Results of a Survey on Amplification and Electronics Use in Scholastic Marching Music Ensembles

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A&E Task-Force Consortium

The following members of the A&E Task Force Consortium endorsed and helped administer the *Amplification and Electronics Survey*

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Introduction

The *Amplification and Electronics (A&E) Survey* was created to take the pulse of a "band-centric" population about the use of electronics in scholastic marching ensembles. The reason for polling this group is simple: we wanted to understand the "grass-roots opinions" of a range of important stakeholders in instrumental education about the use of non-traditional instruments, synthetic sound generation, and electronic amplification techniques that are being used with greater frequency in this scholastic activity. We purposefully sought opinions from a diverse set of voices, for example, soliciting both the opinions of full-time educators and from specialists and vendors in the A&E field. Through their contrasting perspectives, members of these two groups may have very different opinions about how digital amplification and electronics fit into a total band program, and both groups play a central role in this activity that both educates and entertains. To get a grass roots view from these diverse perspectives, survey invitations were disseminated widely through many different list-serves, websites, and social media avenues. This report shares the perspectives of 870 leaders, educators, technicians, supporters and performers. It is our hope that this report helps advance a more robust conversation *among* stakeholders by providing in depth evidence *from* stakeholders.

Survey participants

Because a main goal of the survey was to assess the diversity of the knowledge, beliefs and opinions of a range of stakeholders, the survey asked respondents to indicate whether they were a member of any of the following groups:

- Band Teacher
- General Music Educator
- Designer/Technician/Specialist
- Performer
- Spectator/Volunteer

Many people in the activity wear multiple hats. Not surprisingly many respondents reported that they played multiple roles. To better understand the diversity of perspectives, 6 role categories described below were created based on a careful analysis of patterns in peoples' responses to the role question. In analyzing the results of the survey, we compared the answers of these 6 groups.

Teacher. The largest group of respondents identified as teachers only, or as teachers who also performed, volunteered or attended performances as a spectator. A previously mentioned, respondents who identified as a teacher and a designer were classified designers.

Educator/Adjudicator. A second large group of respondents identified as adjudicators and teachers. The number of respondents who identified only as adjudicators was small.

Designer. A third large group of respondents identified primarily as designers, either identifying only as designers, or as designers who were also spectators, volunteers, performers or teachers.

Broadly Involved. Another large group of respondents indicated that they play multiple, significant roles in the activity. Nearly all in this group identified as adjudicators, teachers and designers. We conjecture that many in this group are leaders in the field.

Performer. Respondents who identified as performers only, or who identified as performers but did not identify as designers, adjudicators, or teachers were coded as performers.

Spectator/Volunteer. Respondents who identified as spectators and volunteers but who didn't identify as designers, adjudicators, teachers or performers, were categorized as spectator/volunteers.

Figure 1 below shows the number of respondents in each of the 6 groups. Teachers make up the largest group in the sample, with nearly 300 teachers responding. Slightly more than 200 respondents who are "broadly involved" in the activity (e.g. as Designers, Teachers and Adjudicators) responded to the survey. Nearly 160 respondents each were in the Designer and Educator/Adjudicator groups. Finally, relatively smaller numbers of performers (38) and Spectators/Volunteers (27) responded to the survey. It's important to note that given the small number of respondents falling into these latter

two groups, the results for these groups may not be representative of the groups as a whole.

Figure 1: Roles respondents play in the activity
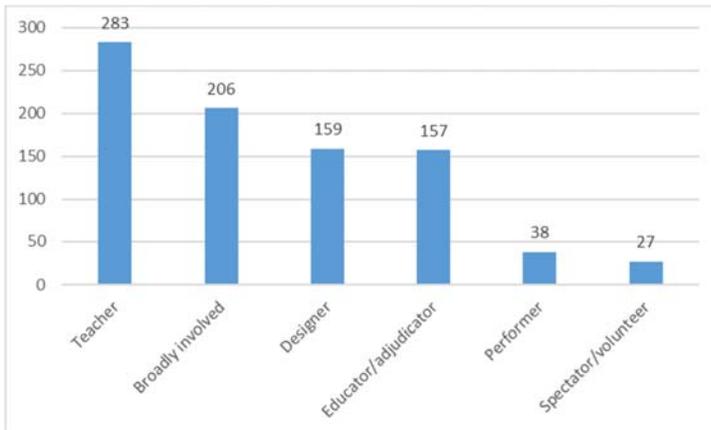
A substantial majority of respondents (71 percent) had postsecondary study in music either at the undergraduate level (35 percent) or graduate level (36 percent). Respondents are also generally quite active in the activity. Nearly half (48 percent) of respondents described themselves as being "extremely active" in the activity while only 9 percent described themselves as "minimally active." The results reported below are thus based on data from people from a variety of key stakeholder groups who are generally highly trained in music and music education and are actively engaged in the activity.

Opinions about the expense of amplification and electronics

The survey asked respondents about their level of concern about the expense of equipment, expense of electronics technicians needed, and concerns related to ethical/legal issues involved with the use of A&E. Figures 2-4 display the level of concern respondents in different groups have about these three issues. The predominance of more darker shading in a figure indicates a greater level of concern while the predominance of lighter shading indicates a group expressed less concern about an issue.

The general pattern we saw is that teachers, educators, spectators, and those who were broadly involved in multiple aspects of the activity tended to express higher levels of concern with the financial and legal dimensions of amplification and electronics use. In contrast, designers tended to express less concern about these issues. It seems likely that educators may have heightened sensitivity about issues of cost and legal risk because responsibility for funding and compliance are significant aspects of their roles.

Figure 2: I am concerned about the expense of high-tech electronic equipment for public school marching bands
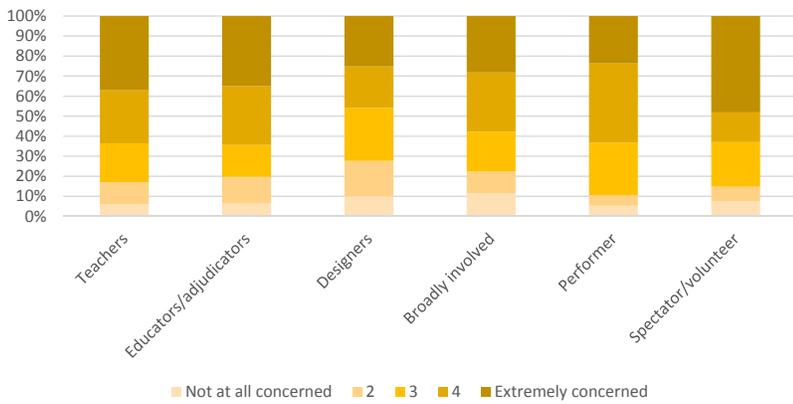

Figure 3: I am concerned about the expenses for specialized technical consultants/workers in the area of sound production for marching bands
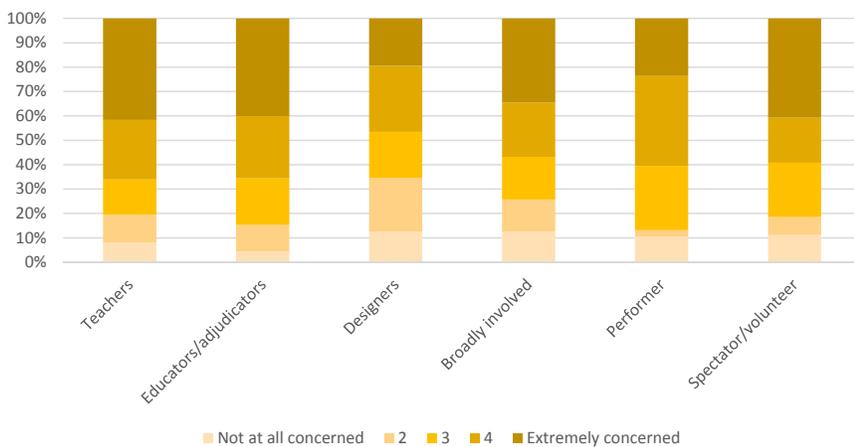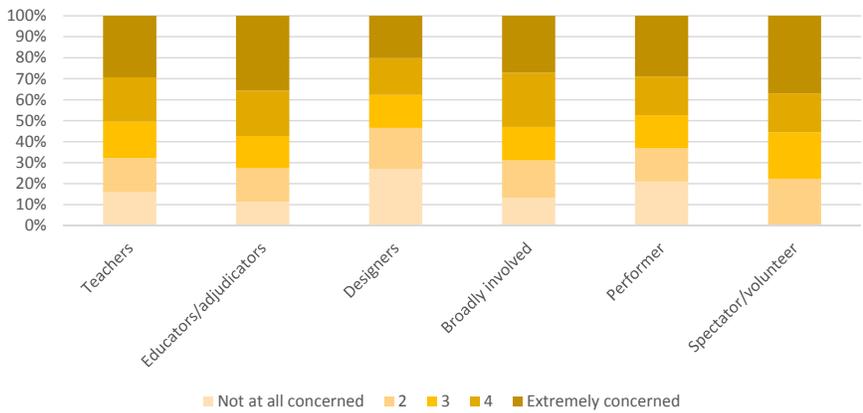
Figure 4: I am concerned about possible ethical/legal issues resulting from the use of sampled, pre-recorded, and synthetic sounds for adjudicated performances in marching band

Opinions about appropriate uses of amplification and electronics

The survey also collected respondents' opinions about the appropriate uses of amplification and electronics in the high school marching arts. Figures 5-10 display respondents' answers about the implementation of microphones in Marching Band. Respondents generally agreed that it was appropriate to use microphones, but differed somewhat as to how they should be implemented. Figure 5 shows that very few respondents believe that microphones are never appropriate. Interestingly, nearly 30% of the small group of spectators who answered the survey feel that microphones should never be used. Relatively large percentages of respondents from all survey groups feel that mics should be used only for soloists. This belief was more prevalent among teachers and educators (approximately 50 percent in these groups agreed) as compared to designers and those who were broadly involved in the activity (36 and 41 of these groups respectively agreed).   The exception to this policy was the amplification of keyboard percussion instruments. There was widespread agreement that miking keyboards for outdoor use is warranted. There were also high levels of support of the use of microphones with vocalists among all groups, though again, spectators were less comfortable with the use of this technique. There is fairly widespread agreement that shotgun microphones should not be used to amplify or manipulate the sounds of an entire section of a full band. The Spectator group held this opinion the most strongly. A considerable number of Designers (31 percent) believed that this use of shotgun microphones was appropriate.

Figure 5: I feel that utilizing microphones in marching band is NEVER appropriate
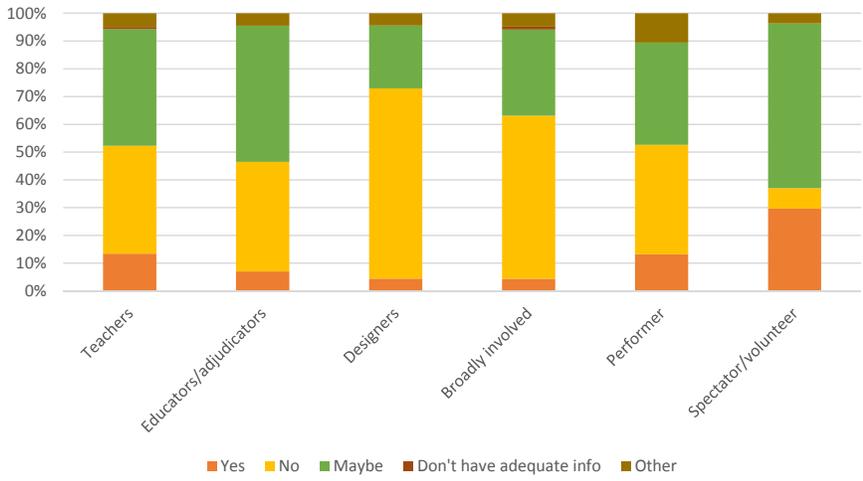
Yes | No | Maybe | Don't have adequate info | Other

Categories: Teachers, Educators/adjudicators, Designers, Broadly involved, Performer, Spectator/volunteer

Figure 6: When miking wind instruments, only soloists should be amplified

Yes | No | Maybe | Don't have adequate info | Other

Categories: Teachers, Educators/adjudicators, Designers, Broadly involved, Performer, Spectator/volunteer
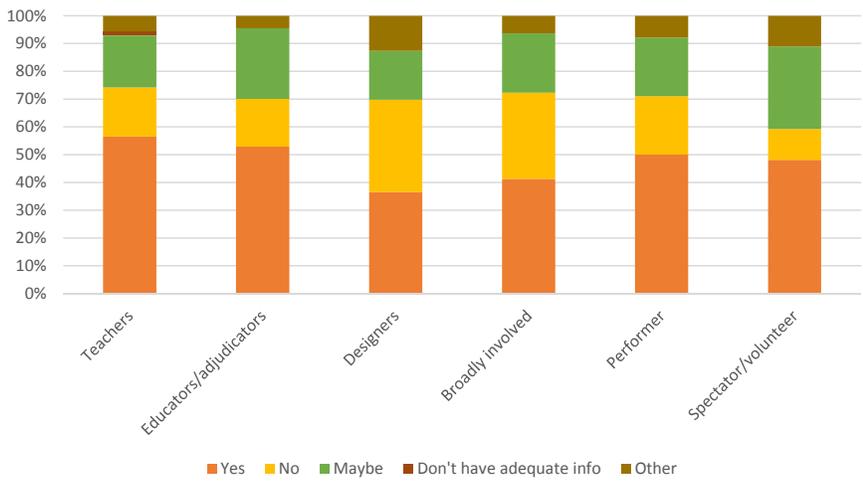
Figure 7: When miking wind instruments, only woodwind soloists should be amplified

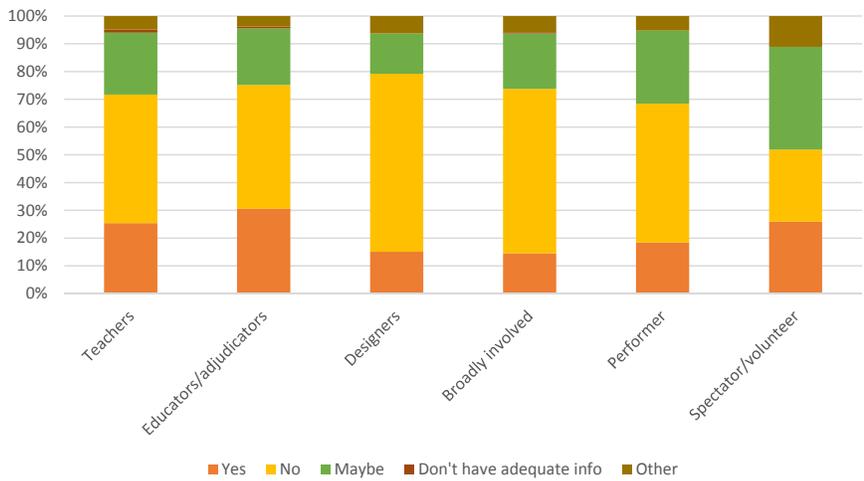Legend: Yes | No | Maybe | Don't have adequate info | Other

Figure 8: Miking grounded keyboard instruments (marimbas, vibes, etc.) should be permissible, as it allows for authentic techniques, implements, and instruments to be used

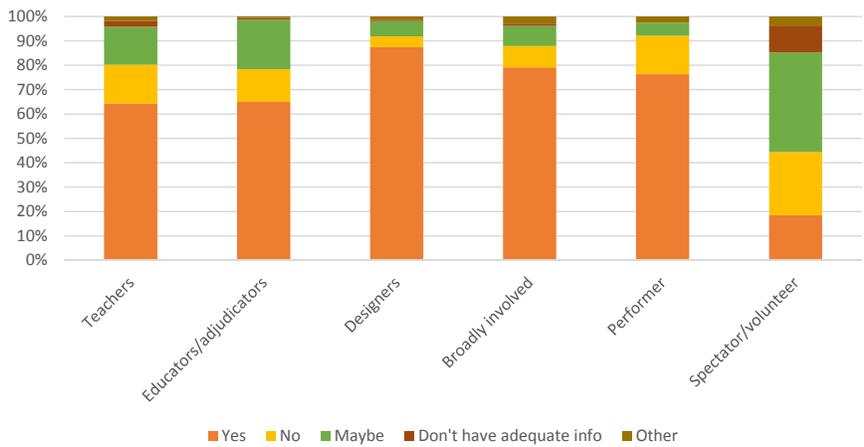Legend: Yes | No | Maybe | Don't have adequate info | Other

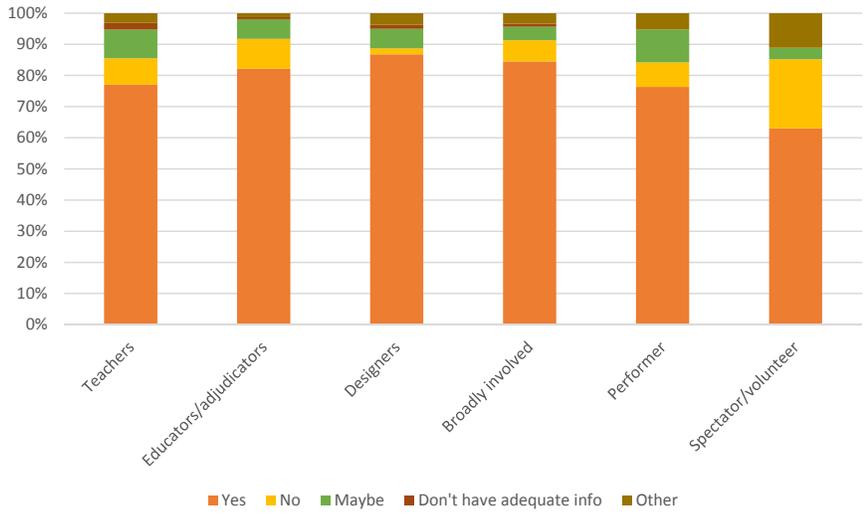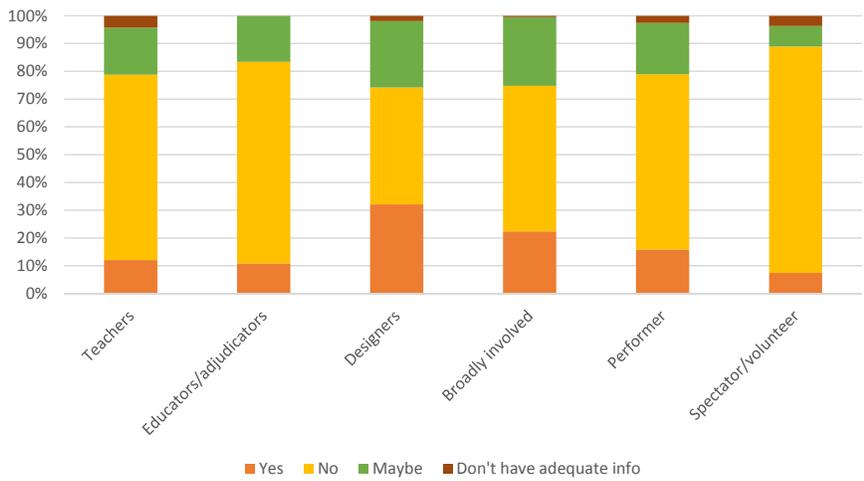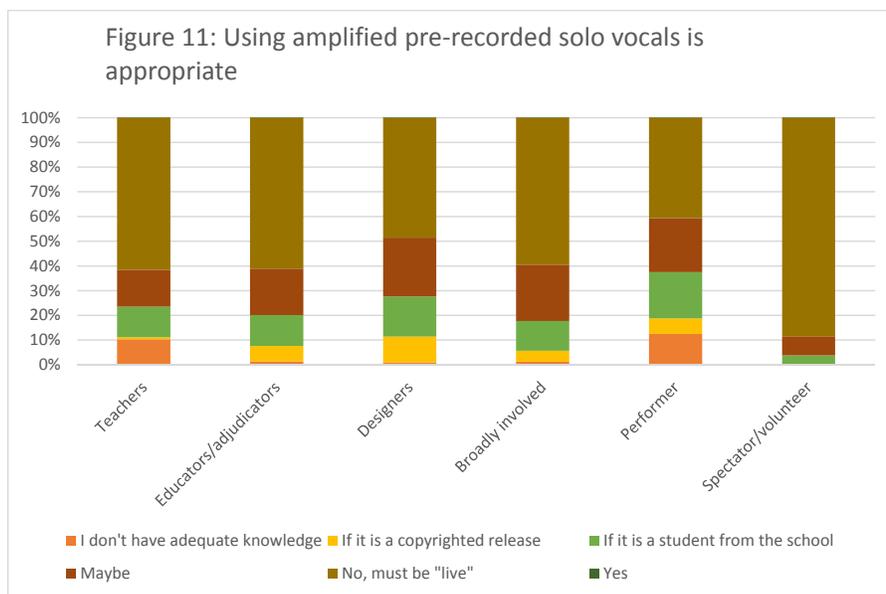Figure 9: Miking live vocalists is appropriate

Figure 10: The use of shotgun and/or omnidirectional mics for reinforcing entire sections or the full band is appropriate

Respondents were asked whether using pre-recorded vocals with band was appropriate (Figure 11). A majority of respondents in all groups believe that pre-recorded solo vocals are inappropriate and that live performers should be used. Fewer Designers felt this way (50 percent) compared with Teachers, Educators/Adjudicators and those who are broadly involved in the activity (approximately 60 percent). Perhaps this disagreement has to do with the application of restrictive parameters on the musical design, or the ethics of using professionally generated sounds (voices) with a scholastic ensemble. Notably, the group most opposed to sampled vocals was the Spectators, at 85%. It is noteworthy that "the audience" held the strongest opinions of this practice, and that it was negative.

Figure 11: Using amplified pre-recorded solo vocals is appropriate

Legend:
- I don't have adequate knowledge
- If it is a copyrighted release
- If it is a student from the school
- Maybe
- No, must be "live"
- Yes

There was a considerable difference of opinion between designers on the one hand and Teachers and Educators/Adjudicators on the other about the use of pre-recorded "non-band" instruments (Figure 12). While 60 percent of Designers believe this practice is appropriate, only about 20 percent of Teachers and Educator/Adjudicators hold the same belief. A sizeable percentage of those who are broadly involved in the activity (44 percent) favor the use of pre-recorded non-band instruments. Again, this lack of agreement between Teachers and Designers might reflect a parameter of limitation for the designers, while the Instrumental Educators appear to prefer using traditional band instruments for band assessments.

Figure 12: Utilizing amplified sample pre-recorded non-band instruments is appropriate
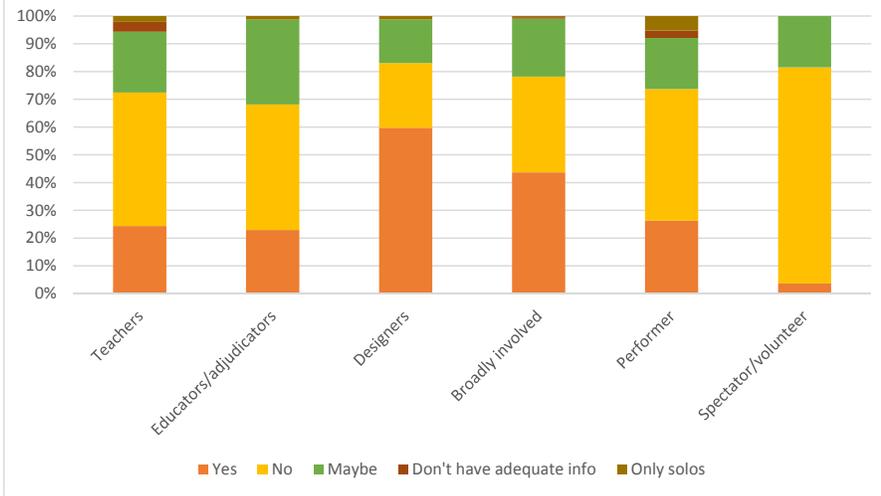
There is widespread agreement in all respondent groups that the miking of individual principal (best) players throughout a performance is inappropriate (Figure 13). Seventy eight percent of all respondents said this practice is not appropriate. Although it should be fairly obvious that this technique is a manipulation of a band's actual sound, it continues to be employed. A majority of all respondent groups believe that using multi-track sounds (overdubbing) with tracks from the actual band players is not appropriate (Figure 14). Relatively higher percentages of Teachers, Educators/Adjudicators and Spectators believe this practice is not appropriate.

Figure 13: The amplification of selected individual principal or "advanced" players for an entire ensemble performance is appropriate

Teachers, Educators/adjudicators, Designers, Broadly involved, Performer, Spectator/volunteer
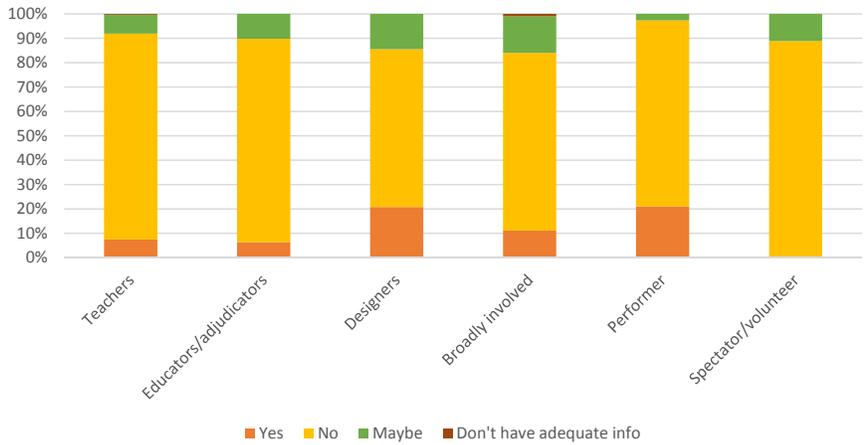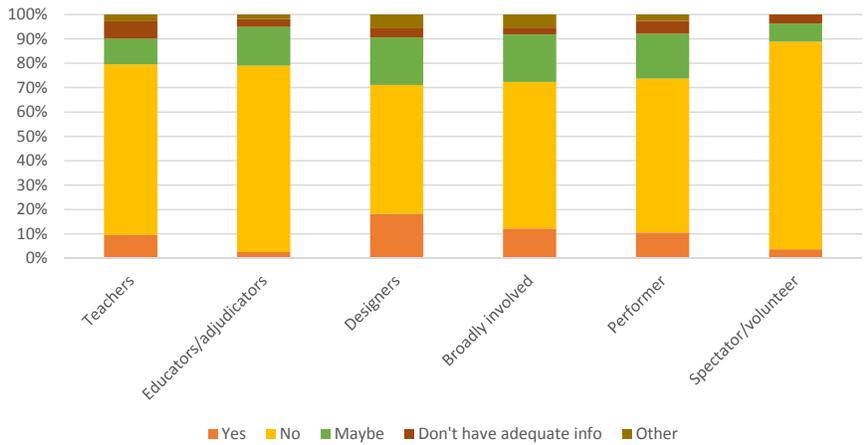
■ Yes ■ No ■ Maybe ■ Don't have adequate info

Figure 14: The use of multi-tracking the ensemble with itself (overdubbed sounds played in sync in addition to the "live" musicians) is appropriate

Teachers, Educators/adjudicators, Designers, Broadly involved, Performer, Spectator/volunteer

■ Yes ■ No ■ Maybe ■ Don't have adequate info ■ Other

The appropriateness and ethics of specific amplification and electronic practices

The survey used a novel approach to measure peoples' views about the appropriateness and ethics of specific practices. Respondents were presented with a series of descriptive scenarios of actual current amplification and electronics use and asked to them rate the appropriateness of each approach. Below we describe the scenarios and respondents' reactions to them.

Using wireless microphones to augment the sound of woodwinds - Scenarios 1-3

Scenarios 1-3 described 3 ensembles of varying size and asked respondents about the "ethical appropriateness" of miking flutes, clarinets and saxes to "augment" the ensemble's woodwind sounds. The scenarios help us understand whether respondents' ratings of the appropriateness of specific practices depend on the size of the ensemble.

> A marching band of nearly [**A=total number of wind players**] with appropriate instrumentation decides to augment their woodwinds by using cordless mics on their top woodwind players in each section. This means that about [**B *number of woodwinds miked***] out of [**C=total number of woodwinds**] now are being amplified in the electronics in the front ensemble. How ethically appropriate is this?
>
> Scenario 1-large ensemble: A=100 total winds, B=6-12 woodwinds miked, C=50 total woodwinds
>
> Scenario 2-medium ensemble: A=60 total winds, B=6-12 woodwinds miked, C=30 total woodwinds
>
> Scenario 3-small ensemble: A=30 total winds, B=4-6 woodwinds miked, C=15 total woodwinds

As we reported above, all survey groups expressed considerable reservation about using shotgun mics for reinforcing entire sections of a band (Figure 10). Responding to scenarios 1-3, respondents still expressed reservation about miking instrumental players, but expressed less reservation about miking reinforcement for a subset of players within a woodwind section (Figure 15). The concern expressed by respondents was essentially the same regardless of ensemble size. The portion of respondents who said this practice was "not ethical and acceptable" was 58 percent for an ensemble of 100 winds/50 woodwinds, 57 percent for an ensemble of 60 winds/30 woodwinds, and 54% for an ensemble of 30 winds/15 woodwinds. A fourth scenario bearing some similarity to these first 3 scenarios asked respondents about the appropriateness of miking the "top woodwind players in each section" for a small ensemble with 30 winds that had poor balance. Compared to the preceding 3 scenarios, slightly fewer respondents (50 percent) found this practice to be not ethical or acceptable.

An additional two scenarios asked respondents about the appropriateness of using sounds sampled from professional music ensembles like the Chicago Symphony Orchestra and the Blue Devils Drum and Bugle Corps to "augment" a band by doubling existing parts, or fill out missing ones. The use of such samples was *rejected by the*

vast majority of respondents (approximately 85 percent deemed such practices as "not ethical"). *Interestingly, the group most opposed to this practice was spectators.* Because spectators are closest to the performance field, their reaction may reflect concerns about the balance (mix) and the quality of sounds when samples are used in performances.

Figure 15: Appropriateness of miking woodwinds for 3 different ensemble sizes

Another scenario asked respondents whether they can recognize a technique that has been used by marching music ensembles: the blending of recorded/amplified sounds with the natural audio of the live winds to increase overall volumes to manipulate sound qualities. The scenario asked respondents whether they could distinguish this "blending" practice from the standard amplification of wind instruments. Respondents expressed considerable doubt about their ability to distinguish between these two practices. *Only 18 percent* of all respondents said they "can always make the differentiation." Perhaps not surprisingly, Designers expressed slightly more confidence in being able to distinguish between these two practices (23 percent said they could always tell).

A final scenario asks respondents' opinions about the ethical acceptability of an ensemble sampling its own brass section and using the sample without "clear intent to deceive the listener." Respondents beliefs about this practice were very split. While 21 percent said this practice is "very ethical", 28 percent said it was "not ethical." That left half of the respondents not expressing a definitive belief about whether or not this kind of sampling was ethically appropriate. As we saw previously, many respondents have concerns with ensembles using samples from professional music ensembles. It would appear from their responses to these questions that respondents have greater comfort with ensembles using samples of themselves, but are still quite split on this particular practice.

Adjudication of amplification and electronics

A section of the Survey was dedicated to the adjudication/assessment of school marching bands. A substantial percentage of survey participants indicate that current adjudication rubrics do <u>not</u> address A&E issues specifically (38 percent said the rubrics do not address the current use of electronics at all). Further, a majority of respondents (55 percent) feel that the adjudicators' practical interpretation of current rubrics do not address A&E issues properly. Since the proliferation of amplification and electronic usage in the marching band world is so recent and expanding so rapidly, it would seem that adjudication systems have yet to "catch up". Also, given that these devices and techniques are not a part of traditional preparatory "band director curriculum," it would seem to demand a community of more electronics instructors, technical staff, and specialized adjudication/adjudicators just to fulfill this unique aspect of a program.

An additional question asked respondents how difficult it was for adjudicators to "differentiate and contextually assess the source and quality of all sounds in a performance." Respondents expressed quite mixed opinions on this question. Only 4 percent said that this kind of judgment was "very easy." Approximately 11 percent said it was "terribly difficult." That left 85 percent of respondents expressing quite ambiguous feelings about judges' ability to accurately discern the "source and quality of all sounds in a performance." Responses to this question were fairly similar across survey groups. Interestingly, the responses of members of the Educator/Adjudicator group were generally similar to those in other groups.

 Educators/Adjudicators were slightly more likely to say this kind of musical judgment was "easy" (7 percent versus 4 percent overall). In contrast, Designers were considerably less likely than those in any other group to say that this kind of judgement was "terribly difficult."

Education and training for the use of amplification and electronics

Survey respondents were asked whether they received extensive education/training in digital electronic equipment. A majority of respondents (57 percent) said they had not received extensive training. Approximately 30 percent said they had received some training or that their training was obsolete. Only 13 percent of all respondents said that they had received extensive training in this area. The percentages of those reporting extensive training were particularly low among Teachers (10 percent) and Educators/Adjudicators (5 percent). Respondents were asked a similar question about whether they received extensive training in sound reinforcement equipment. Responses to this question indicated a similar lack of preparation among all survey groups. Eighty-eight (88) percent of responders termed their knowledge base as "none", "some" or "obsolete." Only 8 percent of Teachers and 6 percent of Educators/Adjudicators said they had extensive training in sound reinforcement equipment. It would appear that an entirely new trained workforce would be required to facilitate exploration and assessments for schools participating in marching band competitions.

A final question asked whether colleges should require class instruction of electronics in Music Education degree programs. Respondents were very "split" in their opinions on this topic. Twenty percent of those surveyed answered "no, other things are more

essential." In contrast, 24 percent of all respondents said that colleges should offer this kind of training, because it's a "basic educational topic." Answers to this question differed considerably by respondent role. A higher percentage of Designers (33 percent) believed that college-level instruction in electronics was important as compared to Teachers (21 percent) and Educators/Adjudicators (17 percent).

Conclusion

From the perspective of a High School Band Director, the challenge of incorporating Amplification and Electronics into a Marching Band Curriculum is one of the more challenging developments for this medium in many years. Not since the adoption of Drum Corps styled "Colorguards" in the 1970's has this activity seen such a significant addition to the demands of fielding a relevant ensemble for assessments and competitions.

It is essential that we again remember that this study is focused on High School Marching Bands, and not competitive Drum Corps. Even though current stylistic approaches can be similar (if not identical), the fundamental purposes of the two activities are dissimilar. The primary role of the Marching Band is an adjunct ensemble of a comprehensive instrumental instructional program focused on the musical literacy of its members. Artistic vision, competition, innovation, and marketing are not the primary roles of the High School Marching Band. These attributes can certainly be ancillary values, but would not support the existence of a Public School Marching Band as a curricular offering in a public school Instructional Program.

A legitimate concern, then, is that an ungoverned use of these electronic devices and techniques not only places an increased human and financial burden on school programs, but also has the potential to subvert basic pedagogical achievement principles. When miking techniques and/or applied synthetic sounds can alter basic sound production characteristics in an assessment, then student achievement is not being perceived or measured accurately. In an educational environment where achievement accountability is stressed as justification for public funding and staffing of music programs, any attempts to artificially enhance students' actual skills and achievement becomes a foundational problem.

We have seen objectively from this survey that even Spectators and Performers are critical of some of the newer adaptations of synthetic and sampled sounds in general. As applied in specific ways, we also see that the practice of electronically manipulating student performances can become antithetical to fundamentals of educational assessment, and a manipulation of competitive standards. It would seem obvious that a greater awareness and dialogue among all the constituencies involved in the high school marching band activity has the potential to employ what is best with new technologies, while remaining focused on our primary mission of facilitating musical literacy and peak experiences with wind and percussion (band) instruments.

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