

DEFINING UNDERGRADUATE MUSIC TECHNOLOGY COMPETENCIES AND STRATEGIES FOR LEARNING:

A THIRD-YEAR PROGRESS REPORT



Slides available at:

<http://teachmusictech.com/resources.html>

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NEED

- Lacking national data on music technology competencies for undergraduate music majors in general
- This, despite the fact that technology now plays a critical role in music teaching, learning, performing, and composing
- Results of such a survey of music faculty and administrators would prove useful in curriculum planning
- Results would guide the preparation of professional, instructional, and career guidance materials, etc.



2011 RICHMOND SURVEY



DESIGN

- Based on our years of experience in teaching college-level technology courses, development of our own materials, and in discussion with a number of colleagues, we arrived at a set of **51** competencies in **7 families**:
 - Physics of Sound
 - File and Disk Formats
 - Digital Audio/Recording and Editing
 - Notation
 - Teaching, Collaboration, Distance Learning
 - Multimedia
 - Digital Citizenship and Historical Trends

OVERARCHING COMPETENCIES

(PRIORITY ORDER)

- N= 276 total responses from approximately 2,699 emails

1. Record and mix a performance with digital audio software
2. Enter and edit music using notation software
3. Demonstrate an understanding of copyright and fair use
4. Create a CD/DVD or streaming audio package of a recording(s)
5. Edit digital audio
6. Demonstrate an understanding of acoustics and audiology
7. Create a music presentation with presentation software and appropriate hardware
8. Demonstrate setting up a computer music workstation and the ability to problem solve common technical issues

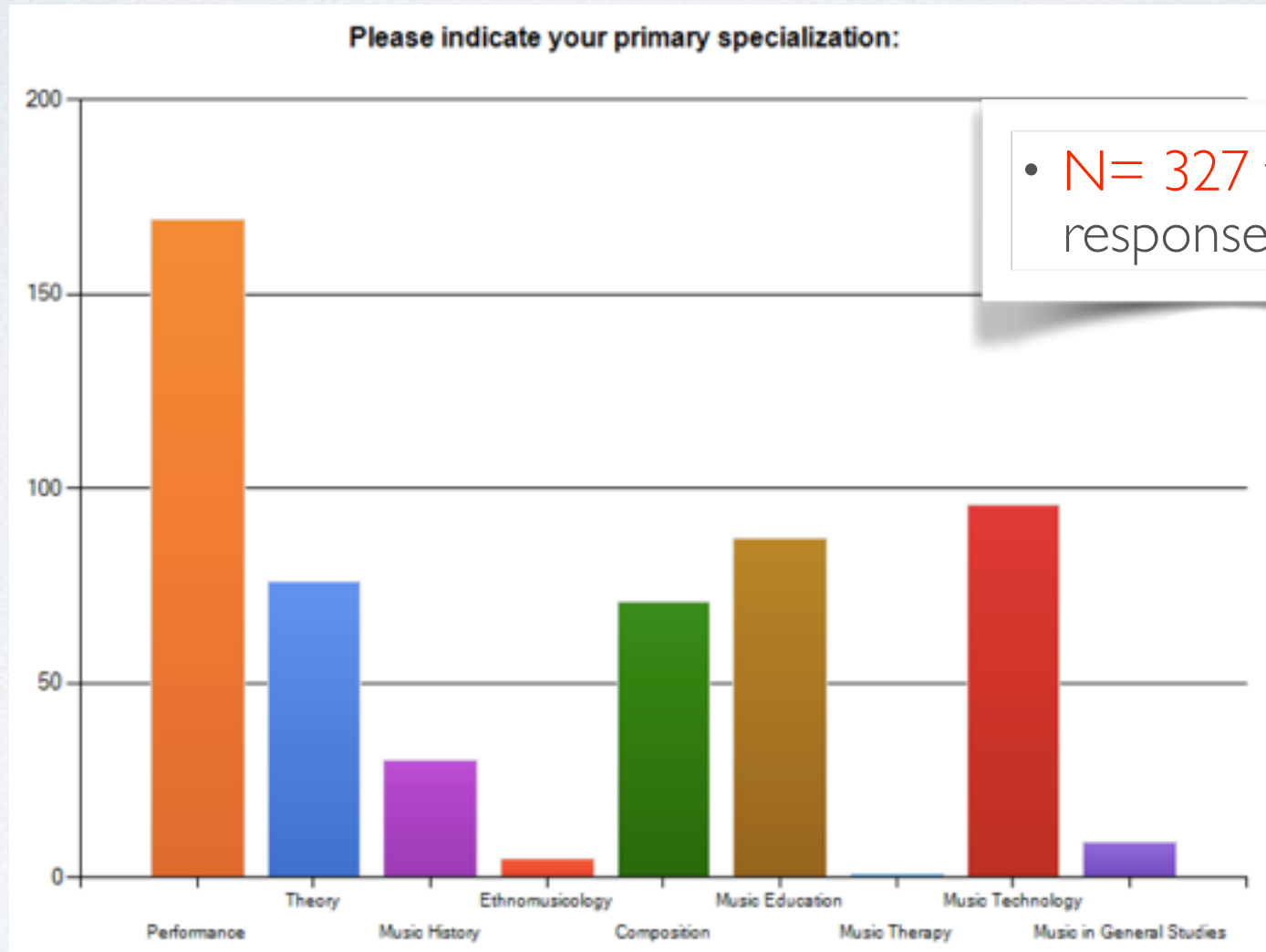
2012 SAN DIEGO SURVEY



STRATEGY FOR 2012

- Confirmation of the set of 8 core music technology competencies from 2011 survey
- Curricular options for learning music technology within an undergraduate music program
- Identifying strategies for integrating the acquisition of these competencies within music programs in general and within individual instructor's teaching
- Identifying capstone experiences that integrate competencies and provide exemplars for synthesis of music learning

SPECIALIZATION



Other includes music business & industry, administration, music in general studies

OTHER COMPETENCIES

Complete Composition Covered Development
Electronic Evaluate Glaring Omission Internet Live
Performance Live Sound MIDI Sequencing Multitrack
Recording Options Processing Program Promotion Self Set
Skills Social Media Software Sound Design
Students Technical Technology Video Web
Design Workstations

SUMMARY POINTS

- Data upheld the set of core competencies across diverse school settings and academic specializations (others suggested were MIDI & MIDI sequencing, video, and social media)
- Notation skills endorsed by all sub-disciplines
- Established relationships between sub-disciplines and specific music software skills training
- 57% of schools offer either a required (35%) or elective (22%) course in music technology
- 22% of programs integrate technology competencies into the curriculum with 8% specifically noting music theory classes

- Outside of music technology classes, theory and music education classes carry the brunt of music technology integration.
- Recording competency is viewed by many as a higher-end skill relegated to recording classes, rather than the intended impromptu recording from a laptop, iPhone, portable recording device with a microphone
- Lack of capstone experiences with technology and a general sense that we have a ways to go in real music technology integration into college music instruction

2013 CAMBRIDGE SURVEY



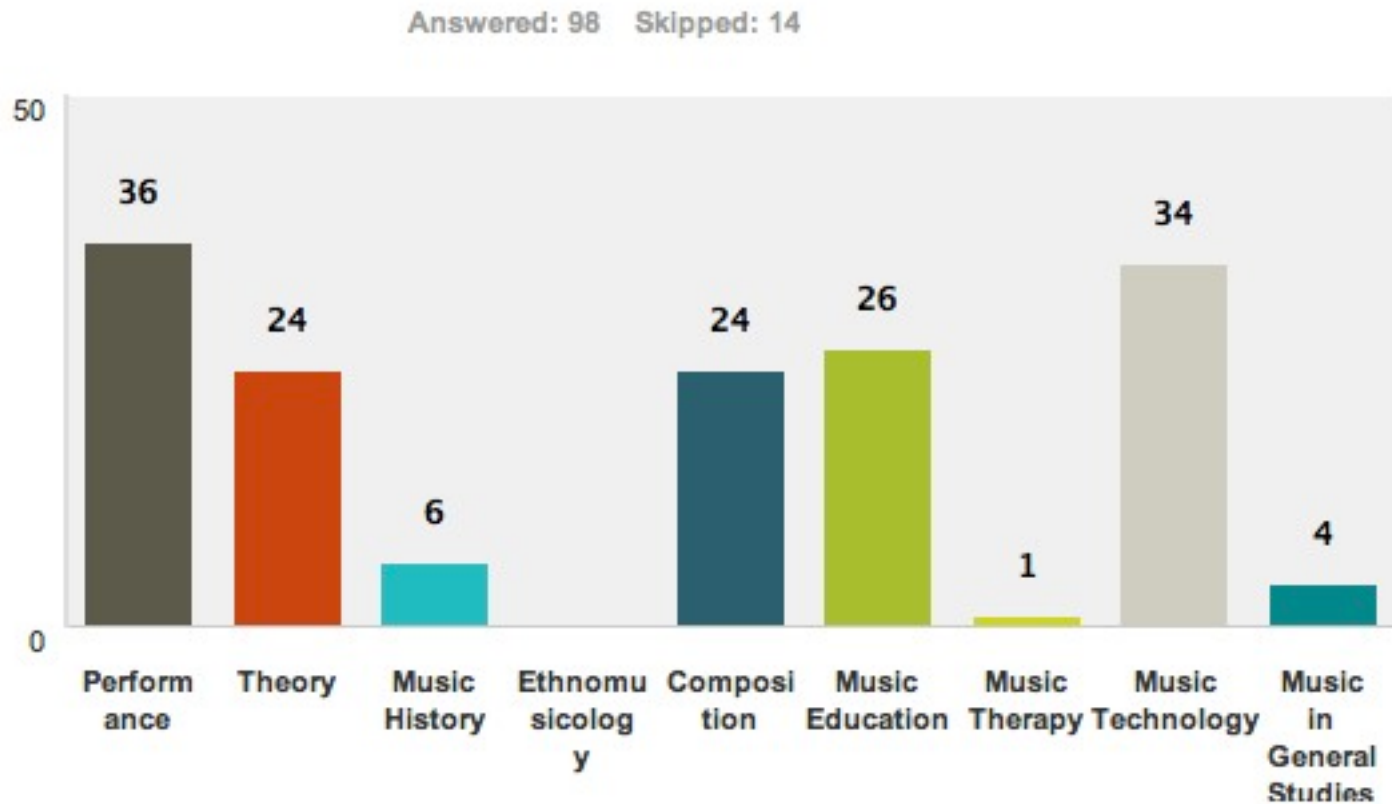
STRATEGY FOR 2013

- Confirmation of a **modified set of 8 core music technology competencies** from 2012 survey **plus 3 additional competencies**
- Looking for more **open-ended responses to provide further insight** into 2012 issues concerning implementation
- Seeking sense of direction with the **impact of new technologies** with cloud computing, social networking, MOOCs and distance learning, etc.
- Looking for **suggestions for advocacy** to promote these competencies and implementation strategies on a nationwide level

SURVEY DEMOGRAPHICS

113 respondents out of 399 email invitations sent

All invitations sent to 2012 respondents

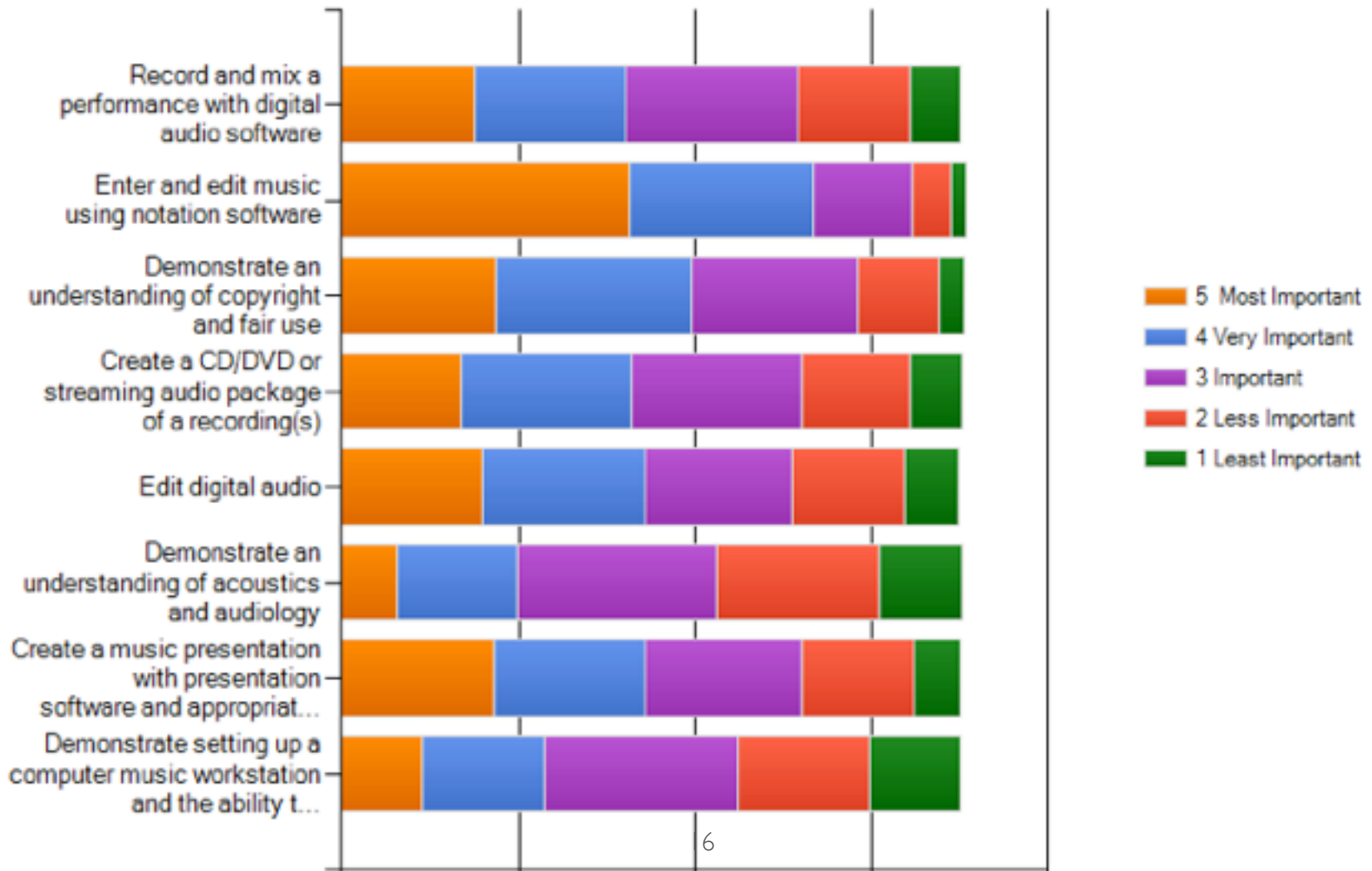


SUMMARY POINTS 2013

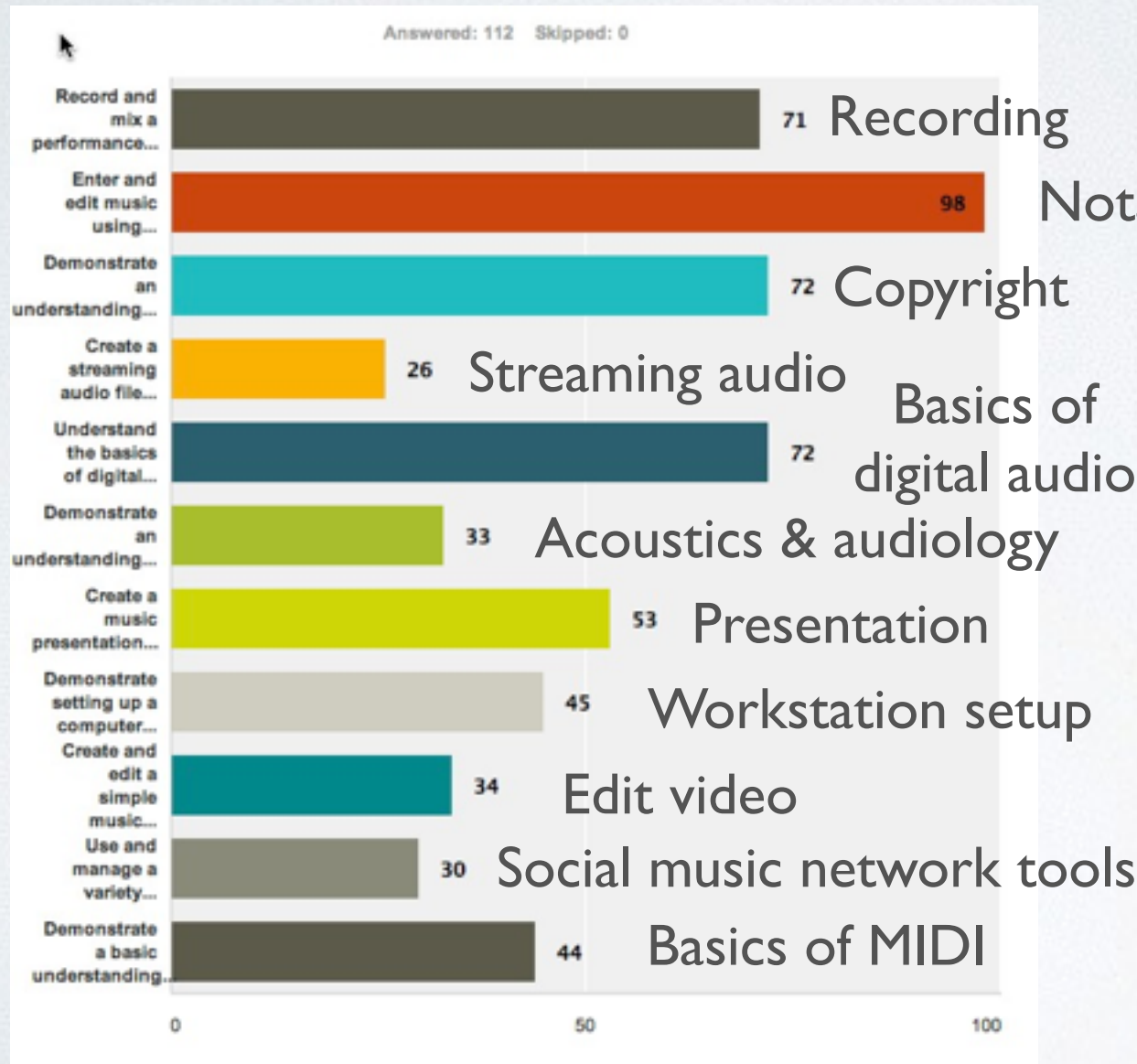
- Confirmed the most valued competencies, demonstrated an increased call for copyright/intellectual property rights education, and received minor support for the new competencies we added
- Continue confusion over what is meant by recording skills
- Interest in tech for music performance
- Concerns about social networking and use of devices in class
- Less than half feel that their unit is making good progress planning and moving ahead with technology.
- Little going on with distance education (isolated examples only) and concern about MOOCs.
- Strong attitude toward "let the students take care of technology on their own" or "they already have these skills"
- Troubling attitude among some that only the institution is the problem
- Financial concerns dominate

CORE COMPETENCIES: 2012

The 8 competencies that have been identified from our past surveys are listed below. Please rate the importance of each for your undergraduate music students on a scale from 5 to 1, with 5 as most important for your students and 1 as least important for your students.



Q1: SELECT THE **TOP FIVE COMPETENCIES** THAT YOU CONTINUE TO FEEL ARE THE MOST IMPORTANT FOR ALL UNDERGRADUATE MUSIC MAJORS



1. Notation leads
 2. Recording, copyright, digital audio next, then
 3. Create a music presentation
- Of the new competencies added MIDI > Simple music video > Social music sharing tools

QUALITATIVE

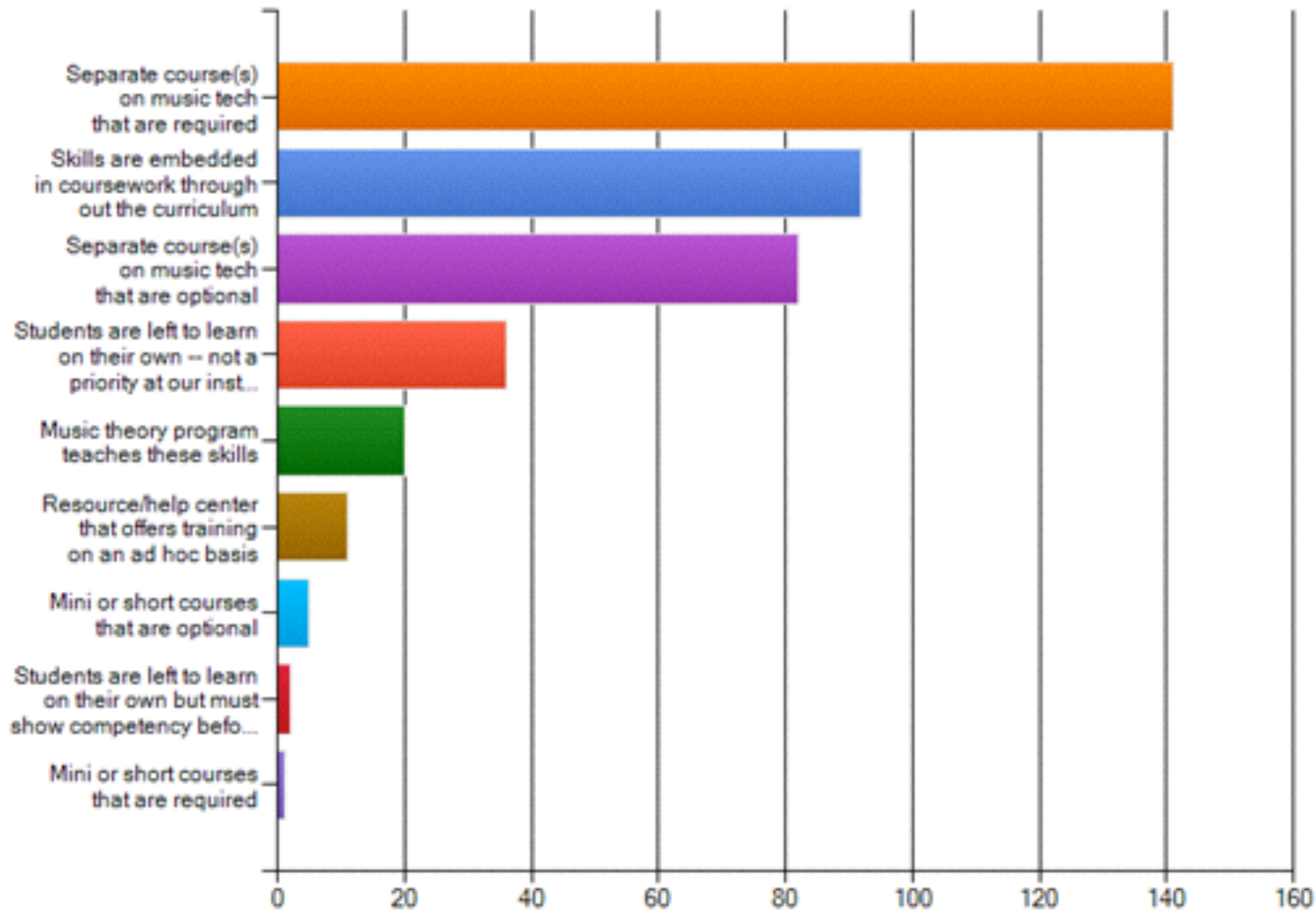
- Had to choose 5, but several suggested that all were important.
- 24% emphasized the importance of copyright
- 15% emphasized the critical nature of notation skill
- 15% felt that Ss come with at least some competency and 11% of comments point to their familiarity with social media tools
- Several suggest that recording, streaming audio, and understanding of digital audio should be combined.

"Almost all of the undergraduate students at my School of Music **arrive having great facility with music sharing tools**, setting up YouTube videos/channels, and other aspects of social networking/music apps. Interestingly, I find that many of these same students rarely articulate their practices as usages of technologies per se--**these practices appear to be almost seamlessly integrated into the multiple aspects of their lives**. However, I find the same **students seem to be terrified of recording/mixing audio files, using composition software, making music presentations**. And all have very **little understanding of copyright and fair use...even when it comes to their writing of old-fashioned papers.**"

" If anything I feel that **lower quality output has become more acceptable** [due to technology] (i.e., notation and audio with errors that would have not been acceptable before)"

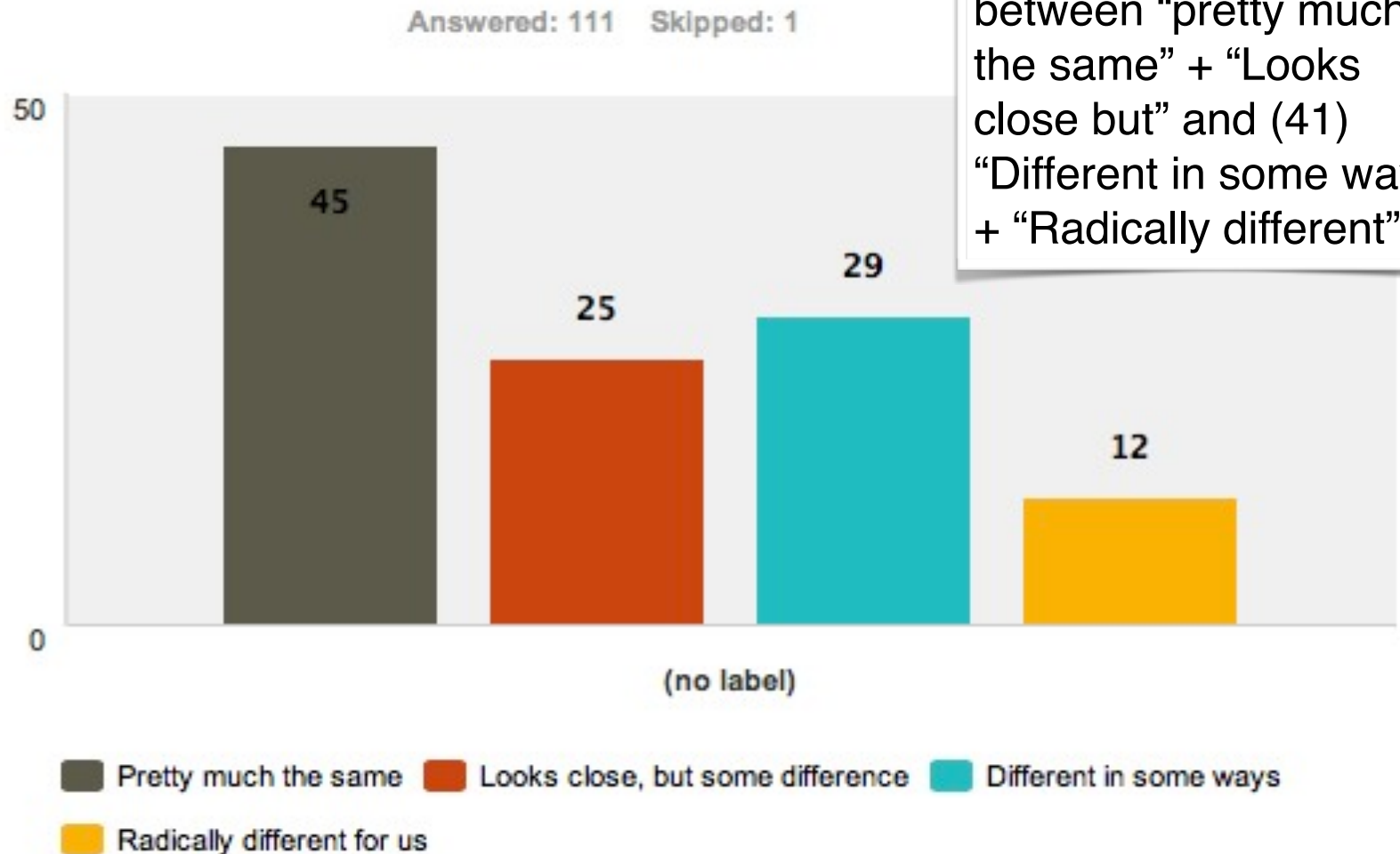
OPTIONS FOR LEARNING: 2012 DATA

Please indicate the primary way music students learn music technology skills in your institution's program.



Price & Pan
2002 found
39% elective
music tech
course and
30% required
for music ed
majors

Q2: REVIEW SUMMARY OF LAST YEAR'S RESPONSE TO THE QUESTION OF WHERE THE **PRIMARY PLACE** WAS THAT **MUSIC STUDENTS LEARN TECHNOLOGY SKILLS** IN MUSIC UNITS. RATE THE EXTENT TO WHICH THIS **REFLECTS YOUR CURRENT UNIT'S REALITY**.



Split (70)
between “pretty much
the same” + “Looks
close but” and (41)
“Different in some ways”
+ “Radically different”

QUALITATIVE

- 34% of comments emphasized an “integrated strategy” which includes comments on learning through the theory core, or through tech electives, or through a required tech course.
- 13% offered that they had a required tech course and 23% no required tech course
- Several commented on music education being either the only area with tech requirements or that music ed had different tech requirements from others.
- 16% suggested that students learn it on their own.
- Several noted making the music tech course a campus Gen Ed requirement under the sciences and have music major count it toward Gen Ed and their degree.

"We no longer have the "lone technology class" but have skills implemented into courses students have throughout the program, beginning in the first semester. We are 23% there."

"We do not have a required music tech. course for all majors. These skills are skills taught throughout curriculum. High-end music technology and recording courses are available for all to take as electives. These classes are required in certain majors (e.g. composition)."

"We normally embed all of the skills required within coursework, but found it lacking. A new gen ed was created to begin next fall that will serve as a music major option in music technology. We plan to have all music majors take that course as early in their program as possible."

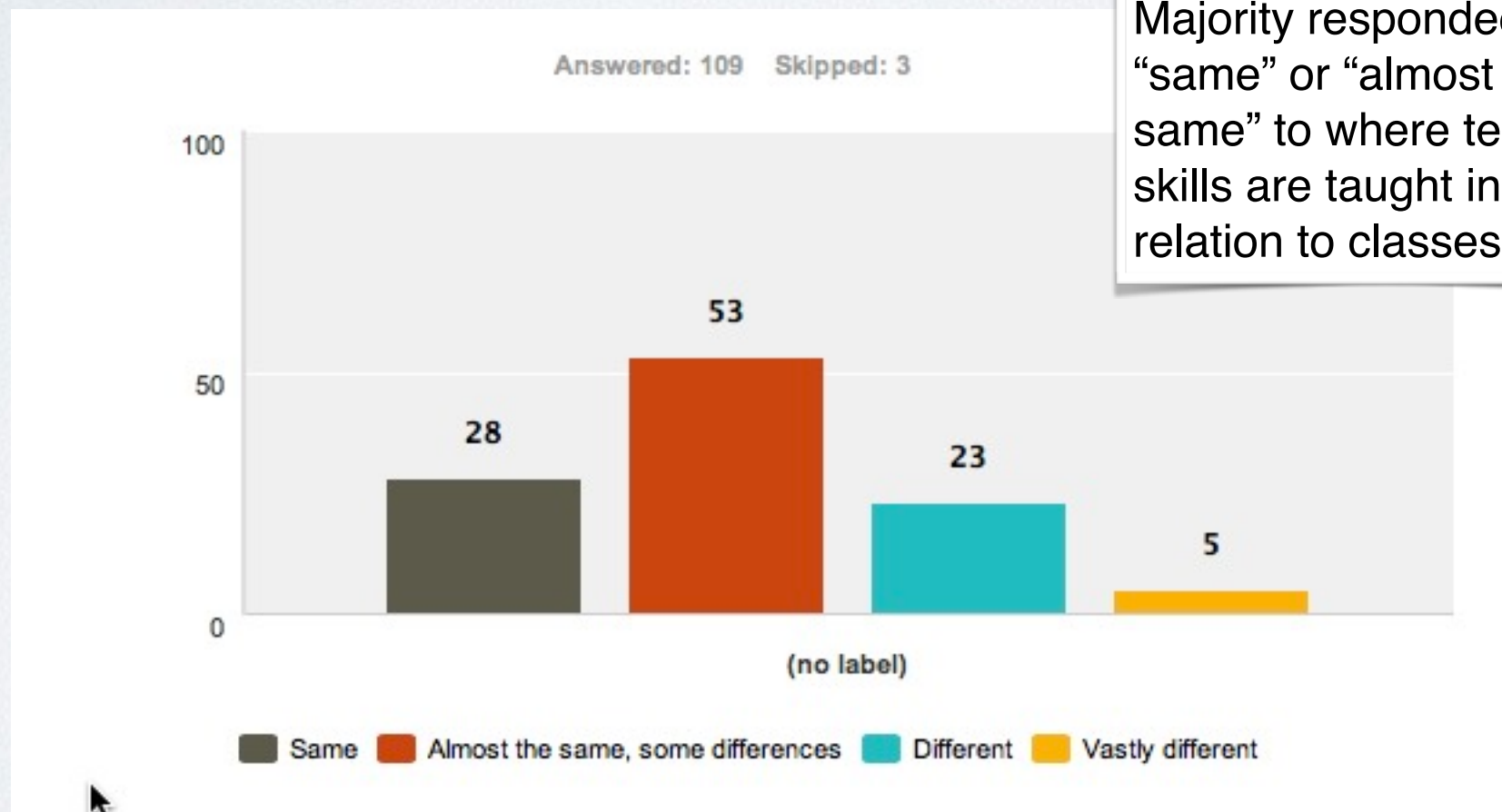
PROGRAM INTEGRATION: 2012

Who carries the burden?

- Recording Digital Audio: Intro Music Tech Classes, More Advanced Tech Courses
- Notation: Music Theory and Composition Classes, Come With Skill/On Own
- Copyright: Music Business Classes, Music Education Methods
- CD/DVD Production and Digital Editing: Come With Skill/On Own, Intro Music Tech Classes,
- Acoustics: Voice Classes, Science Electives, Advanced Tech Courses
- Presentation Software and Computer Workstation: Music Ed Methods, Intro Music Tech Classes, Come With Skill/On Own, Throughout Coursework

Q3: REVIEW A SUMMARY FROM OUR 2012 SURVEY OF WHERE SPECIFIC COMPETENCIES ARE TAUGHT AND INTEGRATED INTO MUSIC CURRICULA.

RATE HOW WELL THIS REPRESENTS YOUR UNIT.

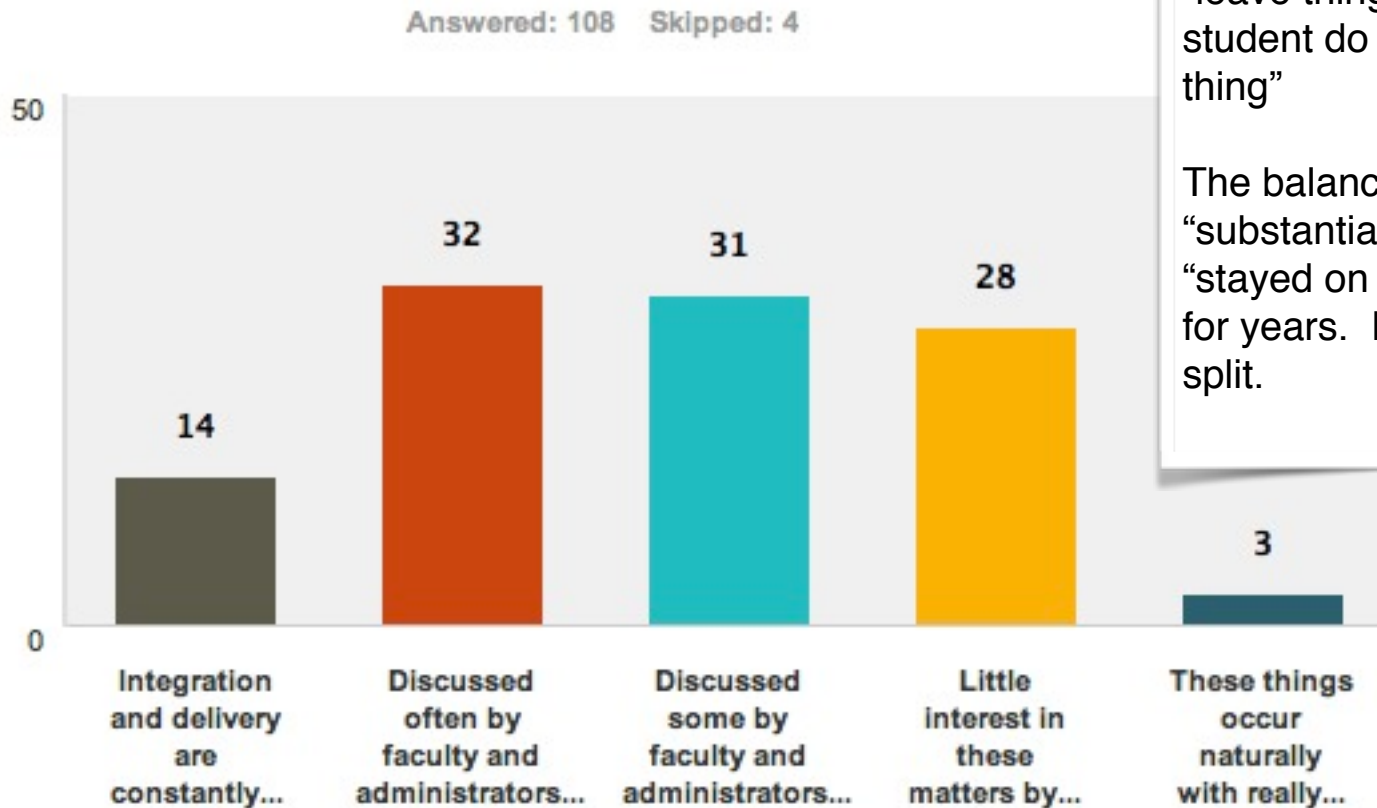


QUALITATIVE

The skills not covered as expressed in comments:

- No acoustics 20% or acoustics covered in other departments 10%
- Little or no copyright 12%
- Leave recording to the pros 8%
- 16% noted that all these skills taught in an intro to tech course

Q4: PLACE A CHECKMARK NEXT TO THE STATEMENT THAT BEST REFLECTS THE DISPOSITION OF YOUR MUSIC UNIT TO THE INTEGRATION AND DELIVERY OF MUSIC TECHNOLOGY ON CAMPUS.



62 say that “little is being done” or “little interest” or “leave things alone & let student do their own thing”

The balance 46 indicate “substantial change” or “stayed on top of curve” for years. Fairly even split.

QUALITATIVE

The negative comments general fell under “top down admin approach,” “not enough room for tech,” “sadly no clarity or movement,” “lack of support,” or made not of the generation gap between young and older faculty. Those struggling were more apt to comment here.

As opposed to “ramming down our throats” comment, this one offers positive results: "I would say that the first statement is more in line with the goals of the higher administration of the college, and that is having a positive and encouraging effect on the departmental levels.”

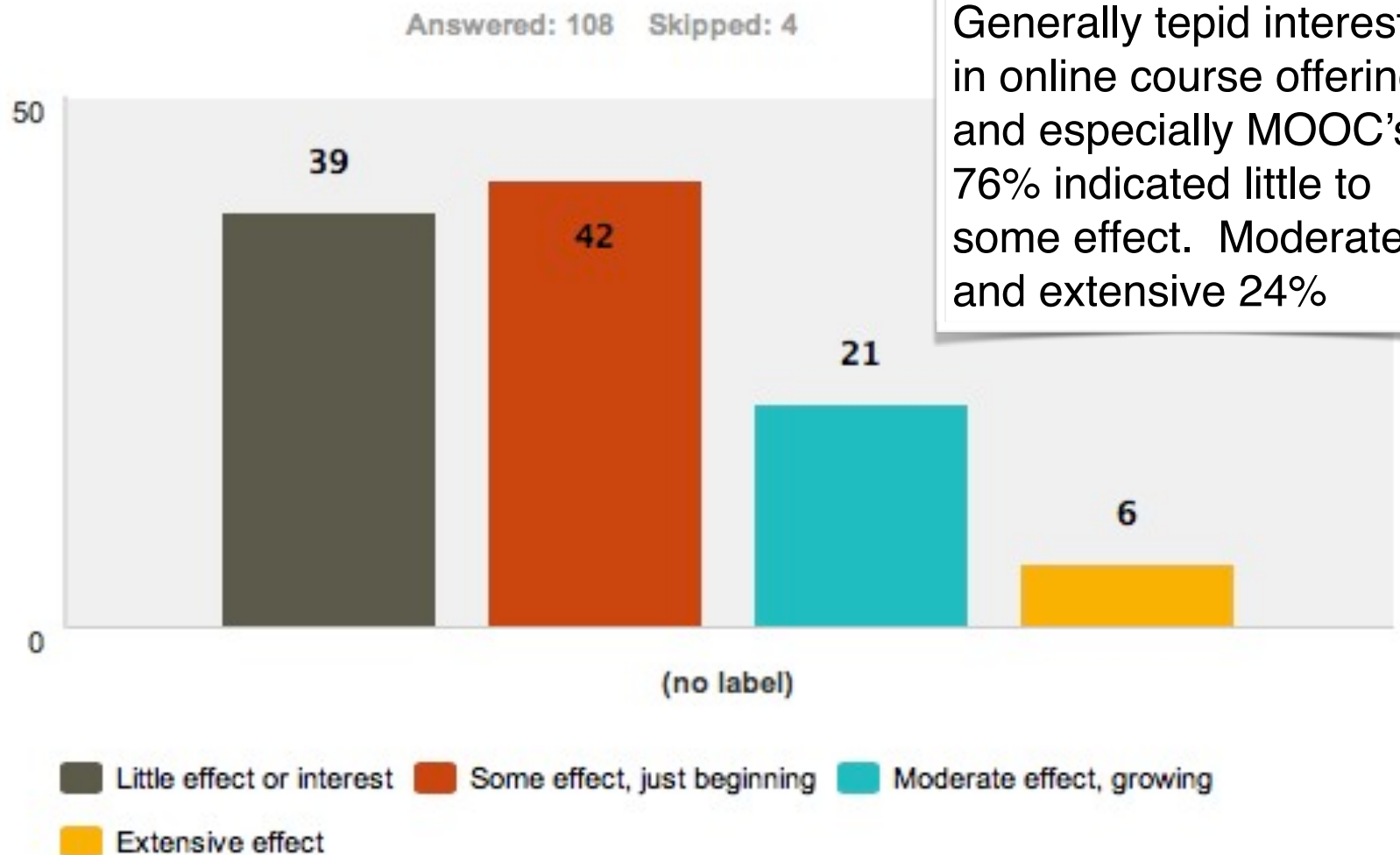
"Things were in OK shape. With the current budget situation and the misconception that students come in knowing what they need to know about music technology, the primary focus has been keeping things in place rather than improving the disposition/moving forward.”

"We've had some discussion but little consensus as to how to best meet our students needs in this regard. Again, so much has to do with draconian budget cuts.”

INFLUENCE OF NEW TECHNOLOGIES



Q5: RATE THE EXTENT TO WHICH **ONLINE COURSE OFFERINGS** OF ALL TYPES ARE EFFECTING INTEGRATION OF DELIVERY OF INSTRUCTION.



QUALITATIVE

- 21% of comments reinforced offering a “few online courses” or “blended/hybrid solutions” and noted that online delivery reaches students otherwise not accessible.
- 12% indicate online delivery for Gen Ed courses only.
- Lots of negative responses such as “little interest in online,” “little faculty support or faculty resistance,” questioned the “lack of engagement” critical to music study, “devalue education,” “not effective,” “no time for development,” “need better network,”
- Those responding: “No MOOCs” (23%)

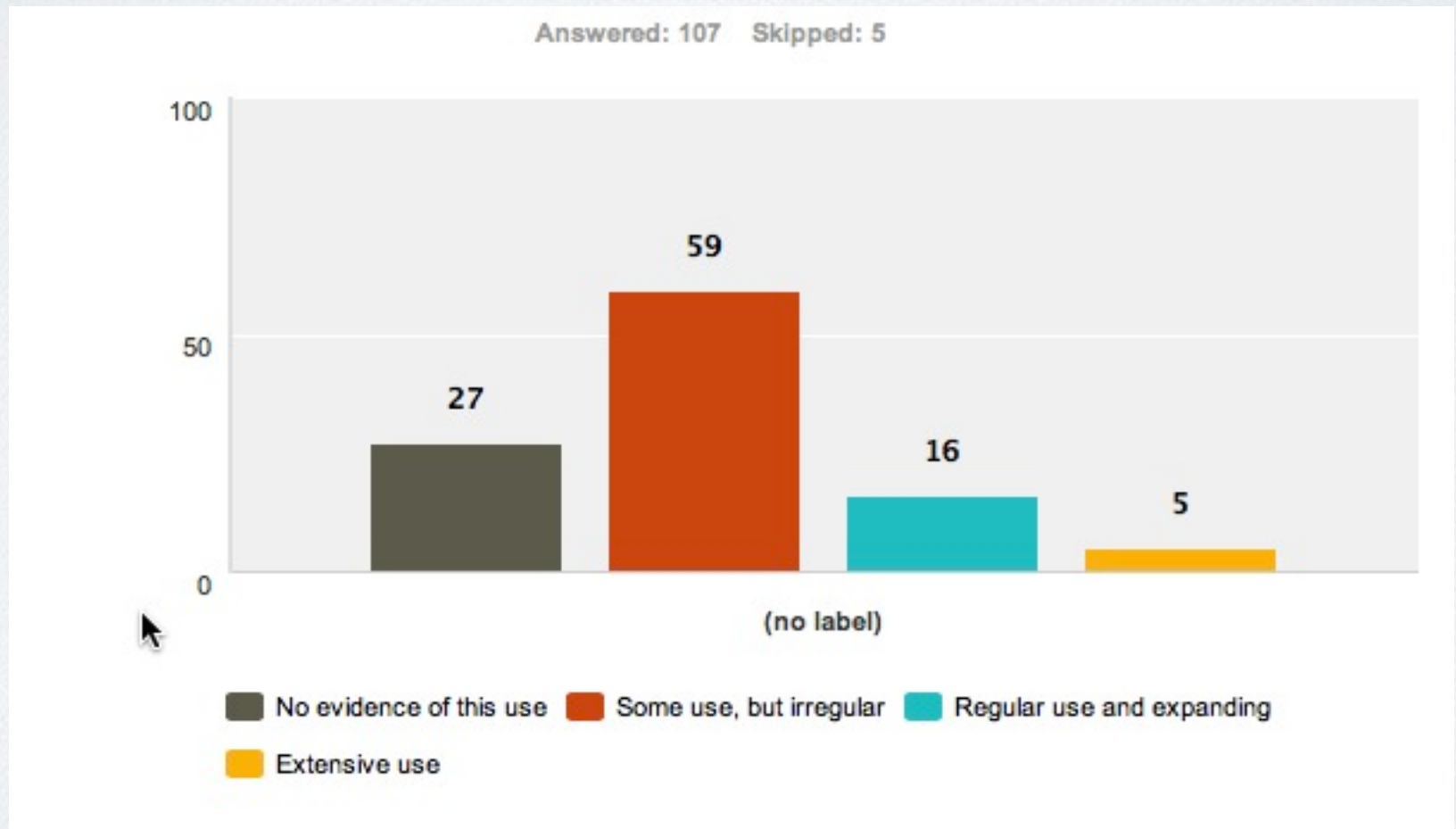
"My institution is rolling out, with support from our new chancellor, its Education Initiatives, which has as some of its **goals the quick starting and implementation of MOOCs**, distance learning, etc. The push comes from a **growing reliance on some schools at this university on course production credits**. Unfortunately, there is currently **little to no support for faculty** in the way of funding, course releases, project assistants, etc., to design and implement such courses. Infrastructure needed for these courses varies wildly across our campus."

"We have one of the **first online NASM-accredited undergrad degree programs**. It's intensive and we continue to explore ways to optimize that experience. In particular, we are **exploring online piano lessons** with our new piano faculty member after a pilot study last spring. We **use a hybrid delivery system in real time with archived class sessions**. "

"At the moment, this is of **little interest in our program**. While there is a push to develop online coursework throughout the University, **our programs are very hands-on** almost apprenticeship models. Human interaction is highly valued. Unless there was a MOOC that would enhance an already existing course I'm not sure we would be going in that direction."

Q6: RATE THE EXTENT TO WHICH YOUR UNIT IS **USING THE INTERNET TO ENHANCE MUSIC TEACHING.**

E.G., USE OF GUEST LECTURES VIA VIDEO CONFERENCING, EXCHANGES OF MUSIC PROJECTS WITH STUDENTS IN OTHER SCHOOLS, INTERNET-BASED PERFORMANCE OR COMPOSING EXPERIENCES, OR OTHER REAL-TIME REMOTE INTERACTIONS.

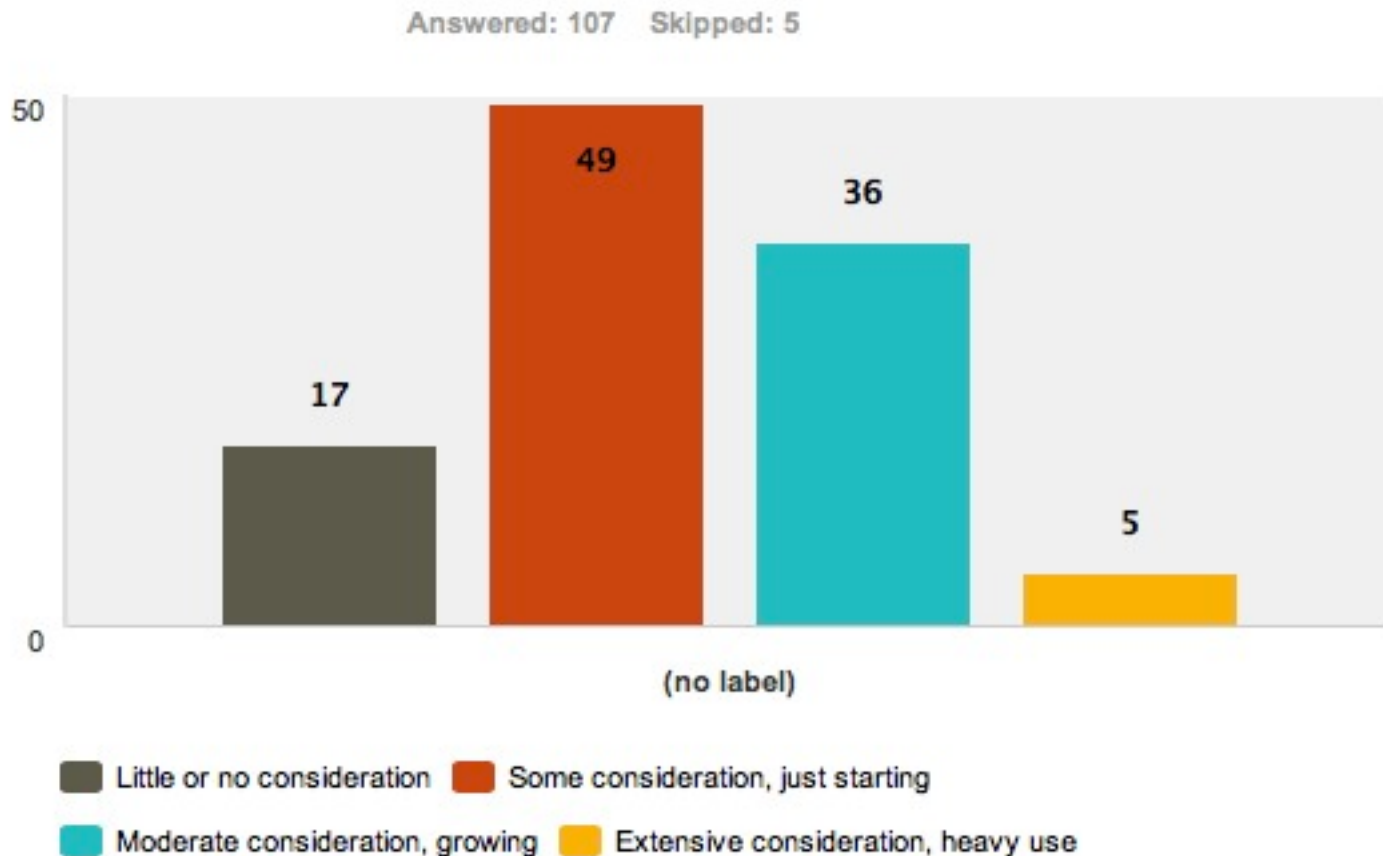


QUALITATIVE

- 35% noted that some version of video conference is in use
- 14% said that the Internet was used in performance instruction
- 14% said nothing or little Internet use was in evidence
- Frequently Mentioned Software
 - Skype (25%)
 - YouTube (11%)



Q7: RATE THE EXTENT TO WHICH YOUR UNIT HAS CONSIDERED **MUSIC TECHNOLOGY INTEGRATION IN YOUR CLASSES** GIVEN THE RISE OF MUSIC'S PRESENCE IN THE **SOCIAL MEDIA OF TODAY** (FACEBOOK, INSTAGRAM, ITUNES AND ITUNES U, BLOGS, TWITTER, SPOTIFY, AND YOUTUBE/ OTHER VIDEO SHARING SITES).



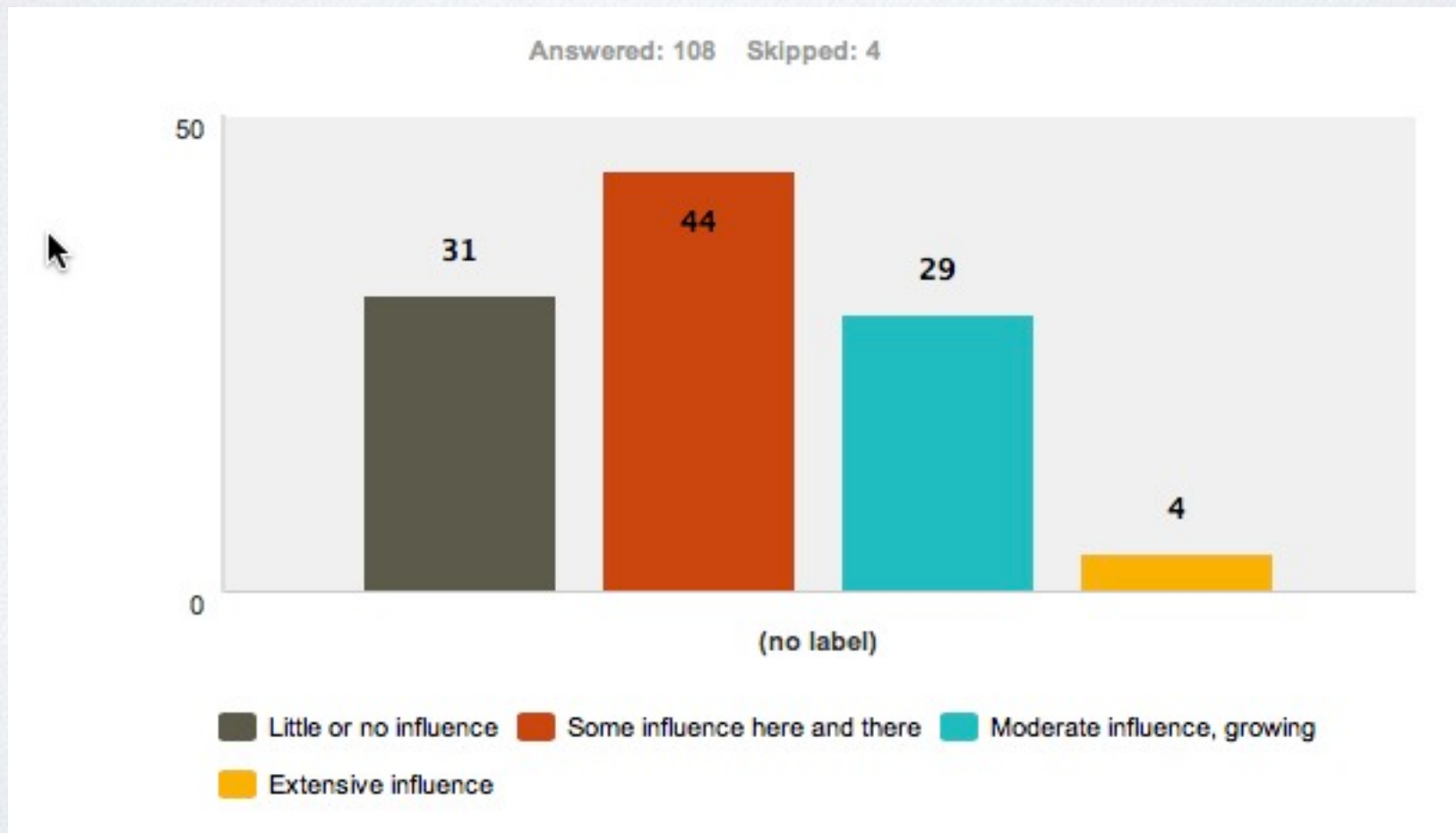
QUALITATIVE

- 31% indicated that social media was used for non-instructional use
- 11% noted largely student use of social media (not necessarily in teaching)
- 14% said that Nothing of Little Use was made of social media
- 9% expressed misgivings and concerns about social media
- Frequently Mentioned Software : YouTube, Facebook, Tumblr, Twitter, Spotify, iTunes, Blogs



- I use social media in my music tech, conducting and music history courses. Some other instructors use a bit but slow to catch on.
- We encourage club involvement at the social media level, and we show them the opportunities available to them; however, **we tend to leave social media to the students to figure out. Most of them know more than we (professors) do about social media, It is rarely something we need to teach them because they need us to teach them other things that they are NOT familiar with.**
- **Most students using social media during one of our classes are using them to engage in academic dishonesty. I'm sure there could be other uses, but I don't find myself able to imagine what they could be.**
- YouTube is an incredible resource of **illegal uploads.**

Q8: HAS THE RISE IN THE NUMBER OF OPPORTUNITIES TO USE THE **CLOUD-BASED TECHNOLOGIES FOR SHARING MUSIC, SCORES, DOCUMENTS, PERFORMANCES, COMPOSITIONS, TEACHING MATERIALS** ETC. INFLUENCED THE CURRICULUM AND ITS TEACHING WITHIN YOUR MUSIC UNIT?

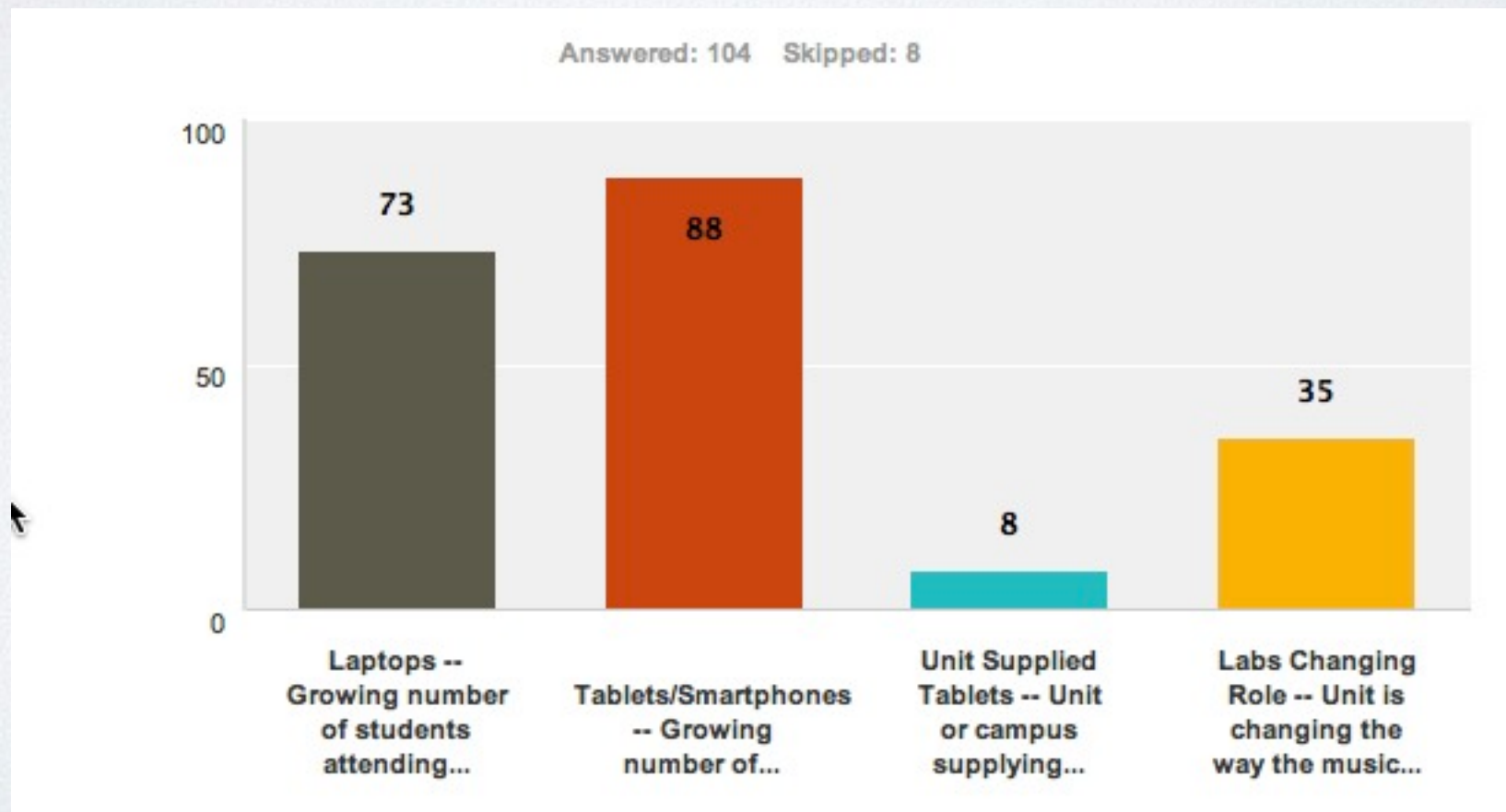


QUALITATIVE (N=38): TO THE CLOUD

- Rising Use (11%)
- Just Beginning (16%)
- Nothing/Little (16%)
- Cautionary Concerns (13%)
- Frequently Mentioned Software
 - YouTube, Wikis, DropBox, Google Tools, iCloud , Sound Cloud, Blogs, IMSLP, Noteflight/InsideMusic, Auralia Cloud



Q 10: WE HAVE CREATED A SET OF DELIVERY CONDITIONS THAT YOU MAY SEE AS CHANGING DRAMATICALLY FOR YOU AND YOUR STUDENTS IN YOUR UNIT. PLACE A CHECK MARK NEXT TO THOSE CONDITIONS THAT YOU SEE AS CHANGING YOUR UNIT'S THINKING ABOUT INSTRUCTIONAL DELIVERY



QUALITATIVE

- 16% viewed these newer delivery systems as positive developments
- Laptops (24%)
- Smartphones (24%)
- Tablets (14%)
- 17% noted a redesign of lab spaces to be more flexible, include more suitable furniture, electrical outlet access, and also indicated a movement to BYOD (Bring Your Own Device)
- 10% express caution about use of devices in class -- did not think that such use helped concentration and perhaps led to distraction



- The technologies that we need most are classrooms equipped with tables for collaboration and small group discussion. And, power ports for mobile devices and computers. Not a specific computer/tablet technology, but tools for collaboration and interaction.
- Laptops (and other devices) have also made it possible for us to move increasingly away from such things as paper handouts.
- We've recently redesigned our lab to be more of a collaborative workspace rather than just a room filled with rows of computer workstations
- Somewhat problematic as standards of behavior with these devices are yet to be established

LAST QUESTION

- **What one positive, nation-wide action** do you feel we might take as a profession to help promote awareness of these critical music technology competencies and their integration into the undergraduate music curriculum? **What organization** or combination of organizations do you feel would best drive this effort forward?



THEMES IDENTIFIED

- In-Service for Professors
- Work with K-12 Schools for Technology Standards (Common Core or other approaches)
- Create an agreed-upon set of Standards
- Identify and promote examples of professionals (performers/scholars) and their use of technology in the real world
- Re-double our efforts to teach about copyright
- Central database of resources for college teaching
- Stress creative thinking techniques in teaching and research that use technology
- Promote technology use through Webinars or Symposia
- Continue to use technology and write about it

OTHERS??????

ORGANIZATIONS TO ENGAGE

- Collaboration between **NASM/NAfME/CMS**
- **CMS/ATMI**
- Others: **SMTE, TI:ME, IBA, AES, ACDA**

Concern
Expressed
About
Effectiveness of
NASM



FINAL THOUGHTS



SUMMARY POINTS 2013

- Confirmed the most valued competencies, demonstrated an increased call for copyright/intellectual property rights education, and received minor support for the new competencies we added
- Continue confusion over what is meant by recording skills
- Interest in tech for music performance
- Concerns about social networking and use of devices in class
- Less than half feel that their unit is making good progress planning and moving ahead with technology.
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UNRESOLVED ISSUE

What technologies skills do our students REALLY come to campus possessing????

- from -- Scott Phillips and Rick Dammers:
 - “ ... college music tech teachers found high school students very poorly prepared for more advanced music technology study, even if they had participated in a music technology class in high school. -- Scott Phillips and Rick Dammers
 - Phillips says, “My suspicion has always been that the standard was removed due to pressure from departments who felt it was too difficult to keep up with the expense and complexity of teaching current and relevant technology to their students. The ‘students are already tech savvy’ argument seems a convenient although very unsubstantiated argument for removing the standard.”

NEXT STEPS



- Online focus groups for further discussion of results from 2013; follow up research on student skills issue entering college.
- Publish our Findings!!  Where would you suggest?
- More in depth analysis and reflection on the 2011-2013 survey data and publication of the findings and directions
- Encourage a more proactive stance on music technology inclusion on the policy level perhaps in conjunction to real reform in how we teach music in college