

“Bringing the Blues to Life Through Virtual Reality”

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Abstract: This article describes a virtual reality (VR) CAVE project designed and created to contextualize the reading of blues poetry within the history and sound of the blues in the United States, a strategy that could be adapted in other humanities disciplines to foster exploration of a topic within an immersive experience. The project aimed to provide students with a better understanding of the blues as a musical form so that the nuances of the blues poems of Langston Hughes would be more readily understood, thereby improving comprehension of form and elevating classroom discussion for a humanities seminar. Students navigate the space within a virtual blues joint to access biographical and geographical information about blues musicians and regional sound, as well as to listen to songs and poems and to watch “live” performance. The article includes an overview of Langston Hughes’ poetic project and the selected poems, the navigable features of the VR project and its development, and student journal responses to the experience, showing the value added to comprehension by accessing the music in a holistic approach.

Keywords: VR, virtual reality, blues, blues poetry, Langston Hughes

The centenary of Langston Hughes’ *The Weary Blues* will be celebrated in 2026, yet the multiple modalities of his work seem remarkably current. As Hughes was writing not only within the spirit of the Modernist aesthetic, but at the forefront of the Harlem Renaissance, any examination of the poems in his first published collection needs to consider not only *melopoeia*, or the musical quality that is inherent in word choice and lyricism of composition, but also a more direct celebration of the underlying musical form, the blues. Thus, in order best to teach the connection of Hughes’ blues poetry to and inspiration *from* the blues, a musical form with which most students are not familiar, I have long utilized live performance of the blues in the classroom so that students could become better versed in the blues sound and instrumentation. As a means of expanding the availability of such an approach, in 2019 I conceived a three-dimensional blues joint to be run in Villanova University’s virtual reality (VR) CAVE-Automatic Virtual Experience (CAVE), developed with the help of its senior technician over the course of the next two years. This VR project shares blues poems by Hughes and others both visually and orally and provides access to blues songs in two different styles, acoustic and electric, while further providing a cultural context of the Harlem Renaissance and the transmission of blues music across the nation. This article will offer an overview of Hughes’ use of the blues, the development of the VR project to highlight the music that underscores the poems, and student response within the context of a first-year seminar with the implication that such a project could be adapted in other humanities contexts to foster exploration of a topic within an immersive experience.

VR Pedagogy

Humanities work with VR lags behind that in other disciplines. For example, Samala et al. (2023) conducted a literature review of publications on VR and AR technology in research and found that the majority of AR/VR tech publications were in the fields of informatics and computer science (2,555 publications) and education (2,018), followed by psychology and health. In contrast, there were only 19 published studies in creative arts and writing. Their study does not concern pedagogical studies exclusively, let alone those regarding higher education, but my own searches have turned up only a limited number of published articles on the use of VR/AR in the humanities (including the arts), with the search recommendation that I consult our university's science and engineering research librarian—not a promising endorsement for many humanities-based projects. That does not mean that such projects do not exist; the dearth of articles may remark more upon a lack of formal study of these projects, for certainly there are those teaching in the humanities who have come to see the potential in such resources.

My own introduction to VR was at a conference for museum educators held at the Franklin Institute in Philadelphia. In 2016, the Institute launched a major VR initiative (funded by an NSF grant) that “include[d] two museum firsts: the creation of a virtual reality content library loaded with premier science content curated from all over the globe—including the exclusive debut of one of the first 360-degree videos from the bottom of the deep ocean—all housed on the museum's first-ever mobile app; and an innovative virtual reality demonstration and lab space for immersive room-scale VR visitor experiences” (PR Newswire, 2016). VR is one of four approaches in the metaverse, which also includes augmented reality (AR), lifelogging, and mirror world (Kye et al., 2021). In their 2023 study, Pangsapa et al. define the metaverse as “a shared digital space that provides immersive and interactive experiences” and remark that “presence is an essential aspect of the metaverse, describing how a user experiences a location in real life” (p. 252). To create this presence and embed a person within a virtual world, metaverse technology makes use of narrative transportation (Pangsapa et al., 2023). This ideal of transportation to another place is the core of the VR blues club.

Kye et al. (2021) suggest the potential for the metaverse/VR as a pedagogical tool via “a space for new social communication; a higher degree of freedom to create and share; and the provision of new experiences and high immersion through virtualization” (p. 1) They indicate that VR, which is the technology used in the blues CAVE, is the most actively used option, with the most diverse applications. The shared space of the VR CAVE blues club offers a chance for students to interact with the music as they might at a club instead of listening to the music singly, as they might through personal headsets. However, unlike some uses of VR, in the blues CAVE, students are not problem-solving or creating something new within the technology; rather, through their collective experience of the music, they come to a new understanding of the poetry that is recorded and reflected in their personal annotations and post-experience discussion, stressing the importance of a humanities framework.

This awareness and connection is stressed by Hu-Au and Lee's finding on the use of VR in education (as cited in Schuster & Moloney, 2022) that the use of VR likely increases student engagement, creates opportunity for consideration of other

perspectives and empathy, and fosters creativity, but that “VR should not be used as a replacement for ‘didactic experiences of learning’” (87). In another literature review of VR in education, Kavanagh et al. (2017) considered both the reasons educators used VR and the problems they may have had in doing so. They found minimal pedagogical reasoning behind the use of VR in education, with many educators motivated more by the opportunity to use VR as a tool without an underlying pedagogical motivation. Three of the 99 research papers studied by Kavanagh et al. (2017) were about potential use of VR in museums, compared to a multitude in the fields of health, engineering, and aviation. While this study is over five years old, it dates from around the time I was first conceiving of my project and remarks upon one of my own concerns. In strategizing the use of VR to teach blues poetry (as discussed later in this essay), I was cautious to consider how VR could be used as a tool to supplement the work my students and I were already doing in analyzing the poems. I did not want to use VR for the sake of using it, but in order to expand upon my students’ sensory experience and cultural awareness, especially as many were saying that they had never (knowingly) heard a blues song.

Jazz & the Blues

Music profoundly impacted the writing of Langston Hughes, whose travels took him across the United States. In his essay “The Negro Artist and the Racial Mountain,” Hughes admits that in much of his poetry he tries to “grasp and hold some of the meanings and rhythms of jazz,” which he explains is “one of the inherent expressions of Negro life in America” (p. 100). In localizing his poetic form more specifically in the blues, a precursor to jazz, as he does in the poem “The Weary Blues,” Hughes demarcates a more intentionally Black space and mode not only of performance but of *being*, a space that is harder for Whites to enter and appropriate. Hughes opens the titular collection with a prose poem that proclaims what it is to be Black that has a nod to music in its central stanza: “I’ve been a singer:/All the way from Africa to Georgia/I carried my sorrow songs./I made ragtime” (*The Weary Blues*, 1). There is an inherent connection of voice with story, a triumphant remaking of suffering into song, that celebrates voice.

Thus, for a teacher, it is important that students *hear* this voice, something typically done by reading poems aloud. Such an activity can help students appreciate rhythm, rhyme, and nuance, but also, as with jazz and blues poems, the undertones of musical form. Alexander’s (2021) article on reading aloud as a methodology points out that just over 100 years ago when the Newbolt Report was published, reading aloud was still a common household and societal practice. As the Report’s recommendations were implemented in subsequent decades, “a ‘Reading Aloud’ pedagogy was developed and refined, becoming associated particularly with poetry teaching,” writes Alexander (2021).

The blues developed through regionality and community, through musical interplay in response to socioeconomic conditions, and it translated and transmitted its message as it spread through the Great Migration. It requires little in the way of instrumentation, for one of the most basic blues instruments is a simple baling or broom wire nailed to the side of a one-room house, which then becomes the amplification for

the notes plucked or slide-played with a bottle or can. But it is a very personal musical form, one that thrives on the audience being present, to give its energy to the musicians.

Philadelphia blues musician Papa Ed Stokes, who contributed to the Blues CAVE project, says that blues music can bend scales or slide, getting in between the tones. Parris Bradley, of VILLANOVA University's Theater Department, says that "technically, that is musically and lyrically, the blues is all about variations and substitutions." He explains that the blues tradition relies on a real-time process of borrowing, passing on, and altering different elements in what is known as the "folk process," through which unity comes from tradition, style, technique, and subject matter.

Without knowledge of the blues and what it sounds like, which seems to be the case today for students of all backgrounds, or of the rich artistic cultural legacy of Lenox Avenue as an emblem for the Harlem Renaissance, how are students to "hear" the musicality of Hughes' poem and understand how it performs the blues? Certainly, students are capable of utilizing Hughes' descriptive language in "The Weary Blues" to see the night club with their mind's eye. He gives the visual cue of the "dull pallor of an old gas light," and for all that most students probably do not know the warmer and subtle flickering glow of gas light, they can conjure up a scene. They can imagine the pianist's "ebony hands on each ivory key" and the "rickety stool" where he sways in time to the music. And they know the song and notes are *deep* and *melancholy* and *moan* (Hughes, "The Weary Blues," p. 5). But do they know the music being brought to life through Hughes' efforts?

Without the context of the blues as musical form, students might rush through the seeming simplicity of the poem, missing the rhythm that underlies the stanzas and the cultural notes of the loneliness of the North to one far from home and the familiarity of an age-old song of betrayal and heartbreak. Papa Ed Stokes points out that "Everyone thinks of blues like, your woman left you, but there's all types of blues." He said there is both sad blues, which most folks think of when they think of the blues, but also happy blues. The happiness relates to the idea that "blues was a form of music that helped pull us through," he said, referring to earlier days in Black experience, when "after a whole day of working, coming across the fields we would sing." This is a time before blues was the blues, he said, when it was called a circle of song or call and response, "but it was something to ease the pain of slavery." Seeing a musician like Stokes perform in the CAVE gives students a chance to observe the uniqueness of the instrumentation. For if, as he says, "You can't really put blues down on paper; it's something that you feel," how then do you teach the blues or blues poems from paper alone?

Blues and the CAVE Project

The first true poem in Hughes' collection, "The Weary Blues," frames the experience of music and place in such a way that the poem is both a description and a performance. With this poem in mind, I first began inviting Parris and some of his friends to perform live in my classes. Students then had a chance to see the instruments, hear the live interplay of the musicians, and consider the traditional chord progressions of the blues. For three years, we did this within the small space of a seminar classroom, hoping that the neighboring classes would not be disturbed by early morning concerts. In the fourth

year, we used the theatre space, which was open in between two productions, a decision that alleviated any burden on neighboring classes, created a more traditional audience space, and provided better acoustics. However, we still ran into the issue of finding blues musicians who could and would attend a 9:30 a.m. class, for as Parris said, “What self-respecting blues musician is up that early in the morning?”

When a call went out for humanities-based projects that might suit the then-new VR CAVE at VILLANOVA University, I thought the blues/Hughes unit would make a strong candidate. The CAVE could provide students with the opportunity to hear the music while still considering the poetry itself. Given the chance to peruse some early VR humanities projects, I donned VR glasses and entered a world of Van Gogh paintings, trying to avoid bumping into a pool table in his “Night Café” while making my way to a window to see his “Starry Night.” I found myself in a gothic-inspired study, clicking from point to point on the floor to move about while Edgar Allan Poe’s “The Raven” was recited, words flashing upon the walls. The idea to create a blues club space based on the poem “The Weary Blues” began to unfold in my mind.

With “The Weary Blues” as a starting point, I enlisted the help of Parris, who was then the set designer for our graduate theatre program, to help conceptualize what the space in the CAVE should look like. He was familiar with the unit I taught and with my needs. We imagined a blues club and drew upon my then-recent experience on Beale Street in Memphis, another of the iconic locations in the history of the blues, as well as his own experiences as a blues and Americana musician. Together with the senior technician for the CAVE, Andrew Grace, we browsed existing VR programs that portrayed cafes and bars, looking for something we could use as a foundation for our vision. Once we found something suitably close, we purchased the program and set about editing it to make it look more like a blues club. This entailed changing the lighting; removing some furniture and the bar with its many taps (to make it a more suitable space for a classroom); and replacing the signage on the wall with posters of blues musicians and street signs, many of which are access points for music and information. The program uses Unity as a platform, meaning that a project can be exported to various destination platforms, such as Windows, Mac, and WebGL. We also developed a storyboard for what the experience of the CAVE would be and how a user would move through the space, imagining what experiences would be guided and what would allow for free exploration.

The resulting blues club is a brick-walled space with booths, high-hat tables, and a small stage. Posters of blues musicians and street signs line the club’s walls. Initially, we envisioned the first “scene” to be of a streetlamp on a dark avenue, relying on an image in the poem, but instead gave primacy to the poem as a literary object. When the program opens with a vocalization of “The Weary Blues,” the words of the poem are projected on the brick wall, bringing the poem to life for users. To use this poem and two others by Hughes, I requested and received permission by the Langston Hughes estate.

It was important to give the voice of the poems to African-American speakers, so that the dialect Hughes uses as part of his cultural project was not rendered performative by a White voice; the first reader also found herself inspired to sing one of the stanzas, so strong was the musical pull of the poem. The club functions as a place to hear music, peruse a few other blues poems, and watch performance. Guided and

then independent listening helps students listen more meaningfully and aids them in hearing the innate musicality of the poems on their own.

The VR Blues Club experience

Students experience the blues club by entering the CAVE classroom in small groups. I usually schedule eight students to attend at a time to allow room for them to move about. The technician gives a brief talk on the CAVE and the VR technology in use and then distributes viewing glasses. One student is selected to “drive” the experience and is given the controls, although I have also led the experience by handling the controls and responding to student interests. For this VR program, students stand within the CAVE space in which three wall screens and one floor screen project the room. When the program commences, the words of “The Weary Blues” play across the brick wall, while Dr. Crystal Lucky’s voice fills the space. This moment is controlled; all of the students must experience Hughes’ signature poem before the other elements of the club are accessible to them for their choosing.

When the first poem ends, it is replaced with a bio card on Hughes himself, as is the case with the two other poets. The posters of blues musicians hanging on the walls are “clickable,” revealing short bios and songs by each musician. In addition, the stage enables “live” performances of electric and acoustic blues styles (recorded on campus), providing a foundation of the types of instrumentation in the music and also showing the difference between a single blues musician working with both voice and instrument and the interplay of the members of a band, in which a solo is handed off like a ball among members of a team, without disruption and with equity. Students may find themselves concerned about bumping into imaginary furniture; we actually removed a couple of high-hat tables for this reason.

Four street signs open to reveal a short paragraph on geographic locations that were significant in blues history, while a map of the US clicks open to provide a fuller exploration of regional style and sound and shows the spread of the blues upward and outward from the Mississippi Delta. Three posters of the blues/jazz poets are connected with audio recordings, including Hughes’ “Po’ Boy Blues,” James Weldon Johnson’s “Sence You Went Away,” and Carl Sandburg’s “Honky Tonk in Cleveland, Ohio” (not technically a blues poem, this last poem offers an opportunity to discuss a White author’s recording of jazz experience).

Student reflections

Pangsapa et al. (2023) used a post-experience survey to assess student response to VR technology in flipped-classroom learning (sustainability, communication, and finance), confirming “the positive impact of the metaverse learning method” and finding that pedagogy was critical in influencing how students engaged with the platform (p. 254). This confirms my own experience of embedding the VR CAVE experience within other elements of the learning unit. Hu-Au and Lee’s (as cited in Schuster & Moloney, 2022) caveat of not using VR in lieu of a didactic method, is in keeping with my approach, which embeds the use of VR within a robust unit. The Blues/Hughes unit is a

part of my “Moderns” humanities seminar, following on the heels of Walt Whitman’s “Song of Myself” and Sigmund Freud’s essay on poets and daydreaming, in which he speculates on how writers get their ideas. I have experimented with the order in which students experience the poems and prefer to have students read the poems before attending the CAVE, then reread and discuss the poems in the next class session. This way students first annotate the poems as they hear them in their head and add to their notation after they have heard the music.

In my own teaching, I have been concerned with students’ metacognitive reflection on the affect the VR experience has on their comprehension of the poetry, so I assign a journal reflection on the experience of reading the poetry and attending the CAVE. The CAVE has helped students to understand the tone of Hughes’ poems, something that is often missed as they focus solely on the meaning of the words when reading. For example, in “Po’ Boy Blues,” the fourth and last stanza deals with the weariness that afflicts the pianist in “The Weary Blues.” The speaker laments, “Weary, weary,/Early, early in de morn. //I’s so weary/ I wish I’d never been born” (Hughes, “Po’ Boy Blues”). Like the pianist in “The Weary Blues,” there is a conflation between weariness and death, or perhaps more appropriately, lifelessness, but when students read this their own, they often miss the rhythm that underlies the stanzas and the cultural notes of the loneliness of the North to one far from home and the weariness that speaks to a struggle not only of heartbreak, but of race in the era of Jim Crow.

Writing on the difference between first reading the poem alone and then hearing it in context, one student commented:

Even though Hughes is very proficient at communicating humanity through his own personal craft, seeing words on paper is, for me at least, not as directly moving as hearing similar themes and emotions communicated directly by a human voice. The blues also has a very prominent tone to it that I can best describe as dusty and bitter (in a good way). The presence of notes outside the traditional diatonic major or minor scales creates a melodic complexity that leads to dissonance.

The comment reveals the importance of the voice in conveying the meaning of the poem, as well as the student’s awareness of a connection between that voice and the music itself. After hearing the poem read aloud in the CAVE, another student wrote:

It is clear that Hughes’ poem is very heartfelt and emotional; however, when I read the poem in my head for the first time, it was hard for me to give it the emotion that it needed. At the same time, blues music is also sung with a lot of passion and emotion. Thus, hearing the blues music being sung helped give the poem the emotional voice that Hughes intended.

Both students use the words “emotion/emotional” while also remarking on their own limitation to infuse that emotional register into the poems on their own; a performance of the poems was required to ignite that level of connection.

Similarly affected, another student commented on how listening to the poem read aloud in the context of the CAVE (in which the words broadcast on the wall in time to the audio) brought their attention to the structure of the poem:

...when we actually listened to the music in the CAVE, I got a different feel from the poem. Instead of focusing so much on the words, I started to focus on the flow behind the poem. How it was spoken and how it was meant to be spoken....So when I looked back at the blues poems, I was able to see the structure instead of the words, and see how that impacted the meaning. It allowed me to look at parts of the poems other than the words, because the words are only a small part of it.

Here, through the use of VR, the student became invested in the versification and was able to hear the poem in a new way, rather than just see it as words on a page. The CAVE's design to attend to both the words and the larger experience show how VR can supplement literary exploration.

For younger audiences, who grew up listening to personally selected and technologically curated music piped directly into their ears in a personal performance mode, understanding the blues as a *social* experience can also be a challenge. Kye et al. (2021) cite Book's 2004 cataloging of the key attributes of VR, which include the shared space it creates, so that multiple students ("users") can participate together; its immediacy and interactivity are other critical factors. In their discussion, Kye et al. (2021) consider primarily users entering the shared space through virtual avatars and then socially engaging, whereas my project brings students together physically and socially in the same space as their own selves. This is important in creating a common performance space.

The CAVE functions to bring the blues poems to life by providing a contextual space and filling in a missing cultural notation for students with a more limited musical experience, especially small-scale performance—not headphones, but also not concerts. As a student later commented, "Listening to someone with passion read 'The Weary Blues' while being transported into another location and vibe really set the whole tone for me as to what the blues really embodies." The CAVE experience was able to do this in ways that simply giving students a playlist of songs to listen to did not, for as one explained, "Attending the CAVE was far more preferable to me than watching a video online or listening to a CD. The CAVE allowed me to breathe in and truly absorb the music." After the VR experience, the student went on to recall an annual trip to a restaurant called Memphis Blues in great detail, evoked by the sensory prompting of the CAVE.

Perhaps more importantly, the students then could understand how blues music was part of a communal culture of shared experience. The clickable posters of blues musicians allowed students to explore briefly the musicians' stories. For example, Blind Lemon Jefferson's bio card notes in part: "One of the first Country Blues musicians to record, Jefferson is credited with popularizing the genre. His lyrics are often sweet and simple, describing the everyday life that he saw around him, but often with a deeper meaning," and lists two of his best-known songs, "Match Box Blues" and "Black Snake Moan." While students read the info, part of one song (selected by Parris) plays.

Seeing the faces of the different musicians, from Son House to Memphis Minnie, and hearing their varied styles, one student wrote:

I wasn't aware before of how much blues music brought people together. Blues music didn't just represent a genre of music, but it represented lively bars that brought people together, music with lyrics that were emotional, and music that inspired other genres of music with its instruments and style.

Several other students recognized through performance that the blues and blues clubs represented a communal space for African-Americans. One student of color spoke about inclusion, writing, "The Blues Club was a community for black people because even if they were not present in the audience, their story was being told. They were finally being heard." This thinking transcends the poem on the page and embraces Hughes' larger project within the Harlem Renaissance.

While student groups sometimes have a moment of adjustment in navigating the control to move about the space, they quickly adapt. In the CAVE, students have danced along to the music, or cried out in surprise when they recognized part of a song or line of music. They are eager to browse all of the musicians' bios and to compare the musical styles, often returning to pieces they had already heard to listen anew in the context of other voices. A student wrote, "I think incorporating the poetry elements helped me understand the rhythmic nature better. The readings were very well done and had a soulful element that continued to show the rhythmic connections with the music." Thus, the musicality innate to the poems now made sense. Some students favored the "live" performances, commenting on the instruments that Papa Ed played and how the members of the Dukes of Destiny interacted in exchanging the solo during their "live" performance.

The map feature was achieved with the assistance of a student researcher, who as part of a semester-long project was able to investigate a range of songs, instruments, and musicians and to categorize them by region. Each city on the map is clickable, revealing information on region, style, musical influence/impact, and noted musician. One student reflected:

I realized I listen to Texas blues more than I thought during the experience. When Texas was selected off the map, I recognized the band immediately. It has caused me to search up the genre and get more into the genre.

The addition of the map feature helps students to visualize the Great Migration and the spreading influence of the blues, even as it retained regional flavor. Products of a more universal culture through the social media and the internet, students now could understand the idea of regional development and specificity. One wrote:

While I had never considered how blues music may have developed with so many stylistic differences in various geographic areas, the map in the CAVE showed some of the characteristics of Delta Blues, New York Blues, Chicago Blues, etc. This demonstrates how music can function as a way for people living

Dolan

in specific regions to connect with one another, forming distinct geographic cultures.

The map also helps students to see the influence of Highway 61, its north-south route paralleling the great Mississippi, and to read of its connection to both Robert Johnson and Bob Dylan.

Conclusion

Overall, the blues CAVE serves to awaken students' senses in attending to the musicality of blues poetry. Through the creation of another world, a blues joint in which students engage with the poems and the music, the VR experience allows students to enter more fully into the literary experience. Additions to the CAVE, such as a low murmur of voices and clinking glassware when songs are not played, have enhanced this experience; future plans include using lidar technology to scan and embed musical instruments used in the blues so that students can "handle" the instruments. VR programming allows us as educators to adapt and revise the experience in response to student learning needs.

As with technology, Papa Ed Stokes says, "I believe music is going to evolve. But the blues, the real deep, true blues, is always going to be here." My hope for VR is that it opens the blues poems up to a fuller understanding and also, as John Colgan-Davis of the Dukes hopes, that "the screen will lead students to read into live music, for there is nothing like live music." And I have reason to believe that this hope may be realized, for as one of my students recently wrote of the VR blues club:

From the words to hearing the piano moan, the vibe of the room has shifted into a grave state. That is what music is able to do to a place. Music has the power to completely flip the world off its axis and form something that was not originally present.

This sentiment might be applied to the use of VR technology itself: designed well, it has the power to open doors for our students' imaginations so as to make them aware in new ways.

While my project was specific to blues music, the multisensory experience that VR affords students has great potential across the humanities. The possibility to explore not only music but art and literature deserves our consideration as practitioners of disciplines outside of STEM. My approach was to use a common experience, gathering the students in small groups, which is in keeping with Pangsaba et al.'s (2023) findings about the benefits of collective experience and social learning, but I have been in discussion with our tech team about any potential benefits to offering the same VR program on individual headsets. What I will always emphasize as critical to the experience is the pedagogical framing of the experience within the classroom, via critical reading, reflection, and discussion. VR can serve as a tool for the humanities without threatening the core aspects of a humanities-based education; by "flipping the world off its axis," we get our students to think anew.

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