Designing a Valid and Reliable Measure of Trauma-Informed Online Teaching Practices for Asynchronous Undergraduate Courses

Virginia L. Byrne
Morgan State University

Michelle Mondrey
Morgan State University

Adeoluwa Oluwatoyin Folami
Morgan State University

Mariola Moeyaert
University at Albany – State University of New York

Christine Licata-Hoang
Morgan State University

Abstract
The majority of U.S. college students have experienced a traumatic event that could impact their health, social life, and academic success. While faculty are encouraged to implement trauma-informed teaching practices, rigorously studied resources do not exist for online courses. We address this gap by presenting findings from an initial study of 129 undergraduate students at a mid-Atlantic Historically Black University. We contribute a valid and reliable student-facing survey of Trauma-Informed Online Teaching practices. Our model and survey can be easily deployed by faculty or instructional designers who seek to understand how to best support students who are navigating the effects of a traumatic event or circumstance.

Keywords: Online teaching, trauma-informed teaching, student evaluations of teaching

Byrne, V. L., Mondrey, M., Folami, A. O., Moeyaert, M., & Licata-Hoang, C. (2025). Designing a valid and reliable measure of trauma-informed online teaching practices for asynchronous undergraduate courses, *Online Learning, 29*(4), 237-256. https://doi.org/10.24059/olj.v29i4.5176

Introduction

Across all institution types, the majority of today's college students are likely to have survived some form of traumatic event or adverse experience that could negatively impact their health, happiness, and academic success (Aruguete & Edman, 2019, Frazier et al., 2009; Read et al., 2011; Smyth et al., 2008; Thompson & Carello, 2022). A traumatic event is a single or series of events experienced by an individual or community as being "physically or emotionally harmful or life threatening" and has lasting negative effects on a person's "functioning and mental, physical, social, emotional, or spiritual well-being" (SAMHSA, 2022). For many, the dual pandemics of the COVID-19 pandemic and systemic racism have been traumatic (e.g., Williams et al., 2024). Trauma can also be collective, historical, or systemic (i.e., a multigenerational experience of trauma shared by a racial group [Comas-Diaz & Hall, 2019; Williams et al., 2024]). Exposure to traumatic events and experiences can cause a *trauma response* that redirects body and brain functions toward surviving instead of thriving and can cause stress that results in issues with learning, memory, self-regulation, and executive functioning (e.g., Boyraz et al., 2016).

To counteract the negative impact of this traumatic stress, higher education faculty are encouraged to implement trauma-informed teaching practices that aim to support students in effort regulation and executive functioning, feeling a sense of control, avoiding retraumatization, and building trusting relationships (Thompson & Carello, 2022). Trauma-informed teaching has been found to meaningfully improve the outcomes of learners who are struggling with healthy decision making (e.g., Venet, 2021). Unfortunately, the implementation of trauma-informed teaching practices has not been rigorously studied for higher education courses where students and instructors are geographically distant and do not meet in real time (i.e., asynchronous online courses). This gap in the literature is particularly troubling because the independent design of asynchronous courses may place greater demands on students' time management and executive functioning skills (Broadbent, 2017; Broadbent et al., 2021; Zhang et al., 2023). For students navigating traumatic stress, whether due to systemic inequities, personal experiences, or broader societal events, these skills may be significantly diminished as students route their energies elsewhere. From the broader trauma-informed teaching literature (e.g., Venet, 2021), we know that some of the best ways to support students' success is through strong trusting relationships with their instructors, clarity of expectations, and easy access to support services like counseling and study groups. Ironically, these are the very supports that may be lacking in asynchronous learning environments because of the transactional distance (e.g., Moore, 2013) between students, the instructor, and their peers. This makes it all the more urgent to explore how trauma-informed practices can be integrated into asynchronous course design and teaching.

While higher education faculty may want to adopt trauma-informed course design and teaching practices in their asynchronous online courses, there is little empirical evidence of which practices to prioritize (Byrne & Hollingsworth, 2024). To address this gap, we embarked on a three-year, mixed methods project to explore *Trauma-Informed Online Teaching* (TIOT; Byrne & Hollingsworth, 2024) in undergraduate asynchronous online courses at a public Historically Black College or University (HBCU). In this paper, we present findings from the first year of our study in which we explore TIOT practices in five undergraduate asynchronous online courses. The purpose of this paper is present the development of a valid and reliable instrument for measuring students' perceptions of the seven principles of the TIOT model and answer the following research question: *In alignment*

with the Trauma-Informed Online Teaching theoretical model, to what extent do the seven latent factors fit the underlying structure of the student survey data?

Literature Review

Research suggests that most college students have experienced one or more traumatic events (e.g., Frazier et al., 2009; Smyth et al., 2008), not including the collective trauma of the COVID-19 pandemic. Most education research on the prevalence of trauma fails to account for the racialized traumatic experiences common among Black and African American students both in-person and online (Becker-Blease, 2017; Venet, 2021). Students of minoritized and marginalized groups (e.g., Black and Latinx students, first-generation college students, low-income students) are more likely to have been exposed to trauma or a traumatic event before and since enrolling in college (Aruguete & Edman, 2019). Of particular importance to this study is that Black and African American students are more likely to experience trauma stemming from the U.S.'s systemic racism that structures limited access to safe neighborhoods, safe schools, financial security, and a life free from violence and discrimination (López et al., 2017; McGruder-Johnson et al., 2000; Simmons, 2020; Voisin et al., 2011).

After experiencing trauma, people may have a *trauma response*, which is an embodied physical, mental, and/or spiritual reaction that redirects the body and brain's functions toward surviving instead of thriving (Shalka, 2020). While not everyone experiences a trauma response and each person's experience and duration are unique, common trauma responses can include emotional dysregulation, substance abuse, depression, lack of motivation, suppressed immune system, difficulty concentrating, loss of self-efficacy, and executive functioning issues (e.g., Venet, 2021). Trauma responses can contribute to practices and attitudes that hinder academic success including poor academic performance and thoughts of leaving college (Boyraz et al., 2013; Duncan, 2000; Varjas et al., 2009). There is a negative relationship between students' trauma experiences and their academic achievement (Boyraz et al., 2016; Jordan et al., 2014).

These challenges might be especially pronounced in asynchronous courses where the independent design and structure can amplify the negative effects of trauma on learning and academic success. Without scheduled class meetings or regular real-time interactions with instructors and peers, asynchronous students must draw upon their self-regulation and executive functioning skills, which might be depleted as they navigate trauma (Boyraz et al., 2016). For example, feeling isolated from peers and the instructor may be intensified in an asynchronous environment. Additionally, the lack of immediate support for content-related or procedural questions can increase stress for students. As a result, the affordances of asynchronous courses, while offering flexibility, may also pose barriers for students whose trauma responses disrupt the very skills that are needed.

Trauma-Informed Online Teaching

To ensure that trauma-affected students can thrive in college, educators are encouraged to adopt trauma-informed teaching practices (Thompson & Carello, 2022). A trauma-informed approach consists of shifts in educational practices, pedagogies, and policies as faculty learn about the role of trauma in students' lives and how classrooms can perpetuate trauma (Venet, 2021). For example, disorganized courses with unclear policies can cause students undue stress and perpetuate harm by consistently setting up students to miss

deadlines and fail. Trauma-informed teaching focuses on supporting students in executive functioning, practicing self-care, avoiding retraumatization, and building trusting relationships (Costa & Dutill, 2021). Trauma-informed teaching emphasizes an anti-racist, asset-based approach to provide all students with trauma-informed care, not just those with documented experiences (Venet, 2021). Trauma-informed practices are adopted as a universal approach—not simply for those students who choose to identify as having experienced trauma.

While research exists on the value of trauma-informed teaching in face-to-face K–12 classrooms and, to a lesser extent, university contexts, the impact of trauma-informed practices on undergraduates in online courses has yet to be rigorously explored (Thompson & Carello, 2022). This gap is concerning considering how the COVID-19 pandemic caused colleges to pivot to online instruction faster than we could study how to adapt trauma-informed teaching to online classes. During the pandemic, scholars published instructional guides promoting trauma-informed practices in online classes (Carello, 2020; Costa, 2020; Ebenfield et al., 2022; Imad, 2022; Valenzuela, 2020; Thompson & Carello, 2022). We conducted a literature review to create a literature-based model of *Trauma-Informed Online Teaching* (TIOT; Byrne & Hollingsworth, 2024) to align with the trauma-informed teaching literature as well as some of the leading theories and frameworks for high quality online teaching and course design (e.g., Byrne & Donlan, 2020, Online Learning Consortium, 2019, Garrison & Arbaugh, 2007). Our original TIOT model consisted of seven principles of synchronous and asynchronous course design and teaching practices that are within the locus of control of the instructor and align with the design constraints of most modern Learning Management Systems (LMSs) such as Blackboard and Canvas.

For this study, we adapted the seven TIOT principles (see Figure 1) to focus only on asynchronous undergraduate courses which, at the University of interest in this study, are conducted via an LMS with no required synchronous meetings on Zoom or in person, however traditional synchronous practices like faculty office hours or student-led group project meetings are still included. In an effort to make this TIOT model relevant to instructors of all disciplines, we focused not on the course content but instead on how the course is designed and enacted by the instructor. We see these TIOT course design principles as the foundation by which any asynchronous course can uphold the seven principles of trauma-informed teaching. The principles are interconnected, non-linear, and, at this time, we do not have evidence that one is more important than the others.

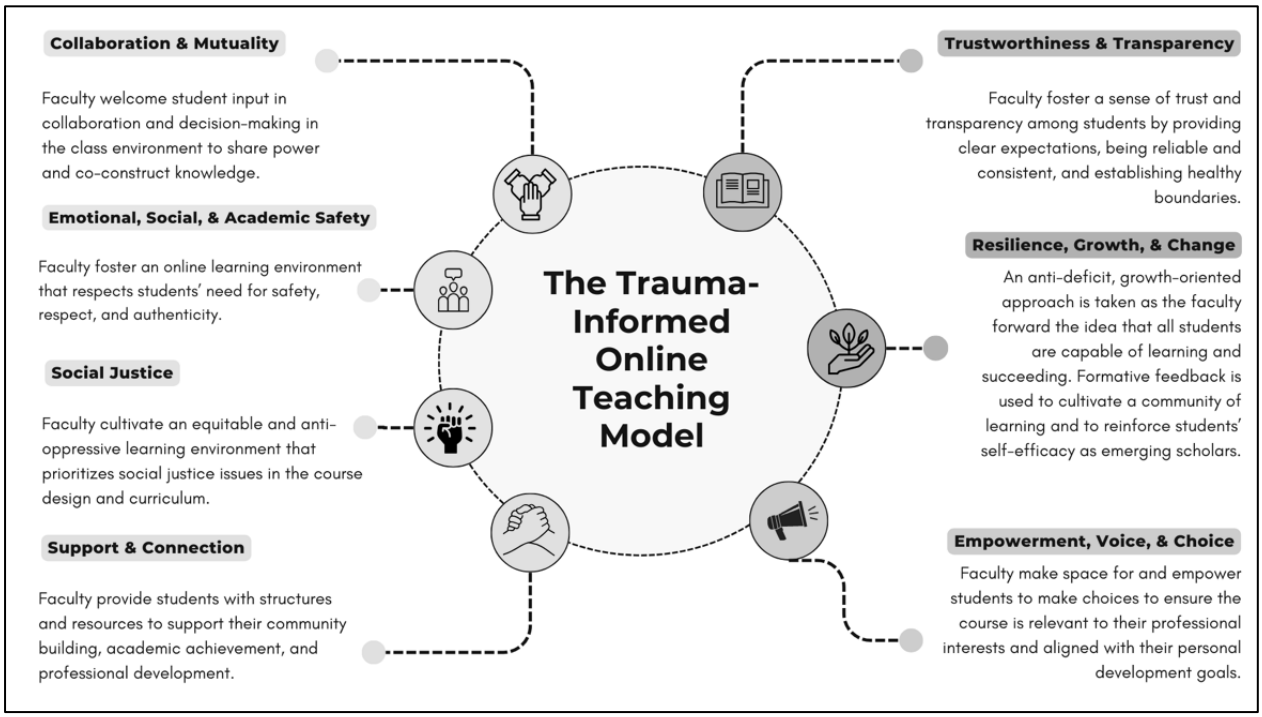
Figure 1
The Trauma-Informed Online Teaching Model

Principle	Description
Resilience, Growth, & Change	Faculty restructure the classroom with an anti-deficit mindset, embedding opportunities for students to succeed through multiple attempts
Social Justice	Faculty embed themes and elements of social justice, equality, and accessibility within the course and classroom environment
Support & Connection	Faculty create a structured learning environment where students can build community and share interests
Trustworthiness & Transparency	Faculty establishes clear and consistent expectations, and classroom norms from the beginning of the course
Emotional, Social, & Academic Safety	Faculty provide a supportive and respectful holistic environment that meets students' needs
Collaboration & Mutuality	Faculty recognize that they are partners with students in creating classroom knowledge
Empowerment, Voice, & Choice	Faculty encourage students to be authentic by offering options for course assignments and allowing students to incorporate their interests into course content

As seen in Figure 2, the principles are arranged in circular form, implying that there is no beginning or end to how these principles present themselves in the asynchronous classroom. The principles also appear in varying degrees depending on the professor and the descriptions under each principal serve as a guide for the definition. While the current TIOT model is based on a review of the literature, this paper is the first exploration into its validity and relationship to other measures of a supportive asynchronous learning environment. We recognize that the TIOT principles may be relevant across multiple course modalities. However, we chose to focus on asynchronous courses because these practices (e.g., fostering trusting relationships, offering emotional support) may be especially challenging to enact when there is no regular, real-time interaction. In such classes, these TIOT practices are not only harder to enact but may also have an outsized impact on student success and well-being.

Figure 2

The Trauma-Informed Online Teaching Model—Visualized



Method

We present quantitative results from the first year of a three-year mixed methods study aimed at exploring the impact of TIOT practices on the academic success of undergraduates in online courses. Our work is funded by the Institute of Education Sciences, U.S. Department of Education, through grant R305B230015, *The Learning and Engaging at a Distance (LEAD) Initiative.*

Site Selection

Our HBCU site selection was purposeful for two reasons: Black and African American students are disproportionality exposed to traumatic events (López et al., 2017), HBCUs have created a legacy for providing high-touch and high-quality teaching and are likely already enacting the TIOT principles but discuss it using other terms (e.g., Williams et al., 2022). Additionally, some institutional policies are also inherently aligned with TIOT practices. For example, asynchronous courses at this institution are limited to 30 students—a low student-faculty ratio is a cornerstone of HBCU instruction (e.g., Kim & Conrad, 2006; Williams et al., 2022). We think operationalizing and norming TIOT practices at an HBCU is important because of these existing best-practices in student support (e.g., Stewart & Nicolazzo, 2018). We recognize that our site selection may limit the generalizability of our findings to non-HBCU contexts.

Data Collection

Our project explores the enactment of the TIOT model within undergraduate asynchronous courses at an HBCU in the mid-Atlantic U.S. Students were recruited due to their enrollment in an asynchronous online, three-credit undergraduate course taught by a participating faculty member. First, we recruited faculty volunteers from a university-provided list of all asynchronous courses. We chose faculty partners based on the following criteria: (1) faculty must be tenured or tenure-track with prior experience teaching online, (2) the faculty must have previously taught the course of interest online, and (3) their course must meet the QualityMatters essential expectations (2021). We saw these criteria as important because we wanted faculty who had authority over the course, were already familiar with the content and context, and had a demonstrated foundation in effective online course design. We selected five faculty to participate.

The five faculty we selected taught courses in education and liberal arts. The courses that we studied were three-credit undergraduate courses designed and advertised as asynchronous courses, but targeting residential students, e.g., the courses were situated within a department and major that was primarily taught in-person. These courses were intentionally designed to be online, unrelated to the COVID-19 pandemic remote teaching policies. Across all five courses, 196 undergraduate students were enrolled.

We partnered with faculty to recruit students to complete our mid-semester online survey. Following the model of Donlan and Byrne (2019) and Byrne and Donlan (2020), we intentionally collected students' perspectives of the course mid-semester or two-thirds through the semester, after midterms had been returned but before the university course evaluation was distributed (March 2024). Over the course of three weeks, the faculty shared written ads from the researchers via their LMS course announcements. Students were then taken to an anonymous survey link. The faculty were not informed who completed the survey. Students were incentivized with a raffle for $20 and, for some classes, extra credit if a percentage of the class completed the survey.

Table 1

Undergraduate Student Participant Demographics

Variables	Value	Frequency	Percent
Expected Grade	A	73	56.59%
	B	37	28.68%
	C	12	9.30%
	D	0	0.00%
	F	0	0.00%
	Did not respond	7	5.43%
Race or Ethnicity	American Indian or Alaska Native	1	0.78%
	Asian or Asian-American	0	0.00%
	Black or African American	104	80.62%
	Latinx or Hispanic	2	1.55%
	Multiple Races or Multiracial	12	9.30%
	Native Hawaiian or Other Pacific Islander	0	0.00%
	White or European American	3	2.33%
	Other	0	0.00%
	Prefer not to disclose or did not respond	7	5.43%
Gender	Genderqueer	0	0.00%
	Non-Binary	1	0.78%
	Man	34	26.36%
	Transgender	0	0.00%
	Woman	87	67.44%
	Do not identify as a man, woman, or trans	0	0.00%
	Did not respond	7	5.43%
Age	18–19 years old	44	34.11%
	20–29	61	47.29%
	30–39	8	6.20%
	40–49	7	5.43%
	50–59	2	1.55%
Class Rank	First year	30	23.26%
	Sophomore	29	22.48%
	Junior	21	16.28%
	Senior	42	32.56%
	Did not respond	7	5.43%
Major College	Engineering	8	6.20%
	Interdisciplinary & Continuing Studies	10	7.75%
	Business & Management	22	17.05%
	Liberal Arts	23	17.83%
	Architecture & Planning	4	3.10%
	Community Health & Policy	13	10.08%
	Computer, Mathematical, & Natural Sciences	11	8.53%
	Education	16	12.40%
	Journalism & Communication	5	3.88%
	Graduate School	0	0.00%
	Social Work	7	5.43%

Did not respond	10	7.75%

Participants

After removing duplicates (i.e., when students accidentally took the survey multiple times) and one graduate student, we collected 129 undergraduate student responses including partial responses—a 65.82% response rate. Table 1 contains the student demographic information. The majority of student participants identified as Black or African American (80.62%, N = 104), women (67.44%, N = 87), between 18–19 (34.11%, N = 44) and 20–29 years old (47.29%, N = 61) split across all four years of an undergraduate degree and across many different majors. Our sample is approximately representative of the University's undergraduate population. The University's Institutional Review Board approved this study.

Survey Overview

The online survey collected information about the students' demographic information, their course, and their perspective on the course as measured by the TIOT instrument associated with the seven principles of the TIOT model. While outside of scope for this paper, the end of the survey asked students about their persistence goals at the University and some more traditional online course evaluation questions.

TIOT Survey Design

We designed the TIOT instrument to align with our theoretical model which is based on an extensive review of both peer-reviewed and practitioner-oriented literature on trauma-informed teaching for online courses and distance education (Byrne & Hollingsworth, 2024). For each of the seven principles, we generated an initial list of ten items. The following were our design criteria. First, we focused on aspects of the course that instructors could reasonably control (e.g., how they communicated their office hours to students), instead of aspects that they cannot control (e.g., the choice of LMS). We tried to prevent framing a question as an evaluation of the quality of teaching or soliciting opinions about the instructor (which existing research has found to be biased based on the instructor's race and gender [Basow, 1995; Chisadza et al., 2019, Smith & Hawkins, 2011; Spooren, 2017]). We avoided asking about students' feelings about the course or if they enjoy the course—which could introduce bias against general education courses or particularly difficult courses (Marsh & Roche, 2000). Instead, we crafted items about the extent to which a student had seen a particular practice. A higher score meant the student was more certain that they had seen their instructor enact this practice.

We then iteratively refined the instrument to remove items and focused the phrasing on the enactment of the teaching practice, not on the students' value of the practice. We solicited feedback from experts in trauma-informed practices in higher education. We refined the instrument and piloted internally with graduate students. The full survey was 36 items across the seven principles. The items used a 7-point scale in which 1 = "Not at all like my class" to 7 = "Very much like my class." There was no "Not Applicable" option, but students were not required to respond to each item.

Data Analysis

Using R 4.4.1 (2024), RStudio (2024), and the lavaan package (Rosseel, 2012), we cleaned the data and explored missing data; with under 9% missing per item we were

satisfied to move forward. We conducted reliability testing to determine if we could reduce the number of items per TIOT principle to improve the associated Cronbach's alpha. We engaged in an iterative reduction of each scale considering both the statistical and theoretical interpretations and reduced the number of items for each principle while either increasing or maintaining the Cronbach's alpha (see Table 2). This process reduced the full survey length from 36 to 24 items.

Using both the original 36-item and the reduced 24-item version of the survey, we conducted a series of Confirmatory Factor Analyses (CFA). The CFA determined the extent to which participants' responses aligned with our theoretical seven principle TIOT model—confirming that the latent factor structure reflects our TIOT model rather than exploring a different factor structure. In our testing, we used different rotations, expectations for robustness, and considerations for covariance between items both within and across latent constructs to evaluate whether the items loaded onto the appropriate constructs. Our decision making was informed by the factor loadings and factor covariance statistics, as well as multiple Goodness-of-Fit indices such as a statistically nonsignificant chi square test statistic, comparative fit index (CFI), and Tucker Lewis index (TLI) values near .95, a root mean square error of approximation (RMSEA) score lower than .06, and a standardized root mean square residual (SRMR) value lower than .08 (Hu & Bentler, 1999; Thompson, 2004). While meeting each of these criteria is not necessary, they provided meaningful guidance. We then reassessed factor reliability using Cronbach's alpha (Raykov & Marcoulides, 2011).

We created variables to represent the mean response to the latent TIOT principles that were used for descriptive and correlation testing. Because the TIOT data was not normally distributed, we used the nonparametric Kendall's Tau-b correlation tests (dplyr package; Wickham et al., 2023).

Table 2

Reliability of Original and Reduced TIOT Scales Associate with the Seven Principles

Principle Construct	Original Number of Items	Alpha of Original Scale	Reduced Number of Items	Alpha of Reduced Scale
Resilience, Growth, & Change	5	0.75	3	0.75
Social Justice	5	0.84	3	0.85
Support & Connection	5	0.86	4	0.86
Trustworthiness & Transparency	5	0.80	4	0.88
Emotional, Social, & Academic Safety	6	0.82	4	0.84
Collaboration & Mutuality	5	0.86	3	0.87
Empowerment, Voice, & Choice	5	0.82	3	0.85

Total Items	*36*	*24*

Results

In this section, we present how we determined that the TIOT survey instrument is a valid and reliable measure of the enactment of the seven principles of the TIOT model. We conducted several CFAs using different approaches. In Table 3, we present the Goodness-of-Fit Indicators for the four models: a model with all original items, a model with the reduced items, a model with reduced items and covariances considered, and a robust model with reduced items and covariances considered. Reducing the number of items and adding covariances between key items decreased the number of parameters needed in our model. We added covariances iteratively based on the R modification indices (see Figure 3 for inter-item covariances).

Table 3

Goodness-of-Fit Indicators of Models of Trauma-Informed Online Teaching

Model	Number of Observations	Number of Model Parameters	Chi-square test statistic	df	*P*-value	CFI	TLI	RMSEA	SRMR
Model with All Original Items	114	129	1652.66	573	0.000	0.675	0.643	0.129	0.140
Model with Reduced Items	118	93	510.602	231	0.000	0.870	0.844	0.101	0.081
Model with Reduced Items and Covariances Considered	118	76	419.861	224	0.000	0.909	0.887	0.086	0.085
Robust Model with Reduced Items and Covariances Considered	118	76	2419.823	276	0.000	0.909	0.887	0.086	0.085

Note. Indices are for standard not scaled model.

Figure 3

Covariances in Final Robust CFA Model

Covariances in Robust Model
Resilience_2 ~~ Support_2
SocialJustice_2 ~~ Collaboration_3
Resilience_1 ~~ Trust_4
Support_2 ~~ Support_4
Safety_2 ~~ Collaboration_2
Trust_1 ~~ SocialJustice_1
Collaboration_1 ~~ Empowerment_1

Figure 4

Final TIOT Items by Principle

Principle Construct	Item Number	Item Text Presented to Student
RESILIENCE, GROWTH, & CHANGE	Resilience_1	Students can submit a draft of an assignment for feedback.
	Resilience_2	My instructor provides video or audio feedback on assignments in addition to written feedback.
	Resilience_2	My instructor encourages me to reflect on my growth in the course.
SOCIAL JUSTICE	SocialJustice_1	Required readings and course content reflect the voices, experiences, and truths of people from marginalized and minoritized communities.
	SocialJustice_2	My instructor incorporates discussions of diversity and justice.
	SocialJustice_3	My instructor includes discussions of power and privilege related to the course content.
SUPPORT & CONNECTION	Support_1	My instructor encourages students to get to know each other via group discussions and projects.
	Support_2	My instructor led an activity about what constitutes appropriate behavior in group discussions.
	Support_3	My instructor provides information about relevant campus or community events and organizations.
	Support_4	My instructor refers students to campus resources such as the counseling center, the writing center, tutoring, etc.
TRUSTWORTHINESS & TRANSPARENCY	Trust_1	Course deadlines are posted on Canvas and the syllabus.
	Trust_2	The syllabus includes written policies for late work and missed classes.
	Trust_3	Assignment descriptions include rubrics and examples.
	Trust_4	My instructor consistently updates my grades on Canvas.
EMOTIONAL, SOCIAL, & ACADEMIC SAFETY	Safety_1	The online course content is only available to registered students.
	Safety_2	My instructor encourages students to meet with them if we are struggling with the structure of the online course.
	Safety_3	I feel confident that my instructor can and will address inappropriate behavior in the online course.
	Safety_4	My instructor shared information about academic integrity beyond the University policy.

COLLABORATION & MUTUALITY	Collaboration_1	My instructor provides clear instructions on how to contact them.
	Collaboration_2	My instructor is available for one-on-one student meetings.
	Collaboration_3	Students have a role in evaluating their own learning.
EMPOWERMENT, VOICE, & CHOICE	Empowerment_1	Students pick their own topics for course assignments or activities.
	Empowerment_2	Students have multiple modality options for submitting assignments (e.g., written essays, podcast recordings, PowerPoint presentations).
	Empowerment_3	My instructor provides a warning before covering possibly retraumatizing content.

While none of the models were perfect, the model with the best fit was a seven-factor solution using the reduced item scales and covariances considered using Robust Maximum Likelihood (MLR), which is presented in the final row of Table 3. The Chi-square test was not statistically significant, and the Root Mean Square Error of Approximation (RMSEA) was 0.086 (with a 90% confidence interval from 0.073–0.099), which suggests that the model does not fit the data perfectly. This is common in models, like ours, that are complex with several factors and many parameters. However, the CFI, TLI, and SRMR indices suggest the model has acceptable fit. In Figure 4, we present the full text of the survey items included in the model organized by the TIOT principles. A power analysis given the robust model parameters returned a high value of .977—indicating that our model is well-powered and does not require additional piloting.

We created mean variables for the TIOT principles and ran exploratory descriptive and normality tests (Table 4). While these cross-course findings are difficult to interpret, we note that responses fall on the full range, and the data has some non-normality. We ran Kendall's Tau-b nonparametric correlation tests and found that all TIOT principles were statistically significantly correlated with one another ($p < .000$). As presented in Table 5, the strongest correlation was between *Collaboration* and *Emotional, Social, and Academic Safety*.

Table 4

Descriptive Statistics of TIOT Principles

Principle Construct	*n*	mean	sd	median	min	max	range	skew	kurtosis	se
Resilience, Growth, & Change	125	4.49	1.63	4.33	1.00	7.00	6.00	0.05	-0.95	0.15
Social Justice	126	4.99	1.59	5.00	1.00	7.00	6.00	-0.44	-0.50	0.14
Support & Connection	124	4.74	1.58	4.75	1.00	7.00	6.00	-0.23	-0.71	0.14
Trustworthiness & Transparency	125	5.81	1.30	6.25	2.25	7.00	4.75	-0.76	-0.71	0.12

Emotional, Social, & Academic Safety	121	5.63	1.25	5.75	2.25	7.00	4.75	-0.63	-0.56	0.11
Collaboration & Mutuality	124	5.57	1.43	6.00	1.00	7.00	6.00	-0.85	-0.12	0.13
Empowerment, Voice, & Choice	125	4.17	1.79	4.33	1.00	7.00	6.00	-0.17	-0.89	0.16

Table 5

Kendall's Tau-b Correlations Matrix of TIOT Principles

	1	2	3	4	5	6	7
1. Resilience, Growth, & Change	1	0.5	0.49	0.34	0.41	0.41	0.5
2. Social Justice		1	0.57	0.3	0.38	0.38	0.57
3. Support & Connection			1	0.36	0.51	0.52	0.6
4. Trustworthiness & Transparency				1	0.62	0.66	0.25
5. Emotional, Social, & Academic Safety					1	0.71	0.38
6. Collaboration & Mutuality						1	0.35
7. Empowerment, Voice, & Choice							1

Discussion

We present the first valid and reliable instrument for measuring students' perceptions of the extent to which an asynchronous undergraduate course aligns with trauma-informed online teaching (TIOT) practices. Our survey instrument, based on the seven principles of the TIOT model, is grounded in the empirical literature of trauma-informed teaching, as well as the leading research on supportive and meaningful online asynchronous teaching in higher education (Byrne & Hollingsworth, 2024). By using this student-facing survey, faculty can gather actionable student feedback on how their course design and teaching practices align with the expectations of trauma-informed pedagogy. Doing so can identify gaps and areas for improvement but also provide valuable documentation of the labor put into designing a trauma-informed online course. In the current higher education landscape, it is essential for instructors to have reliable data of the quality of their teaching beyond that of the institutional summative student course evaluations.

This paper focuses on the development and validation of the TIOT survey instrument itself. We do not examine the relationship between students' trauma histories and their perceptions of trauma-informed practices but will do so in a future paper. Instead, our aim was to create a tool that can be used among all students, regardless of the trauma histories. We intentionally adopt a universal approach grounded in the belief that all students can

benefit from the implementation of trauma-informed practices that reduce stress and barriers for learning.

Our universal approach to the adoption of trauma-informed practices is particularly important given the independent design of asynchronous courses which can place greater demands on students' executive functioning and self-regulation skills (Broadbent, 2017; Broadbent et al., 2021; Zhang et al., 2023). For students navigating trauma whether due to systemic inequities, personal experiences or societal events like the COVID-19 pandemic, these essential skills for learning may be particularly compromised. While recognizing that the TIOT principles are relevant for many course modalities, we hope that those designing and teaching asynchronous courses will consider how the mere course structure may inadvertently amplify the effects of trauma and contribute to disengagement and academic stress.

Our survey items were intentionally designed so that they only asked about course design and teaching decisions within the control of the instructor. For example, we did not include items asking about the students' feelings about the institution's LMS choice or enrollment policies. Doing so ensures that the feedback faculty receive is directly tied to their teaching practices and can inform their own professional development. We also avoided framing items as direct evaluations of the instructor's personality or likability. Survey items were intentionally designed to *not* be about students' perspectives on or evaluations of the instructors' asynchronous teaching decisions, which have been found to contribute to biased evaluations that disproportionately targets Black and Brown faculty—particularly Black women (Perry et al., 2015; Rockquemore & Laszloffy, 2008; Smith & Hawkins, 2011; Young et al., 2023). We iteratively refined our survey to be as concise as possible in an effort to lessen participant completion time, thus increasing the utility for faculty seeking feedback from already over-surveyed students.

We contribute the TIOT survey instrument as a valid and reliable tool for gauging students' perceptions of the extent to which their online course aligns with trauma-informed principles. We encourage researchers, faculty, and faculty developers to use the TIOT instrument to gather course feedback and identify trends in what students notice and do not notice about their course design and teaching practices. Seeing the course through the students' eyes might shed light on how clear or accessible a course really is. For example, if many students respond to the survey that an instructor does not use rubrics, but the instructor has indeed created rubrics, that may signal to reorganize the LMS so that students can more quickly and easily access them. These small changes can make a course easier to navigate and thus less stressful for students who are navigating other stressors in their lives.

Limitations to Generalizability

Recognizing the importance of considering limitations when interpreting findings, we first note that the instructors who participated in our study were excited about gaining feedback from their students—potentially more than the faculty who chose not to participate. The participating faculty's interest in gaining feedback and how they communicated this wish to their students might have positively biased the students' responses. Second, critics of survey-based student evaluations of teaching often raise the concern that students are not meaningfully reading and responding to survey items but are instead clicking similar answers throughout the survey. While this could offer an alternate explanation for why all TIOT principles are strongly correlated, we choose to trust that the students were thoughtful when

they completed the survey. Third, we acknowledge that the survey included a mix of item structures, and we wonder whether student responses may have differed had all items followed a consistent phrasing format (e.g., all items beginning with "students can...").

Additionally, because all courses were screened to meet the expectations of QualityMatters, these courses may not reflect the average asynchronous course offered at the institution. We wonder if our prescreening may have inadvertently limited the variance in our data because we did not include courses that did not meet basic expectations of accessibility.

Because our study was conducted at an HBCU, the findings reflect the strengths and values of the HBCU learning environments. Thus, the results may not be directly transferable to institutions with different cultures, priorities, and histories. Rather than viewing HBCUs as exceptions, future research should recognize HBCUs' leadership in fostering equity-driven, student-centered teaching and explore how their practices might inform broader improvements in higher education. Researchers should consider how the institutional context shapes students' perceptions of asynchronous teaching.

Finally, we do not yet have evidence that one TIOT principle is more important than another or the extent to which each matter to the success of college students in online courses. Our future work will explore this using a mixed methods approach and a large student population.

Conclusion

We live in a stressful time in which students' attention is diverted from their learning experiences. While many faculty feel helpless in supporting students who are navigating hardships, adopting the TIOT practices is an easy way to help. In this paper, we present a valid and reliable survey instrument that allows faculty to assess the extent to which their course aligns with trauma-informed principles from a students' perspective. We encourage faculty, graduate student instructors, and faculty developers to adopt this survey instrument.

Acknowledgements

The research reported here was supported, in whole or in part, by the Institute of Education Sciences, U.S. Department of Education, through grant R305B230015 to Morgan State University. The opinions expressed are those of the authors and do not represent the views of the Institute or the U.S. Department of Education.

Conflicts of Interest

The authors have no conflict of interest.

Human Subject

The authors have received IRB approval.

References

Aruguete, M. S., & Edman, J. L. (2019). Trauma exposure and academic performance in African American college students. *North American Journal of Psychology, 21*(3).

Basow, S. A. (1995). Student evaluations of college professors: When gender matters. *Journal of Educational Psychology, 87*(4), 656–665. https://doi.org/10.1037/00220663.87.4.656

Becker-Blease, K. A. (2017). As the world becomes trauma–informed, work to do. *Journal of Trauma & Dissociation*, *18*(2), 131–138. https://doi.org/10.1080/15299732.2017.1253401

Boyraz, G., Granda, R., Baker, C. N., Tidwell, L. L., & Waits, J. B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology*, *63*(4), 475–486. https://doi.org/10.1037/cou0000102

Boyraz, G., Horne, S. G., Owens, A. C., & Armstrong, A. P. (2013). Academic achievement and college persistence of African American students with trauma exposure. *Journal of Counseling Psychology*, *60*(4), 582–592. https://doi.org/10.1037/a0033672

Broadbent, J. (2017). Comparing online and blended learner's self-regulated learning strategies and academic performance. *The Internet and Higher Education*, *33*, 24–32. https://doi.org/10.1016/j.iheduc.2017.01.004

Broadbent, J., Sharman, S., Panadero, E., & Fuller-Tyszkiewicz, M. (2021). How does self-regulated learning influence formative assessment and summative grade? Comparing online and blended learners. *The Internet and Higher Education*, *50*, 100805. https://doi.org/10.1016/j.iheduc.2021.100805

Byrne, V. L., & Donlan, A. E. (2020). A mid-semester evaluation of college teaching to improve online teaching effectiveness. *Online Learning Journal, 24*(2). https://doi.org/10.24059/olj.v24i2.2126

Byrne, V. L., & Hollingsworth, J. (2024). A model for trauma-informed online teaching in higher education. In R. A. González & Ş. Orakcı (Eds.), *Innovation and educational technology trends in higher education*. Information Age Publishing.

Carello, J. (2020, March). Trauma-informed teaching and learning principles. *Trauma informed teaching blog*. traumainformedteachingblog.files.wordpress.com/2020/04/titl-general-principles-3.20.pdf

Chisadza, C., Nicholls, N., & Yitbarek, E. (2019). Race and gender biases in student evaluations of teachers. *Economics Letters*, *179*, 66–71.

Comas-Diaz, L., & Hall, G. N. (2019). Racial trauma: Theory, research, and healing: Introduction to the special issue. *American Psychological Association, 74*(1), 1–15. https://doi.org/10.1037/amp0000442

Costa, K., & Dutill, J. (2021, July 20). Trauma fundamentals for higher educators [Webinar]. *Online Learning Toolkit*. https://www.onlinelearningtoolkit.com/

Costa, K., (2020). Trauma-aware teaching checklist. *100 faculty*. https://bit.ly/traumachecklist

Donlan, A. E., & Byrne, V. L. (2020). Confirming the factor structure of a research-based mid-semester evaluation for college teaching. *Journal of Psychoeducational Assessment, 38*(7), 866–881. https://doi.org/10.1177/0734282920903165

Duncan, R. D. (2000). Childhood maltreatment and college drop-out rates. *Journal of Interpersonal Violence, 15*(9), 987–995. https://doi.org/10.1177/088626000015009005

Ebenfield, M. N., Clarke, L. W., Doshi, A., Gorrivan, K., LaBonte, G., Leclerc, C., ... & Stevenson, G. (2022). Application of trauma-informed teaching and learning principles in a blended learning environment. In U. G. Singh, C. S. Nair, C. Blewett, & T. Shea (Eds.), *Academic Voices: A conversation on new approaches to teaching and learning in the post-COVID world.* (pp. 185–196). Chandos Publishing. https://doi.org/10.1016/B978-0-323-91185-6.00038-0

Frazier, P., Anders, S., Perera, S., Tomich, P., Tennen, H., Park, C., & Tashiro, T. (2009). Traumatic events among undergraduate students: Prevalence and associated symptoms. *Journal of Counseling Psychology*, *56*(3), 450–460. https://doi.org/10.1037/a0016412

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, *10*(3), 157–172.

Imad, M. (2022). Trauma-informed education for wholeness: Strategies for faculty & advisors. *New Directions for Student Services*, *2022*(177), 39–47. https://doi.org/10.1002/ss.20413

Jordan, C. E., Combs, J. L., & Smith, G. T. (2014). An exploration of sexual victimization and academic performance among college women. *Trauma, Violence, & Abuse*, *15*(3), 191–200. https://doi.org/10.1177/1524838014520637

Kim, M. M., & Conrad, C. F. (2006). The impact of historically Black colleges and universities on the academic success of African-American students. *Research in Higher Education*, *47*, 399–427. https://doi.org/10.1007/s11162-005-9001-4

López, C. M., Andrews, A. R., Chisolm, A. M., de Arellano, M. A., Saunders, B., & Kilpatrick, Dean. G. (2017). Racial/ethnic differences in trauma exposure and mental health disorders in adolescents. *Cultural Diversity and Ethnic Minority Psychology*, *23*(3), 382–387. https://doi.org/10.1037/cdp0000126

Marsh, H. W., & Roche, L. A. 2000. Effects of grading leniency and low workload on students' evaluations of teaching: Popular myth, bias, validity, or innocent bystanders? *Journal of Educational Psychology, 92*(1), 202–28. https://doi.org/10.0.4.13/0022-0663.92.1.202

McGruder-Johnson, A. K., Davidson, E. S., Gleaves, D. H., Stock, W., & Finch, J. F. (2000). Interpersonal violence and posttraumatic symptomatology: The effects of ethnicity, gender, and exposure to violent events. *Journal of Interpersonal Violence*, *15*(2), 205–221. https://doi.org/10.1177/088626000015002006

Moore, M. G. (2013). The theory of transactional distance. In M. G Moore (Ed.), *Handbook of distance education: Second Edition* (pp. 66–85). Routledge. https://doi.org/10.4324/9780203803738

Online Learning Consortium. (2019). *OLC quality scorecard.* https://onlinelearningconsortium.org/consult/olc-quality-scorecard-suite/

Perry, A. R., Wallace, S. L., Moore, S. E., & Perry-Burney, G. D. (2015). Understanding student evaluations: a Black faculty perspective. *Narratives of Professional Helping*, *20*(1), 29–35. https://reflectionsnarrativesofprofessionalhelping.org/index.php/Reflections/article/view/143

QualityMatters (2021). *Higher education rubric* (6th ed). https://www.qualitymatters.org

R Core Team (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/.

Raykov, T., & Marcoulides, G. (2011). Classical item analysis using latent variable modeling: A note on a direct evaluation procedure. *Structural Equation Modeling, 18*(2), 315–324.

Read, J. P., Ouimette, P., White, J., Colder, C., & Farrow, S. (2011). Rates of DSM–IV–TR trauma exposure and posttraumatic stress disorder among newly matriculated college students. *Psychological Trauma: Theory, Research, Practice and Policy*, *3*(2), 148–156. https://doi.org/10.1037/a0021260

Rockquemore, A. K., & Laszloffy, T. (2008). *The Black academic's guide to winning tenure without losing your soul*. Lynne Rienner Publishers.

Rosseel, Y. (2012). "lavaan: An R package for structural equation modeling." *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org10.18637/jss.v048.i02

RStudio Team (2024). *RStudio: Integrated development for R. Rstudio.* PBC. http://www.rstudio.com/

Shalka, T. R. (2020). (Re)membering the body: Identity development and college student trauma. *Journal of College Student Development*, *61*(4), 456–473.

Simmons, D., (2020, June 5). *If we aren't addressing racism, we aren't addressing trauma*. ASCD. www.ascd.org/blogs/if-we-arent-addressing-racism-we-arent-addressing-trauma

Smith, B. P., & Hawkins, B. (2011). Examining student evaluations of black college faculty: Does race matter? *The Journal of Negro Education*, *80*(2), 149–162. http://www.jstor.org/stable/41341117

Smyth, J. M., Hockemeyer, J. R., Heron, K. E., Wonderlich, S. A., & Pennebaker, J. W. (2008). Prevalence, type, disclosure, and severity of adverse life events in college students. *Journal of American College Health*, *57*(1), 69–76. https://doi.org/10.3200/JACH.57.1.69-76

Spooren, P., Vandermoere, F., Vanderstraeten, R., & Pepermans, K. (2017). Exploring high impact scholarship in research on student's evaluation of teaching (SET). *Educational Research Review*, *22*, 129–141.

Substance Abuse and Mental Health Services Administration [SAMHSA]. (2022). *Trauma and violence*. https://www.samhsa.gov/trauma-violence

Thompson, P., & Carello, J. (Eds.). (2022). *Trauma-informed pedagogies: A guide for responding to crisis and inequality in higher education*. Springer International Publishing. https://doi.org/10.1007/978-3-030-92705-9

Valenzuela, J., (2020, July 10). *Bringing trauma-informed strategies into the (online) classroom*. Teacher2Teacher. www.teacher2teacher.education/2020/07/10/bringing-trauma-informed-strategies-into-the-online-classroom/

Varjas, K., Henrich, C. C., & Meyers, J. (2009). Urban middle school students' perceptions of bullying, cyberbullying, and school safety. *Journal of School Violence*, *8*(2), 159–176. https://doi.org/10.1080/15388220802074165

Venet, A. S. (2021). *Equity-centered trauma-informed education*. W.W. Norton & Company.

Voisin, D. R., Neilands, T. B., & Hunnicutt, S. (2011). Mechanisms linking violence exposure and school engagement among African American adolescents: Examining the roles of psychological problem behaviors and gender. *The American Journal of Orthopsychiatry*, *81*(1), 61–71. https://doi.org/10.1111/j.1939-0025.2010.01072.x

Williams, K. L., Mobley, S. D., Campbell, E., & Jowers, R. (2022). Meeting at the margins: culturally affirming practices at HBCUs for underserved populations. *Higher Education*, *84*, 1067–1087. https://doi.org/10.1007/s10734-022-00816-w

Williams, T. R., Bass, J. E., Swain, M., Jennings, D., Wyatt, W. N., & Foster, S. (2024). Unpacking the stress of 2020: Black Americans cope with systemic trauma. *Clinical Psychology & Psychotherapy, 31*(1), e2944. https://doi.org/10.1002/cpp.2944

Wickham, H., François, R., Henry, L., Müller, K., & Vaughan, D. (2023). *dplyr: A grammar of data manipulation*. R package version 1.1.4, https://github.com/tidyverse/dplyr, https://dplyr.tidyverse.org.

Young, J., Farinde-Wu, A., & Sibanda, L. (2023). Teaching and learning in black and white: Unpacking students' perceptions of Black faculty teaching at a predominantly white institution. *Studying Teacher Education*, *20*(1), 21–42. https://doi.org/10.1080/17425964.2023.2240327

Zhang, Z., Xu, Q., Koehler, A., & Newby, T. (2023). Comparing blended and online learners' self-efficacy, self-regulation, and actual learning in the context of educational technology. *Online Learning*, *27*(4). https://doi.org/10.24059/olj.v27i4.4039