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An exploration of trauma-inclusive pedagogy and students' perceptions of academic success

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Abstract

While trauma-inclusive approaches to student learning have been well documented in K–12 contexts, postsecondary education has done little to incorporate trauma-inclusive pedagogy into college classrooms. Using a sample (n = 529) of graduate and undergraduate students at a public rural-serving regional serving university, this study aims to explore differences in students' perception of academic success in courses where trauma-inclusive practices were used and courses where these practices were not. Findings provide evidence that students felt more successful in courses where trauma-inclusive practices were used. Additionally, researchers were able to demonstrate that differences in perceptions of success were more pronounced between students who have been exposed to traumatic life experiences, particularly in the course where participants felt the least successful. Implications for future research, practice, and models of educational development are discussed.

Keywords: trauma-inclusive pedagogy, higher education, student learning, student success

By age 18, over half of students entering U.S. colleges and universities have been exposed to at least one childhood trauma, with over one in

10 exposed to four or more traumas (CDC, 2021). Within the college environment, students continue to be exposed to numerous trauma-inducing events and circumstances including, but not limited to, hazing (Allan et al., 2019), sexual violence (Stoner & Cramer, 2019), food and home insecurity (Ellison et al., 2021), severe anxiety and depression (Oswalt et al., 2020), and bias/discrimination (Bravo et al., 2021). Numerous studies have linked trauma exposure to negative academic outcomes and adverse impacts on learning (Adubasim & Ugwu, 2019; Barr, 2018; Putnam, 2006). Given the widespread nature of trauma within college environments and the cited deleterious impact of trauma on student success, it is important to explore pedagogical practices that account for the impact of trauma within the classroom environment.

Although trauma-informed teaching is an approach that has been discussed and investigated in the K–12 setting (Barr, 2018; Berardi & Morton, 2017; Thomas et al., 2019), little attention has been given to developing similar strategies for learners in the postsecondary setting. Since the advent of the COVID-19 pandemic and instances of civil and social unrest since March 2020, educational developers (Costa, n.d.; Imad, 2021) and faculty members alike (Carello & Thompson, 2021) have begun to address the need to develop trauma-informed approaches for teaching and learning. While Carello and Thompson (2021) compiled stories of how faculty members addressed teaching and learning in ways that centered and supported students' traumatic experiences and inequities at the hands of the massive pivot to online learning, Imad (2021) provides guidance for educational developers who are seeking approaches to teaching and learning that recognize the impact of trauma on learning. Costa (n.d.), additionally, provides a set of guidelines and approaches for faculty to consider as they recognize the role of traumatic experiences on emotional regulation and relationships in the classroom.

This study aims to extend these conversations by providing an initial set of trauma-inclusive practices that seek to leverage course design and facilitation approaches that recognize the impact of trauma on the brain and learning, thereby providing a lens for developing classroom communities and activities that encourage student success

and achievement. This exploratory study synthesizes literature from trauma-informed care, affective neurosciences, and evidence-based pedagogies in order to begin to develop a framework of trauma-inclusive pedagogy for postsecondary learners. Through such a framework we aim to help students regulate emotions, build connections and sense of belonging through authentic relationships, and feel empowered in the learning process. To begin testing this framework, we were guided by the following research questions:

1. To what degree do differences exist between student reports of trauma-inclusive practices used by instructors in courses where they have felt the most successful and those where they felt least successful?
2. What is the magnitude of difference in effect size between students' reports of trauma-inclusive teaching in their most and least successful courses based upon level of trauma exposure?

Trauma, Adult Learners, and the Brain

Definitions of what constitutes trauma are varied and range from considering trauma through the primary and vicarious experiences and events to acute, chronic, and complex ones (Oklahoma Department of Mental Health and Substance Abuse Services, 2014). For the present study, we define *trauma* as being a deeply distressing or disturbing event or circumstance that overwhelms an individual's capacity to cope. Such a definition recognizes that trauma may involve an event, stimulus, or social circumstance, as well as an individual's personal history and response to said event. Additionally, while trauma support is often labeled as trauma-aware, trauma-sensitive, or trauma-informed approaches, we choose *trauma-inclusive* in an attempt to move beyond awareness and information to a more actionable approach. This study, therefore, begins the process of providing a concrete set of strategies to support a trauma-responsive approach in postsecondary settings.

While there is a paucity of literature focused on the impact of trauma on learners in postsecondary settings, much has been done in the neurosciences from which we can glean a better understanding. It is largely known that traumatic experiences and chronic stress changes the brain, especially in areas related to attention, learning, and memory (Clark, 1995; Kim & Diamond, 2002; Perry, 2006; van der Kolk, 2014). Although these changes in the brain have been investigated largely in terms of their impact on development (CDC, 2022; Harris, 2018; Perry et al., 1995), recognition of long-term psychosocial effects (Perry, 2006), exposure to traumatic experiences as adults (van der Kolk, 2014), learner identity and past educational trauma (Wartenweiler, 2017), and educational trauma due to marginalization (Daniels, 2022) all provide rationale for addressing the impact of trauma on learners in the postsecondary setting.

In addition to exposure to traumatic experiences as adults, adult learners may come to classrooms with triggered memories of failure and shame or may also be sensitive to stressors related to being evaluated (Cozolino & Sprokay, 2006). Given this, instructors should create trauma-informed environments in which learners can ultimately examine their emotional state and self-identity with the goal of reducing fear and stress. Daniels (2022) also recognizes that adults who have been marginalized by the educational system will come to the postsecondary classroom with educational trauma experiences. Any instance or combination of occurrences of these traumatic experiences leave adults in a traumatized state, or a state of fear conditioning (Perry, 2006).

Trauma has been shown to reorganize the way the mind manages perceptions, changing not only how we think but also our capacity to think (van der Kolk, 2014). For instance, chronic activation of the amygdala—referred to by van der Kolk (2014) as the "smoke detector" of the brain—can lead to a sensitization effect, enhancing defensive responses and leaving individuals in a constant, often unrecognized, state of hypervigilance (Clark, 1995). This level of fear conditioning inhibits many cognitive processes, including access to memory consolidation and retrieval processes that are needed to achieve and succeed in academic settings (Sandi & Pinelo-Nava, 2007).

Perry (2006; Perry et al., 1995) put forward that the result of fear conditioning and traumatic stress exposure is that learners either become hypersensitive to any threat-related signals or they learn to "tune out" or dissociate. Perry's arousal continuum describes the impact on brain activity and cognition as learners encounter increasingly intense levels of fear or trauma. For instance, in a state of calm, learners have access to regions of the brain that help produce abstract thought and critical thinking. Conversely, as they experience heightened levels of stress or trauma, higher-level thinking capabilities become downregulated and put learners in a more reactive and reflexive state of action. According to Perry:

> The key to understanding the long-term impact of trauma on an adult learner is to remember that [they are] often, at baseline, in a state of low-level fear. This fear state reflects either hyperarousal or a dissociative adaptation pattern, or a combination of both.
>
> (p. 25)

Through understanding the impact of stress on the brain and Perry's arousal continuum, instructors have a starting place to better support students on various points of the continuum. Being able to reframe student behaviors and dispositions through the lens of trauma allows instructors to better engage with students empathetically. From a trauma-inclusive lens, an instructor may be more likely to check in on a student scrolling through their phone in the back of the classroom (potentially dissociating) instead of writing them off as lazy or disengaged. However, to date, little research exists that provides empirical evidence of the impact of trauma-inclusive practices on student success, with existing scholarship framing the topic from a conceptual lens (Costa, n.d.; Daniels, 2022; Imad, 2021). Below, we present a framework for trauma-inclusive pedagogy in higher education that we use to test the efficacy of trauma-informed practices on student success, particularly for students exposed to one or more traumatic life events.

A Trauma-Inclusive Framework

Given the variety of ways in which trauma exposure and chronic stressors can impact learners in higher education settings, it is imperative that higher education instructors enter the classroom with the knowledge and skills necessary to create learning environments in which all learners can achieve and succeed. This study addresses this need by exploring a core set of instructional processes and practices that are aimed at supporting emotional regulation, developing supportive relationships with instructors and peers, and providing accessible and inclusive approaches to facilitating meaningful learning. The strategies investigated in this study are aligned with the long utilized Substance Abuse and Mental Health Services Administration's (SAMHSA) six guiding principles of trauma-informed care—safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment voice and choice; cultural, historical, and gender issues (CDC, 2020)—and framed using Perry's (n.d.) 3 Rs (regulation, relationships, reasoning) for reaching the cognitive region of the brain. Furthermore, we posit that this framework is undergirded by the assumption that these principles occur within particular and nuanced sociocultural contexts. See Figure 1 for a visual representation of this framework.

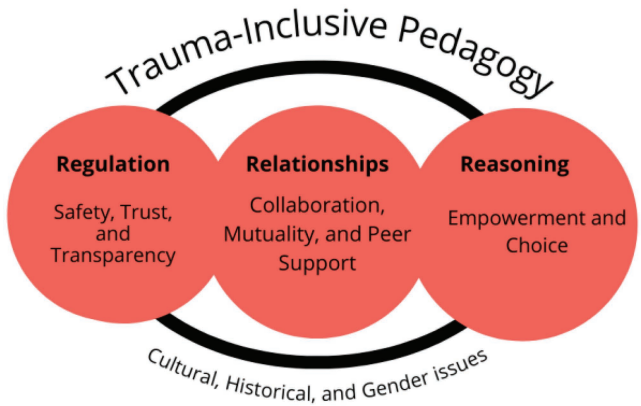

Figure 1. Framework for Trauma-Inclusive Pedagogy

Regulation

Perry's neurosequential model of therapeutics (Perry & Dobson, 2013) posits that regulating the core autonomic functions of the lower brain stem is the first step to addressing emotions related to trauma and chronic stress. Essentially, Perry contends that the human body is programmed to prioritize escaping from situations of perceived stress or danger (fight or flight). Unfortunately, this rapid bodily response inhibits a person's ability to think rationally and creatively until they are once again emotionally regulated. Given this, it is paramount that instructors attend to processes that can support learners with emotional regulation. From a trauma-informed perspective, this process of "settling" the nervous system (Daniels, 2022) can be achieved by attending to the first two principles of trauma-informed care (CDC, 2020)—"providing a sense of safety" (Perry, 2006) and "fostering trust and transparency" (Daniels, 2022; van der Kolk, 2014).

Relationships

One of the most effective emotional regulation strategies, according to Perry (Perry & Winfrey, 2021), is the connectedness that is achieved through relationships. Being able to attend to social engagement through developing relationships, therefore, plays a critical role in helping individuals who have experienced trauma become more regulated and bring their social engagement systems back online. van der Kolk (2014) emphasizes that traumatized humans recover in the context of relationships and that having a support network protects against becoming traumatized. While the classroom is not necessarily a space for recovery, providing a support network through practices that involve fostering peer support, collaboration, and mutuality (SAMSHA Principles 3 and 4) are required to help with emotional regulation and help prevent retraumatization.

Reasoning

Attending to regulatory functions that calm anxious or stressed brains and providing a sense of connection and support allow learners to access the "higher level" of the brain most closely associated with cognition (Perry, 2006). Therefore, cortical functioning is not only critical for the formation of new memories but also for the retrieval of preexisting knowledge. Once learners have been settled and connected, providing opportunities for retrieval, reasoning, and other higher-level thinking skills associated with learning are more possible. At this point, learners are ready to engage. It is vital that instructors attempt to maintain this sense of emotional regulation and safety through empowerment, voice, and choice (SAMSHA Principle 5).

Learner-centered principles locate choice, voice, and empowerment under the broader principle involving balancing power (Blumberg, 2019). Allowing students more opportunities for choice is an approach that empowers the learner to develop agency in their learning process. Blumberg also recommends empowering students through appropriate freedom of expression and responding to feedback from students related to improving teaching and learning as two strategies for achieving this goal. Through embedding choice, acknowledging student voice and agency, and empowering students through the learning process, instructors may continue to build on earlier elements of the framework through safety and connectedness.

Method

The purpose of this study was to use a framework for trauma-inclusive pedagogy in postsecondary education environments to explore differences in perceptions of student success in a population of college students. Guided by our research questions, we developed a 23-item quantitative survey instrument attempting to measure the extent to which students reported their professors' use of practices that were

consistent with trauma-informed philosophies including safety (5 items), transparency and trustworthiness (5 items), choice and voice (4 items), collaboration and mutuality (4 items), and empowerment (5 items). Participants were able to rate each item on a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). The instrument was reviewed for face validity by five subject matter experts including licensed mental health professionals and postsecondary educators. Additionally, this study was reviewed and approved by the Appalachian State University Institutional Review Board (IRB #22–0071)

Sample & Recruitment

Undergraduate and graduate students at Appalachian State University (AppState) were invited via email to participate in an electronic survey at the end of the Fall 2021 semester. AppState is a large rural-serving regional comprehensive institution consisting of approximately 20,000 students, the majority of whom are undergraduates. A total of 529 students completed the survey, resulting in an estimated margin of error of approximately 5% at 95% confidence. Of the total sample, a majority were full-time undergraduate students identifying as straight white women from a suburban background. Additionally, approximately a third were first-generation college students and a third Pell Grant recipients. See Table 1 for a more detailed description of the sample.

Data Collection

Embedding the 23-item scale, described above, within an electronic survey tool, we asked students to respond to items after reflecting on their most successful class of the semester, then think about the instructor who taught the course. Immediately following this, participants were asked to respond to the 23-item scale while reflecting on the course they felt least successful in and the instructor who taught that course. Students were allowed to self-define the term *success*. We chose to allow students to self-define for several reasons. For

Table 1. Demographic Description of Sample

	N	**%**		***N***	**%**
Academic Standing			*Sexual Orientation*		
1st year	80	15.0%	Straight	336	68.0%
2nd year	71	14.0%	Bisexual	88	18.0%
3rd year	84	16.0%	Queer	37	7.0%
4th year or more	87	17.0%	Gay or lesbian	34	7.0%
Graduate student	203	39.0%	Asexual	19	4.0%
			Pansexual	13	3.0%
Racial Identity			*Gender Identity*		
White	457	89.3%	Women	395	77.3%
Hispanic or Latino/a	27	5.3%	Men	87	17.0%
Black or African American	16	3.1%	Non-binary/enby	28	5.5%
Multiracial	14	2.7%	Queer	22	4.3%
Asian or Asian American	13	2.5%	Trans*	7	1.4%
Native American or American Indian	8	1.6%	Agender	3	0.6%
North African or Middle Eastern	4	0.8%			
Pacific Islander or Hawaiian Native	1	0.2%			
First-Generation College Student			*Pell Grant Recipient*		
Yes	161	32.0%	Yes	133	28.0%
No	343	68.0%	No	342	72.0%

instance, if we required students to define their success by course grade, those who made straight As, or identical final course scores/grades, would not have been able to differentiate between their most and least successful course. Additionally, while academic institutions may have specific measures of student success, these measures are not universal and students may have differing ideals of what constitutes their success.

Variables

The following variables were used in data analysis.

Trauma-Inclusive Pedagogy Scale & Subscales

This composite variable consisted of 23 items using a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Subscales included

safety, transparency and trustworthiness, collaboration and mutuality, and empowerment. Reliability statistics for the full-scale within students' reported most successful course revealed a Cronbach's alpha value of .94, while subscales ranged from .73 to .87. Reliability statistics for the full-scale within students' reported least successful course revealed a Cronbach's alpha value of .96, with subscales ranging from .83 to .92.

Adverse Childhood Experience (ACE) Score

This composite variable consisted of 10 dichotomous items based on the ACE Questionnaire (Felitti et al., 1998). For each item, students were able to select "yes" (1) or "no" (0); responses were then added together to create the ACE score.

Collegiate Trauma Exposure (CTE) Score

This composite variable consisted of 13 dichotomous items based on frequently reported traumas experienced by college students (Lynch & Glass, 2019; Silverman & Glick, 2010). For each item, students were able to check off if they had experienced the trauma type (whether on or off campus) since they began their enrollment at the university. Responses were then re-coded 1 for "yes" and 0 for "no" and added together to create the CTE score.

Level of Trauma Exposure

Two categorical variables were created to explore levels of both ACEs and CTEs labeled as no exposure, moderate exposure, and high exposure. ACE levels were determined by commonly accepted standards from other nationally representative studies (CDC, 2021; Sciaraffa, 2017), defining moderate exposure as an ACE score of 1–3 and high exposure as an ACE score of 4 or more. There are no nationally

representative studies to understand appropriate levels of CTE, therefore moderate exposure was considered within one standard deviation from the mean (a score of 1–3), and high exposure was considered outside of one standard deviation (a score of 4 or more).

Data Analysis

IBM SPSS version 27 was used to conduct a series of paired samples *t* tests to explore differences in student reports of trauma-inclusive practices between the class where they felt most successful and the class where the student felt least successful during the Fall 2021 semester. Additionally paired samples *t* tests were used to examine the magnitude of the effect size (Cohen's *d*) of these differences across trauma exposure levels for ACEs and CTEs (no exposure, moderate exposure, and high exposure). Specifically, these analyses were conducted based on specific selected cases that met sub-sampling criteria (no exposure, moderate exposure, and high exposure) for CTEs and ACEs.

Limitations

Conclusions drawn from this study should be considered within light of the limitations of the data collection methods. First, the cross-sectional nature of this study only provides a glimpse of student perceptions within a limited time range, which may not capture students' attitudes or perceptions at different points throughout the year or semester. The study also did not take into account the context in which the participants' most and least successful courses occurred, such as class size, modality, discipline, and so forth. For instance, a senior social work major taking a small seminar course may have reported differently than a first-year student in a large lecture-based math course. Finally, the study lacked a representative sample of racially minoritized students impacting the generalizability of results for these students, as most students were white cis-gender women.

Findings

To address the first research question, a series of paired samples *t* tests resulted in numerous statistically significant differences across student reports of trauma-inclusive practices between their most successful and least successful courses of the semester (Table 2). A large significant difference (Cohen's *d* larger than .08) was found in the trauma-inclusive pedagogy scale between students' most and least successful courses in the Fall 2021 term, suggesting that such practices have a meaningful impact on students' perceptions of academic success within the classroom. Across scaled variables corresponding to the proposed framework (Safety, Transparency & Trustworthiness, Choice & Voice, Collaboration & Mutuality, and Empowerment), students reported large differences between overall trauma-inclusive practices between their most and least successful courses, with trauma-inclusive practices being heavily associated with students' most successful course. The largest effective size was found within the Empowerment subscale, suggesting practices such as providing supportive feedback and empowering students to demonstrate their learning in multiple ways may have a profound impact on student academic success.

Finally, large significant differences were also found across specific items including feeling empowered by their instructor, having a voice in the learning process, feeling as if the instructor wanted them to be successful, comfort communicating with the instructor, and feeling cared for as a student. See Table 2 for further detail.

Additional paired samples *t* tests were conducted to explore the magnitude of the effect of trauma-inclusive pedagogy between students' most and least successful courses based on their level of trauma exposure. Analyses illustrated a stark contrast in the effect of trauma-inclusive pedagogy on students with moderate to high trauma exposure in both CTE (Table 3) and ACE (Table 4) categories. Put another way, students with histories of trauma exposure were more likely to

Table 2. Results of Paired Samples t Test Between Most Successful Course and Least Successful Course

	Most Successful		Least Successful					
	M	*SD*	*M*	*SD*	*p*	*t*	*N*	Cohen's *d*
Trauma-Inclusive Pedagogy scale	4.64	0.45	3.33	1.06	0.00	25.86	413	1.27
Safety scale	4.72	0.45	3.51	1.10	0.00	23.32	466	1.12
Transparency & Trustworthiness scale	4.70	0.45	3.51	1.09	0.00	24.00	482	1.09
Choice & Voice scale	4.48	0.71	3.05	1.35	0.00	22.88	469	1.36
Collaboration & Mutuality scale	4.53	0.61	3.19	1.23	0.00	22.98	460	1.25
Empowerment scale	4.66	0.54	3.14	1.24	0.00	26.51	470	1.24
I felt safe to be myself in the class. (S)	4.74	0.55	3.69	1.30	0.00	17.78	485	0.81
My instructor was inclusive of students from diverse backgrounds. (S)	4.80	0.52	4.08	1.11	0.00	14.18	482	0.65
My instructor made an effort to get to know students. (S)	4.54	0.79	3.12	1.43	0.00	19.61	493	0.88
I felt comfortable communicating with my instructor. (S)	4.77	0.54	3.28	1.40	0.00	23.14	494	1.04
I felt cared for as a student. (S)	4.70	0.65	3.25	1.38	0.00	22.70	493	1.02
My instructor was transparent/clear about expectations. (T)	4.73	0.62	3.25	1.52	0.00	20.81	494	0.94
If I made a mistake in class, or performed poorly on an assignment/test, I believe my instructor would still view me positively. (T)	4.67	0.68	3.46	1.35	0.00	19.93	490	0.90
My instructor maintained high expectations of the students in class. (T)	4.70	0.58	4.03	1.15	0.00	12.20	491	0.55
There was a consistent routine in class throughout the term. (T)	4.66	0.71	3.55	1.42	0.00	16.58	491	0.75
Clear guidelines and expectations were provided for assignments and activities. (T)	4.69	0.65	3.20	1.53	0.00	20.71	493	0.93
I felt like I had a voice in the learning process. (CV)	4.58	0.74	2.84	1.49	0.00	25.13	487	1.14
I was given options with some activities and assignments. (CV)	4.35	0.99	3.05	1.54	0.00	17.42	476	0.80
I was able to choose some topics or ideas to explore that were of interest to me. (CV)	4.44	0.95	3.21	1.49	0.00	16.75	479	0.77
I felt like I had some agency/control over my learning process. (CV)	4.53	0.76	3.06	1.46	0.00	21.92	487	0.99
I was given opportunities to collaborate with other students in my class. (CM)	4.59	0.83	3.45	1.55	0.00	14.59	469	0.67
I was able to work together with peers and my instructor to achieve my goals. (CM)	4.58	0.75	3.18	1.43	0.00	20.87	475	0.96

	Most Successful		Least Successful					
	M	*SD*	*M*	*SD*	*p*	*t*	*N*	Cohen's *d*
I felt connected to the classroom community. (CM)	4.16	1.04	2.87	1.51	0.00	17.65	485	0.80
I felt that my instructor was present and engaged with our community. (CM)	4.71	0.62	3.20	1.43	0.00	22.70	489	1.03
I felt empowered by my instructor. (E)	4.53	0.78	2.72	1.39	0.00	26.91	487	1.22
I felt like my instructor wanted me to be successful. (E)	4.85	0.43	3.59	1.35	0.00	20.73	488	1.08
My instructor provided supportive feedback throughout the course. (E)	4.68	0.68	3.05	1.45	0.00	23.88	491	1.07
The instructor provided several ways for me to develop skills and knowledge in the course. (E)	4.70	0.62	3.19	1.38	0.00	23.62	484	1.07
The instructor allowed me to demonstrate my learning in several ways. (E)	4.55	0.78	3.05	1.45	0.00	21.73	488	0.98

Note: (S) Safety scale, (T) Transparency & Trustworthiness scale, (CV) Choice & Voice scale, (CM) Collaboration & Mutuality scale, (E) Empowerment scale.

report trauma-inclusive practices in the courses in which they felt most successful. When exploring these differences among subscales, results demonstrated the importance of student empowerment as a function of perceived success for students with a history of trauma exposure; however, for these students, their sense of safety also seemed to play an almost equally significant role. Interestingly, trauma-inclusive pedagogical practices seemed to have a larger impact for students with moderate ACE scores versus high ACE scores. Further research is needed to fully understand why there seems to be drop-off of impact for students with high ACE scores. See Tables 3 and 4 for further details.

Discussion

In her article on transcending adversity, Imad (2021) identifies a framework of trauma-sensitive approaches to college teaching, focusing on strategies that instructors can use to foster safety, forge

Table 3. Effect Size Comparison Between Collegiate Trauma Exposure (CTE) Groups and Trauma-Inclusive Practices in Students' Most and Least Successful Courses

	No CTE			Moderate CTE			High CTE		
	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*
Trauma-Inclusive Pedagogy scale	4.63	3.05	1.20	4.61	3.09	1.58	4.59	2.94	1.67
Safety scale	4.77	3.95	0.87	4.70	3.43	1.14	4.68	3.19	1.32
Transparency & Trustworthiness scale	4.75	3.84	0.87	4.70	3.42	1.07	4.64	3.30	1.18
Choice & Voice scale	4.65	3.57	0.84	4.46	2.88	1.33	4.34	2.80	1.07
Collaboration & Mutuality scale	4.66	3.59	0.85	4.48	3.09	1.25	4.48	2.95	1.28
Empowerment scale	4.71	3.66	0.90	4.64	2.99	1.20	4.65	2.88	1.38
I felt safe to be myself in the class.	4.81	4.17	0.57	4.75	3.64	0.84	4.63	3.23	1.06
My instructor was inclusive of students from diverse backgrounds.	4.84	4.39	0.45	4.81	4.04	0.72	4.73	3.83	0.71
My instructor made an effort to get to know students.	4.63	3.48	0.78	4.52	3.01	0.94	4.52	2.95	0.89
I felt comfortable communicating with my instructor.	4.82	3.74	0.85	4.73	3.17	1.07	4.79	3.00	1.26
I felt cared for as a student.	4.73	3.73	0.81	4.70	3.15	1.09	4.68	2.94	1.16
My instructor was transparent/clear about expectations.	4.68	3.63	0.74	4.77	3.18	1.00	4.69	2.96	1.06
If I made a mistake in class, or performed poorly on an assignment/test, I believe my instructor would still view me positively.	4.79	3.95	0.72	4.65	3.34	0.95	4.59	3.12	1.02
My instructor maintained high expectations of the students in class.	4.79	4.10	0.63	4.68	3.99	0.56	4.68	4.06	0.46
There was a consistent routine in class throughout the term.	4.77	3.86	0.66	4.67	3.48	0.78	4.59	3.34	0.78
Clear guidelines and expectations were provided for assignments and activities.	4.73	3.70	0.71	4.68	3.04	1.02	4.68	2.97	1.02

	No CTE			Moderate CTE			High CTE		
	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*
I felt like I had a voice in the learning process.	4.73	3.40	0.90	4.56	2.65	1.28	4.50	2.61	1.16
I was given options with some activities and assignments.	4.52	3.59	0.61	4.36	2.89	0.90	4.13	2.76	0.82
I was able to choose some topics or ideas that were of interest to me.	4.61	3.65	0.65	4.44	3.07	0.85	4.26	3.02	0.72
I felt like I had some agency/control over my learning process.	4.70	3.56	0.85	4.48	2.89	1.07	4.40	2.83	1.01
I was given opportunities to collaborate with other students in my class.	4.79	3.78	0.67	4.51	3.38	0.64	4.50	3.23	0.78
I was able to work together with peers and my instructor to achieve my goals.	4.73	3.61	0.80	4.54	3.08	0.98	4.54	2.90	1.11
I felt connected to the classroom community.	4.35	3.41	0.62	4.11	2.72	0.84	4.16	2.59	0.93
I felt that my instructor was present and engaged with our community.	4.76	3.62	0.75	4.69	3.04	1.13	4.73	3.05	1.08
I felt empowered by my instructor.	4.55	3.28	0.92	4.53	2.55	1.38	4.53	2.46	1.33
I felt like my instructor wanted me to be successful.	4.85	3.98	0.75	4.85	3.50	1.03	4.84	3.35	1.00
My instructor provided supportive feedback throughout the course.	4.71	3.58	0.83	4.66	2.87	1.19	4.68	2.82	1.19
The instructor provided several ways for me to develop skills and knowledge in the course.	4.76	3.71	0.84	4.69	3.03	1.20	4.64	2.96	1.13
The instructor allowed me to demonstrate my learning in several ways.	4.67	3.67	0.74	4.47	2.92	1.02	4.53	2.64	1.26

$p < .001$

Table 4. Effect Size Comparison Between Adverse Childhood Experiences (ACE) Groups and Trauma-Inclusive Practices in Students' Most and Least Successful Courses

	No ACE			Moderate ACE			High ACE		
	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*
Trauma-Inclusive Pedagogy scale	4.67	3.59	1.14	4.62	3.03	1.73	4.63	3.05	1.51
Safety scale	4.76	3.87	.84	4.71	3.41	1.21	4.68	3.33	1.13
Transparency & Trustworthiness scale	4.77	3.86	.85	4.68	3.40	1.26	4.66	3.37	1.10
Choice & Voice scale	4.54	3.46	.80	4.46	2.83	1.22	4.47	3.05	1.06
Collaboration & Mutuality scale	4.54	3.61	.76	4.50	2.97	1.28	4.55	3.20	1.08
Empowerment scale	4.71	3.64	.89	4.66	2.95	1.48	4.61	3.03	1.20
I felt safe to be myself in the class.	4.81	4.15	0.58	4.76	3.56	0.92	4.62	3.49	0.84
My instructor was inclusive of students from diverse backgrounds.	4.80	4.34	0.48	4.82	4.04	0.69	4.77	3.92	0.72
My instructor made an effort to get to know students.	4.57	3.40	0.73	4.55	3.03	0.99	4.51	3.01	0.86
I felt comfortable communicating with my instructor.	4.85	3.74	0.82	4.74	3.09	1.18	4.74	3.20	1.05
I felt cared for as a student.	4.77	3.76	0.78	4.67	3.10	1.15	4.71	3.07	1.07
My instructor was transparent/clear about expectations.	4.74	3.67	0.68	4.72	3.14	1.05	4.71	3.04	1.01
If I made a mistake in class, or performed poorly on an assignment/test, I believe my instructor would still view me positively.	4.78	3.85	0.76	4.60	3.27	0.97	4.69	3.41	0.91
My instructor maintained high expectations of the students in class.	4.75	4.23	0.46	4.73	3.95	0.63	4.63	4.01	0.49
There was a consistent routine in class throughout the term.	4.82	3.82	0.68	4.65	3.52	0.75	4.59	3.34	0.80
Clear guidelines and expectations were provided for assignments and activities.	4.77	3.58	0.74	4.68	3.09	1.02	4.66	3.05	0.98

	No ACE			Moderate ACE			High ACE		
	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*	Most	Least	Cohen's *d*
I felt like I had a voice in the learning process.	4.63	3.23	0.89	4.58	2.65	1.32	4.56	2.82	1.11
I was given options with some activities and assignments.	4.37	3.55	0.52	4.37	2.83	0.96	4.31	2.98	0.82
I was able to choose some topics or ideas that were of interest to me.	4.53	3.58	0.61	4.40	2.99	0.84	4.44	3.28	0.78
I felt like I had some agency/control over my learning process.	4.61	3.43	0.82	4.48	2.83	1.12	4.52	3.11	0.96
I was given opportunities to collaborate with other students in my class.	4.55	3.79	0.48	4.56	3.26	0.74	4.66	3.48	0.74
I was able to work together with peers and my instructor to achieve my goals.	4.58	3.63	0.66	4.57	2.93	1.17	4.63	3.20	0.94
I felt connected to the classroom community.	4.29	3.40	0.60	4.16	2.55	1.01	4.14	2.95	0.67
I felt that my instructor was present and engaged with our community.	4.71	3.54	0.79	4.73	3.03	1.18	4.70	3.15	1.01
I felt empowered by my instructor.	4.60	3.21	0.95	4.51	2.52	1.40	4.51	2.65	1.22
I felt like my instructor wanted me to be successful.	4.88	4.02	0.72	4.85	3.46	1.02	4.81	3.43	1.02
My instructor provided supportive feedback throughout the course.	4.71	3.51	0.84	4.70	2.85	1.24	4.62	2.96	1.06
The instructor provided several ways for me to develop skills and knowledge in the course.	4.74	3.69	0.80	4.70	2.96	1.32	4.65	3.15	0.98
The instructor allowed me to demonstrate my learning in several ways.	4.58	3.65	0.66	4.54	2.82	1.21	4.50	2.92	0.98

$p < .001$

trust, create meaning, cultivate community, and center well-being and care. Aligned with these notions, the current study focuses on how course design and facilitation can include many of these elements of trauma-informed care to support student success. While models and discussions related to inclusive teaching and learning have proliferated in the past decade (Addy et al., 2021; Loya, 2021), models that include strategies or approaches specific to the impacts of trauma have not yet become prevalent. This article begins to contribute to that area of the literature and serves to inform educational development practices by providing a lens specific to how we can calm and center the learning experience for those who have been exposed to traumatic events, who are experiencing current life traumas or stressors, or who are struggling with learner identity or past educational traumatic experiences. Findings from this study support the efficacy of trauma-inclusive practices in promoting student success, extending earlier studies (Barr, 2018; Berardi & Morton, 2017; Thomas et al., 2019) that have explored this topic within the context of K–12 education into the postsecondary education sector. While findings provide evidence that such approaches may have larger benefits for students who have been exposed to traumatic life events, they also illustrate how such practices are of benefit to all students. Specifically, instructional practices that convey care and trust, develop connected communities, and provide voice, choice, and empowerment in the instructional process can have a deep impact on college student success in the classroom.

Implications for Practice

Implications from this study are wide reaching. From the classroom perspective, faculty development centers and graduate instruction training programs may use the scale developed within this study as a framework for providing professional development to instructors on trauma-inclusive teaching practices. Such educational development

opportunities may include inviting instructors to take an inventory of how they would rate themselves across each item and construct. Such opportunities may also introduce instructors to emerging trauma-inclusive instructional practices such as learner-centered approaches; ungrading (Blum, 2020); authentic assessment (Callison, 1998); or relational topics such as community-building, collaborative and team-based learning, providing empowering feedback, and designing for learner variability (CAST, 2018). Given the demonstrated impact of survey items related to student empowerment, such as allowing students options and control for how they demonstrate and engage with their learning, faculty development initiatives should focus on training instructors in pedagogical practices that help students take ownership of their learning. One such model widely promoted within the college student affairs literature is Marcia Baxter Magolda's learning partnerships model (Baxter Magolda & King, 2004), which conceptualizes student learning as a tandem bicycle with the student in the front seat controlling the direction of the bike and the educational professional in the back seat providing stability, support, and balance.

From the perspective of academic administration, this study provides evidence for the need to create course structures that allow instructors to engage in trauma-inclusive practices. For example, a contingent faculty member teaching a lecture-based course of 100 students may feel overwhelmed or unsupported in creating safety, building positive and trusting relationships, and empowering students given the sheer volume. To that end, instructors need to be supported with smaller class sections or increased instructional support personnel, such as teaching assistants, to allow them to engage in trauma-inclusive practices without inducing their own burnout. Finally, given the emerging connections between student success and trauma-inclusive pedagogy, faculty incentive structures should be developed to encourage faculty to learn more about the impact of traumatic stress in student learning, as should structured opportunities for faculty to

re-structure their courses using trauma-inclusive frameworks, such as the one presented in this study.

Implications for Future Research

While findings in this study provide a strong foundation for instructional practice, they also raise several questions that may be explored in future studies. For instance, findings illustrate a larger impact of trauma-inclusive pedagogy on students who have experienced moderate exposure to ACEs as compared to those with high exposure. Further investigation is needed to understand why this delineation exists. Additionally, this study was based on students' perceptions or experiences of specific pedagogical practices within college classrooms; however, that does not necessarily mean that their instructors were not engaging in such practices. Understanding potential gaps between student and instructor perceptions of how trauma-inclusive practices are utilized in class may provide a more nuanced understanding of the mechanisms connecting trauma-inclusive pedagogy and student success. In that same vein, future scholarship may explore the impact of trauma-inclusive pedagogy on the various ways in which student success may be defined, including overall GPA, course-level grades, student retention, and student graduation.

Furthermore, while quasi-experimental in nature, this study did not assess several covariates that may have impacted or mediated student reports of trauma-inclusive practices. To that end, future research may replicate this study while also accounting for variables such as the discipline of the course, class size, class modality, and institution type (e.g., teaching-focused vs. research-focused). Replication studies may also focus on the experiences of those with marginalized social identities within the intersections of race, ethnicity, sexual orientation, and gender identity. Finally, qualitative investigation of trauma-inclusive practices may yield a more nuanced view of how students and/or faculty view and experience these practices in the classroom.

Conclusion

This study is particularly timely considering the COVID-19 pandemic, as students continue to grapple with ever-evolving policies around course delivery, support, and economic fallout. Given the connection between trauma exposure and human learning and development, as well as the widespread nature of trauma exposure in college students, it follows that adoption of trauma-inclusive teaching practices is one of many ways to improve college student success. The present study utilized a trauma-inclusive teaching framework to explore differences in student perceptions of success. Findings indicate significantly higher perceptions of success in courses where students reported their instructors' use of trauma-inclusive teaching practices. Findings also show how students exposed to trauma were less likely to report trauma-inclusive practices in their least successful courses. While the sample limits generalization, our findings provide strong initial evidence of the benefit of our framework in bolstering student academic success within the postsecondary environment.

Biographies

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