

# Investigating Teacher Margin and Creativity in Michigan

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## Abstract

*Teacher creativity is essential to developing and delivering innovative learning opportunities, including hands-on experiences which are at the heart of school-based agricultural education (SBAE). A teacher's ability to develop and deliver innovative learning experiences may, however, be influenced by their margin. Teacher margin is defined as the difference between what a teacher has the capacity to do (i.e., power) and what they are tasked with doing (i.e., load) in their personal and professional roles. The potential relationship between creativity and margin is particularly salient in SBAE as consistent research has found agricultural educators experience a burdensome workload and reduced margin. As such, the current study employed a survey methodology to explore teacher creativity, margin, and the relationship between the two variables. Results from the study indicate agriculture teachers in Michigan perceived low levels of margin, indicating their required workload is near or exceeding their capabilities. Data also revealed agriculture teachers in Michigan perceive moderate levels of creativity. Furthermore, no statistically significant relationship was identified between margin and creativity. These findings suggest teachers maintain stable levels of creativity regardless of differences in margin. Findings are discussed using the theory of margin with recommendations for research and practice explored.*

## Introduction

School-based agricultural education (SBAE) teachers have a myriad of items on their workplace *to-do lists* alongside additional obligations at home (Sorensen et al., 2016). The professional load shouldered by SBAE teachers has contributed to their emotional exhaustion (Kitchel et al., 2012; Smith & Smalley, 2018), stress (Hainline et al., 2015; King et al., 2013), and tedious work-life balance (Sorensen et al., 2016; Sorensen & McKim, 2014). The COVID-19 pandemic likely exacerbated these issues, furthering concerns related to teacher success and professional retention (McKim & Sorensen, 2020; Shoulders et al., 2021). The central role of teacher workload within this system of challenges necessitates empirical research on teacher margin, defined as the difference between the holistic load (i.e., accumulation of work and life duties) and power (i.e., accumulated ability to achieve load) held by a teacher (Hiemstra, 1993; McClusky, 1963). Thus, the current study explored the margin of SBAE teachers in Michigan.

Qualitative findings regarding teacher margin suggest creativity may be stifled by a lack of margin (*blinded for peer review*). Creativity is a valued attribute among educators for a variety of reasons, including being an outlet for self-expression (Reilly et al., 2011), increasing student engagement (Radeljić et al., 2020; Reilly et al., 2011), and increasing student perceptions of educator effectiveness (Aschenbrener et al., 2010a, 2010b). Furthermore, fostering student creativity has long been encouraged (Reilly et al., 2011; Rinkevich, 2011) in part, because creativity is valued by employers (Robinson, 2009). Given the importance of creativity, it is imperative to explore, develop, and sustain creativity among school-based agricultural education (SBAE) teachers. As such, this study also explored creativity among Michigan SBAE teachers.

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### **Purpose and Research Questions**

The lack of an established baseline for teacher margin and teacher creativity in SBAE limits current understanding. In addition to creating a baseline, it is important to explore differences in teacher margin and creativity by demographic variables to provide insights into how these variables are experienced across teachers within the profession. Finally, the relationship between margin and creativity suggested by Marzolino et al. (2024) necessitates an investigation into the relationship between these two variables. As such, the research questions for this study are:

1. What level of margin do SBAE teachers perceive?
2. How is teacher margin predicted by demographic variables?
3. What level of creativity do SBAE teachers perceive?
4. How is teacher creativity predicted by demographic variables?
5. How does margin relate to creativity?

### **Literature Review**

There are two topics within the literature pertinent to this research study: (a) teacher margin, largely explored through load and power; and (b) teacher creativity.

#### **Teacher Margin**

The theory of margin is relatively new to SBAE; studies surrounding this theory are primarily in the fields of higher education and nursing (i.e., Biney, 2021; Stevenson, 1982). We argue broader applications of this theory may yet be realized. In fact, margin related to SBAE teacher professional development was explored by McKim and McKim (2023). They recommended tailoring professional development to support increased power and decreased load among teachers, suggesting this margin-based approach to professional development would maximize impact. The seminal research on SBAE teacher margin (McKim & McKim, 2023) highlights the importance of the concept within the system of agricultural education; however, this research did not provide empirical data on the levels of margin perceived by teachers. Thus, establishing a baseline for teacher margin is a critical next step.

While margin has not been studied by name, several strands of literature are related to teacher margin, including work-life balance, time management, stress management, and burnout. Beginning with work-life balance, the more balanced work and life are for teachers, the more equitably work and home loads can be accomplished, perhaps leading to a greater amount of overall margin. Studies show agriculture teachers can achieve only a moderate amount of work-life balance (Sorensen et al., 2016; Sorensen & McKim, 2014). Additionally, work-life balance and success are at odds when it comes to early career teachers as they have more unfamiliar elements of the job to explore and navigate (Traini et al., 2019). Further regarding early career teachers, attitudes toward teaching fluctuate throughout the school year (Disberger et al., 2023; Moir, 1990) and may affect teacher margin.

The perception of having enough time has weight in teacher margin - better time management could lead to more power or a lessened load. McKibben et al. (2022) found slight, positive correlations between job satisfaction, recreation, working with SAEs outside of school, and salary. Other work on time management suggests SBAE teachers are spending uncompensated hours on job-related duties (Hainline et al., 2015; Sorensen et al., 2016; Torres et al., 2009). With hours spent working outside of the 40-hour work week, teacher margin may be impacted by having less time to recharge, relax, or destress.

Burnout occurs after periods of prolonged stress and manifests in the form of emotional exhaustion, depersonalization, and low personal achievement (Maslach, 1976). Operating with little margin is stressful, especially if that state persists over time (McClusky, 1963). Teachers who are experiencing burnout may suffer decreased self-efficacy and perceived effectiveness (Brouwers & Tomic, 2000). In SBAE, Newcomb et al. (1986) found 17-30% of SBAE teachers in Ohio were experiencing high levels of burnout; Croom

(2003) found SBAE teachers in three southeast states were experiencing moderate emotional exhaustion, low depersonalization, and high personal achievement; Kitchel et al. (2012) reported similar findings for teachers in six different states; and Smith & Smalley (2018) reported mid-career teachers were experiencing moderate levels of emotional exhaustion, depersonalization, and personal achievement. The levels of burnout have varied over the years; after the onset of the COVID-19 pandemic, it is unclear the burnout levels among SBAE teachers. Research in broader education, however, paints a grim picture with the National Education Association reporting 67% of teachers identify burnout as a very serious concern (GBAO Strategies, 2022).

### Teacher Creativity

There is a dearth of research exploring teacher creativity in secondary school classrooms, especially in the United States. Cayirdag found creative self-efficacy and teacher self-efficacy were linked to “creativity fostering teacher behaviors,” (2017, p. 1969) suggesting more efficacious teachers promote student creativity. Research suggests there are two types of creativity, transformational creativity that shifts paradigms, and everyday creativity that allows people to solve problems (Reilly et al., 2011). Outlets for teacher creativity include “curriculum preparation, teaching methods, connection with students, shaping the environment, and reflection on practice” (Reilly et al., 2011, p. 254). However, Reilly et al. (2011) lament an overfocus on educational outcomes and attempting to teach *all* the content may stifle creativity. Conversely, others suggest teaching the required curriculum in unique and creative ways could circumvent this issue (Cayirdag, 2017).

Teacher creativity has positive benefits for students, including increased engagement (Reilly et al., 2011; Rinkevich, 2011) and reduced boredom (Radeljić et al., 2020). When students are more engaged, they will likely experience more success. Despite these potential bonuses, creativity may also be perceived as a negative by some teachers. Beghetto (2007, as cited in Rinkevich, 2011) noted some teachers regard creativity as an additional duty, adding to their workload. Some also suggest creativity in the classroom be limited to those who are inherently more creative, an idea which Rinkevich (2011) disagrees with. Rinkevich (2011) argues teacher preparation programs must eliminate the belief that only those who are inherently more creative may be creative in the classroom.

Within agricultural education, studies on creativity have been limited, especially scholarship at the secondary school level. Baker and Robinson (2016) examined originality, finding students receiving an experiential learning treatment scored higher in creativity. The findings of Baker and Robinson (2016) suggest SBAE teachers using experiential learning techniques help their students be more creative. Direct instruction, however, may still be selected by SBAE teachers because it is efficient and familiar, potentially reducing student creativity development within SBAE (Baker & Robinson, 2016).

Research at the postsecondary level suggests undergraduate students identify creative teaching behaviors in their instructors and rate creative instructors as more effective (Aschenbrener et al., 2010a). Additional research found postsecondary instructors were strong in elaboration as a creativity technique, but lacked the originality component of creativity (Aschenbrener et al., 2010b). Instructor self-perceptions of creativity were, however, not correlated to teaching experience or gender; conversely, data collected from students suggested a relationship between instructor creativity and teaching experience (Aschenbrener et al., 2010a, 2010b). Outside of instructor creativity, student creativity is also important. Research suggests postsecondary students lack creativity and innovation (Robinson, 2009). Also thought to be related to student creativity are student learning styles, as Friedel and Rudd (2006) reported a slight relationship between these two variables.

## Theoretical Framework

The theoretical lens for this study is the theory of margin, initially conceptualized by McClusky (1963). The theory of margin states everyone has a load in life they must achieve, comprised of both external (i.e., familial and work duties) and internal (i.e., expectations for oneself) obligations. Additionally, all individuals have power to achieve that load, derived from “physical, social, mental, and economic abilities together with acquired skills which may contribute to the effective performance of life tasks” (McClusky, 1963, p. 16). The difference between power and load is margin. When margin is plentiful, McClusky (1963) posited individuals are not living up to their true potential because individuals could be learning new skills. When people have little to no margin, however, they become increasingly stressed and may approach the point of a breakdown (McClusky, 1963).

The theory of margin was explored by Stevenson (1982), who developed a scale to measure load, power, and margin. Subscales included self, family, religiosity/spirituality, body, extra-familial relationships, and environment (Stevenson, 1982, p. 223). The amount of power or load derived from various areas within those subscales could be quantified to measure the amount of margin one has in life. The margin construct utilized in the current study’s instrument was informed by Stevenson’s work.

Regarding creativity, the 4in1 construct of creativity, conceptualized by Kharkhurin (2014), is a theoretical tool which creates a broad definition for creativity. This construct suggests there are four dimensions of creativity: (a) novelty, (b) utility, (c) aesthetics, and (d) authenticity (Kharkhurin, 2014). *Novelty* is the creation of something new, an original thought, process, solution, or idea. Through a teaching lens, this implies new or original takes on teaching content, integrating new topics into curriculum, or trying new classroom management techniques. *Utility* refers to a creative work being useful by making a meaningful contribution. In teaching, this could be operationalized as creativity yielding increased student engagement and learning retention. *Aesthetics* strives for creative work to incorporate beauty, also thought of as truth, and may be achieved by sharing important discoveries with fellow teachers or simply orchestrating something well. *Authenticity*, the final component, demands a creative work allows the creator to express themselves and their perceptions. For teachers, this entails being their authentic selves in the classroom. Kharkhurin’s (2014) framework was modified and adapted to fit the context of this research. For this study, creativity is evaluated based on reported novelty, utility, aesthetic, and authenticity. The aesthetic value, as it is hardest to define in this context, was the least represented in the instrument’s creativity construct.

## Methods

An online, quantitative survey was used in this study exploring teacher margin and teacher creativity in Michigan.

### Population and Response Rate

The survey was distributed via email to all Michigan SBAE teachers ( $N = 150$ ) during the 2022-2023 school year. Responses were collected via Qualtrics during April and May 2023. Four reminder emails were sent to teachers during that time frame (Dillman, 2007). A total of 90 completed surveys were received for a response rate of 60.00%. Non-response bias was evaluated by comparing on-time respondents ( $n = 51$ ) to late respondents ( $n = 39$ ) for teacher margin and creativity. The lack of statistical significance (i.e.,  $p$ -value = .919 [margin];  $p$ -value = .852 [creativity]) between the groups suggests non-response bias was not an issue within this study.

### Instrumentation

The survey was comprised of three sections. The first section included the margin construct, which contained nine questions (reported in Table 1). The second section included 14 questions measuring teacher creativity (reported in Table 3). The third section, demographics, elicited personal and programmatic information from respondents. Item-specific response options were created for each of the questions within the margin and creativity sections (Saris et al., 2010). All questions were measured on a five-point scale, with a score of one representing the lowest amount of margin or creativity and a five representing the highest amount of margin or creativity. Questions were randomized within survey blocks. A *post hoc* construct reliability analysis established the margin ( $\alpha = .78$ ) and creativity ( $\alpha = .83$ ) constructs were reliable.

### Data Analysis

After being retrieved from Qualtrics, data were analyzed using the Statistical Package for the Social Sciences (SPSS). For research objective one, margin data were combined into a construct and individual item and construct means were calculated. For research objective two, a simultaneous entry multiple linear regression was completed wherein margin was the dependent variable and selected demographic variables served as the independent variables. For research objective three, creativity data were combined into a construct and individual item and construct means were calculated. For research objective four, a simultaneous entry multiple linear regression was completed wherein creativity was the dependent variable and selected demographic variables served as the independent variables. For research objective five, the relationship between teacher margin and creativity was evaluated via a correlation analysis. The assumptions of multiple linear regression and correlation were checked and cleared prior to running each analysis.

### Description of Respondents

Respondents averaged 10.70 years of teaching experience. Most respondents taught at a comprehensive public high school ( $f = 55$ ; 61.11%). Additionally, two-thirds of respondents ( $f = 60$ ) had completed a formal teacher education program. Females comprised the majority of respondents ( $f = 68$ ; 75.56%).

## Results

For research question one, overall teacher margin averaged 2.26 ( $SD = 0.53$ ), with one being minimal margin and five being plentiful margin (see Table 1). Teachers reported the highest areas of margin as workload manageability ( $M = 2.90$ ,  $SD = 0.97$ ) and frequency of using support systems ( $M = 2.90$ ,  $SD = 1.11$ ). The lowest area of margin was availability of free time ( $M = 1.73$ ,  $SD = 0.69$ ).

Table 1

*Margin Construct*

Question	<i>M</i>	<i>SD</i>
How often are you able to effectively utilize your support systems?	2.90	1.11
Overall, how manageable would you consider your workload?	2.90	0.97
Overall, what is your level of stress? *	2.59	0.86
How often does your workload afford you the opportunity to practice your spirituality in the way you desire? †	2.57	0.91
Do you have space in your schedule to appropriately deal with life events?	2.14	0.86
How much mental space do you feel you have on any given school day?	1.92	0.66
How often do you have time in a school day to just sit and think?	1.84	0.68
How much energy do you have remaining after a school day?	1.81	0.81
How much free time versus scheduled time do you have during the week?	1.73	0.69
<i>Margin Construct Score</i>	2.26	0.53

*Note.* Response options differed for each item. \*Reverse coded. †Not applicable option provided.

For research question two, a regression analysis was completed for teacher margin and selected demographic variables (see Table 2). The final model was not statistically significant ( $F$ -value = 1.36,  $p$ -value = .234), indicating the collection of independent variables were not significant predictors of teacher margin given the power available within our study.

**Table 2***Regression of Teacher Margin and Demographics*

Predictors	Dependent Variable: Teacher Margin					
	Zero-order correlation ( <i>r</i> )	<i>p</i> -value ( <i>r</i> )	<i>B</i>	<i>SEB</i>	$\beta$	<i>p</i> -value
Gender <sup>a</sup>	-.10	.348	-.08	.15	-.07	.581
Parent/Guardian Status <sup>b</sup>	.04	.745	-.02	.13	-.02	.858
Relationship Status <sup>c</sup>	.15	.165	.18	.13	.15	.217
Education Type <sup>d</sup>	.10	.367	.01	.13	.01	.968
School Type <sup>e</sup>	-.18	.109	.21	.14	.19	.121
Mid-Career Teacher	-.23	.036	-.27	.14	-.24	.056
Late Career Teacher	.15	.191	.06	.15	.05	.708

*Note.*  $R = .34$ ,  $R^2 = .12$ ,  $F$ -value = 1.36,  $p$ -value = .234. Indicator variables include: <sup>a</sup>Female = 1, <sup>b</sup>Parent/Guardian = 1; <sup>c</sup>In Relationship = 1; <sup>d</sup>Completed Teacher Preparation Program = 1; <sup>e</sup>Vocational/Career Center = 1.

For research question three, the mean teacher creativity score was 3.05 ( $SD = 0.52$ ), with one being least creative and five being most creative (see Table 3). Teachers reported the highest amount of creativity via authenticity, reporting teaching agriculture is something they are passionate about ( $M = 4.10$ ,  $SD = 0.90$ ), whereas the lowest amount of creativity was reported for teaching using new practices ( $M = 2.44$ ,  $SD = 0.79$ ).

Table 3

*Teacher Creativity Construct*

Question	<i>M</i>	<i>SD</i>
To what extent would you say being an agricultural educator is one of your passions?	4.10	0.90
To what extent do you feel that you can be yourself as a teacher?	3.78	0.88
To what extent do you think your personality comes across when you are doing your job?	3.74	0.98
Thinking about premade curriculum or curriculum that others have shared with you, to what extent do you put your own unique twist on those lessons?	3.36	1.07
Do you look for new ways to deliver content to students?	3.14	1.11
Do you actively revise your curriculum to ensure it is having students think critically?	2.98	1.02
How often do you use your imagination to plan lessons?	2.88	1.01
To what extent do you think what you do in your classroom is creative?	2.85	0.78
To what extent do you think what you do in your classroom is innovative?	2.81	0.75
To what extent do your students think what you do in class is creative?	2.76	0.81
Thinking on a year to year basis, how often do you use the same lessons in your classroom?*	2.68	0.90
Do you use the same methods when you teach?	2.55	0.78
How often do you create new curricular experiences for your classroom?	2.55	0.73
How many of your lessons contain practices you consider to be new?	2.44	0.79
<i>Teacher Creativity Construct</i>	3.05	0.52

Note. Response options differed for each item. \*Reverse coded. †Not applicable option provided.

For research question four, a multiple linear regression including teacher creativity and selected demographic characteristics was completed (see Table 4). The collection of selected demographic variables was not statistically significant in modeling teacher creativity ( $F$ -value = 0.92;  $p$ -value = .494) given the power available in this study.

Table 4

*Regression of Teacher Creativity and Selected Demographics*

Predictors	Dependent Variable: Teacher Creativity						
	Zero Correlation I	Order	<i>p</i> -vall( <i>r</i> )	<i>B</i>	<i>SEB</i>	$\beta$	<i>p</i> -value
Gender <sup>a</sup>	-.08		.467	-.08	.16	-.06	.622
Parent/Guardian Status <sup>b</sup>	.08		.454	.12	.13	.11	.368
Relationship Status <sup>c</sup>	-.09		.441	-.10	.15	-.08	.496
Teacher Preparation <sup>d</sup>	-.11		.324	-.25	.14	-.21	.083
School Type <sup>e</sup>	-.03		.766	-.04	.14	-.03	.803
Mid-Career Teacher	.04		.704	.15	.15	.13	.312
Late Career Teacher	.10		.370	.19	.16	.16	.221

*Note.*  $R = .29$ ,  $R^2 = .08$ ,  $F$ -value = 0.92,  $p$ -value = .494. Indicator variables include: <sup>a</sup>Female = 1, <sup>b</sup>Parent/Guardian = 1; <sup>c</sup>In Relationship = 1; <sup>d</sup>Completed Teacher Preparation Program = 1; <sup>e</sup>Vocational/Career Center = 1.

For research question five, a correlation was run to determine the relationship between teacher-perceived margin and creativity. The relationship between margin and creativity was not statistically significant (i.e.,  $r = .07$ ;  $p$ -value = .547) given the power available in this study.

### Discussion, Recommendations, and Conclusions

Findings from research question one suggest teachers in Michigan perceived little margin ( $M = 2.26$ ). These findings are particularly alarming considering the association between reduced margin and professional resilience (McClusky, 1963). Inherently, individuals seek systems which afford them margin to learn and grow (McKim & McKim, 2023); therefore, our findings indicating SBAE teachers in Michigan lack margin suggests teachers may leave the profession due to its preclusion of margin. Not only should stakeholders in Michigan be motivated to take action based on these findings; disciplinary leaders in other states should be motivated to evaluate the margin perceived by SBAE educators in their state to bring awareness to this potential issue. Importantly, however, the timing of such evaluations should be considered. The data analyzed in the current research were collected in April and May, which contain some of busiest weeks in Michigan teachers' calendars. Thus, it is reasonable to assume margin might be higher at other points in the year. Therefore, it is recommended margin evaluations in Michigan, and elsewhere, be conducted multiple times throughout the school year to monitor the potential ebb and flow of margin among SBAE educators.

Shifting to research question two, findings demonstrate selected demographic variables have insignificant associations with margin among respondents. These findings suggest additional variables play a more substantive role in teacher margin for survey respondents. Future scholarship on teacher margin should consider the inclusion of specific workload characteristics (e.g., number of teaching preps, FFA contest involvement, class size, student participation in supervised agricultural experiences) when modeling SBAE teacher margin. Further, modeling teacher margin amongst a larger sample could add statistical power to the analysis, affording a more discriminating look into this important variable.

Findings for research question three suggest, overall, teachers perceive moderate levels of creativity. The areas where teachers excelled in creativity were in the authenticity domain, feeling that their personality came across while doing their job, they could be themselves as teachers, and indicating that being an SBAE teacher was one of their passions. Areas where creativity scores were the lowest included the frequency of lessons with new practices, creating new curricular experiences, and using the same methods when teaching, all falling into the novelty domain. As such, helping teachers access new teaching methods, practices, or carve out time to create new curricular experiences may be valuable for increasing SBAE teacher creativity.

For research question four, none of the selected demographics were statistically significant predictors of creativity among respondents. These findings suggest no difference between career stages, gender, and creativity, reinforcing findings from Aschenbrener et al. (2010a, 2010b). Accordingly, we conclude other factors impact teacher creativity. Potential factors to be considered in future scholarship include teacher self-efficacy, personal creativity identity, value toward creativity, and workload characteristics (e.g., number of classes taught). Additional recommendations for research include scholarship which gathers student perceptions of teacher creativity to help evaluate learning benefits associated with classroom creativity.

For research objective five, there was no significant relationship between teacher margin and creativity. This ran counter to what was suggested by teachers in Marzolino et al. (2024). Despite their relatively low amounts of margin, teachers are still reporting moderate creativity. This could be a boon for the profession, as it seems no matter how little margin teachers have, they are still finding some sort of creative outlet. Alternatively, these findings may be explained by other variables being more accurate predictors of creativity. Future research is warranted to gain clarity on teacher creativity.

While this study provided important information on SBAE teacher margin and creativity, it does have limitations. First, the research was limited to a single state. Additionally, data were collected during some of the busiest weeks for Michigan SBAE teachers, which could have influenced responses. As such, our previous recommendation of longitudinal research on teacher margin and creativity throughout a school year is reinforced to better understand the interplay between program calendar, margin, and creativity.

Teachers in Michigan have a low amount of margin and a moderate level of creativity, suggesting that there is room for growth in both areas. While this study serves as a baseline for these variables in Michigan, the predictors of margin or creativity are still unclear. Expanding the survey to include a larger sample may be beneficial in bolstering statistical power and gaining a better understanding of these variables and their relationship. Ultimately, it is important for teachers to have the margin required to stay within their chosen profession, just as it is important for teachers to be creative and reap the benefits of creativity within their classroom.

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