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A Longitudinal Evaluation of Conflict Management Capacity Building Efforts in Higher Education

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Abstract

The cost of conflict avoidance and mismanagement can be detrimental to organizational environments. Thus, the need for individuals capable of managing conflict effectively is a vital and necessary leadership skillset, specifically within higher education. The purpose of this study was to examine if participation in the LEAD21 leadership development program, a national leadership program for faculty emerging as leaders in the land-grant university system, changed participant levels of conflict management capacity. The longitudinal analysis included comparisons across members of four classes in the LEAD21 program, as well as the aggregated data from all four years. Results indicated the overall level of conflict management capacity rose by an average of 15.1%. Agricultural leadership educators can use the results to inform leadership education initiatives while also using the presented Conflict Management Scale to measure such initiatives. Study expansions, implications, and recommendations are discussed.

Keywords: managing conflict; conflict management; leadership development; evaluation

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Introduction

"[N]othing determines our success in life as much as our ability to work with other people. And nothing is more messy in relationships than dealing with conflict" (Maxwell, 2013, para 2). This quote from John Maxwell is the impetus behind some of Maxwell's (2013) teaching resources such as his "10 Commandments of Handling Conflict." A plethora of books about conflict are available, such as Patterson, Switzler, Grenny, and McMillan's (2012) popular narrative on *Crucial Conversations: Tools for Talking When Stakes Are High*. Books that do not solely focus on conflict still touch on its existence indirectly. For example, Covey (1989) expounds upon a win-win mentality and the act of seeking first to understand before being understood in *The 7 Habits of Highly Effective People*. Collins (2001) paints a picture of the benefits of healthy conflict in *Good to Great* as he discusses how brutal honesty and spirited debates that are seemingly conflictive can be energizing, innovative, and collaborative. Additionally, countless websites and videos exist about what conflict is, why it begins, where it begins, how people should respond to it, how people actually respond to it, and the advantages and disadvantages of its existence. A simple search using the phrase *conflict management* in a Division I

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research university library database results in 197,257 results and a similar search using Google results in an astounding 323,000,000 results.

Conflict occurs in any industry and environment where there is interaction among humans. Though it can involve difficult conversations, emotion management, and the perception of negative feedback (Berger, 2017), some agree with the sentiment that, "[c]onflict is neither good nor bad. Properly managed, it is absolutely vital" (Berger, 2017, para 1). Rather than managing it, sometimes the choice is made to shun, ignore, or passive-aggressively handle conflict (Berger, 2017; Carmichael & Gallo, 2015; Frost, n.d.; Overton & Lowry, 2013; Suarez, 2016), stemming from a discomfort which is a "natural human tendency" according to the Society for Human Resource Management (SHRM) (Lytle, 2015, para 2). However, this tendency can be costly. A global research study found 0.9 to 3.3 hours are spent addressing conflict in the workplace per week (Overton & Lowry, 2013). Regarding how conflict indirectly affects other areas of an organization, SHRM reiterates that, "Every unaddressed conflict wastes about eight hours of company time in gossip and other unproductive activities…" (Lytle, 2015, para 5). A "…calculated expense [of conflict] based on average hourly earnings in 2008 was $359 billion in lost time" (Overton & Lowry, 2013, p. 260). Other costs of conflict avoidance or conflict mismanagement include employee absenteeism and turnover (Overton & Lowry, 2013), strained relationships, decreased productivity, and low morale (Frost, n.d.). Such costs may be the result of conflicting priorities, perspectives, assumptions and preferences (Lytle, 2015) along with poor communication, differences in personality, role confusion, stress, and ineffective leadership (Overton & Lowry, 2013). Lytle (2015) suggests that even seemingly small conflicts should be taken seriously because they can often relate to larger issues.

Higher education, and the land-grant university system (LGUS) in particular, is not immune to conflict and the need to have mechanisms in place to address it. In fact, Suarez (2016) asserts that "to be ready to lead in higher education, you must understand how to deal with conflict…" (para 1). This sentiment is echoed by the existence of an International Journal of Conflict Management. Additionally, HigherEdJobs.com, a website frequented by higher education faculty and staff, speaks specifically about the important role leadership plays in helping with workplace conflict. HigherEdJobs.com contributor Daniel Griffith (2016) asserts "…managers must take responsibility for helping employees develop the capability to address their conflict situations on their own whenever possible" (para 1). Griffith (2016) goes on to propose that managers and leaders can do this by coaching employees and helping them take ownership of the situation as well as possible solutions. However, higher education leaders may not automatically know how to coach others through conflict management if they, themselves, have not been intentionally developed in this area. Griffith (2016) recognizes that not everyone may have the capacity to help with conflict management and encourages leaders to reflect on the following question before helping others: "Are you capable of managing your own conflicts so that you can serve as a credible role model for others?" Agricultural leadership education can assist current and future employees grow in the area of answering such a question. As a key leadership skill (Suarez, 2016), conflict resolution should be expected (Suarez, 2016) and can be improved upon through leadership development initiatives (Overton & Lowry, 2013).

Benefits of building upon conflict management and resolution skills are numerous. Those who have such skills can help foster stronger relationships, respect, collaboration (Frost, n.d.), and more effective communication (Mitchell, 2019) in the workplace. These skills also increase problem solving, which can aid in the flow of productivity and efficiency (Frost, n.d.). When an organization actively practices conflict management, morale is not negatively affected because tension does not build up as employees learn to view situations with empathy and from difference perspectives. Also, situations are not just seen more holistically, but more possibilities and solutions are thought of for addressing situations (Frost, n.d.). Deemed as a natural (Frost, n.d.; Lytle, 2015), normal, and healthy occurrence (Lytle, 2015) when managed properly, conflict management can be a key ingredient to the success of an organization (Lytle, 2015). "Experts have found that the most effective teams are those in which members feel safe enough to disagree with one another. A culture where dissent is allowed, or even

encouraged, can spur innovation, diversity of thought and better decision-making" (Lytle, 2015, para 8).

The present study evaluates LEAD21's ability to increase conflict management capacity in LGUS leaders. LEAD21 is a national leadership development program for leaders associated with the National Institute of Food and Agriculture (NIFA) and colleges of agricultural, environmental, and human sciences. The program's influence on change leadership has already been evaluated (Lamm et al., 2018); thus, not only does this study expound upon previous research, but it also aligns with the 2016-2020 American Association for Agricultural Education (AAAE) National Research Agenda (Roberts et al., 2016). Priority area three of the research agenda calls for agricultural education to continue developing a "sufficient scientific and professional workforce that addresses the challenges of the 21st century" (Roberts et al., 2016, p. 9). Therefore, conflict, and the teaching of how to manage it, can be part of a larger conversation about leadership and education. Institutions connected to the Association of Public and Land-Grant Universities (APLU) must continually evolve to equip agricultural teachers and leaders in ways that promote the missions of APLU and each university. Teaching conflict management skills in the classroom and teaching it to those in administrative positions are both equally vital to the sustainability of the agricultural workforce. Effective curriculum on the topic can also create a cyclical trickle-down effect as administrators make conflict management improvements, then help faculty with this area, who then incorporate such skills in teaching methods for current students who may become faculty and/or administrators in the future.

Additionally, maintaining how information about conflict management curricula are created and shared should be infused with a process of review and evaluation. As evaluation of educational outcomes continues to increase in value, so will the competency of conflict management. This skill will continue to be needed by recipients of agricultural education and those who trust agricultural educators to help them become more career-ready, soft-skilled-equipped professionals in an increasingly connected and complex workforce. In addition to "[a]gricultural education research [seeking] to connect its educational programs to 21st century skills and communication competencies" (Stripling & Ricketts, 2016, p. 32), conflict management research can also be used to aid AAAE's sixth research priority area geared toward having "vibrant, resilient communities" (Roberts et al., 2016, p. 9). Such research has the potential to enhance community relations and inform the community-based leadership initiatives influenced by agricultural educational programs (Graham et al., 2016).

Conceptual Framework

Among different types of conflict that are discussed in the literature, task, process, status, and relationship conflict have been identified. Task conflict, also called task-led conflict, is disagreement over tasks and the decisions that should be made about those goals and tasks (Mitchell, 2019). Task conflict can be further nuanced into routine conflict over simple tasks or procedural conflict over more complex issues (Mitchell, 2019). While task conflict is a disagreement over *what* is or is not being done (Carmichael & Gallo, 2015), process conflict results from disagreement over *how* something should be accomplished. Even if the *what* and *how* of goals and tasks are clear, status conflict, disagreement about *who* is in charge can still exist (Carmichael & Gallo, 2015). Either one of the above conflict types can be associated with (Overton & Lowry, 2013), or even mislabeled as (Carmichael & Gallo, 2015), relationship conflict, also known as interpersonal or emotional conflict (Mitchell, 2019). Relationship conflict occurs when a personal disagreement causes interpersonal conflict in which employees view "themselves as opposed to one another" (Mitchell, 2019, para 3). Sources of this conflict can be personality differences or misunderstandings, making relationship conflict more stressful than other types of conflict and more difficult to manage because of the emotions and personal preferences involved (Mitchell, 2019). Overall, having knowledge of different types of conflict helps one at least "have a starting point at which to resolve [conflict]" (Carmichael & Gallo, 2015, para 18).

No matter the type of conflict, models aimed at addressing difficult situations have the following fundamental principles in common (Overton & Lowry, 2013):

1. Conflict is inevitable and…both positive and negative consequences may occur depending on how the conflict is managed.
2. The results are likely to be better with active engagement rather than avoidance.
3. People must be motivated to address conflict.
4. Behavioral, cognitive, and emotional skills can be acquired.
5. Emotional skills require self-awareness.
6. The environment must be neutral and feel safe. (p. 260)

For effectiveness and capacity expansion, it is the responsibility of a leader to know, practice, and coach others in implementing the aforementioned principles (Griffith, 2016). "There is considerable evidence that when leaders anticipate or encounter disagreement, such conversations are likely to be stressful and ineffective" (Robinson et al., 2014, p. 260). However, conflict management capacity can be learned and developed (Overton & Lowry, 2013) and it is vital, as "[h]ighly effective leaders [are recognized as those who] identify, understand and develop swift and smart resolutions to workplace conflicts" (Berger, 2017). Leaders are expected to be self-aware, know their positionality in a situation, accurately judge how severe a conflict is, and help create safe and respectful environments (Overton & Lowry, 2013). Additionally, conflict-savvy leaders should have a type of interpersonal effectiveness (Robinson et al., 2014) that lends to negotiation skills, the questioning of assumptions, open-mindedness, effective expression of viewpoints, positive relationships, and behavior change. According to Robinson et al. (2014), there is evidence that leadership development curriculum can aid leaders in developing such strategies. A willingness to learn, coupled with a leadership education focus "on leaders' theories-in-use, including both their behavior and the reasoning that explains it," can make a positive difference on a leader's personal development and professional practice (Robinson et al, 2014, p. 290).

Purpose and Research Objectives

The purpose of this study was to examine if participation in the LEAD21 leadership development program affected participants' perceived levels of conflict management. The study was driven by the following research objectives:

1. Describe the participants' levels of conflict management prior to completing LEAD21.
2. Describe the participants' levels of conflict management after completing LEAD21.
3. Determine if there is a difference in level of conflict management prior to completing LEAD21 and after completing LEAD21.

Methods

Based on the purpose and objectives of the study, a descriptive and causal-comparative research design was employed. The causal-comparative methodology was selected based on the hypothesis that participation in the LEAD21 leadership development program would be associated with differences in reported levels of conflict management (Kirk, 1995; Lamm et al., 2016). Levels of perceived conflict management were measured using a pre-test and post-test approach to quantify potential change (Rossi et al., 2004; Brown & Terry, 2013).

The population for this study were participants in the LEAD21 leadership development program during four classes: 2013-14, 2014-15, 2015-16, and 2016-17. This population was selected as it represented an audience that had participated in a similar leadership development program curriculum and had a consistent pre-test and post-test evaluation administered across classes. Within the scope of the program, the majority of the conflict management curriculum is based on the Thomas-Kilmann Conflict Mode model (Thomas & Kilmann, 1974). Participants completed the TKI assessment (Thomas, 2008) prior to attending the in person seminar. At the seminar participants received the results of their assessment as well as individualized coaching from program facilitators. Additionally, participants had an opportunity to identify a conflict situation they were facing at their home institution

and were then given an opportunity to work with a learning partner to practice managing the conflict. Additional support and group debrief and discussions were also facilitated during the program.

Within the population of interest, individuals were affiliated with the LGUS system either (1) as employees of LGUS institutions such as 1862 and 1890 institutions, (2) through affiliated organizations such as the USDA NIFA, or (3) from Non-Land-Grant Agricultural and Renewable Resources Universities (NARRU). Specific demographic data of the population are presented in Table 1.

Table 1
Demographics and Institutional Affiliation of Population

	2013-14		2014-15		2015-16		2016-17		Overall Combined 2013-17	
Characteristic	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Sex										
Male	52	59.1	42	51.2	44	51.8	47	55.3	185	54.4
Female	36	40.9	40	48.8	41	48.2	38	44.7	155	45.6
Institution										
1862	71	80.5	69	84.1	66	77.6	68	80.0	274	80.4
Institution										
Minority Serving Institution	12	13.8	11	13.4	17	20.0	11	13.0	51	15.0
NIFA/Other	5	5.7	3	3.7	2	2.4	6	7.0	16	4.6

Data for the research were collected using a researcher-developed scale that was used as part of a larger evaluation of the program. A researcher-developed scale was deemed to be more appropriate than existing conflict management scales (e.g., Jehn, 1995) based on the specific learning objectives for the program, as well as the unique organizational context participants represent. The scale, named The Conflict Management Scale, was composed of six items. The six items included: *I know how to manage conflict between myself and others*, *I have strong conflict management skills*, *I am able to identify the root causes of conflict*, *I know how to engage others in difficult situations to manage conflict*, *I know how to engage others in difficult conversations to strengthen our relationship*, and *I am aware of the costs associated with conflict in a group*. Individuals indicated their response on a five-point, Likert-type scale. Possible responses to each item included: 1 – "Strongly Disagree," 2 – "Disagree," 3 – "Neutral," 4 – "Agree," 5 – "Strongly Agree." A Managing Conflict Scale score was calculated by summing each of the five-statement scores and dividing by five.

The items were developed with the assistance of, and subsequently reviewed by, a panel of experts consisting of individuals with expertise in scale development, leadership development, adult educational theory, and program evaluation for content and face validity (Crocker & Algina, 1986). Experts included both university faculty members and leadership development practitioners. Reliability and internal structure validity was analyzed and found to be adequate based on existing social science standards for internal consistency (Cortina, 1993; Schmitt, 1996; Streiner, 2003). Internal consistency was calculated and represented by Cronbach's alpha. When all four classes were combined, the overall Cronbach's alpha was calculated to be 0.83 for both the pre-test and post-test. Cronbach's alpha was also calculated for each class under both pre-test and post-test conditions; values ranged from 0.81 to 0.85 (Table 2).

Table 2
Internal Consistency Reliability

Item	Pre-test α	Post-test α
Overall Combined (2013-17)	0.83	0.83
2013-14	0.81	0.84
2014-15	0.83	0.85
2015-16	0.84	0.81
2016-17	0.83	0.82

A census of all 337 participants representing the four classes from 2013-14, 2014-15, 2015-16, and 2016-17 academic years was conducted. The program consists of three seminars conducted over the course of nine months as well as periodic check-in calls and activities between seminars. The seminars range in length from four to six days. The evaluation consists of a pre-test before the start of programming, a pre-session survey, intra-session surveys, a post-session survey, and a post-test given at the end of the program experience. The pre-test and post-test are administered using an online survey tool, are distributed according to the recommendations of the Tailored Design Method (Dillman et al., 2008), and included a pre-notice message, an invitation to complete the survey, as well as a series of at least two reminders.

Among respondents, only those who had both a valid pre-test and valid post-test score were analyzed (Agresti & Finlay, 2009). A total of 262 paired responses were analyzed. Individual pre-test and post-test response rates are provided in Table 3. Response rates were considered acceptable based on established social science and online survey data collection standards within the literature (Baruch & Holtom, 2008).

Table 3
Response Rates

Item	Pre-test		Post-test	
	n	%	*n*	%
Overall Combined (2013-17)	280	83.1	275	81.6
2013-14	81	95.3	75	88.2
2014-15	69	84.1	71	83.5
2015-16	71	83.5	68	82.9
2016-17	59	69.4	61	71.8

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 25. Objectives one and two were analyzed using descriptive statistics as well as a one-way between subjects ANOVA to compare effect of group on level of conflict management based on class conditions. Objective three was analyzed using a paired-samples *t*-test (Ary et al., 2010; Zimmerman, 1997).

Results

The Conflict Management Scale was used to address the research purpose and objectives. The first objective, level of conflict management prior to completing the LEAD21 program, was calculated based on respondent results to the pre-test scale. The overall Conflict Management Scale had a minimum score of 1.67 and a maximum score of 5.00 (M = 3.50, SD = .58). The class from 2014-15 had the highest conflict management mean pre-test score. Results of the one-way between subjects ANOVA conducted to compare the effect of the group on level of conflict management, based on class conditions, indicated there was not a significant effect of the group on conflict management for the class pre-test conditions [$F(3, 279) = 1.61$, $p = .19$]. The pre-test mean, standard deviation, minimum,

maximum, and combined conflict management scores for all four individual classes, as well as the overall combination of classes, are presented in Table 4.

Table 4
Conflict Management Scale Scores – Pre-test

	n	*M*	*SD*	*Min*	*Max*
Overall Combined (2013-17)	280	3.50	0.58	1.67	5.00
2013-14	81	3.52	0.59	2.00	5.00
2014-15	69	3.62	0.55	2.00	5.00
2015-16	71	3.42	0.59	1.67	4.67
2016-17	59	3.44	0.60	2.00	4.83

The second objective, level of conflict management after completing the LEAD21 program, was calculated based on respondent results to the post-test scale. The overall combined Conflict Management Scale had a minimum score of 2.67 and a maximum score of 5.00 ($M = 4.04$, $SD = .45$). The class from 2013-14 had the highest conflict management mean post-test score. A one-way between subjects ANOVA was conducted to compare the effect of the group on level of conflict management based on class conditions. There was not a significant effect of the group on conflict management for the class post-test conditions [$F(3, 274) = 0.50$, $p = .69$]. The post-test mean, standard deviation, minimum, maximum, and combined conflict management scores for all four individual classes, as well as the overall combination of classes, are presented in Table 5.

Table 5
Conflict Management Scale Scores – Post-test

	n	*M*	*SD*	*Min*	*Max*
Overall Combined (2013-17)	275	4.04	0.45	2.67	5.00
2013-14	75	4.09	0.48	3.00	5.00
2014-15	71	4.04	0.48	2.83	5.00
2015-16	68	4.00	0.43	2.67	5.00
2016-17	61	4.04	0.43	2.83	5.00

The third objective, to determine if there was a difference in level of conflict management prior to completing LEAD21 and after completing LEAD21, was analyzed based on comparing respondents' pre-test scale scores to their post-test scale scores. Specifically, a paired-samples t-test was conducted to compare the mean levels of conflict management in pre-test and post-test conditions. A statistically significant difference in the scores for the overall combined conflict management analysis in pre-test ($M = 3.51$, $SD = .58$) and post-test ($M = 4.04$, $SD = .45$) conditions; [$t(261) = 14.63$, $p < .001$] was observed. The statistically significant results between pre-test and post-test conditions were further observed across all four individual classes. The overall increase from pre-test to post-test conditions for the overall combined program was calculated at 15.1%. The smallest observed difference was in class 2014-15 (12.7%), followed by 2013-14 (14.6%), and 2015-16 (16.7%). Class 2016-17 had the largest observed difference (17.2%). Additional results and analysis are presented in Table 6. To quantify effect size Cohen's *d* was calculated for each of the paired analyses. A large effect size was observed for each of the analyses (Cohen, 1988).

Table 6
Descriptive Statistics and t-test Results for Conflict Management Pre-test and Post-test

Outcome	Pre-test		Post-test							
	M	*SD*	*M*	*SD*	*n*	95% CI for Mean Difference	*t*	*p*	*df*	Cohen's *d*
Overall Combined (2013-17)	3.51	0.58	4.04	0.45	262	0.46, 0.61	14.63	.000	261	.90
2013-14	3.56	0.59	4.08	0.45	71	0.40, 0.65	8.18	.000	70	.97
2014-15	3.61	0.56	4.07	0.48	65	0.32, 0.61	6.42	.000	64	.80
2015-16	3.42	0.56	3.99	0.43	67	0.43, 0.71	8.12	.000	66	.99
2016-17	3.44	0.60	4.03	0.43	59	0.41, 0.77	6.62	.000	58	.86

Conclusions, Implications, Limitations, and Recommendations

Conflict will always be present and, "although [it] cannot be avoided, it can be managed" in ways that make leaders, and thus whole organizations, better (Overton & Lowry, 2013, p. 260). This sentiment is echoed in countless popular media and academic resources pertaining to the world of organizations. Human interaction, effective leadership, and the accomplishment of organizational goals are ubiquitous with conflict management and resolution skills. A void of conflict management capacity can prove detrimental on both an individual and collective scale as misunderstanding and stress can be costly to morale, relationships, health, personnel management, and productivity (Frost, n.d.; Overton & Lowry, 2013). A desire to prevent such consequences is confirmed by the trend of workplaces implementing conflict management coaching, mediation processes, and ombudsman conflict representatives (Brubaker et al., 2014; Griffith, 2016). According to Brubaker et al. (2014), leadership is a vital component to making any type of conflict management implementation successful:

> [O]ne of the fastest-growing trends in conflict management coaching appears to be for leaders in organizations—a main objective being to strengthen their conflict competence. Successful organizational interventions correlate with the ability of organizational leaders to manage themselves and their conflicts well... (Brubaker et al., 2014, p. 380)

The true pre-test, post-test study at hand highlights LEAD21 as an empirically-tested example of how leadership development can build conflict competence and can aid leaders in addressing different types of concurrent conflict, such as situations related to task, process, status, and relationship conflict (Carmichael & Gallo, 2015; Mitchell, 2019; Overton & Lowry, 2013). Higher education, and specifically the LGUS, is not exempt to the costs conflict avoidance and mismanagement can bring. Thus, the study underscored how leadership development focused on the topic of conflict management within the context of the LGUS can equip leaders for the inevitable experience of conflict (Brubaker et al., 2014; Overton & Lowry, 2013) and can thus strengthen the operation and mission of the LGUS.

With results indicating conflict management capacity increases from 12.7% to 17.2% for individual classes and 15.1% overall, this study also relates to the theoretical underpinnings of helping leaders have better results with conflict through active engagement, motivation, self-awareness, and acquired skills associated with one's behavior, thinking, and emotions (Overton & Lowry, 2013). As leaders grow in these areas, they are better able to coach followers in growing in the same areas (Griffith, 2016), creating a type of conflict management capacity domino-effect that any organization would deem beneficial. Results complement Robinson et al.'s (2014) evidence that leadership development curriculum does help leaders acquire and develop skills associated with effective leadership.

Effective leaders are influential in creating safe environments (Overton & Lowry, 2013) where conflict can be a platform for learning opportunities because of intentional and constructive trust-building and problem-solving strategies (The Complete Leader, n.d.). Therefore, the continued

inclusion and evaluation of conflict management in agricultural leadership education is vital. The Conflict Management Scale introduced in this study can be a resource for agricultural educators and other facilitators of leadership development programs that seek to statistically measure perceived differences in how participants comprehend conflict management curriculum. In addition to the awareness and importance of such curriculum, implications for agricultural education can extend from the classroom to conflict resolution strategies tailored for community initiatives (Graham et al., 2016). Furthermore, literature confirms the management of conflict is related to the management of change (Brubaker et al., 2014), which connects the skillset of change leadership that LEAD21 develops in leaders (Lamm et al., 2018) with the skillset of conflict management that is also proven to be developed by the program, as evidenced by this study. Therefore, an implication for leadership education practitioners would be to strengthen conflict management capacity curriculum and development initiatives as a complement to change leadership education, helping students and leaders become even more adaptive and prepared in complex leadership environments.

The opportunity to study LEAD21 cohorts over a span of four years and to show a consistent increase on a specific content area such as conflict management is a strength of the study. However, one could argue that using an original instrument with six items is a limitation to the study's replicability. Though the reasoning behind creating an instrument was offered, it is helpful to note this study may be expounded upon by using alternative instruments to explore what results occur in the future. At the same time, we also offer expansion of the study by encouraging other leadership development programs to engage in intentional evaluation of actual impact on participants' conflict management development by using The Conflict Management Scale to gather and analyze results.

An expansion of this study relates to the trend of leaders wanting and needing to address conflict proactively, going "from intervention to prevention" (Brubaker et al., 2014, p. 381). Though conflict is expected to happen, equipping leaders to be sensitive to the antecedents of conflict deepens their conflict management capacity and expands leadership education focused on this topic. With the foundation of the importance of conflict management capacity and methods to help leaders develop it, recommendations for further research encourage scholars to delve into how to teach leaders to anticipate conflict and empirically show the evidence of doing so. Lastly, though LEAD21 participants attended three seminars lasting four to six days each, results of this study indicate that statistically significant change in self-perceived conflict management capacity can occur despite a relatively short timeline. Not only does this observation allude to the influence of leadership education and implications of evaluative efforts, but it also lends to opportunities of future research exploring if differences among various intervention timelines exist. Overall, continued evaluative efforts of leadership education and conflict management capacity are needed for every leadership context and for the sustainability of the LGUS and healthy organizational environments worldwide.

References

Agresti, A., & Finlay, B. (2009). *Statistical methods for the social sciences*. Pearson Prentice Hall.

Ary, D., Jacobs, L. C., Sorensen, C., & Razavieh, A. (2010). *Introduction to research in education*. Wadsworth Cengage Learning.

Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 61*(8), 1139-1160. https://doi.org/10.1177/0018726708094863

Berger, L. (2017, June 7). *Five conflict management strategies*. Forbes. https://www.forbes.com/sites/forbescoachescouncil/2017/06/07/five-conflict-management-strategies/#353d749d521d

Brown, N. R., & Terry, R. (2013). The effects of group leader learning style on student knowledge gain in a leadership camp setting: A repeated-measures experiment. *Journal of Agricultural Education, 54*(2), 44-56. https://doi.org/10.5032/jae.2013.02044

Brubaker, D., Noble, C., Fincher, R., Park, S. K., & Press, S. (2014). Conflict resolution in the

workplace: What will the future bring? *Conflict Resolution Quarterly, 31*(4), 357–386. https://doi.org/10.1002/crq.21104

Carmichael, S. G. (Interviewer) & Gallo, A. (Interviewee). (2015, November 25). *4 Types of conflict and how to manage them* [Interview transcript]. Harvard Business Review. https://hbr.org/ideacast/2015/11/4-types-of-conflict-and-how-to-manage-them.html

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Routledge Academic.

Collins, J. (2001). *Good to great: Why some companies make the leap...and others don't.* HarperBusiness.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98-104. https://doi.org/10.1037//0021-9010.78.1.98

Covey, S. R. (1989). *The 7 habits of highly effective people: Powerful lessons in personal change*. Simon & Schuster.

Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory.* Cengage Learning.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (Eds.). (2008). *Internet, mail, and mixed-mode surveys: The tailored design method* (2nd ed.). Wiley & Sons, Inc.

Frost, S. (n.d.). *What are the benefits of good conflict resolution skills?* Chron. http://smallbusiness.chron.com/benefits-good-conflict-resolution-skills-37268.html

Graham, D. L., Arnold, S., & Jayaratne, K. S. U., (2016). Research priority 6: Vibrant, resilient communities. In T. G. Roberts, A. Harder, & M. T. Brashears, (Eds.), *American Association for Agricultural Education national research agenda: 2016-2020* (pp. 29-35). http://aaaeonline.org/resources/Documents/AAAE_National_Research_Agenda_2016-2020.pdf

Griffith, D. B. (2016, April 18). *The leader's role in coaching employees through conflict*. HigherEdJobs. https://www.higheredjobs.com/articles/articleDisplay.cfm?ID=882

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative science quarterly*, *40*, 256-282. https://doi.org/10.2307/2393638

Kirk, R. E. (1995). *Experimental design: Procedures for the behavioral sciences* (3rd ed.). Brooks/Cole.

Lamm, K. W., Sapp, L. R., & Lamm, A. J. (2016). Leadership programming: Exploring a path to faculty engagement in transformational leadership. *Journal of Agricultural Education*, *57*(1), 106-120. https://doi.org/10.5032/jae.2016.01106

Lamm, K. W., Sapp, L. R., & Lamm, A. J. (2018). A longitudinal evaluation of change leadership within a leadership development program context. *Journal of Leadership Education, 17*(3), 121-134. https://doi.org/10.12806/V17/I3/R7

Lytle, T. (2015, July 13). *How to resolve workplace conflicts.* Society for Human Resource Management. https://www.shrm.org/hr-today/news/hr-magazine/pages/070815-conflict-management.aspx

Maxwell, J. (2013, July 17). *The ten commandments of handling conflict*. John C. Maxwell. https://www.johnmaxwell.com/blog/the-ten-commandments-of-handling-conflict/

Mitchell, J. (2019. January 26). *Task conflict vs. relationship conflict*. Bizfluent. https://bizfluent.com/about-6612188-task-conflict-vs--relationship-conflict.html

Overton, A. R., & Lowry, A. C. (2013). Conflict management: Difficult conversations with difficult people. *Clinics in Colon and Rectal Surgery*, *26*(4), 259–264. https://doi.org/10.1055/s-0033-1356728

Patterson, K., Switzler, A., Grenny, J., & McMillan, R. (2012). *Crucial conversations: Tools for*

talking when stakes are high (2nd ed.). McGraw-Hill.

Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). *American Association for Agricultural Education national research agenda: 2016-2020*. Department of Agricultural Education and Communication.

Robinson, V. M. J., Sinnema, C. E. L., & Le Fevre, D. (2014). From persuasion to learning: An intervention to improve leaders' response to disagreement. *Leadership and Policy in Schools*, *13*(3), 260–296. https://doi.org/10.1080/15700763.2014.922997a

Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2004). *Evaluation: A systematic approach*. Sage.

Schmitt, N. (1996). Uses and abuses of coefficient alpha. *Psychological Assessment, 8*(4), 350-353. https://doi.org/10.1037//1040-3590.8.4.350

Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment, 80*(1), 99-103. https://doi.org/10.1207/S15327752JPA8001_18

Stripling, C. T., & Ricketts, J. C. (2016). Research priority 3: Sufficient scientific and professional workforce that addresses the challenges of the 21st century. In T. G. Roberts, A. Harder, & M. T. Brashears, (Eds.), *American Association for Agricultural Education national research agenda: 2016-2020* (pp. 29-35). http://aaaeonline.org/resources/Documents/AAAE_National_Research_Agenda_2016-2020.pdf

Suarez, E. (2016, May 4). *Navigating conflict*. Inside Higher Ed. https://www.insidehighered.com/advice/2016/05/04/how-navigate-conflict-higher-education-leader-essay

"The Complete Leader". (n.d.). https://www.thecompleteleader.org/conflict-Management

Thomas, K. W. (2008). Thomas-kilmann conflict mode. *TKI Profile and Interpretive Report*, 1-11.

Thomas, K. W., & Kilmann, R. H. (1974). *Thomas–Kilmann conflict mode instrument*. Tuxedo, NY: Xicom.

Zimmerman, D. W. (1997). Teacher's corner: A note on interpretation of the paired-samples t test. *Journal of Educational and Behavioral Statistics, 22*(3), 349-360. https://doi.org/10.3102/10769986022003349