Designing Music Technology Modules as a Supplement to Traditional Music Classes

Part 1: Research Findings

Part 2: Exemplars and Models

Peter Webster
Northwestern University

David B. Williams
Illinois State U, Emeritus

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Overarching Message

We've made tremendous gains in the use of technology of all forms integrated into the traditional music curriculum of college music.

Survey Value

- Positive show of music technology effectiveness
- Demonstration of what projects most effective
- Baseline for most effective software and hardware
- Models for integrating technology into music curriculum
- Shows success from ATMI and CMS training initiatives over past 10+ years

Methodology

- Implemented through hostedsurvey.com online survey tool
- Anonymous response (unless specifically chose to identify themselves
- IRB approval at Northwestern U
- E-mail invites sent to all CMS members with e-mails and through ATMI member list
- 400 respondents; 252 (63%) passed criteria for participation ("traditional not music tech classes")
- 123 provided contact information for materials
- 139 provided one module details; 42, two modules; and 9, three modules
- 43 requests sent out for exemplar materials

Survey Questions

- *Respond from the viewpoint of your own music department or school, not you personally*

- *Do not include music technology classes, per se.*

Check the types of music classes in your department where music technology experiences are embedded in traditional coursework? (check all that apply)

1. General studies
2. Music education
3. Music theory
4. Music history, styles or analysis
5. Music research
6. Music therapy
7. Music psychology
8. Ethnomusicology
9. Music composition
10. Applied instruction

Check the types of music classes in whic ... for your students (check all that apply)

Multiple Choice: Select All That Apply

Answers	0% 50% 100%	Percent	Frequency
General studies		20.65%	51
Music education		25.91%	64
Music theory		48.99%	121
Music history, styles or analysis		31.98%	79
Music research		16.19%	40
Music therapy		1.62%	4
Music psychology		3.64%	9
Ethnomusicology		8.10%	20
Music composition		30.77%	76
Applied instruction		22.67%	56
Ensembles		10.12%	25
Other		14.57%	36
	Total Respondents:		**247**
	Skipped This Question:		**0**

Other courses

Course	Count
Music tech of some type	4
Aural skills	4
Electronic music	3
Group pedagogy (piano, vocal)	3
Music appreciation	2
Humanities	2
General teacher educ	1
Career development	1
Music and chemistry course	1

What technology skills are taught in modules used in your department? (Check all that apply)

- PowerPoint or Keynote presentation
- Webpage or website
- Digital movie
- Digital audio clip or recording
- Pod- or video-cast
- Music notation project
- Music sequencing project
- Music mixing and/or recording project
- Social computing project
- Intelligent accompaniment software
- Computer-aided instruction

What technology skills are taught in the ... ect of creating (check all that apply):

Multiple Choice: Select All That Apply

Answers	0% 50% 100%	Percent	Frequency
PowerPoint or Keynote presentation		47.11%	106
Webpage or website		36.00%	81
Digital movie		23.11%	52
Digital audio clip or recording		52.00%	117
Pod- or video-cast		18.22%	41
Music notation project		63.56%	143
Music sequencing project		28.89%	65
Music mixing and/or recording project		28.89%	65
Social computing site using software such as Facebook, NING, YouTube, Twitter, etc.		21.33%	48
A project using intelligent accompaniment software such as tuners, visualizers, or other aids to music performance			
Project using computer-aided instruction			
Other			

Other technology Skills	
Max	2
Portfolios	2
Ear training software	2
Clickers	1
Windows Journal software	1
Digital timeline tool	1
Wikis	1
Film-scoring software	1
iMovie	1
GarageBand	1
Biblio software programs	1
OMA from C4Education	1
VideoAnt for video annotation	1
Music scanning software	1
Interactive music performance software	1
DSP	1
Computer music programming	1

Primarily, where is this work completed? (check one)

- In a music computer lab
- In another campus computing facility
- With students' personal computer in their residence
- With students' laptops in class

Primarily, where do you expect this work will be completed? (check one)

Multiple Choice: Select Only One

Answers	0% 50% 100%	Percent	Frequency
In a music computer lab		48.17%	105
In another campus computing facility		5.96%	13
With students' personal computer in their residence		37.16%	81
With students' laptops in class		8.72%	19
		Total Respondents:	**218**

Primarily who does the technology teaching? (check one)

- Instructor in the course
- Teaching assistant
- Technical staff in the department
- Peer teaching
- Self-directed learning

Primarily who does the technology teaching? (check one)

Multiple Choice: Select Only One

Answers	0% 50% 100%	Percent	Frequency
You		77.98%	170
Teaching assistant		0.46%	1
Technical staff in the department		4.13%	9
Peer teaching		3.67%	8
Self-directed learning		13.76%	30
	Total Respondents:		**218**

How would you describe the overall technology skills of faculty in your department compared to faculty in other programs you are familiar with?

- Significantly lower
- Lower
- About the same
- Higher
- Significantly higher
- Can't determine

How would you describe your overall tech ... he other music faculty in your program?

Rating Scale

Answers	0% 50% 100%	Percent	Frequency
5		37.38%	77
4		37.38%	77
3		20.87%	43
2		2.91%	6
1		1.46%	3
	Total Respondents:		**206**

How many years has your department, in general, been working on creating technology modules to support the mainstream music curriculum?

- Just started
- 1 year
- 2 years
- 3-4 years
- 5 or more
- Forever!

How many years have you been working on ... odules to support your music teaching?

Multiple Choice: Select Only One

Answers	0% 50% 100%	Percent	Frequency
Just started		7.28%	15
1 year		3.88%	8
2 years		13.59%	28
3-4 years		13.11%	27
5 or more		41.26%	85
Forever!		20.87%	43
	Total Respondents:		**206**

Approximately what percentage of a course is devoted to a typical technology module?

- 10
- 20
- 30
- 40
- 50
- 60 or more

First module described

Approximately what percentage of the course is devoted to this unit:

Multiple Choice: Select Only One

Answers	0% 50% 100%	Percent	Frequency
10		46.27%	62
20		24.63%	33
30		7.46%	10
40		3.73%	5
50		0.75%	1
60 or more percent of the grade?		17.16%	23
	Total Respondents:		**134**

Across all three modules

Percentage of **course** devoted to unit	1st Proj	2nd Proj	3rd Proj	Total	Percentage
10	62	20	3	85	46.4%
20	33	3	1	37	20.2%
30	10	6	2	18	9.8%
40	5	1	0	6	3.3%
50	1	3	0	4	2.2%
60 or more	23	7	3	33	18.0%
				183	

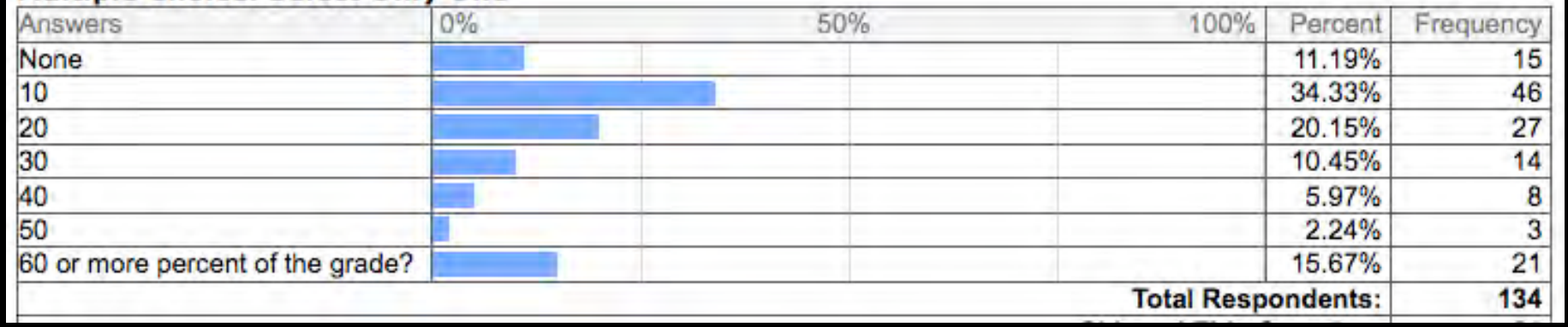
Approximately what percentage of a course grade is devoted to completing a technology module?

- 10
- 20
- 30
- 40
- 50
- 60 or more

First module described

Approximately what percentage of the gra ... evoted to the completion of this unit?

Multiple Choice: Select Only One



Answers	0% 50% 100%	Percent	Frequency
None		11.19%	15
10		34.33%	46
20		20.15%	27
30		10.45%	14
40		5.97%	8
50		2.24%	3
60 or more percent of the grade?		15.67%	21
	Total Respondents:		**134**

Across all three modules

Percentage of **grade** devoted to unit	1st Proj	2nd Proj	3rd Proj		
None	15	3	0	18	9.8%
10	46	14	3	63	34.4%
20	27	8	1	36	19.7%
30	14	3	2	19	10.4%
40	8	1	0	9	4.9%
50	3	4	0	7	3.8%
60 or more	21	7	3	31	16.9%
				183	

Project Analysis

Project Code	Count
Create arrangement or composition	39
Create score	20
Create a PowerPoint presentation	13
Use sequencing/looping in some fashion	10
Build a website or webpage	9
Create a PowerPoint w/media	9
Construct a Podcast	8
Study aural and theory skills	8
Create a digital audio project	7
Create instructional unit using technology	7
Do theory/other notation assignments	7
Carryout a listening activity	6
Construct a video project	6
Misc	6
Varied music tech projects	6
Develop a wiki or wiki entry	5
Edit and/or mix recording	5
Work with intelligent accompaniment	3
Music for video	2
Online class	2
Perform w/electronic instruments	2
Review CAI software	2
Build a digital portfolio	1
Music analysis	1

Software Used

Software Used in Modules (keyword count analysis)	
finale	53
sibelius	33
garageband	21
audacity	18
powerpoint	17
imovie	9
logic	7
quicktime	6
macgamut	6
digital-performer	6
blackboard	6
peak	5
notepad	5
sonar	4
protools	4
max	4
dreamweaver	4
smartmusic	3
sharpeye	3
practica-musica	3
microsoft-office	3
iweb	3
cubase	3
tikiwiki	2
soundforge	2
reason	2
performer	2
office	2
maxmsp	2
logic-express	2
kontakt	2
keynote	2
itunes	2
ilife	2
humdrum	2
google	2
garritan	2
flash	2
angel	2

Hardware Used

Word Count	Frequency
mac	42
pc	37
computer	35
computers	22
macintosh	14
macs	9
midi keyboard	7
g5	6
imac	6
laptop	6
projector	6
imacs	4
lab	4
laptops	4
audio	3
cal lab	3
computer lab	3
digital pianos	3
g4	3
headphones	3
interfaces	3
microphone	3
midi	3

alesis	2
camcorder	2
camera	2
digital recorder	2
digital video	2
g4 emac	2
korg	2
korg synthesizer	2
lcd projector	2
macbook	2
mbox	2
midi controller	2
printer	2
recorder	2
recording equipment	2
scanner	2
smartboard	2
speakers	2
synth	2
video	2
alternative control	1
amp	1
cameras	1
cd	1
cds	1

Model Designs

ASPECTS OF DESIGN		A	B	C
Intent	1. (Focus of Skills)	General Musical Understanding	Specific Music Skills	Specific Music Technology Skills
	2. (Focus of Learning)	Skills for Personal Musical Growth	Skills Designed for the Teaching Music to Others	Combination of Both
Delivery	3. (Class Time)	Teacher Spends Time in Class Teaching Technology	Students Must Find Own Resources	Combination of Both
	4. (Where Completed)	Projects Completed in Class	Projects Completed Outside of Class	Combination of Both
	5. (Extent of Modules)	Modules a Small Part of Class	Modules a Substantial Part of Class	
	6. (Student Interaction)	Individual Projects	Collaborative Projects	Combination of Both
End Product	7. (Content)	Music-Only Product/Experience	Multimedia Product/Experience	Other (research, use of social computing site, etc.)
	8. (Use)	Meant Only for In-Class Use	Possible Extension Beyond Class	
Software Use	9. (Music Software)	No Specified Titles, Student Choice	One Specified Title	More Than One Specified Title
	10. (Other Approaches)	Multimedia Title(s)	Web-based software (Music, Social)	
Hardware Use	11. (Kinds of Hardware)	Computer Alone	Computer w/MIDI and/or recording gear	Computer w/variety of multimedia gear

What's to come in Part 2

- Synopsis of study methodology
- Matrix of models from study
- Presentation of materials illustrating models from participants in survey
- Wrap up input from audience on how to best make use of results
- Advice from survey participants

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Projects from the Field Presented

For information on these exemplars, contact

Peter Webster directly

(pwebster@northwestern.edu)

Advice from the Survey

Theme	Count
Delivery/instructional strategy	25
Preparation	23
Keep it simple	22
Support	21
Be prepared	17
Let content lead	16
Time	13
Fear of technology/technology expertise	11
Explore	11
Network with others	10
Use models from others	8
Other	3
Funding	2

Fear, Simplicity & Preparation

- Just dive in. If you wait until you actually know what you are doing, you'll never do it. Put the project on your syllabus and commit to doing it, and out of desperation you will find a way to get it done.
- Don't worry about breaking the technology. Click anywhere you want to and just experiment with the platform or program you are using. There is nothing you can break.

- Take a small piece and work to integrate it effectively, then expand; the worse thing that can happen is to overwhelm students (and yourself) with too much technology in poorly conceived projects/activities
- Less is more
- Keep it simple, keep it interesting

- Always know that sometimes things go wrong. So have an alternate plan just in case. Also, know your equipment forwards and backwards.
- Always have a back-up plan for class just in case the technology/internet doesn't work!
- Get involved early and keep trying new things.

Explore, Delivery, & Content

- You learn by "using" it
- Just dive in. Try everything and see how the students respond. If their learning improves, continue. If not, try something new.

- Technology is a tool for learning music, as it is for many things these days. Students expect and want to use it in all their music learning situations.
- Let students teach themselves as much as possible -- they learn more and get more engaged that way.
- Be succinct. Students do not like to read large amounts of material.
- Leave room for student creativity! Introduce the project, provide parameters or a framework, and then step into the role of a facilitator and let the creativity happen!
- Be patient with the students. Use peer learning.

- Focus on the content, not the technology. Curriculum should drive the technology used.
- Make sure there is a specific task or objective in which technology will be a help. Don't use technology because it's cool.
- It's not about the teacher using technology in the classroom... it's about the student using technology to create.

Network & Support

- The more you can network the better.
- Get involved- use the web
- Work with the rest of your faculty. Don't be a maverick; it will ultimately confuse/frustrate not only your students, but your colleagues as well.

- Cultivate a close working relationship with the technical support staff at your school.
- Seek support from tech center and colleagues (and through ATMI!)
- Enlist the help of students who already have experience.
- Teach them [students] how to find help on their own (e.g., on-line documentation).

How well do our data describe the use of tech modules in your school's music program

- We are not as involved using tech in our classes
- We are about the same involvement
- We are somewhat for involved that what you describe
- We are considerably more involved

How might you best use the ideas shown here at home department? (Select one)

- Will use ideas in my own course(s)
- Will use ideas to help a few faculty for specific courses I have in mind
- Will use ideas for general training for our music faculty
- Will use ideas to change some things I'm already doing.

How useful would sharing the full results of this research be to the profession?

- What you've shown here is enough
- Expand some of the exemplar materials
- Put all of the results out for us to peruse in some form