

## **Digital Storytelling in Music and Audio Education: Inspiring Modern Reflective Practice with Relevant Technology**

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### **ABSTRACT**

Digital storytelling (DST), a method of reflective practice using simple multimedia tools, presents highly useful, multidisciplinary curricular options across the K–16 educational spectrum and in community programs. Although it has a rich, emergent pedagogical vision in the digital humanities, digital storytelling as a creative assessment tool remains under-explored in music and audio education. Millennials, deeply embedded with multimedia technology proficiency, now represent a growing population of music and audio students pursuing higher education degrees in commercially focused disciplines. This article examines digital storytelling as a central part of a germane curricular design in popular and technology-based music courses in university settings. Finally, some pedagogical suggestions and guiding questions are offered that university teachers can use to encourage student reflective practice through digital storytelling.

*Keywords:* digital storytelling, DST, commercial music, popular music, music and media education, reflective practice, multimedia technology, millennial learning

### **Introduction**

As more university-level certificate and degree programs offer specializations in music technology, college educators can profit from considering how to unlock the mystery of “production” to reach their students. Taking into consideration that the current generation of millennial students has grown up with computer technology

at the center of their everyday life, music technology educators likely encounter cohorts that are creative and self-assured in their use of digital audio workstations, computers, tablets, and similar tools. The “digital native” generation grew up with all forms of multimedia at the center of their very existence.<sup>1</sup> This article proposes that the technology itself affords reflective music and audio educators with an opportunity to explore the tools they use along with their students.

While students might take their knack for this technology for granted, instructors may choose to introduce a series of open-ended questions about how independent artists and producers record modern popular music with accessible technology in the twenty-first century. These questions can guide classroom discussions with students and inspire music and audio teachers to connect technology to their own research aims. Here are a few ideas:

- **Q1:** How are independent music albums produced at home and in nontraditional sites?
- **Q2:** How does contemporary recording technology influence musicianship?
- **Q3:** How do independent artists address remote collaboration, production, technical, and artistic issues?
- **Q4:** Can media technology encourage university students to be reflective learners?

Using reflective questions to engage critical thinking, foster collaboration, and promote research is not a new phenomenon. Yet, as all forms of music technology continually advance, the need for careful introspection by music and audio educators—particularly at the university level where these types of undergraduate programs emerge—remains an essential and beneficial practice. Dana and Yendol-Hoppey (2009) describe this “teacher inquiry” as a multidimensional way towards understanding the intricacies that underscore classroom management, curricular policy, and the stakeholders involved at all levels of education. They encourage teachers not to be overly concerned with semantics—noting that teacher inquiry,

action research, and intellectual/professional curiosity are all appropriate ways to describe this type of reflective practice.

### **Guiding Questions in University Music Technology Programs**

The questions offered above are not intended to be comprehensive, rigidly defined, nor prescriptive. Simply put, some younger students might not be fully aware of the deeper context of recording technology's influence and what issues they will encounter when producing their own ideas. Similarly, music technology educators may be interested in documenting and analyzing the ways that their students use these tools in newer undergraduate programs that lack clearly articulated rubrics for assessment and evaluation. Dana and Yendol-Hoppey (2009) encourage teachers to identify their curiosities and draw from their everyday classroom experience to glean data. Considering this point from the perspective of music technology coursework in university settings, the timing is appropriate to explore how new media fosters reflective practice in teachers and students alike.

Music technology degrees are generally nascent in comparison to other teacher-preparation and performance programs. To be clear, this article considers music technology, audio engineering, commercial music production, new media, gaming, and sound design as generally similar learning pathways. The terms used to define these types of degrees are flexible and often identical. Each of these types of programs model certain aspects of the commercial audio and music industry. Colleges and universities may use slightly different nomenclature, but the general idea is that these types of degrees prepare students for vocationally focused careers as freelance professionals where they create music and sound for creative purposes. The programs may vary in length, scope, and title, but they share a similar overarching mission.

Any form of data gleaned from lab-based music technology courses can be used for evaluation, assessment, and to guide curricular decisions. General questions like these are also meant to get undergraduate music educators thinking

about how music is produced at the many sites available for recording and production; they also reflect on the emerging areas of music technology and audio-related education scholarship.<sup>2</sup> This article also suggests that capturing small glimpses of recording activity—wherever those events happen—offers rich data for understanding how music technology educators can guide students to learn production concepts. Moreover, applying Dana and Yendol-Hoppey’s (2009) flexible approaches to teacher inquiry in these settings encourages reflection from the teacher/practitioner and from the student using familiar data collection methods.

### **What (or Where) is “The Studio” Anyway?**

Remembering my own budding (and slightly obsessive) interest in music production, there always seemed to be a certain level of mystery regarding the “studio,” and more specifically, how albums were made. Combing through album liner notes and record sleeves provided valuable insight into the persons (and technology) involved in the creation of my favorite albums.<sup>3</sup> The notion of a “studio” has been transformed over the past twenty years due to the proliferation of inexpensive, accessible, and highly effective recording technology.

Today, we use terms like “project studio” to articulate the fact that music is not always recorded in professionally designed rooms. Musicians of all types use very basic tools to capture digital quality sound wherever and whenever they feel like it. Taking that concept a step further, in many ways the idea of a “studio” refers to an artist’s laboratory. It is a safe place where they can create without distraction. Indeed, university programs are replacing the audio engineering and industry apprenticeship model; the instructor’s role most certainly changes within these contexts as well.<sup>4</sup>

Under the apprenticeship model, learning from a senior audio engineer meant paying your dues as a production assistant or as an intern. It was both secretive and privileged access to important technical information and experienced audio engineers only shared that information strategically. Today, the instructor of

record may be an experienced audio engineer with major label credits. On the other hand, the instructor of record in a music technology course could be a composer with a DMA/Ph.D. in a music technology area. These are widely disparate extremes of the pedagogical spectrum. Nevertheless, that instructor must consider that many students in undergraduate music technology programs have some access to music production software and have more than likely spent some experimenting with recording. Considering that fully-stocked rooms with large-format analog desks are most commonly found in educational settings these days, the student's time as an undergraduate may be their only opportunity to get experience using the traditional analog equipment.

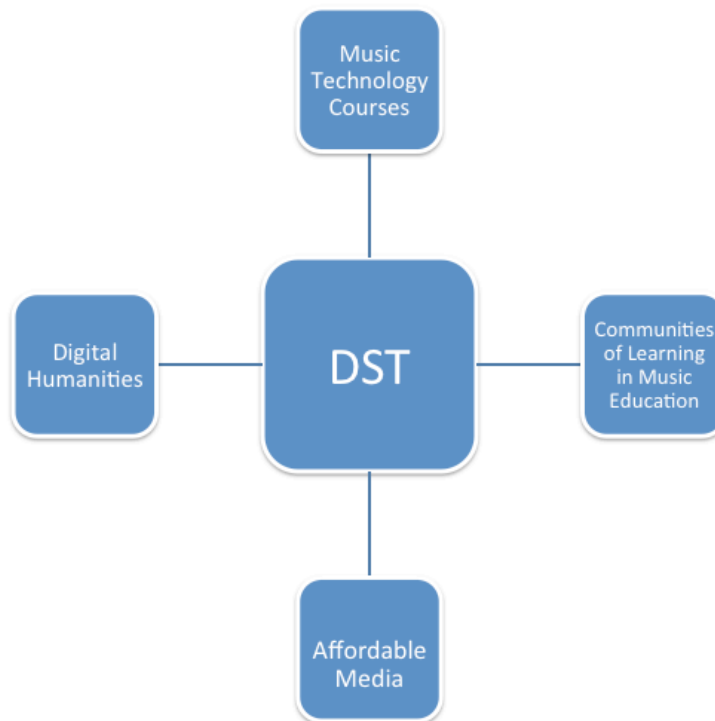
Recent music technology scholarship argues that the recording studio is a robust source for ethnographic research.<sup>5</sup> Thompson and Lashua (2014) note that the studio, in all of its various formats, is a suitable place to conduct ethnographic fieldwork. From their research, we can infer that this type of fieldwork can happen in commercial/major label recording sessions, with independent artists, and within university audio programs and the like. Just as ethnomusicologists incorporate mixed methods in the field to catalog their data, the smaller project studio promises to reveal much about emerging trends in independent music production. It is for these reasons that using some form of new media to capture the studio's events will prove beneficial for scholarly analysis.

Artists can record ideas on their phone or tablet without much thought. In this age of information saturation, music fans can simply type a few words into a search engine and get a wealth of source materials to peruse. Many of those resources include videos, interviews, tutorials, and recording studio events. Thus, music educators can use these questions, and ones like them, to inspire classroom discussions and bridge reflective praxis with efficient music technology pedagogy. In all actuality, introducing digital audio workstations and related music technology, without proper context, seems to yield little effectiveness in student learning.<sup>6</sup> Perhaps the next step is then to carefully explore how to incorporate Dana and

Yendol-Hoppey's (2009) methods of teacher inquiry within a collaborative framework with instructors and college students in a music technology class.

### What is DST?

Digital storytelling (DST) is a multi-platform creative practice using traditional and media-based resources offering many creative opportunities for reflection on university-based music and audio education programs. When implemented sensibly, DST supports individual music production and technology modules using simple tools to encourage students to reflect on all stages of their learning. DST encourages introspection as a central focus beyond individual classes and toward giving a voice to diverse music learning communities. Figure 1 illustrates the relationship in more detail:



**Figure 1: DST as a curricular focal point.**

Addressing music and technology–based recording skills in higher education require data that sheds light on a creative process normally shielded from public consumption. Although we can assume that many independent artists, producers, and audio engineers enjoy collaborating with others, these persons often prefer to record, mix, and produce new ideas away from the public and with minimal distraction. Documenting footage of the production events and their meaning gives students and teachers a rare glance of a highly intimate performance in the commercial or home recording studio. Likewise, capturing short video clips and photographs with mobile phones gives students a chance to share their work–in–progress with their teachers and classmates on course websites and through the Internet.

Creating digital stories with simple multimedia tools (mobile phones and tablets, open–source media technology, social media) gives educators useful pedagogical strategies to mix music technology and audio courses. When deployed, these tools offer students a chance to reflect on their own activities in the studio, and how they interact with the many processes involved in music production. They give educators a glimpse into the student’s reflective potential using multimedia, and they provide administrators and accreditation bodies with fresh approaches to assessment and course evaluation.<sup>7</sup>

Although this article focuses mostly on production-centered classes, the concepts outlined may be included in related courses with a broad student base to stimulate new modes of teaching and learning. As a supplemental learning resource, DST inspires multi–platform literacy, collaborative learning, critical thinking, and awareness. Successful integration of DST concepts into music technology curricula presents a creative alternative to traditional written reflective practice by using items millennial learners already use. Some of these pedagogical tools include mobile technology, open-source media software, and the Internet. Yet, while there are many ways to incorporate the latest technologies, music educators must carefully evaluate how these tools truly enhance student learning. Dorfman’s (2013)

important research corroborates this notion by providing many examples of teachers who have incorporated aspects of music technology into their own courses with varying results.

Using examples generally drawn from popular music education in university settings, this article introduces valuable pedagogical concepts that bridge musical styles by examining case studies by Allsup (2011), Dunbar-Hall (1999), Hannan (2006), and Lebler (2007). Also, by presenting a general synopsis of digital storytelling and its relationship to the digital humanities, this article aims to establish a connection with DST and music education drawn from literature from by Robin (2008), Chung (2006), Benmayor (2008), and Lowenthal and Dunlap (2009). In due course, this article also offers some pedagogical recommendations for how undergraduate faculty may include DST concepts into music technology courses using affordable and easily accessible tools.

### **The Artist-As-Producer or Perhaps as Just an Artist**

Gullö (2009) argues that modern recording takes on two major identities, that of an artist-centered focus and that of a production-centered focus. The artist-centered focus finds the producer in a primarily supporting role: helping the artists reach their fullest potential. In the producer-centered focus, the producer is a controlling force in all aspects of the recording (Gullö 2009, 3). Gullö's research, while extremely pertinent in differentiating two key roles, does not consider the "artist-as-everything" ethos that portrays a restless creative overseeing of virtually every aspect of production.<sup>8</sup>

As Bell's (2014) notable case study illustrates, the role of the independent artist, recording at home with modern recording technology, often blurs and overlaps traditional roles. Solitary recording happens due to artist preference, out of necessity (in other words, no one else is available to help, or budgetary constraints), or without much thought. Of course, there are many instances where artists collaborate asynchronously via the Internet. And, there are still many situations



where major label artists record in the same room with their session players while the audio engineer and/or producer works in the control room. My own personal experience working as a sideman in Nashville, Tennessee, illustrates that point. Yet, the heart of Bell's research indicates that much of the audio production in the 21<sup>st</sup> century frequently happens without clearly delineated roles. The next question to ask, then, is why this matters and how digital storytelling somehow aims to shed light on the issue? At the very least, there are a number of reasons why an independent artist works at home, without interruption, and with whatever modest tools are available to them. DST can help in understanding how the single artist/producer/engineer navigates the relevant creative and technical approaches.

### **Unpacking Millennials, DST, and Music Technology Education**

What we know thus far is that music technology educators often work in degree programs designed to replace the employment pathways once considered vocational and/or technical. We also know that students interested in these types of degrees are not without some basic technology and/or musical proficiency. With little more than a portable device, simple audio interface, and headphones, musicians can record and mix original ideas anywhere in the world. Furthermore, modern artists have access to expansive global communities via the Internet. Since the tools are both affordable and immediately reachable, entrepreneurial musicians do not need a traditional recording studio or a major label to distribute their product. Access to software-based synthesizers, loops, controllers, Internet connectivity, and tablets streamlines the independent musician's workflow. Why does this matter?

Consider, for example, a possible scenario where an individual steps into a music technology lab, opens a standard digital audio workstation (DAW), plugs in a guitar or USB-powered device, presses record, and then puts on headphones. This person could then edit and mix parts, upload them to Facebook, SoundCloud, or another social media site, and alert their "followers" about the new track they just

recorded. By its very nature, that single person had 100% control of the creative output. Putting aside subjective labels, that student's process is solitary. Why are they working by themselves? Are they antisocial? Do they not want to work with someone else? That student may repeat the same process at home a personal recording set-up. In another scenario, students in a glossy picture stand over an expensive analog console (perhaps an Solid State Logic Duality console), completely steeped in their own world. Since more and more full-service recording studios are closing due to shrinking budgets, it is not out of the realm of possibility to consider that a university audio program is the only time a student might gain learning experience with such an expensive facility.

To be certain, undergraduate music technology programs attract students who are already somewhat steeped in this culture. Instructors who are considering the ways to encourage millennials to reflect on their learning must guide students to use their native tools to stimulate introspection. DST is one such approach faculty may consider as a relevant method to accomplish this task. Just as students use mobile phones to record their musical ideas, the same device can be employed to document their creative process in action. Before looking at specific curricular examples, it is important to consider some related pedagogy in music education as valuable case studies.

### **A Brief Look at Popular Music Education<sup>9</sup>**

Allsup (2011) affirms the ever-increasing worldwide acceptance of teaching popular music, although, in the conservatory-styled tradition, classical musicians meet such activities with reticence because of inexperience and unfamiliarity with commercial performance trends. It seems that decades of traditional, conservatory-style training methods have limited some classical musicians from expanding their musical horizons. Hannan (2006) indicates that commercial music performance and production, as an educational pursuit, is nascent in its growth and development, as mentioned above. The "newness" of these types of degree programs illustrates that

students are equally interested in music and technology. Rodgers (2014) observes the millennial generation's deep roots using music technology—an interesting paradox considering music technology's formal implementation in education is less than three decades old. Rodgers' (2014) point speaks to the fact that millennial learners are fluent in many aspects of technology.

Beyond the conservatory and university school of music, some instructors explore teaching music through a wide range of genres including hip-hop (Kruse 2014). Rodgers (2014) suggests that music technology educators, largely accustomed to traditional lectures and memorization drills, now have to adjust to new teaching approaches, ones that better align with millennial learning styles. Rodgers' (2014) observation points to a 'disconnect' in music technology pedagogy: If the students are not learning production concepts by rote, how can instructors use digital storytelling to enhance their own reflective practice? Just as applied music teachers might videotape their students to provide feedback, new media tools could enhance music technology pedagogy by demonstrating mixes-in-progress and creating reflective teach-back opportunities.

Hannan (2006) sees musical literacy as a broadly defined subject area, although, within the confines of the higher education, musicianship generally means aural, visual and performance proficiency with melody, harmony, and rhythm. Hannan's (2006) acknowledgment of traditional musical literacy infers most of this learning occurs passively in lecture-based teaching. Music production literacy, however, is different than rote memorization of chords and scales. To be sure, traditional musicianship can certainly improve a budding audio engineer's creative sensibilities. Yet, in the context of hybrid music technology degrees, music, technical, aesthetic, and interpersonal skills are best addressed in fresh ways. If the music technology educator *is* interested in rote demonstrations of technology, modules can be designed that require students to use keyboard shortcuts to accomplish certain tasks in music production software within a specific timeframe.

Rodgers (2014) explains a suitable alternative is to direct students towards actively researching topics that interest them. By including an inquiry-based method paired with leading questions, students must synthesize the materials in order to solve related problems (Rodgers 2014). Similarly, this concept is reiterated by Dana and Yendol-Hoppey (2009), as both authors suggest that individual who engage in topics that have personal meaning are more likely to reflect positively on those topics and share their knowledge with others.

### **Changes in Music Consumption, Learning, and Pedagogy**

Lebler (2007) argues that one of the biggest changes in the music industry is that the audiences' listening habits are digital, usually streaming via the Internet. Instead of passively consuming, the audience duly produces and uses the content—thus replacing the traditional model of formal listening in concert halls. Lebler (2007) frames the music industry's shift from “content delivery” by an expert to a “producer-consumer” model in education where students and instructors work collaboratively towards cultivating a self-directed and independent learning culture (207).

The “co-creation” concept Lebler (2007) refers to includes instruction and learning as well. Rather than adopting the master-apprentice model, the informal learning method embraces a collaborative exchange between teacher and student (206). The co-creation idea that Lebler espouses is very important in music technology settings. Here, teachers and students work together. Their roles are flexible and fluid. Just as their roles overlap in some ways, so too does the practical emphasis on musicianship and technology proficiency.

Gullö (2009, 1-2) observes that millennial learners have the following features:

- They grow up in an age with portable and mobile technology at the center of their everyday lives.
- Millennials join diverse online communities not limited by religious or cultural factors.

- The Internet is their main source of information gathering.
- Millennials consume and produce music, doing so to enhance their lifestyle and participate in likeminded communities.

Here, we can see that millennial learners are generally open-minded, comfortable with all aspects of technology and prefer to frame their creativity as a lifestyle choice. If this cohort is so flexible and accepting of other cultures, how can music technology educators capitalize on these values in a related production course?

### **Informal Learning and Teacher/Student Respect**

Allsup (2011) extols the virtues of small, collaborative environments where group cooperation improves information retention—pointing to garage bands as a wonderful example of this informal, collaborative learning model. In this case, the bands are unsupervised and without formal instruction. This is vital. In a music technology class, Allsup's (2011) concepts affirm that overly pedantic approaches are lost on millennial learners. Lebler's (2007) research further suggests that each student's prior band experience, informal peer feedback, access to studio technology, the perception of audience response, use of audio recordings, and individual assessment proved valuable in an undergraduate popular music curriculum. Thus, if the instructor takes note of the student's prior experience and working knowledge, they can engage the student to seek out peer review and hands-on learning concepts. Additionally, the student responds positively, noting that the teacher trusts them to navigate music production software. If the student needs help, they are more inclined to ask for guidance. Also, these types of concepts seem to be more effective in small to medium classes.

Criswell and Menasche (2009) agree that modern technology emboldens students who have little training to take part in music performance groups. Indeed, students need not be traditional musicians in order to participate in laptop

ensembles/orchestras and similar groups. Simply having intellectual curiosity and access to a laptop or tablet are the only prerequisites for participation. Once again, Dana and Yendol-Hoppey (2009) present an optimistic yet related support for educator inquiry and research. From this we can infer that if music technology educators and students see the benefits of incorporating new media into their reflective practice, they are more likely to experiment with it. In other words, digital storytelling may prove to be effective in music technology courses, in ensemble settings, and elsewhere in music and audio education.

Allsup (2011) reiterates the benefits of instructor-facilitated discussions concerning how commercial and art music intersect during classes and rehearsals. The pedagogical mission is to instill a sense of respect and connectedness with all trends of music rather than drive musicians towards limiting their tastes (Allsup 2011). Classical musicians, mostly inexperienced with pop, can assimilate basic concepts to interpret the deeper intricacies of popular music that they might miss otherwise (Allsup 2011). In essence, respect is a touchstone of all aspects of music technology pedagogy.

Here, I consider respect not only in the teacher-student relationship, but in the types of content millennial learners are attracted to, and the tools and methods by which they assimilate and communicate knowledge. Having technology proficiency certainly enhances the audio student's chances of gaining employment. Yet, beyond that, their ability to use technology to synthesize and reflect on their ongoing learning process via media is an added bonus.

### **Student-Driven Learning in Music and Audio Education**

Lebler (2007) indicates that while traditional instruction has validity in popular music education, students must realize their collaborative, autonomous role in learning new concepts through individual and peer assessment; this requires the teacher to relinquish some control and focus on student-centered learning through technology. Hannan's (2006) research indicates that, although music majors place

emphasis on diverse facets of musicianship, all clearly understood the skills they needed for success in their specialized fields.

DST is beneficial in motivating instruction where students, left to their own devices, figure out how to mix a certain style of music they are unfamiliar with. In such a learning situation, the students use their ears, their eyes (looking at the DAW), and engage in a trial-and-error process. Of course, they can also write and/or blog about their mixing experience in an essay. Or, through a simple web camera or audiovisual device, they could comment on their work as it is happening. Furthermore, the teacher could see how, for each project, the student tries to learn from following their favorite artists or mixers. Even before the project is finished, students could upload a short snippet of their work to a class website and solicit feedback from their peers. They could include a short video diary and still images from screen shots or photos from the session itself. This process could work well in online and distance-based courses as well.

### **Millennial Students as Collaborators in Music Technology Courses**

Lebler's (2007) music education research shows that students functioning as equal collaborators in their learning process:

- Acquire musical skills indirectly through consistent access to relevant studio recording technology.
- Take part in fertile music communities that inspire self-direction and unobtrusive pedagogy.
- Actively participate in peer feedback from the first day and command respect for their collaborative roles.
- Respect multi-faceted assessment models.
- Demonstrate and include multiple learning modes.
- Use recording technology to enhance their reflective practice (pp. 217–219).

Allsup (2011) supports Lebler's (2007) notion of informal pedagogy by explaining that the instructor-student relationship within the context of popular music education must continue beyond the master-apprentice model. Using DST in music and audio education requires a particular type of teacher—one who embraces modern technology, consensus-driven pedagogy, multimodal learning, reflective assessment, and practical guidance rather than an overly didactic authoritarian model (Allsup 2011; Lebler 2007; Dunbar-Hall 1999). Finally, DST encourages students to be reflective and expressive in ways that suit their own needs while also learning more about modern technology. What follows describes some ways to include DST in music courses along with a brief historical overview of how this practice emerged in the digital humanities and in community education.



**Figure 2: Possible tools for digital storytelling.**

### **Digital Storytelling in Media and Music Education**

DST's roots paired a community-established artistic practice with a firm desire to connect relevant educational activity using multimedia technology while



representing diverse and under-served populations in the Bay Area during the late 1980s and early 1990s (Center for Digital Storytelling 2015). According to Lowenthal and Dunlap (2009), that human beings who have a basic need to share and the openness to reveal their ideas and selves while overcoming limiting boundaries, contributes positively to the “Community of Inquiry” (70). Digital storytelling—in its basic form—can be an essential factor in establishing a healthy communication exchange; individuals use media assets to draw on their lifetime of acquired knowledge with society (Lowenthal and Dunlap 2009).

Applying this concept to music and audio education, undergraduate students can use media to express their passion and expertise for technology. When taping simple video diaries, students are humanized to a point as the camera captures their authenticity. If a student is having a problem with technology, or shows confidence and expertise using a particular piece of software, the video recordings capture important data for later analysis .

Humans often recount personal experiences in the company of others and explore the multifaceted interactions they have with each other. Robin (2008) asserted that personal narratives, where the author shares personal accounts of life inspires digital storytelling—resulting in content that resonates with both the author and the audience. In music technology settings, student artists can use DST to share how their creativity merges with technology. Additionally, teachers can use these same approaches when evaluating their own practice.

### **Bringing DST into the Classroom—A Look at the Digital Humanities**

Robin (2008) observes that meaningful incorporation of multimedia content into the classroom challenges students to problem solve in multidimensional ways. Benmayor (2008) sees digital storytelling, and the learning behind it, as collaborative. Incorporating such activities in the classroom requires students and teachers to reveal personal details about their experiences that are then subjected to critique and peer review (Benmayor 2008). This requires some consideration

about how to gauge feedback in the classroom environment since the stories should be shared in ways that connect everyone and must be respected (Benmayor 2008). Consequently a several significant things can result:

- Students in the class with little prior experience in multimedia production band together and work to create interesting stories.
- The students, many of whom may feel under-represented and marginalized in regular society, feel safe to share the realities of their lived experiences in such classes.
- Technology in itself is also a gateway that opens up many creative opportunities for students to explore their lived experiences (Benmayor 2008, 198–199).

These three conditions can be applied in music technology courses as well. In addition to short web videos, students can use Microsoft PowerPoint, photo and video editors, and open-source recording platforms to create slide shows and related presentations for classroom assignments. Moreover, teachers can guide students towards producing multimedia content that reflects their passions and interests. It should come as no surprise that some students may choose to explore more personal topics such as their connections to original music, lyric analysis and content, and related ideas.

Chung (2006) argues that the merits of digital storytelling extend beyond creating multimedia art; each author communicates a narrative to the others so all parties can understand. Teachers can foster a spirit of acceptance by creating student screenings or showcases: by doing so, the teacher helps to strengthen the bonds each person forges throughout the course (Benmayor 2008). Moreover, presenting stories engages classes to have inspired dialog, feedback, and critique through peer evaluation (Chung: 2006).

### **Pedagogical Considerations of DST in Music and Audio Education**

DST projects take on many forms across a range of grade levels. A key for successful DST implementation is to give students the freedom to choose their own topics. Robin (2008) sees teachers and administrators as lacking a consensus on DST research design and methods—particularly in how to implement research projects that avoid debating the merits of test scores. Rather, Robin (2008) suggests analyzing the holistic inclusion of multimedia into classroom learning, so that the benefits of the technology include qualitative interpretation of student critical thinking, analysis, problem solving, and creativity. Grading these projects could prove to be challenging in some ways. Yet, teachers may choose not to focus so much on numerical values for subjective content. Perhaps just fostering a spirit of expressive openness through new media is a sufficient starting point.

As their familiarity (and that of their students) with DST improves, teachers can pragmatically incorporate rubrics that fit their particular courses. It is for this reason that some teachers may choose to incorporate DST into upper-level capstone or portfolio preparation courses. Doing so accomplishes two important objectives. Students are generally more mature as they get ready to graduate college. They are motivated to do good work and have some experience with music production technology. Second, by this point in their matriculation, the student should have formed a strong relationship with the teacher(s). As such, instructors need not be overly didactic in requiring a certain type of reflective practice. Simply getting students to reflect on their learning is a great way to foster creativity.

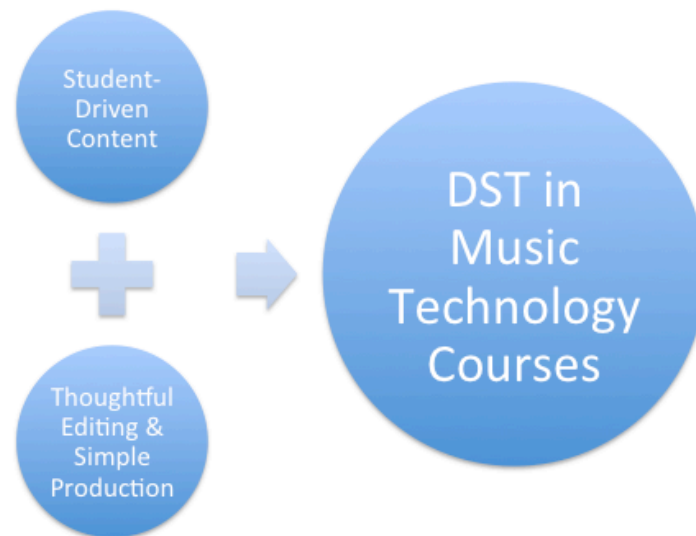
### **New Forms of Literacy**

Ohler (2008, 55–56) notes that many scholars consider the virtues of digital literacy in the literature; he summarizes digital literacy across three central areas including efficiency, creativity, and intelligence. From a wider perspective, Ohler (2008, 54–59) views digital literacy as an essential component of building learning competencies of written, oral, artistic, and digital communication. Ohler's (2008)

perspectives on literacy share many commonalities with Robin's (2008, 224) notions of technical, visual, digital, and informational expertise using multimedia tools. How does this evolving form of literacy apply to undergraduate music and audio students?

If a typical audio engineering assignment requires students to keep track sheets, session notes, microphone lists and settings, and signal flow choices—is it not possible for the student to produce a short video or slide show including these very same assets? Indeed, using multimedia as a communication platform is not meant to replace writing and grammar skills. On the contrary, giving students the option of scripting their own narration challenges them to come up with a clear, concise summary of their recorded events.

Lowenthal and Dunlap (2010) explain that DST projects offer suitable alternatives to essay exams and written assignments. Ohler (2008) concurs, reporting that students often perceive writing for media along the same lines as creating a script. Although the task calls for sufficient planning and formation, generating personalized content engages students to write without feeling pressured (Ohler 2008; Lowenthal and Dunlap 2010). Following are two examples for instructors to consider using in the classroom.



**Figure 3: Topics that students are interested in provide great storytelling opportunities.**

#### **Curricular Example One:**

One possibility for undergraduate students enrolled in a technology-centered music class is to utilize web cameras and free sites to create and broadcast DST material for teach-back or product review purposes. Robin (2008) mentions that students often use DST concepts to create reports that inform or present information on a specific subject of interest. Lowenthal and Dunlap (2010) agree, arguing that when students pick a topic to teach to their peers, creating the digital story connects the course's theoretical materials with the student's professional work experience. Waldron (2012) alludes to YouTube videos as an important recent tool in online music education research.

#### **Teachers could ask their students a few guiding questions:**

- What is your favorite music production software and why?
- Could you teach a particular mixing technique to your friend or classmate?

- What is the most important issue facing the music industry today?
- How would you describe your musical style?

Within certain music and/or audio courses, some topics might include performing cover songs, teaching a particular mixing technique using screencapturing software, or posting a video blog about a topic related to the music industry. Students can use web cameras and open-source audio editors like Audacity to mix their projects. Whitaker, Orman, and Yarbrough's (2014) recent case study indicates that of the nearly 1,800 global YouTube videos grouped by a “music education” keyword search, over 300 focused specifically on tutorials given by college-aged contributors (49).

In a related case study, undergraduate audio production students enrolled in a streaming media course produced simple web-based videos, reviewing their favorite piece of recording equipment or musical instrument; the students linked their product reviews to social media sites and their own web page, thus building a body of work reflecting their creative interests (Walzer 2011). Whitaker, Orman, and Yarbrough's (2014) review of recent music education literature suggests the subject areas that explore the correlation between YouTube and music education practice is small—primarily focusing on online networks, participation, and how YouTube enhances musical procedures.

Students simply need access to a web camera, perhaps a USB microphone, and an Internet connection. Once they “produce” a short video responding to the teacher’s prompt, they can edit it and upload it to a course website. For those who are less inclined to upload their content to the web, they can simply convey the project via a secure server. This activity is often fun for them and gives them a chance to show their growing expertise in a related subject area. Moreover, teachers may be surprised at how ambitious and creative their students get with this type of project since they get to control much of the content.

### **Curricular Example Two:**

A second curricular option involves using DST to document creative works-in-progress in a music technology course. In this scenario, students who are struggling to create lyrics or

musical arrangements introduce multimedia to produce initial sketches of their composition. Similarly, when the student posts a short video diary introducing the musical idea and its associated challenges, the solicitation for feedback introduces a level of authenticity, as classmates truly understand problems of creative blocks. Students can also use mobile technologies to document collaborative songwriting, production, and recording sessions. If the other participants allow it, students can film their interactions with session players, arrangers, and clients. Furthermore, students can shoot footage of rehearsals and live performances with their own commentary interspersed throughout. Here are some guiding questions to inspire student work:

- Can you discuss an original song you wrote?
- Do you get in the “zone” when you work on original music? If so, how?
- Are there benefits to collaborating on tracks with others? If so, how?
- When was the last time you were stuck on a musical idea? How did you fix it?

As Benmayor's (2008) research suggests, this task introduces the student's peers to “lived experience” as a frustrated songwriter, mixer, or producer (198–199). For a current perspective on these issues, recent studies by Tobias (2012) and Bell (2014) investigate the complex and interconnecting roles that modern songwriters assume when recording and producing music. Likewise, Tobias' (2012) work thoroughly explores these issues in secondary music education. This project may be more appropriate for longer assignments. The students must identify some deeper themes that influence their creative process. They must diagnose those issues and seek answers to their own deeper questions.

### **Going Deeper with Intimacy and Critical Thinking**

Before any DST assignments are produced, it is essential that music technology educators foster a spirit of acceptance, respect, and “fair” peer review in the

classroom. This means that the teacher uses personal judgment to establish some ground rules and criteria for how students should evaluate each other's work. Although this paper has argued for a genuinely collaborative relationship between the teacher and student, there may be some limitations in that approach as it relates to critique. Rather than demanding a certain type of critical practice when student videos are played, teachers may request that students come up with particular adjectives to describe their classmate's work. Of course, this takes practice and experimentation. Yet, if the students understand that their work is presented and received with a spirit of cooperation and respect, they are more likely to respond positively to this. Moreover, the teacher could request that students break out into small groups to work on these types of projects.

Requiring that students create a video reflection, short media narrative, or similar piece gives the teacher a detailed glimpse of the student's thought process, and supports written reflections as well. The advantage of this practice is it is relevant at any point during the term. A student posting video diaries invites a level of personal confidence the written word cannot replace. This is not to suggest that traditional written assignments are without merit. Yet, the visual component of a video gives the student's classmates a chance to view them "at work." If each student is using media to respond to a personal guiding question posed by the instructor, they are more likely to consider what they say and how they say it.

Ohler (2008), Chung (2006), and Benmayor (2008) agree that successful digital storytelling requires thorough planning that uses a variety of tools to conceive an original narrative. In this example, the students use their applied research skills to find the related musical content they want to emulate; a lot like popular musicians use albums and informal methods to analyze performance tendencies (Hannan 2006; Dunbar-Hall 1999; Allsup 2011).



## Conclusion

Instructors considering multimedia-based reflective practice in audio and music courses need not include costly technologies if such are not practical. Open-source and portable tools offer budget-friendly alternatives for teachers and students to explore DST options in the classroom. Music and audio students using mobile devices, web cameras, and free audiovisual software can tell their story with the tools available to them, at home and in the classroom. For example, students are free to combine web cameras, mobile phones, Microsoft Office, and Audacity to create, mix, and present their work. Most importantly, although there are many options for using technology in the classroom, instructors should tailor these concepts to fit their particular courses and get student feedback on how media technology encourages their reflection on learning. This can be accomplished through informal classroom discussions or through formal assessment later.

Digital storytelling, as an assessment tool, promises to reveal a rich, creatively inspired, and immediate glimpse into the intricacies of creative practice with independent sound recording, student-driven content, and even teacher-led inquiry. Teachers can use video diaries and short videos to reflect on what is working in their classrooms. They can identify areas for improvement and ideas for possible research using digital storytelling in a reflective way. Additionally, students can use DST to respond to thought-provoking questions posed by their teachers. They also have some control over the message they choose to communicate. Depending on the context of the questions, and the class itself, there exists the great potential for rich qualitative data to cull in the future.

DST need not replace all traditional forms of communication, assessment, and testing. Yet, the power of DST engages students to use multimedia to craft their own stories. That is the essence of what DST represents. By imagining a scenario where first-year students incorporate video diaries into their courses, they could conceivably be competent with the practice in the final semester of their senior

year. Likewise, students having had three years' worth of information reveals a great deal about their creative personality.

DST's flexibility as a delivery platform for personal and group projects ensures its positive inclusion in a range of courses. Additionally, future DST studies must incorporate a diverse and carefully selected sample population of undergraduate students drawn from pop music-related subject fields to explore how ongoing multimedia reflective practice evolves throughout a semester. Data analysis must consider a range of ethnographic and theoretical perspectives drawn from existing research in the digital humanities, music and media pedagogy, and educational technology.

Indeed, digital storytelling gives the actors associated with an artistic practice an opportunity to reflect on their personal and collective roles, growth and maturation, and the many complex factors affecting the completion of the finished product. Perceptive, learner-focused faculty and administrators must carefully explore how DST enhances course objectives and may consider professional development opportunities drawing upon best practices from related subject areas outlined in this article. DST by itself does not engage millennial learners without thoughtful, guided instruction aimed at expanding practical, diverse, and technology-supported expression, literacy, and communication in popular music and media degrees. DST curriculum supported by the relevant peer assessment, accessible technology, unobtrusive teaching, and thoughtful collaboration promises to enrich all undergraduate music disciplines with insightful, expressive content truly reflective of the millennial generation.

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## Notes

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<sup>1</sup> Since the early 2000s, Marc Prensky (2001) has written extensively about digital natives—explaining that this generation of students fluently speaks a language influenced by the Internet, computer technology, media, games, and popular culture. Considering his work nearly 15 years later, Prensky urged teachers to find ways to use technology in the classroom. Taken in a broader context, those same ideas can be applied today. For more information, see Prensky’s (2001) essay “Digital Natives, Digital Immigrants” from *On the Horizon*.

<sup>2</sup> For decades, the Audio Engineering Society, the global professional organization for sound engineers, has been the definitive resource for reporting on the many technical aspects of audio and related areas. In recent years, interdisciplinary peer-reviewed scholarship that addresses the musicological, artistic, pedagogical, and creative aspects of music production can be found in the *Journal on the Art of Record Production* (coinciding with the annual Art of Record Production Conference), the *Journal of Music, Technology & Education*, and in the terrific *Art of Record Production: An Introductory Reader for a New Academic Field* edited by Simon Frith and Simon Zagorski-Thomas (2012).

<sup>3</sup> In his seminal book *Capturing Sound*, Mark Katz (2004) details the “phonographic effect,” the expressions of sound recording technology, and its pervasive influence, both historically and in contemporary culture.

<sup>4</sup> A recent examination of the differences in apprenticeship and educational pathways in audio education can be found at <http://www.aes.org/e-lib/browse.cfm?elib=17869>.

<sup>5</sup> For more information about this type of scholarship, please see Thompson and Lashua’s (2014) terrific article in the *Journal of Contemporary Ethnography*.

<sup>6</sup> Jay Dorfman (2013) and Adam Patrick Bell (2015) dispel the myths that incorporating music production and related software is simple and requires little thought. Dorfman’s (2013) book outlines Technology-Based Music Instruction (TBMI) in significant detail—giving music educators many pedagogical and philosophical ideas to consider. Bell (2015) argues that readily available DAWs like GarageBand must be thoughtfully included into related curriculum.

<sup>7</sup> I have written elsewhere (2015a, 2015b, 2015c) about a general lack of consensus on some essential aspects of assessment in music technology programs. For more information, please see <http://www.intellectbooks.co.uk/journals/view-Article.id=20165/> (accessed January 24, 2016).

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<sup>8</sup> Adam Patrick Bell's (2014) important research with project studios offers a comprehensive look at the steep learning curve some independent artists undertake in learning how to use digital audio workstations for their own creative purposes. For more information see Bell's article "Trial by Fire: A Case Study of the Musician-Engineer Hybrid Role in the Home Studio in the *Journal of Music, Technology & Education*.

<sup>9</sup> The Association for Popular Music Education offers diverse perspectives into all areas of this emerging pedagogical discipline within music education. Beyond what is covered in this article, readers may view their website at <http://www.popularmusiceducation.org> for valuable resources (accessed January 24, 2016).

### **About the author**

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