

# One Computer & A Microphone: Technology as a Mirror in the Music Classroom

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As someone who had worked previously in two different schools, both with dedicated computer music labs, I found myself wondering why I wanted to start all over again. Moving to a new job is exciting, full of possibility, and I was being invited to spearhead a brand new performing arts department at an up-and-coming local charter school. “We

digital multitrack recording station. For those of you who have been teaching for a while – this was not so possible 10 or 15 years ago. The online revolution has opened up many opportunities for music teachers on small (or zero) budgets. Web 2.0 developments are making the web browser into your gateway to a variety of music applications, and open-source software (that’s free software to you) is now a real alternative to commercial products.

So, how might you take advantage of this opportunity? For most classroom recording applications, you will want to use a decent microphone. If you have a laptop with a built-in mic, this can work well for student projects, but not so much for large group recordings. Maybe you teach choir, band, or simply want to engage your entire 7th grade class in a recording project. I recommend using a stereo

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can funnel 40-50k into the music department over the next year,” an over-enthusiastic (and now ex) principal told me, eager to promote the possibility of a music tech program. “We’re moving to a brand new building and you will have everything you need!”

Well, the building happened, but the promise of a music technology nirvana has not (yet!). I was faced with a department that had very little in the way of traditional music equipment, yet alone anything electronic. The only way to bring music technology into the classroom was to use my own laptop, and it occurred to me that many music teachers might find themselves in a similar predicament. I vowed to make my classes interactive, relevant, engaging, and in touch with current technologies (we’re not talking Autoharps here folks).

In most school systems throughout the country, there is a move to equip teachers with a personal laptop and schools with broadband internet access. From there, it only takes a small investment to turn a basic laptop into a fully-fledged



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condenser microphone with an audio interface (the little box that converts your analog microphone signal into a digital signal that your computer can understand). This setup can be purchased for around \$500 and will give you CD-quality recordings. If you really want to keep it simple, and you don't care about recording in stereo, you might want to try one of the new USB-powered microphones, which need no additional interfaces, for as little as \$80.

Now comes the part where you can really impress your principal: hmmm which free software to use? Not only is there excellent free and open-source software available, but

[Indaba Music](#), [eJamming](#), and [Jamglue](#) for a vision of the future.

A common trap with technology is getting wrapped up in the "stuff" and forgetting what the "stuff" actually will allow you to do. All of the options I've outlined here will get you from A to B, but it's important to spend your time thinking about how you are going to incorporate technology into your curriculum in a meaningful way. Being able to record your class or performing group is really like holding a mirror up to your students. Hearing a performance back through some speakers is often more educational than any constructive feedback you might give as a teacher. Students tend to be their own harshest critics, so you may find that it becomes your job to provide mostly positive feedback – a welcomed position for most teachers.

Assessment is greatly improved in the high-tech music classroom. Not only can students evaluate their own recordings and give feedback to each other, but you can take work home on your laptop. No more scribbling notes during student performances in an effort to give accurate grades and feedback. Now you can actually listen to your students and engage in constructive conversations with them. Worry about the grading later. Maybe you could stimulate more parent interest in your program by posting recordings on a class blog or school website...?

It's great to be able to record traditional performances, but technology also opens up some non-traditional possibilities for group composition, and can help to reinforce some advanced concepts for students. One fun project that I have used successfully is creating an ostinato composition with the whole class. The group creates complimentary ostinato patterns using body percussion and we then layer recordings of each pattern to develop a short piece. This is a great way to introduce form and structure, using the short looped phrases as building blocks.

Another really simple yet effective project was creating phase loops that were inspired by Steve Reich's [Piano Phase](#). By recording one segment of an ostinato rhythm, duplicating the recording on a second track, slightly lengthening the copied loop and then looping both together, we were able to faithfully recreate the sound of a tape loop moving in and out of phase [\[recording\]](#). This is one project that my middle school students could not have accomplished without technology!

However you teach music, I hope that you will consider integrating technology into your classroom. The benefits are huge and the investment needed is quite small. Consider how using a simple laptop recording setup can greatly enhance your ability to teach, by capturing student performances, allowing for more specific assessment and feedback, and enabling you to publish the results of your hard work for the whole world to hear!



you actually have some choices! Mac users will probably want to stick with the pre-installed [GarageBand](#) but you may want to try [Audacity](#) (also available on the PC and Linux). A cool alternative to GarageBand for the PC is [tracAx](#).

If you really are on the open-source bandwagon and you're using a laptop with some flavor of Linux, then there are many applications in development: [Jokosher](#) and [Ardour](#) are a couple that have caught my attention. Of course, there are several excellent products out there to purchase, such as Sony's ACID Music Studio and Acoustica's Mixcraft (both for PC). In addition, several Web 2.0 startups are promising a future of online audio recording and instant collaboration, but it's still early days. Nevertheless, check out [JamStudio](#),