linked to award applications).

Note. “System” refers to the broad collection of individuals, organizations, and processes which influence agricultural education. This includes, but is not limited to, teacher educators, state staff, program standards, policymakers, and agricultural education related organizations.

The flexibility to intentionally invest time in work and life roles brought about by boundary margin provides the conceptual justification to link the donut model for agriculture teacher success to job satisfaction, life satisfaction, and teacher retention. When margin exists between an agriculture teacher’s lower and upper bounds, intentional decisions can be made which align to self-actualization, family satisfaction, and community betterment (McKim & McKim, 2023). The result is an agriculture teacher satisfied with their work and life roles who may be more likely to remain in the profession.

In conjunction, the model may also extend understanding of teacher attrition and the agriculture teacher shortage. The theoretical connection between the donut model and teacher attrition emerges through the *overlap effect*, defined as a teacher’s lower bound exceeding their upper bound in one or more life or work dimensions (see Figure 6). The overlap effect occurs when a teacher does not possess the resources (e.g., time, energy, emotion) to accomplish a dimension of their job or life at the level they require of themselves to be successful. For example, a teacher may identify their lower bound for grading to be three hours a week providing constructive, written feedback on student assignments. However, their upper bound might be limited to 90 minutes a week for grading due to the obligations of other work and life roles. In this overlap scenario, the teacher is unable to invest the time required by themselves to be successful.

Figure 6*Visual Representation of the “Overlap Effect”*

The relationship between the overlap effect and teacher attrition is, however, not perfect (i.e., as soon as overlap occurs, the teacher does not immediately leave the profession). Instead, we suggest there are two moderating variables influencing this relationship. First, the salience of the job dimension(s) in overlap likely influences if the overlap leads to attrition. Specifically, the more salient the dimension, the more likely it will result in teacher attrition. Second, the expected duration of the overlap will likely influence its relationship with attrition. The agriculture teaching profession includes moments throughout the school year that are busier than others (Disberger et al., 2023). In these moments, overlap is more likely, but expected to be temporary; thus, less consequential to teacher attrition. The more sustained the overlap is expected to be, however, the more likely it will result in teacher attrition.

Emerging and alarming evidence within the discipline suggests overlap may be the norm for some agriculture teachers, especially those early in their career. The theme of this emerging scholarship is early career teachers normalize sacrificing non-work obligations to meet demands at work (Haddad et al., 2023; Traini et al., 2019; Traini et al., 2020; Traini et al., 2021). Within the donut model for agriculture teacher success, these findings are translated as teachers feeling forced to reduce their lower bounds within life dimensions (e.g., exercise, family, hobbies) to compensate for rising lower bounds within work dimensions (e.g., FFA events, school committees, grading). Certainly an undesirable state, evidence suggests teachers must reduce their lower bounds within life dimensions or face sustained overlap as pressure mounts to increase work-related lower bounds. This phenomenon may contribute to teacher attrition, which is most common among early career teachers (Ingersoll et al., 2014; Sutchter et al., 2019).

Conclusions

The donut model for agriculture teacher success complements the three-circle model for agricultural education by foregrounding teacher success. In the proposed model, teacher success is defined by two characteristics, (a) teacher productivity existing between self-identified lower and upper bounds for work and life dimensions and (b) ample margin between self-identified lower and upper bounds. In this way, teacher success is having the boundary margin to intentionally invest resources throughout work and

life roles to achieve personally defined success. In addition to detailing teacher success, the proposed model provides important conceptual linkages to teacher satisfaction, teacher retention, and teacher attrition. Therefore, just as the three-circle model illuminates salient approaches for optimizing student growth (Baker et al., 2012; Croom, 2008; Swafford, 2018; Talbert et al., 2023), the donut model for agriculture teacher success illuminates salient approaches and relevant research questions to better understand the successes and challenges of an agriculture teaching career.

In addition to the theoretical affordances of the model, the donut model for agriculture teacher success is designed to be a practical tool for agriculture teachers. Because the model is individualized, teachers are encouraged to map the relevant dimensions within their work and life roles, identifying lower and upper bounds for each dimension (free resources for creating an individualized donut available here: <https://tinyurl.com/2de6sv6p>). Once created, the individualized donut model serves as a tool to communicate, evaluate, and reflect upon lower bounds, upper bounds, and boundary margin. Consider an agriculture teacher who has created their donut model; the following are examples of how they could use it at different points in their career. When interviewing for an agriculture teaching position, they could utilize their donut model to evaluate alignment of their lower and upper bounds and the norms of the school and position to which they have applied. As they begin working within the school, they could continually refine their donut model with administration and community stakeholders agreeing to their lower and upper bounds. The teacher could regularly reflect upon their work and life roles to ensure they are maintaining existence within the boundaries in times of success and times of self-doubt. Further, a donut model validated by administration and community stakeholders could be used by the agriculture teacher to defend boundary-affirming decisions (e.g., saying “no” to a school committee, declining to facilitate a new event).

Recommendations

Through the adaptation of donut economics (Raworth, 2017; Wahlund & Hansen, 2022) in crafting the donut model for agriculture teacher success, critical recommendations for research and practice emerged. For research, three initial questions arose. First, we recommend research exploring the experiences which influence an early career agriculture teacher’s lower bound within dimensions of the agriculture teaching profession. This scholarship should seek to critically evaluate aspects of system socialization (e.g., high school agriculture experience, preservice coursework, student teaching experience, teacher mentorship programs, industry interactions) which elevate lower bounds to a point of potential overlap with upper bounds.

In addition to research on lower bound development, further scholarship should explore the efficacy of experiences in agricultural education which expand boundary margin. Through these investigations, attention should be given to experiences which may reduce the lower bounds of agriculture teachers as well as experiences which may increase the upper bounds for agriculture teachers. As a starting point for potential variables, refer to Table 1 within this manuscript.

Finally, empirical research exploring the hypothesized relationships between boundary margin, job and life satisfaction, teacher retention, and teacher attrition is warranted. Given the persistence of the agriculture teacher shortage (Eck & Edwards, 2019; Smith et al., 2022), new approaches to understanding agriculture teacher retention and attrition are useful to informing efforts to keep quality agriculture teachers in the profession.

In addition to recommendations for research, three salient recommendations for practice also emerged. First, we recommend this model be integrated within postsecondary agriculture teacher education programs. As future teachers engage in coursework, field experiences, and student teaching experiences, opportunities should be consistently provided to critically evaluate existing and emerging lower and upper bounds within work and life dimensions. These reflective opportunities allow teacher education faculty to

co-construct realistic expectations with preservice teachers as they progress toward becoming early career agriculture teachers. Additionally, teacher education faculty should use these opportunities to explore with preservice teachers how expectations change when work and life roles evolve (e.g., marriage, children, community leadership roles). Further, continually revisiting the models of students during their teacher education program provides valuable formative feedback to teacher education programs on how postsecondary experiences are influencing the perceptions of future educators.

The second recommendation is for current teachers and teacher leaders to implement the donut model for agriculture teacher success into their practice as educators and professional development facilitators. As explored, the model has utility in clarifying and communicating personal and professional bounds that can help current teachers realign their approach to exist between their lower and upper bounds, potentially supporting satisfaction and retention.

The final recommendation for practice is leveraging the utility of the proposed model beyond agriculture teacher success. In fact, this approach to boundary modeling may be beneficial for others throughout the agricultural education system, including student leaders, state staff, foundation leaders, teacher educators, and graduate students. Through intentional reflection, planning, and boundary communication, we can collectively craft careers in agricultural education which exist between a level of productivity which minimally meets our individualized definition of success and a level of productivity which precludes us from achieving success throughout all our work and life roles.

References

- Baker, M. A., Robinson, J. S., & Kolb, D. A. (2012). Aligning Kolb's experiential learning theory with a comprehensive agricultural education model. *Journal of Agricultural Education, 53*(4), 1-16. <https://doi.org/10.5032/jae.2012.04001>
- Croom, D. B. (2008). The development of the integrated three-component model of agricultural education. *Journal of Agricultural Education, 49*(1), 110-120. <https://doi.org/10.5032/jae.2008.01110>
- Disberger, B., Washburn, S., Hock, G., & Ulmer, J. (2023). A qualitative analysis of agriculture teacher's attitudinal changes toward the teaching profession in the first three years of teaching. *Journal of Agricultural Education, 64*(1), 61-81. <https://doi.org/10.5032/jae.v64i1.30>
- Eck, C. J., & Edwards, M. C. (2019). Teacher shortage in school based agricultural education: A historical review. *Journal of Agricultural Education, 60*(4), 223-239. <https://doi.org/10.5032/jae.2019.04223>
- Haddad, B., Traini, H. Q., & McKim, A. J. (2023). We've crossed a line: A philosophical examination of systemic implications surrounding SBAE teachers' attempts at boundary setting. *Journal of Agricultural Education, 64*(1), 82-95. <https://doi.org/10.5032/jae.v64i1.31>
- Hughes, M., & Barrick, R. K. (1993). A model for agricultural education in public schools. *Journal of Agricultural Education, 34*(3), 59-67. <https://doi.org/10.5032/jae.1993.03059>
- Ingersoll, R. M., Merrill, L., & Stuckey, D. (2014). *Seven trends: The transformation of the teaching force*. Consortium for Policy Research in Education Report (#RR-80). CPRE

- Ingersoll, R. M., & Tran, H. (2023). Teacher shortages and turnover in rural schools in the US: An organizational analysis. *Education Administration Quarterly*, 59(2), 396-431. <https://doi.org/10.1177/0013161X231159922>
- Jenkins III, C. C. (2008). A quality agricultural education program: A national Delphi study. [Unpublished master's thesis]. University of Kentucky.
- Lambert, M. D., Henry, A. L., & Tummons, J. D. (2011). How do early career agriculture teachers talk about their time? *Journal of Agricultural Education*, 53(3), 50-63. <https://doi.org/10.5032/jae.2011.03050>
- McKendree, R. B., & McKim A. J. (2021). Teacher changing the discipline: A case study of participatory professional development. *Journal of Agricultural Education*, 62(3), 72-84. <https://doi.org/10.5032/jae.2021.03072>
- McKim, A. J., & McKim, L. K. (2023). Enhancing professional development by increasing agricultural educator margin. *Journal of Agricultural Education*, 64(3), 16-25. <https://doi.org/10.5032/jae.v64i3.48>
- Moore, G. (2006). Who is driving the pickup truck? A call for professional leadership. *Journal of Agricultural Education*, 47(1), 1-5. <https://doi.org/10.5032/jae.2006.01001>
- Murray, K., Flowers, J., Croom, D. B., Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education*, 52(2), 107-117. <https://doi.org/10.5032/jae.2011.02107>
- Nguyen, T., Lam, C., & Bruno, P. (2022). *Is there a national teacher shortage? A systematic examination of reports of teacher shortages in the United States* (EdWorkingPaper: 22-631). Annenberg Institute at Brown University.
- Offerman, J. K., Maxwell, L. D., Solomonson, J. K., Barrowclough, M. J. (2024). Filling the gap: Factors influencing individuals with no school-based agricultural education background to enter the profession. *Journal of Agricultural Education*, 65(1), 320-334. <https://doi.org/10.5032/jae.v65i1.82>
- Raworth, K. (2017). Why it's time for doughnut economics. *IPPR Progressive Review*, 24(3), 216-222. <https://doi.org/10.1111/newe.12058>
- Rayfield, J., Murphy, T., Briers, G., & Lewis, L. (2012). Identifying innovative agricultural education programs. *Journal of Career and Technical Education*, 27(2), 38-50. <http://doi.org/10.21061/jcte.v27i2.558>
- Shoulders, C. W., & Toland, H. (2017). Millennial and non-millennial agriculture teachers' current and ideal emphasis on the three components of the agricultural education program. *Journal of Agricultural Education*, 58(1), 85-101. <https://doi.org/10.5032/jae.2017.01085>
- Smith, A. R., Foster, D. D., & Lawver, R. G. (2023). *National agricultural education supply and demand study, 2022 executive summary*. <https://aaaonline.org/resources/Documents/2022%20NSD%20Executive%20Summary.pdf>

- Smith, A. R., & Smalley, S. (2018). Job stress, burnout, and professional development needs of mid-career agricultural education teachers. *Journal of Agricultural Education, 59*(2), 305–320. <https://doi.org/10.5032/jae.2018.02305>
- Solomonson, J. K., Thieman, E. B., Korte, D. S., & Retallick, M. S. (2019). Why do they leave and where do they go? A qualitative study of Illinois school-based agriculture teachers who left the profession. *Journal of Agricultural Education, 60*(4), 115–131. <https://doi.org/10.5032/jae.2019.04115>
- Solomonson, J. K., & Retallick, M. S. (2018). Over the edge: Factors nudging mid-career, school-based agriculture teachers out of the profession. *Journal of Agricultural Education, 59*(4), 1–19. <https://doi.org/10.5032/jae.2018.04001>
- Sorensen, T. J., & McKim, A. J. (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education, 55*(4), 116-132. <https://doi.org/10.5032/jae.2014.04116>
- Sorensen, T. J., McKim, A. J., & Velez, J. J. (2016). Why agriculture teachers leave: A national examination of turnover intentions and work-family conflict. *Journal of Agricultural Education, 57*(4), 186-201. <https://doi.org/10.5032/jae.2016.04186>
- Sorensen, T. J., McKim, A. J., & Velez, J. J. (2017). A national study of work characteristics and work-family conflict among secondary agricultural educators. *Journal of Agricultural Education, 58*(2), 214-231. <https://doi.org/10.5032/jae.2017.02214>
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2019). Understanding teacher shortages: An analysis of teacher supply and demand in the United States. *Education Policy Analysis Archives, 27*(35), 1-40. <http://dx.doi.org/10.14507/epaa.27.3696>
- Swafford, M. (2018). STEM education at the nexus of the 3-circle model. *Journal of Agricultural Education, 59*(1), 297-315. <https://doi.org/10.5032/jae.2018.01297>
- Talbert, B. A., Croom, C., LaRose, S. E., Vaughn, R., & Lee, J. S. (2022). *Foundations of agricultural education*. Purdue University Press.
- Thieman, E. B., Henry, A. L., & Kitchel, T. (2012). Resilient agricultural educators: Taking stress to the next level. *Journal of Agricultural Education, 53*(1), 81-94. <https://doi.org/10.5032/jae.2012.01081>
- Torres, R. M., Ulmer, J. D., & Aschenbrenner, M. S. (2008). Workload distribution among agriculture teachers. *Journal of Agricultural Education, 49*(2), 75-87. <https://doi.org/10.5032/jae.2008.02075>
- Traini, H. Q., Claflin, K., Stewart, J., & Velez, J. J. (2019). Success, balance, but never both: Exploring reified forms of success in school-based agricultural education. *Journal of Agricultural Education, 60*(4), 240–254. <https://doi.org/10.5032/jae.2019.04240>
- Traini, H. Q., Yopp, A. M., & Roberts, R. (2022). The success trap: A case study of early career agriculture teachers' conceptualization of work-life balance. *Journal of Agricultural Education, 61*(4), 175-188. <https://doi.org/10.5032/jae.2020.04175>

- Traini, H. Q., Haddad, B., Stewart, J., & Velez, J. J. (2021). Adjusting, appeasing, and rearranging: How agriculture teachers reconcile demands of the profession. *Journal of Agricultural Education*, 62(2), 167-184. <https://doi.org/10.5032/jae.2021.02167>
- Waddock, S. (2020). Reframing and transforming economics around life. *Sustainability*, 12(18), 1-16. <https://doi.org/10.3390/su12187553>
- Wahlund, M., & Hansen, T. (2022). Exploring alternative economic pathways: A comparison of foundational economy and doughnut economics. *Sustainability: Science, Practice, and Policy*, 18(1), 171-186. <https://doi.org/10.1080/15487733.2022.2030280>
- Yopp, A. M., McKim, B. R., & Homeyer, M. M. (2018). Flipped programs: Traditional agricultural education in non-traditional programs. *Journal of Agricultural Education*, 59(2), 16-31. <https://doi.org/10.5032/jae.2018.02016>