GarageBand '08

A White Paper

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Background

Apple has produced a versatile program that can be used to several different things with audio files. Through the use of pre-recorded songs, it can guide the user through steps to personalize one of these songs. It also lets users create original sound files, songs/compositions or podcasts, and easily edit them later.

This program, GarageBand, allows users to create music and podcasts using multiple audio tracks. Even with very little musical knowledge and experience, the user can use their own creativity and a few ideas from Apple to arrange, mix, and share their own songs. With the right equipment and minimal effort and expense, the user can also record and notate their own music with this application.

For the less experienced musician, Magic GarageBand is the place to get started. This allows the user to choose the style of music, instruments in the band, and add different effects to make it their own. Since it utilizes a multiple level of tracks, it is very easy to take out or add single instruments or lines.

For those with a music background, they can compose their own tunes with the virtual keyboard and/or pre-recorded instrument samples that come standard with the program. Extra instruments and samples can be purchased that can be added are called Jam Packs and are also marketed by Apple. There are five of them and they are categorized for different musical interests such as vocals, world music, mixing, orchestra instruments, or a back-up band. The Jam Packs give more choices and possibilities, but are not a necessity. Changes in tempo (speed), key, volume, and duration of notes are possible as well. Multi-take recording also makes it possible to record multiple performances and choose the one they want.

Other options are to record your own instruments or purchase other Apple samples that come in one of five Jam Packs mentioned earlier depending on your interests. It is always an option to use a combination of both. This music can be mixed, notated, burned to CD, used as a ringtone, shared online, or used as the soundtrack to a movie made in iMovie (another iLife application). The program is also capable of producing podcasts.

GarageBand is part of the Apple suite, iLife that comes with all Macintosh computers manufactured since early 2004. The prices of Apple machines range from $599 to $2799. If a Mac was manufactured before this date and the user wishes to add iLife to their computer the price is $79 for a single user and $99 for up to five computers, but some system upgrades may be required. Optional costs include $100 for each of the five Jam Packs that upgrade the basic GarageBand instruments and loops. These are available through the Apple website or stores and through other retailers that sell Mac software. Other optional accessories are instruments that could be used for recording into the program. Examples of these are: USB keyboard (from $49), electric

guitar or bass ($100 and up), microphone to record voice ($5 and up), and earphones (from $5).

Implications for Music Education

The GarageBand software could be a valuable tool to music educators at all levels, but because of its user friendliness it would be a good choice for elementary students. It could be a way to get and keep their attention to teach them about music composition and the topic of jazz and popular music, allows them to create as they learn, and could reinforce the content visually, aurally, and kinesthetically (or by touch). Using GarageBand also helps address several of the National Music Standards that can sometimes take more effort to reach in a traditional classroom setting, as well as easily assess students' competency in these areas.

Composition

Composing music can sometimes be a very time consuming and potentially frustrating task for students and teachers. Using the traditional pencil and manuscript paper, writing out musical ideas can be difficult for a young student who is still developing his or her fine motor skills. It can also be difficult for a teacher to decipher students' handwritten work at any age. GarageBand as a notation software could make composition much easier to put on paper. Ease of navigation also makes it appealing to students and teachers who could easily learn to use it alongside their students.

Jazz

Instruction in the area of jazz and popular music can be a tough task for a teacher whose training is for the most part classical. Allowing students to freely experiment with Magic GarageBand, they can explore different styles and what instruments are used in each style. Taking it a step further, students can view individual instrument parts on a music staff. Since most of jazz and popular music is experienced through radio and other media, it is rare that the notation can actually be seen in this way.

Creativity

Meaningful and active learning can easily be experienced through GarageBand. Students can use their own creativity in completing projects that are authentic in nature. When designed correctly, these types of projects can produce a final product that the student(s) have ownership of and can share it with others. It gives them the ability to be in their own studio composing, mixing, or recording music from all genres. It can also reinforce content in an engaging way. Instead of the teacher simply reminding the students of something like time signature (how many beats per

measure), the students actually experience how note duration must coordinate with the time signature. Other topics that could be reinforced are tempo (speed), key, dynamics (volume), melodic flow, etc. Since music can be listened to, played, and seen through GarageBand, it also presents it through different modes of learning. Multiple modes of presentation and the need for users' choices, creates a more meaningful learning experience.

AssessmentT

The issue of musical assessment can also be addressed by GarageBand. Whether it is a teacher assessing students or students assessing themselves and others, this software makes it easy to listen to students' work without the hassle of having performers come in or students bringing in instruments. There are also very few limitations on the instruments available when using GarageBand, which is not usually the case in public music classrooms. Teachers and students alike can listen to compositions in or out of class which can save precious class time, especially when elementary students today get less than an hour of music instruction per week.

The National Music Standards that have been set by MENC (Music Educators National Conference) are what most music curriculums are based upon. With the pressure of performances and concerts, some of the standards take more time to plan and call for different means of creativity on the part of the teacher. Precious class time is usually taken up by rehearsal for upcoming shows at the expense of topics that help meet standards such as improvising, composing and arranging, and notating.

GarageBand's multi-take recording fosters improvisation that can be listened to with an ensemble and the best performance can be chosen. If all takes are chosen, it gives the student a chance to reflect on their performance and can give the teacher the opportunity to evaluate their progress. Composing has already been addressed and arranging can be done with the program's preloaded songs or the teacher could make his or her own for the students to use. Notating is also one that has already been mentioned. Relating music to other disciplines could be addressed by maybe having students compose a soundtrack for a video made in iMovie for another subject or they could make a music video.

GarageBand has definite potential in helping to solve some of the curricular issues in today's general music classroom not only in an elementary setting but they could also be transferred to the secondary setting in both instrumental and choral classes.

National Educational Technology Standards (NETS) for Students & Teachers

The International Society for Technology in Education (ISTE) has established sets of standards to support the use of technology in education under two categories: students (NETS-S) and teachers (NETS-T). Utilizing GarageBand in the general music classroom can assist music educators in reaching some of the NETS for students and for themselves as teachers. Specifically in the elementary music classroom, this program helps address several of the standards in each of the two categories as laid out below.

NETS-Students	How it applies
1. *Creativity & Innovation* **a. apply existing knowledge to generate new ideas, products, or processes** **b. create original works as a means of personal or group expression** **c. use models & simulations to explore complex systems & issues**	- Using established computer skills like clicking & dragging - Using musical knowledge in editing process - Individual & group work possible - Magic GarageBand as an intro to how it works
2. *Communication & Collaboration* **a. interact, collaborate, & publish with peers, experts, or others employing a variety of digital environments** **b. communicate information & ideas effectively to multiple audiences using a variety of media formats**	- Sharing final products through CDs, on an iPod, as a ringtone or posting it to community websites - Creating soundtracks to movies made in iMovie (another standard iLife application for Macs)
4. *Critical Thinking, Problem Solving, & Decision Making* **b. plan & manage activities to develop a solution or complete a project**	- Group projects that require allocation of duties - Planning steps of the process
6. *Technology Operations & Concepts* **a. understand & use technology systems** **d. transfer current knowledge to learning of new technologies**	- Allowing experimentation - Working on a Mac as oppose to a PC - Future use of other notation software like Finale or Sibelius

NETS-Teachers	How it applies
1. *Facilitate & Inspire Student Learning & Creativity* **a. promote, support, & model creative & innovative thinking & inventiveness** **b. model collaborative knowledge construction by engaging in learning with students**	- Create their own project alongside students - Learn the program with them instead of teaching it to them
2. *Design & Develop Digital-Age Learning Experiences & Assessments*	- Devising & implementing projects to be completed in GarageBand
3. *Model Digital-Age Work & Learning*	- Learning with them (same as above)
4. *Promote & Model Digital Citizenship & Responsibility*	- Giving credit to others work when used - Understanding how much public 'sharing' can be done when another's music is edited

Environmental Factors to Consider

Before deciding to implement GarageBand into an elementary music classroom, there are a few factors to consider about the environment in which the teacher will be using it. Obviously, Macintosh Computers are required and may not be the standard in many schools. If Macs are available, the number of computers will determine what kind of assignment(s) that will be possible. If a music teacher is lucky to have access to a classroom set, then individual and cooperative work will be possible. Basically the number that is available will determine the size of groups and ultimately the project design itself. If there is only one, the teacher may need to allow students to use it after school or one at a time over several class periods.

Another environmental factor to consider is the extra equipment that may be necessary or advantageous to students as they work with GarageBand. If they are to compose a melody that spans more than an octave (eight white keys on a piano), then a USB keyboard will be very useful instead of using the keyboard tool in the program. Microphones would be needed for podcasts, earphones to listen in the classroom, and so on.

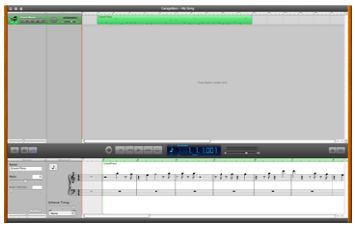
The teacher also needs to consider the amount of pre-instructions the students may need not only in the program itself, but also using Apple computers. Many

students and adults are not as familiar with the differences from PCs. So the number of workstations available, additional equipment available, and the instructional time needed will directly affect the nature of use within the curriculum and should be thoroughly considered before implementation.

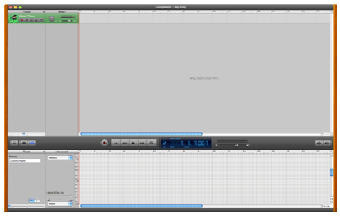
Advantages & Disadvantages

Of course, as with any technology, there are benefits to its use and there are drawbacks. The main advantage is that it is no easy to use and it utilizes basic computer skills like clicking and highlighting. This makes composition much more engaging that paper, pencil, and no instruments to playback what has been written.

The essential tools needed for classroom use are visible and options are easily changed. There are very few hidden features in GarageBand. The notation view (with music staff) is easily accessed and can be changed back to the 'sound' view at any point during the editing process. The notation can also be printed maybe for performers to read and perform in a live music setting or maybe for assessment purposes. Since burning them to disc is possible, students that may not have a computer at home could share their work with their families and friends.



Notation View



'Sound' View

The fact that the songs used in Magic GarageBand, which are prerecorded tracks, can be edited gives the less experienced a chance to create their own song with very little training. By adding a new track or two and maybe changing a couple of instruments, someone that started in Magic GarageBand has a brand new song of their own. The multi-take recording feature (new for GarageBand 08) is a wonderful tool for self evaluation and can ensure that the user gets the take that he or she likes the best within their composition. It allows the user to choose a section (no matter how long or short) and play or sing over and over, as many times as needed while the other tracks can be heard. Then they can go back and pick their best performance or the one they like best. With other notation software, the user must delete each take not used and does not have the option of comparing to choose the best one.

Finally, GarageBand comes standard on all new Macintosh computers. So if you have a Mac that was manufactured in 2004 or later, you have a version of GarageBand already.

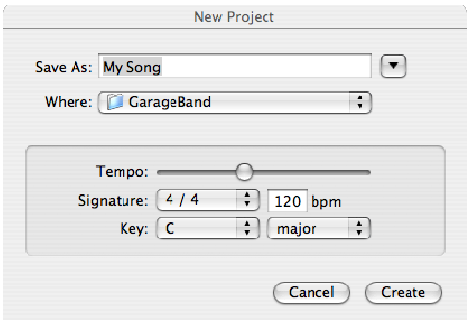
As for drawbacks of the software, it is only compatible with Apple products so it is not available for PCs. So if you want to have GarageBand, you must purchase a whole computer instead of just spending $80 on the program alone. For users that are accustom to a PC, becoming familiar with a Mac can be a frustrating, though not an impossible, task.

The need for extra equipment also arises as composition becomes more sophisticated. For example, if the user simply wanted to notate *Mary Had a Little Lamb,* the onscreen keyboard would be sufficient since the tune only utilizes four different notes and it is very short. It is very hard to accurately play more than a simple melody on it because of its range and because it can sometimes delay play back when it is clicked, ultimately notating an unintended rhythm. On the other hand, if the user wanted to notate a full four-part arrangement of *The Star Spangled Banner*, a keyboard would be essential in capturing all of the notes on one track. There are also a very limited number of software instruments available which is why you may want to upgrade with one of the JamPacks mentioned earlier depending on your ambitions for the program. So depending on what kind of work students will be doing, more money may be necessary to ensure that GarageBand is a worthwhile piece of instructional technology.

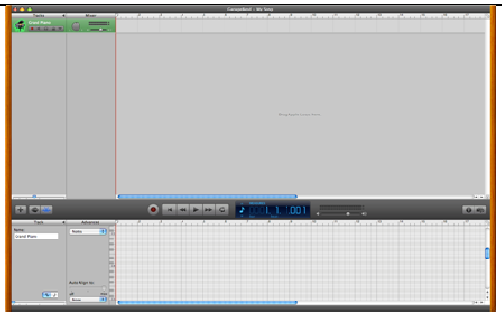
There are also several musical downfalls to GarageBand that would be of some concern to experienced musicians. Teachers should also be aware of these before planning a project. How loud or soft music is played is referred to as dynamics and has specific markings and abbreviations that are included in music. Garage band does not contain any of these expressive devices. It also either is unable or has a hard time identifying and notating complicated rhythms, so quicker notes, like 16th notes, may not be an option.

How To Navigate GarageBand:
New Projects & Magic GarageBand

- Choose top option, *Create New Music Project*
- The next window will appear



- Name your song & click create or customize further
- Choose how fast or slow using the sliding *Tempo* head
- Choose how many beats per measure with the *Signature* dropdown
- Choose the key of your piece with the *Key* dropdowns



- Now you are ready to compose. Use the onscreen keyboard or your own instrument
  (click the music note in the bottom left corner for the notation view)

- Choose bottom option to experiment with Magic GarageBand

- Click different genres to hear the styles and click 'audition' in the bottom right corner

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- Roll the mouse over each instrument to see different options
- When your band is ready click 'create' in the bottom right corner
- Now you are ready to edit

Helpful Links

http://manuals.info.apple.com/en/GarageBand_08_Getting_Started.pdf
The complete GarageBand 08 manual online that gives detailed instructions for every action and function.

http://www.apple.com/ilife/tutorials/#garageband
Collection of video tutorials on some main functions.

For more video tutorials check: www.youtube.com
Many different tutorials from different users.
www.teachertube.com
Several different useful videos.

www.garagedoor.com
A website dedicated to GarageBand. Contains tips and links of interest for users.

edcommunity.apple.com/gallery/student/collection
Apple's online community for sharing music made with GarageBand.

References

http://www.apple.com/ilife/garageband/
http://en.wikipedia.org/wiki/GarageBand
www.garagedoor.com